

**Architecture
Philosophy and
Theory Group**

Spring 2022

ENTANGLEMENTS

Entanglements

To be entangled is not simply to be intertwined with another, as in the joining of separate entities, but to lack an independent, self-contained existence. Existence is not an individual affair. Individuals do not preexist their interactions; rather they emerge through and as part of their entangled intra-relating.

Karen Barad (2006) *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning.*

For many years a particular habit of thought had us believe that architecture theory was but a sub-field of the discipline of architecture, subservient to its culture, dedicated to the critique, interpretation and judgement of architectural types, objects or subjects. We equated the production of theory to the production of discourse, exclusively. Thinking, reading and writing about architecture were understood as purely cognitive endeavors carried out by specific intellectuals known as 'theoreticians'. Architecture theory, like history, belonged to the realm of the discursive. Today, we know better than to "slash" theory from history, theory from practice, or very simply put, thinking from making. Architecture is a material-discursive practice: although it does so allographically (at a distance) architecture impacts material reality in very real and very concrete terms. It is a 'worlding' practice, that is, it has the potential to construct worlds. These worlds, or what we could better refer to as lived environments, do not come about solely through design, nor do they emerge through words and thoughts alone. The worlds and environments that architecture helps to bring forth are more than just relational. They are onto-epistemological: material and semiotic entanglements. Thus, architects not only as designers, but also as theorists participate in worlding practices. This is the understanding of, and the approach to architecture (and its theorization) that the Architecture Philosophy and Theory group subscribes. Conventional approaches to disciplinary and academic modalities, canons, forms, styles and formats, as well as old-fashioned educational and didactic schemes (including output deliverables and assignments) need to be rethought so as to potentialize the power of the theoretical through a fresh approach to conceptualization, theorization, problematization and experimentation. Rather than aiming at rigid and fixed structures and the exposition of 'clarity' over inquiry, the theoretical may be understood as a force-flow towards new entanglements of meaning and matter that 'matter' in and for architecture.

In the Architecture Theory Thesis lecture seminar student participants act, feel and think from within this material-discursive approach to architecture. As theorists, they engage the entanglement of meaning and matter and produce thesis essays that reflect such engagements. In this process, they think, they read, they write, although not always in that order, and never in isolation. In our seminars we emphasize collective and group discussions, where peer-to-peer encounters stimulate the posing of constructive questions and respectful exchanges, thus promoting a safe space where thinking-with and thinking-together are central. In these settings, students contribute with their personal and individual research interests and concerns and over the duration of the course, develop them into sound problem statements and research questions and extend these into eight weeks of researching, reading, and writing. They bring these essays further in thinking them in combination with the group's work, thus finding thematic clusters, shared concerns and questions, compatible frameworks and methods. What emerges is more than a simple 'compilation': issues that point towards fundamentals; the importance (and power of) experimentation, notions of how environments are brought to life, how topics, fields and disciplines adapt or rupture, how they bring about new concepts and meanings. They raise questions on what constitutes diversity, difference and variety, not only in terms of identity politics, but also beyond, in the disciplinary domains. All these questions become conditions for thought to emerge, and opportunities for meaningful exchanges.

During the Spring 2022 edition the three groups headed by H. Sohn, A. Radman and S. Kousoulas, produced the present volume titled 'Entanglements'. This rich and varied volume including the work of most student participants, is the first issue of the Theory Thesis Annual. The volume has been edited, curated, and laid-out by students for students, and thus is entirely credited to them. We hope to make this a lasting tradition!

Heidi Sohn, course coordinator
Architecture Theory Thesis Seminar 'Thinking/Reading/Writing'
Architecture Philosophy and Theory Group
Spring 2022

Architecture **P**hilosophy and **T**heory Group

AR2AT031

COLLECTIVE THESES ISSUE: ENTANGLEMENTS

2021/2022 - semester II - spring 2022 - Q3

Architecture Theory Thesis

**Writing seminar:
Thinking/Reading/Writing**

Heidi Sohn Group

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Adults sense the world through the notions of memory, experience and perception. As children are lacking the essence of memory and experience, they experience the world mainly through the unconscious kinaesthesia and hapticity. The here and the now defines their perception of space. Child development is influenced by the continuous interplay of nature and nurture. As most children spend a few years of their youth in kindergarten, its architecture and formation has a great influence on their behaviour and development. Healthy architecture in kindergarten

allows children to engage in their surroundings, whilst allowing them to retract from the crowd and active environment. It is a space in which contradiction should be able to form a coherent entity, in which children can recognise different spaces but lose their individuality in the chaos of unpredictable spaces. Architecture should allow their imagination to lead and invite children to develop cognitive skills.

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Mimi Cepic

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Fundamental

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Jonas Stappers

Situating the architectural drawing as a way-of-doing of orthography and imaging concerning architectural practice, inside is gained of the omnipresent Cartesian grid in the architectural habitus and what it brings to bear upon the world. Moreover, by unravelling how the drawing is in itself is never static but a process, possibilities of drawing otherwise are introduced and open up space for renewed architectural experimentation from within entangled ecologies of drawing.

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STAYING WITH THE TROUBLED TOOLS?

On the omnipresence of Cartesianism in architectural drawings and towards ecologies of drawing.

Jonas Stappers
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Introduction

Monochrome floor plans, perspective sections, diagrams consisting of arrows and other graphic symbols, colourful axonometric drawings, technical details, photo-realistic renders, and many more—all these representational devices circulate within and around the architectural discipline. Large amounts of time are spent on drawing, modelling and seeking representational styles in both architectural education as well as in the profession.

Whenever I situate myself in the architectural field—be it during education, working in a professional environment, or immersing in the work of others—architectural drawings have been for me personally in one way an anchor of stability in the field. On the other hand, they sometimes strike me as abstract, volatile devices of experimentation that question why, how and for whom we draw.

There seems to exist a constant development of different representational styles and new (digital) tools and modes of production, while traditional methodologies are still thought of as the industry standard. Architectural drawings are becoming more and more complex in the sense that we are using more advanced projections and perspectives and introducing a new layer of seemingly dynamic graphic symbols (arrows, etc.). But are these truly new methods of operating or just representational gimmicks?

In this thesis I will elaborate on the way in which we in architectural practise are drawing and how we can be more aware of the implication of drawing(s); not to only focus on the input or output of the drawing practise, but to question and unravel how drawing is in itself never static, but a process, and is therefore part of the processes that shape current architectural practise. How can (the) architectural drawing be in itself a very mechanical process, or a stable end-product, but at the same time become something that expresses and is part of non-visible, dynamic, non-binary and mobile processes? And how can contemporary architectural drawing practise and its mechanical tools be oriented to include processes like affordances, capacities, temporalities, movements, modes of inhabitation, and choreographies.

The thesis starts off by situating drawing as a (specific) way-of-doing using the concept of orthography and the development of the image in relation to the development of architectural practise. In situating drawing in this way, we can then gain understanding of the contemporary habitus of architecture, how it cannot seem to escape from the omnipresent Cartesian grid, and what this gridded habitus brings to bear upon the world. Moreover, in assessing the implicated assumptions in these ways-of-drawing in the contemporary architectural habitus, we can develop insight into the Cartesian onto-epistemology that underlies the assumptions in this habitus. Then, using less conventional ways-of-drawing as heuristic devices leads me to speculate on the possibilities of drawing otherwise, of destabilising architectural conventions and open up space for renewed

architectural experimentation from within entangled ecologies of drawing.

Drawing or image? What is (an) architectural drawing?

Whenever we consider architectural processes or practise, the architectural drawing is inevitably implicated. Yet within current architectural practises, what we mean by 'drawing' in a general sense is often rather ambiguous. Left unexamined, it seems to function as a shorthand for a multitude of 'drawing activities'—hand drawing, digital drawing, physical and digital modelling—that result in drawings—sketches, computer drawings, 3D models, technical details, renders, etc.—that seem to share very little in their appearance, using all manner of representational styles and devices, and are employed towards very different goals by having different (more or less designated) roles in architectural practises.

Orthographic drawing and post-orthographic images

When we try to describe drawing in its most technical, mechanical manner, it could be denoted as the act of inscribing 'geometric thoughts' through hand-mechanical actions (hand, pen, mouse) onto a seemingly stable surface (paper, software). In this mechanical depiction, a drawing is largely understood as something static: once drawn it does not move (May, 2017, p. 11).

In this sense, drawing entails a certain *orthographic* mode of production. Orthography is understood as a geometric method existing of rules, conventions, and assemblies that arrange the visual marks of a non-linear world into legible (repeatable, and retraceable) marks (May, 2017, p. 14). The '*linear graphism*' of orthographic modes of drawing thereby enables the capture of a non-linear world into a linear 'recording of the world' (May, 2017, p. 15). The speed of this recording was synchronous with the method of these drawing actions, enabling the capacity for historical sensibility; to tie the past to the present (source). So, this orthography depicts and values 'traditional' modes of drawing, as prescribed methods of production through retracing, wherein architectural experimentation and historical reasoning are concomitant.

In present times, with the previous and ongoing shifts in methods of production from analog to progressively digital forms practise, 'drawing' can no longer be understood in only this orthographic sense. Current architectural drawing practise is intertwined with digital methods of production to such an extent, and these drawings are so dependent and inscribed by the *tools* we use, that architects speak a whole vocabulary of *commands*, *functions*, *signs* to model, draw, calculate, communicate, and simulate—so much so that we hardly know how to practise

without these methods, or outside these simulations.

Instead, May perceives these modes of contemporary architectural production as *post-orthographic*. With the digitalisation of architectural practise, architectural workers are increasingly '*processing images*' rather than engaging in the '*processes of drawing*' (May, 2017, p. 19). The post-orthographic surfaces of images are a way of detecting energy through signals, which can be processed, stored, managed, calculated, etc. Images thus are outputs of the signalisation of certain energetic processes, and interdependent with data and data processing (May, 2017, p. 12).

So while these digital tools may appear simply as ways of making tasks that were previously labour intensive more efficient, they are rather a part of a more profound transformation of architectural practise. This is reflected in the fact that the fact that architectural labour has, mirthlessly, itself not become less intensive for architectural workers; it has rather shifted to allow architecture to do other things. Perhaps, it is even the very ready availability of these digital tools, their supposed universality and seemingly endless possibilities, that precludes reflection on the fact that they are themselves very much an outcome of, and are framed by, specific, situated histories of both technical developments and political shifts. A recent, quite extreme example of this would be parametricism, an architectural paradigm that was an important driver of the rapid development of many of these tools. Despite the promises of endless possibilities for parametricism in architecture, it has quickly committed itself to the niche production of rather unimaginative formalisms for the rich—a development undoubtedly heavily inscribed by our political moment.

Surely, pre-digital drawings and methods of drawing were also shaped by the (mechanical) tools and political conceptions present back then. Alberti's orthogonal drawings—plan, elevation, section; precisely those categories that parametricism sought to overcome—can, for example, be understood as a certain conception of politics in which the politics of architecture are restricted to the domain of the programme as represented in the *plan*, while aesthetics considerations are represented in *elevation*, and the section connects these two by elaborating on *structure* (Spuybroek, 2008). Rather than overcoming these categories and the political regimes they manifest(ed), parametricism has sided firmly with the current political status quo by aligning with the most powerful elites.

Representation has *never* been neutral, this is not only something of the present digitalisation. The tools and modes of production are constantly shifting throughout the years, never neutral but, tied to societal changes, are inherently political. In my experience, the current lack of reflection on the character of the digital shift has led to a situation in which there is a lot of time and effort spent on representing aspects of a project in a certain way, and (technically) figuring out how to produce such representations, rather than questioning why we represent in certain ways; how these technologies change the conditions of

architectural production and what the consequences and possibilities of these technologies would be for architectural practise.

Returning to May's notion of (post-)orthography: while with orthography, architectural experimentation and historical reasoning were coupled, in the post-orthographic processing of images these are largely decoupled. With the rise of digitalisation, signalisation, datafication in architecture, the duration of retracing, the linear or mechanical conception that structured orthography in the past, is replaced by the immediacy of 'real time' imaging. With the advent of computerised drawing, the production of images is mostly based on functions, models, and calculations that happen at a *refresh rate* anterior to the perception of the human eye. Production nowadays is all about the anterior and posterior. Thinking in *commands* or *algorithms* asks for inputs to generate an output: from two mouse clicks to create a simple 2d straight line, or a highly complex mathematical script that 'generates' a certain 'fluid' shape, or generating a 2D floor plan from a 3D model. While these operations of course do not happen instantly, the ways and speeds of computation escape human perception, omitting the intermediate or interim, bypassing thought, thus precluding interaction or interruption in these processes. Doing away the interim, or the *trajectory* of making a mark, means leaving out an in-between in which new relationships (noise) can arise, which provoke thinking outside or shifting boundaries.

Both the historical sensibility of *retracing* and the open-endedness of the *trajectory*, allowing for architectural experimentation, are replaced by automated chains of inputs and outputs—black boxes that operate at a 'telematic' speed (May, 2017, p.13). Instead of a *representation* of the world, imaging strives to be a *presentation* of the world, a 'real-time' model of the world (May, 2017, p.19). Where we used to imagine architecture by tracing (*re-presenting*) the past to 'present' the future, we now justify architectural form by images of performance, control, efficiency, etc. (May, 2017, p.20). In the closed circuits of imaging, in which the automation of architecture and exclusion of architectural experimentation foreclose both past and future, architecture becomes *the managing of the risks of the volatile present*, with technologies such as BIM and the financialised architecture of the excel sheet rendering in real time *the spinning top of the scenarios of the present moment* (Gibson, W., 2003, as cited by Berardi, F., 2005).

Habit and habitus

However volatile our present, current modes of production have arguably become more static in response, certainly in relation to the more fluid production we know from the pre-digital (which will be elaborated on later). Here, my concerns with a lack of reflection on modes of drawing become explicated: the shift in the 'drawing activities' of the digital signifies a transformation of architectural *habits*. The reliable performance of digital tools and operations combined with their appearing as-if universal complete their black box-like condition, transforming the daily practise of architecture into an automated practise, in which there is little space left to speculate on the changing conditions of architectural production, or to explore or experiment with the possibilities of these technologies beyond generating inputs and outputs—the only questioning is on how to perform more efficiently. This transformation becomes (painfully) obvious when one enters an architectural office or school, especially when deadlines are approaching: bodies contorted behind screens for hours at end, bleary-eyed workers with tensed-up shoulders and painful backs. This time spent behind screens performing endless operations conditions the bodies of architectural workers—even if it concerns the bodily deskilling through the relative disembodiment of working with software—becoming anchored in daily architectural practise. As such, it

manifests as a non-discursive, situated, bodily and technical knowledge - an architectural *habitus* - within the architectural *habitus*, a 'network of dispositions toward doing things in a certain way,' the *habitus* of a profession (Bourdieu, 2008).

Paradoxically, drawing remains an important vehicle for discursivity in architectural practise (with the design process conceptualised as thinking (together) through drawing, whatever form this drawing may take). However, it is the very non-discursivity of (digital) drawing that shapes the condition for this discursivity, conditioning what can be thought, communicated, and designed; and necessarily precluding certain modes of thinking, communicating, designing. Drawing thus figures as a common sense, as a going without saying; drawing becomes a structuring structure which reconfigures the architectural *habitus*.

Drawing Reconsidered

Reconsidering the previous orthographic definition of drawing (the act of inscribing 'geometric thoughts' onto a seemingly stable surface), it strikes as a supremely Cartesian definition, one that presupposes a *mind-body dualism*: the mind operates independently from the body in its thinking, instrumentalising the body and medium to execute the representation of these thoughts. This conception of the act of drawing and its implications on the drawer and the drawing thus reproduces a transcendental ontology of Platonic idealism - albeit without necessarily appealing to eternal truths - carrying the implication that the world can be remade according to independently generated thought. Herein, in the illusion that one can think as if outside of the world, 'a view from nowhere,' and act on it without being implicated in it, we can locate the heritage of Enlightenment rationalism. The vehicle that facilitates this illusion, then, is the Euclidean rationalisation of space, which is presupposed to be an empty, three dimensional space, that is then filled with matter. Again, Descartes intervenes by operationalising this space with his coordinate system; three axes along which matter can be organised. Cartesian mind-body dualism and rationalisation of space combine in producing an ontology in which everything can be reduced to Euclidean space, enabling the ontological centring of the Western 'universal' man, at once categorising producing a hierarchy in which he places himself above other species, the landscape and marginalised groups (Verzier, 2021).

Projected onto the architectural *habitus*, this disposition at once tends to overestimate the mastery of the architect over the world, while underestimating the creative potential of the world itself, reinforcing a subject-object relationship in which matter is instrumentalised to suit the architect's needs, a *hylomorphism* that at once constitutes and legitimises the ontological hubris of Cartesianism. Rationalising space as neutral, uncharged by the 'objects,' or rather *ecologies* within it, space is reconfigured as a *tabula rasa*. And with each architectural intervention, the site is considered as, and thus made into, a *tabula rasa*, which can be remade by instrumentalising matter, negating the entangled ecologies that populate it.

In the post-orthographic condition of imaging, we can now access the 3D Euclidean space and use Cartesian grids to manipulate virtual matter using software, rather than dealing with the translations of 2D renderings of 3D space of physical drawings. So even if the 'context' may play a major role in the conceptualisation of a project - then the *tabula rasa* it at least figures prominently in the empty 3D space of architectural software: a grid that allows the precise control and computation of (virtual) matter. The virtual space of the drawing or the model, modelled itself after Euclidean and Cartesian conceptions of space and matter, comes to replace the Platonic realm of ideal forms; instead of being ungraspable, ineffable, it is infinitely available and endlessly manipulatable. The onto-epistemological consequences of cartesianism become fully realised when the simulation

and reality seemingly overlap to such an extent, that the simulation starts to encroach on the experience of reality as such and is taken as more real, or rather, more *ideal* and therefore more *valuable* than actualised reality.

However, this onto-epistemological regime that structures our current architectural habitus does "no justice to the ways humans and things get by in the world" (Latour & Yaneva, 2013, p. 84):

"Everyone agrees that the drawing (or the photography) of a building as an object does not say anything about the 'flight' of a building as a project, and yet we always fall back on Euclidean space as the only way to 'capture' what a building is."
(Latour & Yaneva, 2013, p. 82)

Rather than a universal way of conceptualising the world (and the role of architecture in it), we should take this to be a specifically Western tradition and history, a situated knowledge (Haraway, 1988) based on certain standards and conventions.

One way to understand the persistence of this situated knowledge is to draw out its alignment to the *efficient causality* of capitalism, that instrumentalises 'Nature' to be productive for capital. Cartesian dualism and tabula rasa allow the selective in- and exclusion of objectified or othered bodies and ecologies through the supposition of externalities based on prioritising extractive potentials. In the regime of imaging, even when externalities are 'included,' they are so by datafication of them: by capture through data it is ensured that these 'others' (that in actuality exist on the same ontological plane), reduced to inputs and outputs, can never threaten to expose the situatedness of the knowledge of the architect, maintaining their 'view from nowhere' (Haraway, 1988), simultaneously accounting for the risks (or opportunities) these externalities may pose.

"The grid has already grown inside, its powerful permeating illusion of order conveying an ontological version of the world, of society, of architecture so perfected that it seems inevitable. A vision not at the service of equality, but primarily of the white masculinist subject who takes the world as his possession."
(Verzier, 2021)

Trajectories: temporality and movement

Traditional orthographic notation system often only represents two extremes (the 'before' and 'after'; (Stalder & Kalpakci, 2018, p. 15); they do not show the processes that take place in between, all the adjustments and thoughts that happen in-between the 'design' and the 'finished' building.

Moreover, in the realisation of architectural projects, this Cartesian way of representation is reliant upon the internal knowledge of the building industry (architect, contractor, builder); the static semiotics limit who can read the drawing: only those readers who are acquainted with the project or are well-versed or -schooled in reading these drawings, can read the *anterior*, *interim*, and *posterior* of the process into the drawing. From the first start until the final construction drawings there is a constant need for (re)organising in Cartesian terms, always recapturing complexities and contingencies of the process in (post-)orthographics. This interim—the fundamental ambiguity and futurity of the in-between, an inherently political process of negotiation, deliberation—is never fully acknowledged through a differentiation of the (Cartesian) differentiation of before-after into ever smaller before-afters, always accounting for risks, always offering the illusion of control.

If we instead reconsider drawing beyond the object-subject relation, it can be understood as a *verbal noun (gerund)*: the act of thinking or designing is embodied in the practice of drawing, where the focus is not on (mechanistic) technique but on the tacit knowledge of the producer (architect) through the united mind-body (Feuerstein, 2016, p. 46). The unity of mind-body is not static or linear, but instead rather fluid. This could extend to architectural drawings: they need not be the outcome or part of a linear trajectory, not only an immutable representation, but can be considered to always be *mobile* (Latour & Yaneva, 2013). Architectural drawings are thus never really *static*.

In orthographic drawing and post-orthographic imaging, geometric Cartesian patterns are projected onto planes. While these drawings explicate the topological relation between objects, these are not helpful to understand the processes of time and movement in the drawing (Meisenheimer, 1993, p. 75), and therefore suppresses thinking in these temporalities, paths, and trajectories. These processes are instead achieved by providing an additional layer to a drawing, explicating these relationships through the proximity of lines to each other, additional graphical notations, like connecting lines, symbols or typography. Graphic symbols can help to draw out non-visible and dynamic processes in the drawing. These points, lines, arrows, curves, etc. have been used to show certain direction, intention, or duration in these 'static' representations, for example arrows in transportation maps (Meisenheimer, 1993, p. 75). These ways of notation seem to be employed more frequently nowadays, although one could question whether the employment of this semiological register truly enables us to interpret the anterior, interim, and posterior better, or

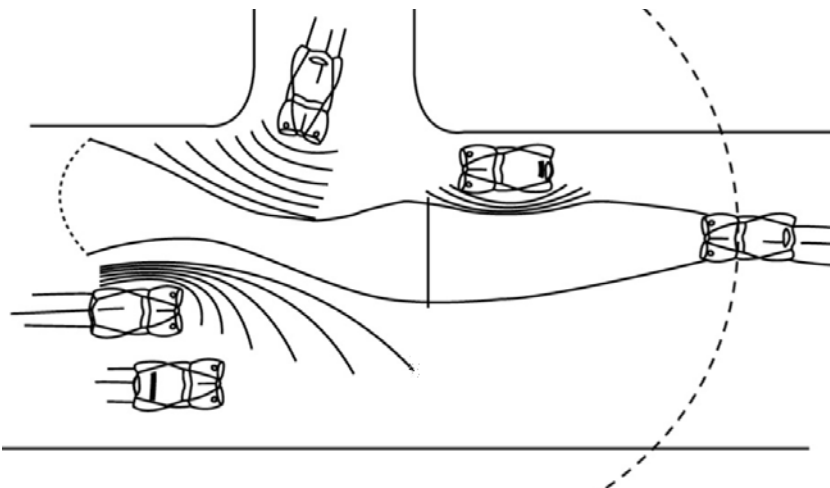


Figure 1

Illustration of processuality.
From Gibson and Crooks (1938)
(Radman, 2022)

whether these seemingly fluid graphic symbols are merely a kind of poetic gimmick that suits, guides and supports the Cartesian (capitalist) habitus. As 'climatic sections,' 'concept diagrams,' with their graphic notations for airflow, routes, etc, become increasingly part of the architectural drawing set, the privileging of relations and their organisation over everything else in these diagrams should be critically assessed, as they may try to overly direct and therefore mislead the reader, or converge possible readings, leaving out other ways of thinking in the margin (Contingent Collective, 2021, p. 83). But when used carefully, these graphics may be helpful, diverge possible readings, to imagine the interim processes (affordances, choreographies, relationships, etc.), as seen for example in figure 1.

To express and embody these temporal and embodied relations and trajectories on a more fundamental level, instead of relegating the mobility of a drawing to an 'additional layer of semiotics,' we should shift our drawing from a (Cartesian) ontology to (non-Cartesian) ontogenesis - from how things are (in ever smaller intervals), to how things become (Crampton, 2009, p. 845), centring the 'intermediate thinking' and prioritising the trajectory. It is on the trajectory that the 'thingly' nature, in contrast to the 'objective' nature, of architectural projects (i.e. buildings) arises, and where deeper understanding the more-than-human relationships and processes can be expressed (Latour & Yaneva, 2013, p. 89). With this said, are there ways that contemporary practises of architectural drawing and imaging allow for this 'thingly' nature to be expressed? Are there other ways in which contemporary tools could be used? To what end?

If we think of Deleuze's two methods of organisation; the smooth and the striated, as well as the space of science and arts, with somewhere in-between architecture (Grosz, 2003), then the Cartesian *architectural habitus* positions itself more towards the science space, which is striated by our practical needs. How can the architectural drawing not only be used to reinforce the striation of space, but rather as a process that functions as a mode of conversation between one space into another?

One suggestion could be found in ways-of-drawing within other fields like choreography and calligraphy, which allow for focussing on this trajectory rather than only on the topological relation. A drawing of a musical dance (figure 2) or the drawing of calligraphic symbols (figure 3), relies on the relationship between representation and the embodied experience and the temporality of memory. In order to understand the meaning of the drawing presented, one has to interpret the lines, weight and flow to comprehend the path, duration and time, which are essential to make sense of them. While these ways of representation seem inevitably bound to the 'arts,' creating routes and pathways is undoubtedly an architectural concern too (Meisenheimer, 1993, p. 66). Incorporating these 'freeform' modes of drawing into architectural drawing, for instance, may express the intensities and

processes, the affectual mobility of a drawing. But how to translate these affects of the (hand)drawing into the contemporary digital methods of production, where the interim is far less obvious?

Towards ecologies of drawing

Not only is the drawing mobile in the sense of its temporalities and trajectory. The drawing is always part of a network of relations between human as well as non-human objects. In the sense that the architectural drawing could be seen in-between the human and non-human, therefore engages as 'an environment,' capable of addressing other life forms (Baukunst, 2019). No matter how the drawing is being produced, it is always mobile in its relations. This though is nevertheless inevitably still part of an *epigenetic landscape* in which certain relations are more likely to arise than others. So in this way, the drawing is guided as well as guiding in a certain direction.

Everyone relates in a different way to the image/drawing that is presented. It could be stated that the representation of reality in the form of a drawing is interpreted differently and dependent on the memory and experience of the viewer/interpreter. In order to think in the 'language,' or rather, *semiotics*, of the architectural profession, one should be familiar with the current architectural graphic symbols and style. One should understand that dotted lines represent items that are 'behind' the observer or thick lines represent constructive elements, etc. Through this vocabulary, the 'architect,' 'constructor,' etc. is able to imagine the processes, spaces, affordances, and dynamics of the thingly nature of the architecture represented in the drawing. The same is seen when we view architectural images within everyday media; images are often created with a certain intention to direct the viewer, leaving little room to understand the complex whole of ecological relations present. Like we see in the 'final' renderings on billboards that leave little room for the viewer to interpret the complexity of the intervention, this opacity effectively renders the viewer passive, or at least leaves them with an unrealistic, mythical view of a project (Minkjan, 2016). With the digitalisation of the architectural industry and rising complexity and use of digital architectural models, not only the processes of drawing/imaging the traditional plans, sections and elevations have shifted to more 'real time' refreshing images. Other methods of imaging like highly detailed perspective drawings and renderings have become more omnipresent, and constantly developed and elaborated, although the 'traditional' methods are still thought of as the industry standard.

The way in which the drawing/image is produced, is being interpreted and experienced in its intermediate and posterior moments, is always in a sense enabling a certain bi-directional relation of the objects in the drawing and the interpreting observer. The concept of *Umwelt*, as Jacob von Uexküll describes it, considers how every object relates in its own manner to its environment (Uexküll, 1992). By taking

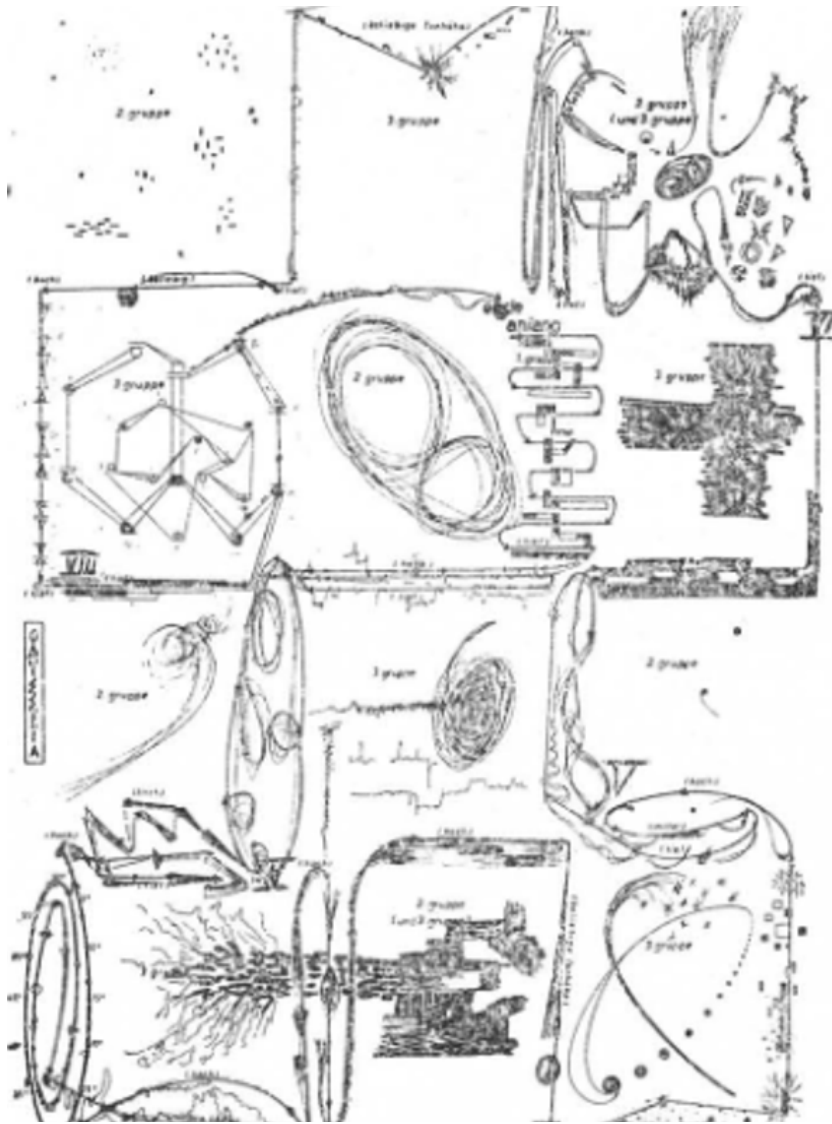


Figure 2

Anestis Logo thetis Odyssey (ballett music).
 Universal-Edition Vienna 1964
 (Meisenheimer, 1993)



Figure 3

Diagram of movement: Encounter between
 Heaven (Yang) and Earth (Yin) in the
 'Footprint method of the Great Yu'
 (Meisenheimer, 1993)

this into account, it could be said that different ways of drawing or imaging account for different qualities of relationships or capacities for those actors that are involved (objectives) to act. So, the amount that a drawing attempts to script the experience of the viewer frames the multiplicity of interpretations, or its ecological capacity, of the drawing. In order to explore some of the ecological possibilities of the architectural drawing, in the following passages, I will contemplate some 'non-standard' examples.

One example of a drawing that we can employ as a heuristic device, to explain these ecological affects in the drawing, is the illustration of 'Granby four streets' (Liverpool, GB) by Assemble (figure 4), which is drawn as an axonometric 'stage' in which all elements are represented equally (in its artistic style). The drawing it tries not to script or highlight specific features (Stappers, 2020). Instead, it shows most of the elements as equally important, as a sort of 'harmony'. One way of reading this drawing, then, could be to read into the suggested interdependencies between these elements the environmental, social, and mental ecologies of the project (Guattari's, 1989): the environmental (building properties, context, materiality, etc.), social (collaborative

processes and mutual relations between the humans and non-humans alike) and mental ecologies (subjective interpretations, memories, thoughts, and imaginations of the future)(figure 5) stress not the Cartesian onto-epistemology, opening up space instead for that other philosophical avenue, that of *ethics*. The drawing *affords* different things to different actors; in this sense the drawing forms and is formed by an architectural ecology, not only highlights the ecological relations in the drawing itself—"to rethink all connected aspects of the project as a whole", as Bateson states (Braidotti & Hlavajova, 2018, p. 131)—it also suggests an ecology of actors connected through this image, which could then be seen as a multiplicity of a dozen images (figure 6). Therefore the drawing in a sense functions on different planes and can be interpreted differently by anyone or anything (Ballantyne, 2007, p. 40).



Figure 4

Pencil drawing of 10 Houses on Cairns Street
(ASSEMBLE, 2015)

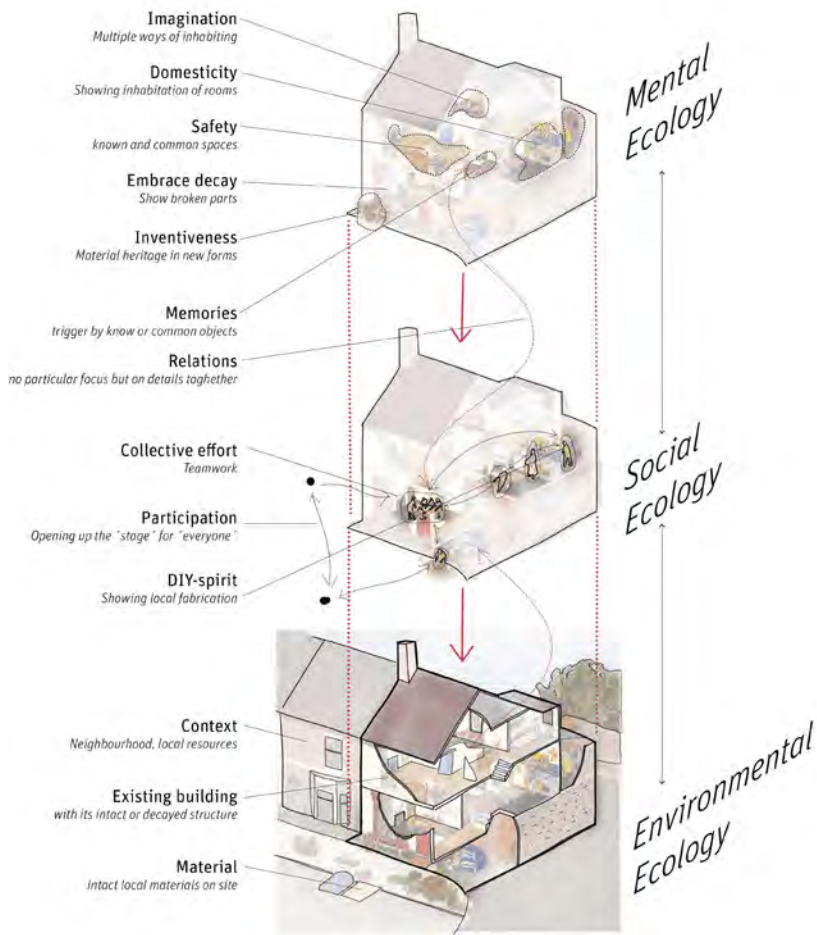


Figure 5
Interpretation of the multiplicity of the drawing (Stappers, 2020)



Figure 6
Interpretation of the drawing as a different Umwelt ('capacity to act') for each participant/objectile (Stappers, 2020)

Staying with the troubled tools?

When drawing using orthographic/axonometric representation methods and by using drawing styles that do not prioritise one aspect above another (similar lineweights, colour, etc.), ecological thinking could arise because each object is drawn using the same visual importance (Atelier Bow-Wow, 2014, p121) (figure 7). By using a parallel projection that does not call out the identity of the observer or assigns weight to certain subjects, it shows a synchronised view of time in which all entities that populate the drawing become interrelated (Atelier Bow-Wow, 2014, p. 121). While such drawings depict entities in synchronicity, when observed, these entities are interpreted differently based on the disposition and experiences of the observer, thus subjectively giving the drawing an intentionality or direction. For example, by drawing non-static entities like people and vehicles in the image, one could imagine the image as non-static by associations with previous experiences (e.g. familiar routines) with these entities (Meisenheimer, 1993, p. 77). In contrast to the axonometric representation methods, the perspective

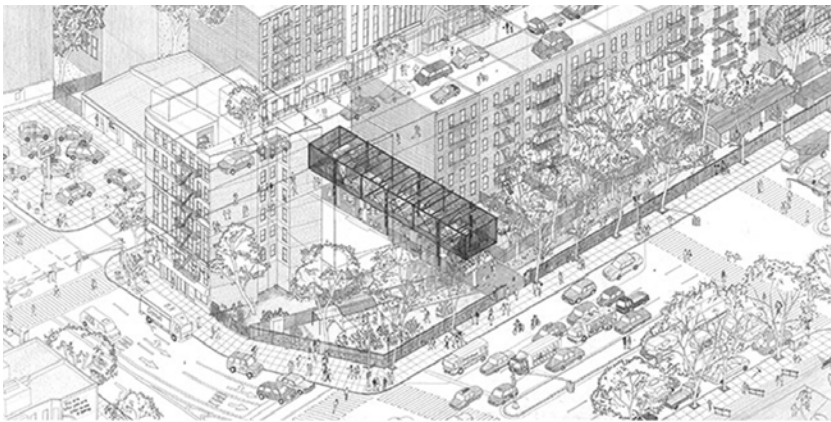


Figure 7

Axonometric drawing (Atelier Bow-Wow, 2014)

drawing adds an additional dimension of depth and therefore a certain hierarchy into the image. Previously non-Western / Asian drawings did not include perspective, so all elements in the image are viewed as having the same importance (Atelier Bow-Wow, 2014, p. 121). When using perspective drawing, one should be aware of the intention and hierarchy it introduces. This is not a harmful thing, per se, as it could also be used to highlight relations that are not achievable in axonometric or planar representation methods.

Indeed, perspective is combined with planar drawing methods

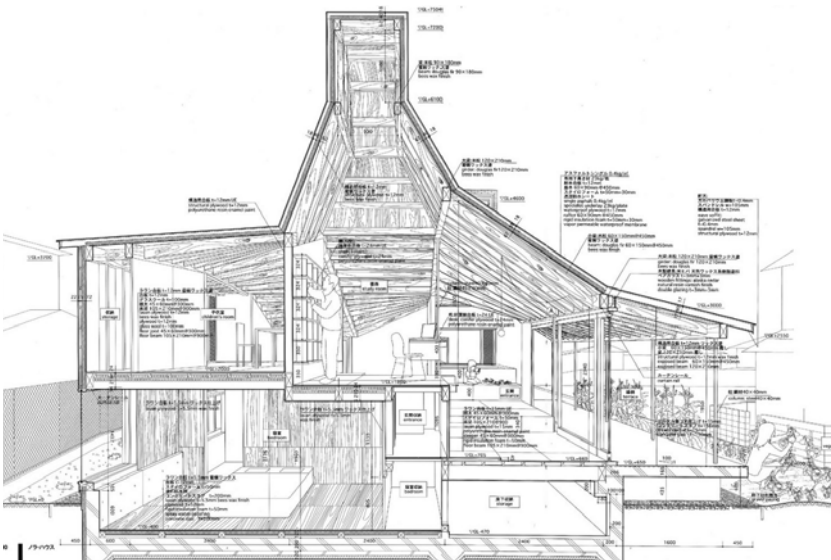


Figure 8

Axonometric drawing (Atelier Bow-Wow, 2014)

(section) in the contemporary methods of drawing/imaging, for example in the perspective sections of Atelier Bow-Wow (figure 8). In this way, multiple 'pictures' / 'stages' are being juxtaposed in order to highlight relations that remain otherwise unseen. Not only is this a method of juxtaposing spaces in one image, these complex drawing methods can also juxtapose time and space, thus showing temporalities. Like the perspective section in which the anterior (what to build) is shown in the technical section and the posterior (space of occupation) is shown in the perspective by introducing silhouettes and daily activities into the drawing. The interim is nevertheless not shown in these drawings and still depends on the intrinsic knowledge of the discipline like we also see in traditional orthographic drawing methods the 'before and after' (Stalder & Kalpakci, 2018, p. 15). In the drawing of Assemble (figure 3) the interim is introduced by drawing the building as neither the *before* or *after* as well as by highlighting the building processes.

How (much) to draw?

Drawing inhabitation, drawing both professionalised as well as non-professionalised processes, materiality, etc. as seen in the perspective drawings of Atelier Bow-Wow or the axonometric drawing of Assemble, could be seen as maximalist methods of drawing. Although these two differ quite a lot in their way of production and their aesthetics, both attempt to map different ecologies of inhabitation in the drawing that are not traditionally seen in architectural drawings. Although these seem like maximalist drawing approaches, it could be argued whether these are truly maximalist; the richness of ecologies of

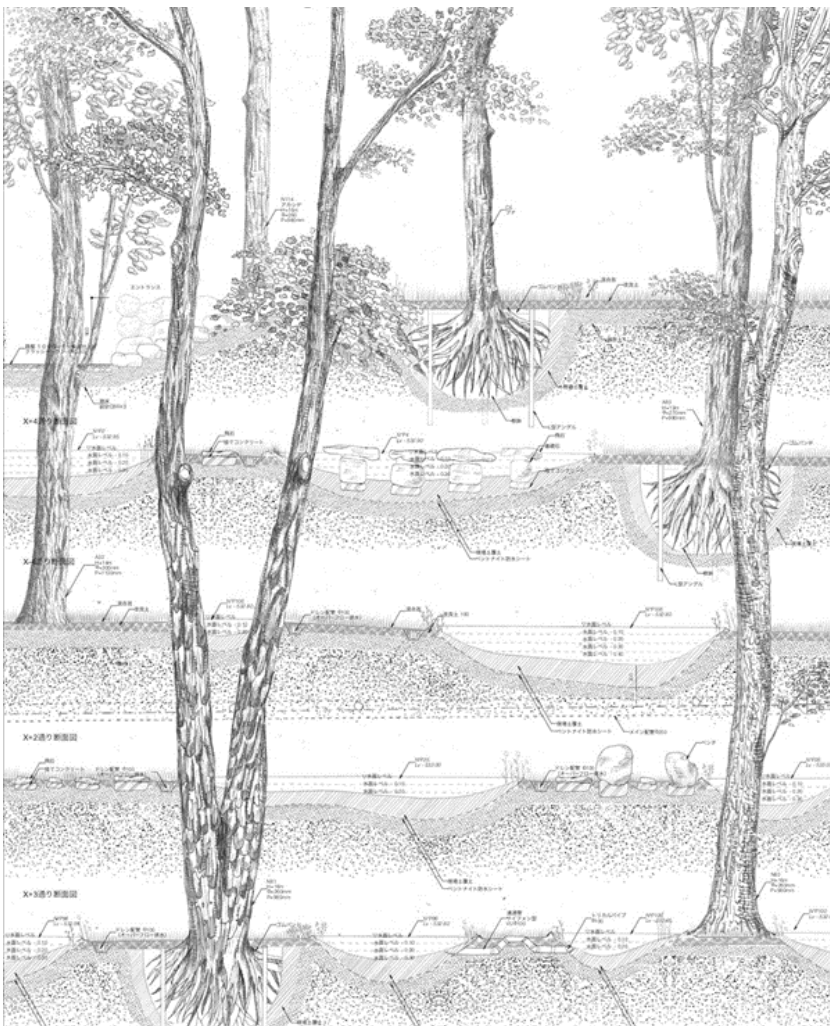


Figure 9

Section drawing Biotop Water - Junya
Ishigami (Ota & Obrist, 2019)

thought triggered by the drawing itself are perhaps only maximalist in relation to those traditional modes of drawing that are devoid of life.

Achieving similar effect by different means, the 'minimalist' drawings by Kajuyo Sejima, display the interpretation of space and function in a more abstract, almost 'mystical' way, and appear to be in stark contrast to the drawings discussed previously (Vidler, 2000, p. 3). One could question whether these 'maximalist' drawings leave enough room for interpretation of the observer or viewer of the drawing. For example, meticulously drawing modes of inhabitation could guide the observer in a certain direction of interpretation, to the effect that the ecologies of thought are diminished. When taking this into account while drawing in this 'maximalist' fashion, the 'maximalist' drawing enables multiplicities, though its different graphic elements or signs, are they not only able to create a certain specific signification but cross borders between different types of signs and therefore productively introduce new ecological relationships, as Félix Guattari calls these, 'a-signifying semiotics' (Stalder et al., 2016, p. 67). So if you selectively draw elements that are inherently fluid, living or organic, for example when you draw the lively environment of the proposed site, like the trees and soil in the drawing by Junya Ishigami (figure 9), the fact that these are drawn, then, inherently assigns value to these lively elements. While such a drawing is taken as a static image, it would already 'need updating' before it is even finished. But the drawing never really is, because it is evident that these lively entities exist in relation to the building. The drawing encourages to constantly re-examine the environment and its relations in regard to the building.

Although there could still be a necessity to add constraints to allow for new ideas to arise (Latour & Yaneva, 2013, p. 84), these constraints could help to situate other, less visible, more spontaneous ecologies to emerge in the drawing. Therefore graphical systems, or Cartesian organisation methods could help to highlight non-Cartesian, ecological relationships. An example of this would be a drawing of Junya Ishigami (figure 10) in which trees are drawn in an x/y grid system and in a similar representation style. This way of arranging them in a grid pattern makes the differences and similarities between them clearly visible.

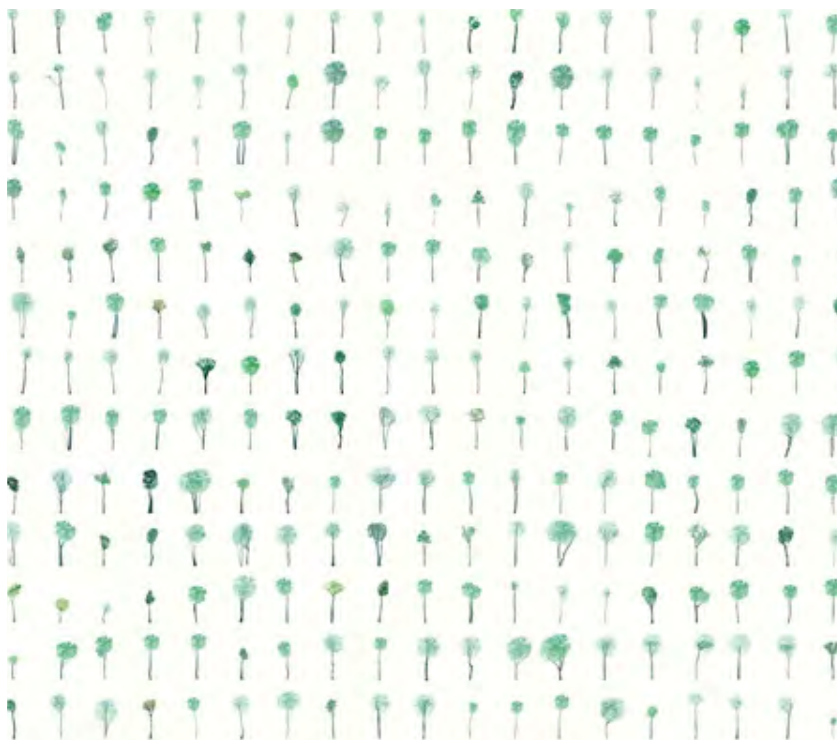


Figure 10

Trees Biotop Water - Junya Ishigami
(Ota & Obrist, 2019)

Conclusions

Architectural conventions in the drawing are connected to predominant ways of realising architectural products and building industries. Drawing differently has implications on the building industry, and how the built environment is (re)produced. Not drawing the ground implies that the site is approached as essentially a *tabula rasa*. If you do choose to draw the ground, you do not do this in the hope that the developer might do something with it—no, the ecology of drawing is one part of shifting architectural practise towards more ecological forms of architecture; an architecture in which the architect becomes enmeshed in and attuned to architectural ecologies, in which the architect is in continuous negotiation and deliberation with the expanded ecology of architecture.

In order to steer the architectural drawing and therefore the architectural practise, there should be an awareness of the ‘*tabula scripta*’ (Alkemade et al., 2019, p. 22) in which architecture is produced. But in order to shift, the concept of drawing should be truly acknowledged not as a singular idea to communicate or reflect, but more as having a quasi-autonomous existence, as having a life on its own that produces and continues in itself (Grosz, 2003, p. 78).

Here the tools of imaging and drawing of contemporary architectural practise should not be employed towards the automation of architecture and exclusion of architectural experimentation in a frantic effort to manage the volatile present in the closed circuits of post-orthographic imaging, forming an architectural habitus in which black-boxes are used to control, and optimise performance and efficiency. By understanding what this Cartesian ‘image of thought’ entails, we can start to understand what it does not entail, what possibilities still lie in drawing, opening space for speculation on other-ways-of-drawing using these Cartesian technologies to destabilise the Cartesian onto-epistemological regime itself, together with its binary logics of before-after, inside-outside, input-output, mind-body, object-subject. By employing architectural drawing(s) as a heuristic device, ecologies of drawing can be explored to counter the Euclidean rationalisation of space and the commonsensical ‘view from nowhere’, providing possibilities for the destabilisation other other architectural categories and typologies. By investigating the interim, the trajectory, temporalities, the potentiality for the mobility of drawings, I hope to have opened up lines of flight for renewed architectural experimentation through drawing that is able to destabilise inscribed habits and recognise the potentiality of the architectural habitus to change.

Only when the potentiality of these tools to draw, think and produce otherwise is acknowledged in architectural practise can drawings as architectural concepts become truly productive and multiplicitous (Grosz, 2003, p. 80). So, it is not all about the tools and only the need for new tools, but rather, as André Jaque states:

“Using traditional drawing methods as an act of measuring, categorising, etc. to move against political structures, create values by representation. We should draw trees, soil and water, because they are all part of the system”
(Andrés Jaque, 2022).

Architecture should not be a representation of culture of pluralism, but be a pluralist culture in itself. Architectural habitus and drawing practise should shift to accompany and co-constitute such a culture. Drawing and thinking differently means doing architecture differently.

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ON THE CONCEPT OF INTELLECTUAL PROPERTY

Challenging the prevailing premise of architectural authorship

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Disclaimer: This essay does not claim a holistic explanation of the debate on authorship in architecture. Rather, it attempts to illuminate a variety of relevant considerations in the discourse. As it neither proposes exhaustive definitions nor elaborates on concepts in detail, the reader is invited to understand intellectual engagement as an interactive process. The necessity of a synchronous literature review highlights the dialectical essence of knowledge acquisition.

"He who receives an idea from me, receives instruction himself without lessening mine; as he who lites his taper at mine, receives light without darkening me." - Thomas Jefferson, 1813

As with agriculture, architecture is a civilisation building practice (Sohn, 2022) and thus essential to the formation and sustenance of society. While epistemology links the architectural profession to the physical, tectonic instance of a building (Frampton & Cava, 1995), it has evolved to include increasingly sociological responsibilities and artistic authorial claims. The contemporary necessity of a creator of a product or service generally resides in the condition of attaching profit to a labour performance and thus covering the worker's cost of living. However, the explicit mentioning by name does not apply to most collaborators in the construction process. The quality of production and a significant impact on the environment reflect how, over time, authorship evolved into a means to an end, becoming a tool to control and organise economic activity. Outside of the theoretical discourse, the implication of architectural authorship appears in linguistic usage only as a third-degree reference. The notation of the built project is usually mentioned first, followed by its owner or function. It is only on closer enquiry that the producer is named to indicate the affiliation of creative talent. Elsewhere in the history of the built environment, we find oral authorships that use an entire population as a reference, for example, the pyramids of Ancient Egypt. Here, the authorial implication is less about individual talent and more about cultural belonging. These different notations challenge the necessity of a philosophical engagement with the implications of authorship of the built environment. It seems that outside of rental price, should any further thought be spent on attributes of inhabited space, it is availability, functionality or aesthetics of space that counts. I argue that the relevance of the contemporary analysis of authorship, ownership and intellectual property in the architectural discipline arises from the fact that the commercialisation of architecture over time alienated the profession from its original service-providing claim.

Architectural production includes three modes of engagement with im-/

material matter: idea, product and dialogue. Its incipient character results in the art of creating new space through thought. Subsequently, it employs a craft, understood in both its direct anachronistic meaning (Frampton & Cava, 1995) and its indirect contemporary execution, referring to a substantial involvement with material. Finally, as an art, it is a form of language as it includes a dialectic engagement with the environment. This threefold division of architectural work denotes different disciplinary locations. On the one hand, it contains the autobiographical notion of artistic production and thus locates itself in the discipline of the fine arts. At the same time, it includes an allographic component, an essence of scripting art that is technically executed by others. As a creator of technical construction manuals and instructions for use, architecture finds a place in the discipline of engineering. (Carpo, 2011) Without denying the legitimacy of Paper Architecture, which has architectural value without being constructively implemented, the dichotomy mentioned above of the architectural work points to the interdependence between idea and material realisation, which is definite for the further discourse. As both the artistic and the scientific disciplines attribute different functions to the user, architecture appears as a hybrid mediating intellectual property of the thought, ownership of the product and collective property through engagement. The interpretative dependency of each component's implication on the notion of authorship will sequentially be explored in its linear allocation.

INTELLECTUAL PROPERTY OF THE IDEA

There are two main tools of diverse nature at the architect's disposal to articulate an idea. The first medium exists intellectually and visualises the concept with descriptive media. The second instrument is the precise notation, which ensures appropriate execution, such as construction drawings. As the creation of architectural concepts is situated at the intersection between immaterial ideas and material embodiment, the claim arises to consider the change of matter as the culmination of an idea. As Alberti postulates, the aim is to reach a pinnacle in the design phase from which any change in the elaborated revision(s) would only worsen the notated result. (Carpo, 2011) The formulation of these versions takes place in several steps, starting with the idea. The initial discourse on authorship in architecture pivots on this chicken-and-egg argument, for the existence of an author implies per se the emergence of a previously non-existent idea. The question of the original initiator of a causal chain in the artistic discipline introduces the ontology of knowledge acquisition. According to architect Mark Wigley, Descartes's explanation of the individual's existence "...therefore I am" with his capacity for thought requires a pre-given power of thought "I think, therefore..." Introducing "I think, therefore I know" (Wigley, 2021), he challenges the act of conversation as

an exchange of thoughts concerning its initial starting point. Thought is reinterpreted as an active act of speaking, for one knows as a consequence of speaking. Wigley argues that if one knew what they were thinking before speaking and therefore knew what the other was thinking or knowing, there would be no necessity for conversation. Defining the dialectic act of thinking as the source for knowledge acquisition offers an analogy to the theoretical implications of the design concept. An illustration involves the metaphor of the original tectonic act of the "art of joinings" (Frampton & Cava, 1995, 4): The production of versions of the built environment through problem-solving is essentially the art of joining pre-thought ideas. The ingenious concept emerges through appropriation and arrangement of thoughts and applying them in a different context. (Kousoulas, 2022) Some of the ideas adopted in this essay arrive from external discussions. Still, any thought expressed and formulated by person A in context A has a different meaning to person B looking for answers for context C. The syntactical variations arriving at a symbiosis, transformation or compilation of these thoughts are independent in this argument. Any compilation, if it claims to establish novel approaches to a given matter, rearranged in a specific order to pursue a specific goal, is also a symbiosis. Furthermore, as the coexistence of different elements for mutual benefit, the latter can similarly be considered an innovation, a transformation of reality. Applying this logic to the discipline highlights the revisioning essence of conceptual sketching as the architect's inability to produce a copy of the imagined form on the first try. Just as engagement with the other in conversation is a verbal means of connecting the preexistent dots, the essence of the impulse of conceptual thought takes shape by employing a change in the medium's materiality through drawing.

Establishing conceptual production as a cooperative activity challenges the definition of value and intentionality related to or given by its author. In his investigation of this topic, Foucault differentiates between the meaning of what is said by an author as opposed to the feature of what is said by a writer. (Wallace, 1998) This introduces the widespread debate on the ontology of an author. Evaluating Roland Barthes' famous "Death of the Author", poet Harvey Hix divides the term author into the entities poet, scribe, proxy, and narrator. The reinterpretation divides the notion into two creational and two fictional aspects. The poet is the initial creator who, through his authority, gives the work its validity. The scribe represents the subject in history that wrote down the respective work. The narrator, the story-telling entity inherent in the work, is the most accepted instance as it is familiar through first-person perspective tellings. The proxy is the individual projection of his interpretation and the reader's engagement with the text. (Hix, 1987) In his analysis, however, Hix focuses on the discipline of literature. Applying this principle first-hand to the domain of art falls short in that the primary objective of the argument lies in tracing the affiliation of spoken language. The discourse is mainly

about the tension between what is said and what is meant in a literal sense, whereas in the arts, next to the descriptive notation, the primary medium is visual. The artistic domain uses the notion of the author, work and reader/viewer. Before the advent of mechanical or digital reproduction modes, artistic craftsmanship decelerated the process of creating art. The object produced would contain inherent intentionality from an author inviting the reader to engage actively in decoding it. Engineering sciences predominantly refer to the producer, product and user. Both niches use the triangular communication model to assign scopes of action, but different terminology carries different connotations. In philosophical discourses, a standard description of this relationship between the spectator and the spectated is subject and object. However, the implication of creation and its directionality of relations are missing in this dialogue. Theoretical discussions of modes of representation feature notions such as signifiers concerning the to be signified. While this relation to transportation of meaning's semiotic aspect could be fitting, there is a lack of implication about an observer.

The architectural discipline employs the artistic terminology, manifesting this self-understanding. While agreeing with the necessity of a threefold subdivision of the interrelationship, shifting emphasis among the existing variables will result in different semantics. Similar to Hix's approach, this part offers a proposal for the architectural dissemination of roles and contemporary vocabulary: con-ditor, con-dition and con-fectus. The widespread notion of the author changes to the architectural con-ditor, the co-speaker. The assimilated form stems from com (together) and dicere (to speak). Consequently, the architectural work becomes the co-said, con-dition. Now, the reader converts to the architectural con-fectus, the co-creator. The word consists of the assimilated form of com (together) and the combining form of facere (to make, to do). Relating to the development of thought, the necessity of this interrelation arises from the immaterial incompleteness of initial concepts and their dependency on intermedial exchange. (Massumi, 2008) For example, Giambattista Vico's concept of a corporeal imagination states that immaterial intuition and perception arise as a result of peoples' material engagement with their environment; for "when the beauty of a conceit overwhelms the spirit (...) both speaker and listener are caught up in a rush of ingenuity, each making connections that were not made before (...)" (Michael Mooney on Giambattista Vico in Frampton & Cava, 1995, 10). While external commissioning in architectural practice describes the usual linear sequence of con-ditor, con-dition and con-fectus, the shared prefix com allows for an impartial directionality in this triangular relationship. Accordingly, an adaptation to the different niches of architectural creation becomes possible, including, for example, an incipient evaluation of the con-fectus in participatory methodologies of architectural ethnography. This exploration does not claim to be exhausted but will be

sufficient to illustrate a broad palette of more suitable ways of defining relational conditions. Concluding, condition becomes the impulse, independent of materiality, which both poles can activate.

OWNERSHIP OF THE PRODUCT

The absence of the initial creation and its temporal imperishability calls into question the very claim of ownership. Excerpts from the debate about the origins of modern liberalism offer insightful interpretive grounds on the importance of property for society. John Locke's naturalism ascribes to the individual a natural right to own their labour and person. Georg Hegel, however, does not acknowledge natural property relations but postulates their violent appropriation as a natural right. In doing so and thus controlling objects, (wo)men give meaning and change their now possessions' status. By contrast, Jean-Jacques Rousseau negates this precedence of human ownership over the environment. He insists that while it also created civil society, desire and spatial appropriation are the origins of oppression. (Ryan, 2012) The utilitarian interpretation of appropriation and ownership has enabled civilisations to rise above the natural environment through economic cooperation. The above examples show two ways of interpreting ownership: through natural right or forced appropriation. Architecture can be understood as the imposition of form onto the material, thereby taking possession of it, conveying a similar dominant attitude. However, the division of labour in favour of efficiency led to a physical separation of the architect from the built product. Using the contemporary hand-made, mechanically-made and digitally-made modes of production (Carpo, 2011), the architectural scope is limited to the lifecycle phases up until the beginning of construction, revealing a shift from the art of tectonic creation to the immaterial art of creation. While this division suggests otherwise, the definition of property à la Hegel through physical appropriation has found its way into modernist thinking. Ensuring domination of idea over the material (Hollier, 1989), construction supervision represents the controlling authority between the executing parties and the architect's instructions. The notion that everything on the building site goes according to plan reflects this duality between spatially absent perfectionism and on-site realism.

Inspiration as intellectual matter and innovation as tactile matter are in a dichotomy and, at the same time, interdependent, for without the execution of experiments no progress would be possible. Despite this, as the ideal drawing precedes the realised project, the architect's profile highlights the past, superior to the future. The beginnings of this attitude lie in the Enlightenment and the emergence of the autonomous rational individual, which redefined itself in the humanistic market economy of the 17th century. As a means to distinguish oneself from the competition, the notion of an author leads from

thematic attribution and moral evaluation to thematic classification and evaluative hierarchisation of works. The advent of printing and the subsequent globalisation further enable the emergence of an international style (Carpo, 2011), introducing the related necessity of copyright as an immaterial brake of the reproducibility of an idea. This restrictive mindset leads to singular authorship in a collaborative work environment, which, through its opportunistic commercialisation of the one, predominantly harms the product. Not giving credit to the collective decreases its productive engagement as, in the realm of creation, accountability appears to be tied to the sense of reflexive and self-referential commitment. For (wo)men, the idea that their actions leave symbolic traces even after their existence is more incentive to produce than the profit.

COLLECTIVE PROPERTY THROUGH ENGAGEMENT

In a capitalist society, an object's value attributes to the process of labour performance. Creation, however, always entails responsibility which is the reason and simultaneously the result of the construct of authorial authenticity. Responsibility in the artistic realm arises when the producer of an object claims its holistic completeness. (Scollon, 1994) In terms of documentary evidence, the signature appears as a sign of ownership. The idiosyncrasy of personal production (Brown et al., 2020) separated an original from a copy in the time before mechanical reproduction. In engineering sciences, the notion of authority refers to the claim of objectivity. In order to arrive at uniformly recognised objectivity, any subjective intention and interpretation of the producer are illuminated, questioned and, if necessary, erased in a process of exclusion. As an artwork, space is a creative interplay with the pluralism of the unconscious ego. At the same time, its production lies in the realm of accountability of service. Therefore, architectural authority lies at the intersection of the artistic context of discovery and the scientific context of justification.

An architectural idea's translation into built space should not be seen as a conclusion of the idea but only as an intermedial embodiment of a version. The reinterpretation of this version can then be assessed according to its improvement potential, enabling ideas to exhaust their maximum potential. Daniel Libeskind's Chamber Works drawings illustrate this point, as they cannot be understood as architecture without the active act of interpretation. (Evans, 1998) Similarly, the temporal discontinuity of architecture is exemplified in Constant Nieuwenhuys' work New Babylon. (Wigley, 2021) The visual artist invites the viewer, Homo Ludens, to help shape and develop the project. While these two collaborative approaches centre on the interpretive capacity of users, Vilém Flusser experiments with its very disappearance. He suggests that the notion of repetition can contribute to an overall improvement

in quality and value (Foster, 1996) at the expense of interpretive meaning. Repetition semantically implies a loss of depth, but it does not lose everything as it filters the repeated object down to its essence. An example shall illustrate this point. In theory, photography should have no claim to originality since it is, in its essence, the mechanical production of a copy of reality. However, referring to the phenomenon of cryptomnesia in the perceptive environment (Lethem et al., 2007), one could suggest the production of a new object, as photographic art enables capturing forgotten and thus hidden realities. Still, it does not claim ownership of the object, even though it is a materially detached re-creation. Relating the captured object's availability to their status as visual communal property dissolves the phenomenon of ownership. Analogies appear in architectural concepts such as Mies van der Rohe's open floorplan, which lost the need for referencing through its universal character. (Scollon, 1994)

These transformed objects became part of the cultural heritage of a society. (Flusser, 1986) The replacement of labour performance by digital devices disrupts this linear sequence. Since Flusser never experienced global digitisation at the scale of the 21st century, his prognosis outlines a future vision of liberation from the urge to produce where digital mass culture will eventually lead to the separation of the production of cultural objects from human activity. Using the example of the camera as further development of painting, the media philosopher defines culture as the collection of cultural objects - a counter-movement to the natural tendency of decay. Thus, the artist as producer of these cultural objects becomes the revolutionary. As this is replaced in Flusser's vision of the future by the mass production of the apparatus, an entropic necessity disappears, and (wo)men are freed from this labour - they are free to enjoy art in its primary states. What could not be foreseen is that the excess of cultural objects would lead to a loss of value instead of liberation. The cultural object rejoins the natural decay cycle while a new kind of hierarchisation has developed in contemporary mass culture: populism. Whereas previously, authors were concerned with controlling that no one steals their ideas, the sheer number of productions today has made them slaves to the algorithm, which, contrary to common beliefs, is even more concerned with sameness than with originality.

A COMPROMISE

This contemporary speculation focussed on the implications of architecture's idea, product and engagement with their respective meanings for the concept of authorship. Stretching out the established dialectic production of concepts to its extreme, every thought can be considered plagiarism. Sustaining this, John Locke highlights the difference between rights over an object as an act of transfer instead of rights based on original acquisition. Inheritance of property refers to the right to transfer goods at will. Even if a

plagiarised concept is considered intellectual property, its intangibility is not transferable to third parties. This concludes the inapplicability of ownership to timeless intellectual claims of architectural concepts. Additionally, once constituting a universal character, they contribute to a cultural heritage that precludes authorial self-reference.

Moving to a new interpretation of the physical nature of architecture, Wigley's reinterpretation of Paul Thek's *Meat Pieces* (1964-67) highlights a novel consideration of the multiplicity of the built environment. The building's entanglement of pipes, its non-conformity to rules and organic circulation result in the understanding that architecture is not exclusively reducible to aesthetic qualities. Relating the production of the built environment to the architect's profession ceases with the beginning of construction. Consequently, after the completion of the allographic notation of a proposed version, the product withdraws from the profession's field of responsibility and affiliation. Understanding architecture in Wigley's anthropomorphic metaphor as a living organism brings awareness that insisting on the meticulous debate of originality and ownership outside its legitimate framework will sooner or later lead to the discourse of cosmogony. Offering a middle ground to this debate, the writer Jonathan Lethem locates art both in the so-called "gift economy" (Lethem et al., 2007) and in the market economy. He divides these different economies into the first and further product use. Value is attributed to the artist's labour consolidating his livelihood while the production does justice to the collective claim of art as a cultural institution.

Without a gift economy, there will be no cultural heritage. Without cultural heritage, there will be no inspiration. Constituting this reveals how the insistence on intellectual property as private ownership will stop the cycle of creation.

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XL.L.M.S

Architecture behind the crisis of the economy.

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5393671

Architecture in capitalism has been subjugated to the pursuit of economic growth. Max Weber's 1904 concept of the *iron cage*¹ quite literary materialized the increased rationality of western capitalistic societies. Dom-ino-like structures that reinforce quantitative logic of property or open plan that result from the obsession with control are just a few of many contributions of architectural thinking to this stream of thought. Architectural writing stimulated the culture of growth, speed, and competition for over a century with the Futurist manifesto in 1909 as a pure celebration of speed, machinery and industry along with an obsessive fascination with bigness in S.M.L.XL. in 1995 among many others. The result of this kind of architectural thinking is present all around the globe from super-slender towers in NYC, whose sole purpose is that of investment, to the ghost cities of China that are blindly following the "GDPism"

This essay focuses on the reciprocal relationship between the pursuit of (economic) growth and architectural practices. As thinking and doing are inseparable, this essay is conceived as a process consisting of two parts. The first one describes the entanglement with growth, as seen from different perspectives, and the second one speculates about alternatives. Those entanglements, or rather ecologies as they are referred to later on in the essay, are interwoven with the introduction of theoretical concepts and divagations.

Growth

The strive for infinite GDP growth in a finite environment is the unsustainable contradiction that capitalism remains locked in (D'Alisa et al., 2015). In economic terms, growth is the monetary increase of all the market value of all the final goods and services per country in a specific time period. (Finance & Development." Finance & Development | F&D. Retrieved 23 February 2019) The initial basic concept for GDP was invented by the end of the 18th Century. However, the modern concept we know today was adopted as the main model of policy measurement of western countries at the Bretton Woods conference in 1944, even though it was not intended to be by its creators. (Ferlamont, 2015) In 2021, as an example, the Netherlands GDP reached 925.00 billion USD and consequently a growth of 5.7% in comparison to the previous year. (Netherlands Economic Snapshot - OECD, 2022) The idea of GDP can be traced back to the proponents of progress, that appeared in Europe in the 18th Century and flourished in the 19th Century, which epitomised optimism of that time. For them, the human condition improved and continue to improve over the course of history. (Progress (Stanford Encyclopedia of Philosophy), 2011) Growth is literary meaning the increase of something and progress can be seen as a movement towards an "objective" goal. Hence, the growth as an increase of something "objectively" desired can be seen as progress. Growth is

1

In sociology, *iron cage* describes the trap of teleological efficiency, rational calculation and control that Western capitalistic

supposed to express progress or prosperity, but in fact, it is a measure of material consumption and it does not say anything about human or environmental wellbeing. It is, however, one of the main tools of capitalist machinery to incentivize to work harder and justify exploitative actions on the environment. GDP represented in that rationalist way remains as a set of abstract numbers, so its material, social and mental consequences are disclosed from sight. Complex economic mathematical models can forecast or even increase GDP, but they are not able to criticize it in

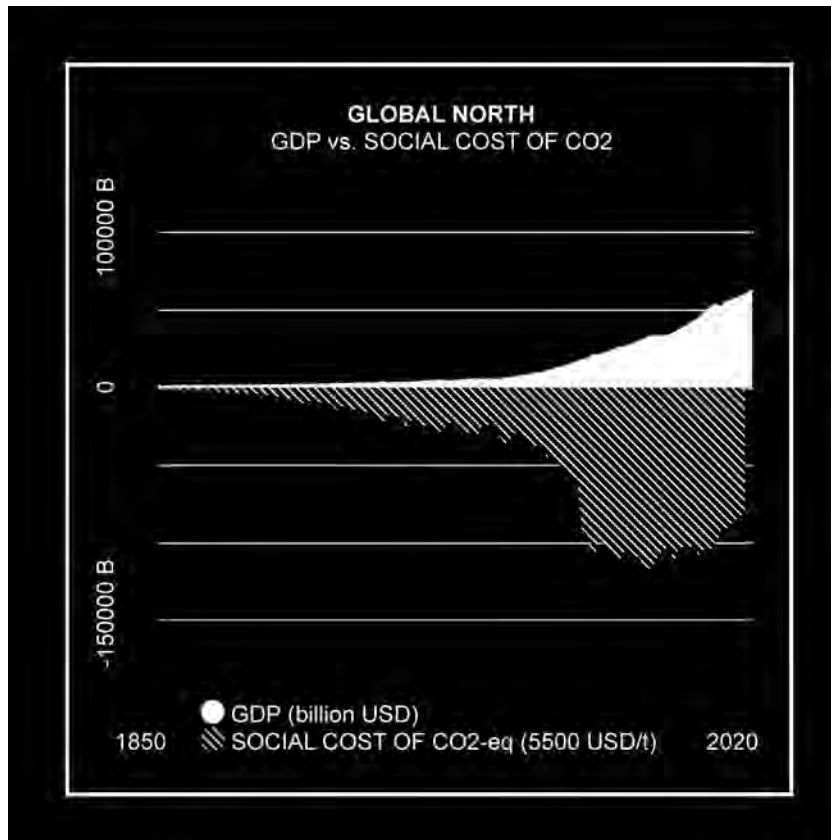


Figure 1/Social cost of growth

A chart by DISNOVATION.ORG - one of the series of charts showing "counter-visualisation" of wealth accumulation in global north.

Source: <https://disnovation.org/sg/>

the first place. "Because positivism does not permit any concepts other than the existing ones through which data is interpreted, math and logic must contend themselves with merely making more efficient the existing systems."(Horkheimer & Adorno, 1982)

Economy and Ecology

In broader terms, the underlying subject matter of that essay is a relationship between economy and ecology. Both words are composites and share the prefix *eco*, which comes from the Greek *oikos* meaning "household" or "place to live". It is, however, in their suffixes that they differ. The former is connected to *nomos* which translates to "law" or "custom" - and represented the concept of law in ancient Greece, thus the Greek *oikonomos* and *oikonomia*. (Definition and Etymology of Economy, 2022) The latter was coined by the German zoologist Ernst Haeckel (Frichot, 2018). There *oikos* is merged with *logos* meaning "word" or "reason", which is the root for logic. Haeckel applied this term to the "relation of the animal both to its organic as well as its inorganic environment."(Frichot, 2018) The term, therefore, describes "the logic of the household". In one way Ecology attempts to answer the question: how are objects placed in that "household"? Economy consequently describes the laws of 'household' and answers the question: why are things placed? The logic of the household

is expressed by the manner of living of its inhabitants, which naturally demands a certain allocation of “things” for its operation. Economy, by regulating that distribution, controls the logic ecologies. Laws and conventions are expressions of that economy. Ecologies composed of mutually interdependent co-evolving entities are also dependent on other ecologies, as in the end, they share one’s household - the Earth, and consequently its “things”. The economies, therefore, regulate the distribution of these “things” and consequently render some of the ecologies possible, while others not.

Countermovement

Left ideas of degrowth assume that living in small groups and communities engaged in risk-free farming is a naive fairy tale in the light of capitalist machinery. That machinery, however, was fueled by the major trends in architectural thought and production of the 20th century, a crucial time for the development and growth of a project. As some people point out, given the current context we encounter oxymorons like modern worlds – where we either modernize so much that we lift off from the earth, or we stay on earth and we cannot modernize (Latour, 2018). Modernists, rationalists and the positivism system we are entangled in today allow only for increasing the efficiency of GDP growth and consequently lead to even stronger ongoing social, mental and environmental exploitation. It is not merely a conflict that can be solved by a change in the system, it is a contradiction that requires a change of the system. (Bateson, 2020)

Rationalist and relationalist

Rationalist thinking, relying on “hard facts” and reductionism, was nevertheless a dominating thinking in the modern period that caused an ever-increasing cascade of problems. Egological belief in innate ideas resulted in the fanatic strive for infinite growth, that in the current realm received ideological status and subjugated all actions to its performance, both human and non-human material and immaterial. Philosophers like Deleuze and Guattari call for the ecological, relational way of thinking that would disrupt prevailing rationalist industrial traditions. Following the relational way of thinking, I would argue that in the current situation, we remain locked into an ever-accelerating autodestructive entanglement I would like to call the ecology of growth. It is a dynamic system of mutually interdependent co-evolving entities, where architecture, as a materially-discursive practice, plays a crucial performative role. In this case, performing in the name of growth. Unfortunately, the ecology of bad ideas proliferates as the ecology of weeds (Bateson G. 1971). Hence, I would argue that the idea of growth was the main influence behind the pathological

developments of architecture practice and thinking, and consequently shaped architecture from the smallest detail to the whole city, from design theories to design magazines in a way that would not be ever considered without the “growth” parameter. This consequently in reciprocal action gave momentum to the ecology, which in fact, is a trap. A holistic genealogical perspective on architectural development would require work far exceeding the scope of this essay. For that reason, a selection of a few following examples aims to illustrate how architectural production, in a reciprocal relation, was shaped and is shaping the ecology of growth on multiple levels.

“There is an ecology of bad ideas, just as there is an ecology of weeds” ~ Gregory Bateson

Ecology of Growth

I would argue that tectonic changes in architecture starting from the modern period onwards can be defined to a large extent by the growth imperative. As a critique of bourgeois interior and in the name of economy, the detail became the crime, which began the course of modern architecture we understand today. Initially, as a proclamation for a more ascetic way of living, the detail itself has become subjugated to new power relations. Once a place for artisanal expression, it evolved into clamps, folds, “click-on” elements and other prefabricated systems that replaced the whole millennia of work in favour of permanence with the ever-increasing temporality. (Koolhaas R. 2006) The very art of joining materials together followed the pursuit of growth and became the tectonics of growth. Lifespans of demountable, flexible building elements are becoming increasingly shorter as a result of the ceaseless drive for innovation, which also enhances the market with increasing demands. Tectonics understood as an art of construction completely changed its meaning as architects no longer think how to join one material to another, but rather arrange the purchase of ready-made products for their clients, skipping unnecessary, lengthy involvement with craftsmen, making the process more efficient and accelerating the flow of capital.

**Tectonics of growth / Fig 2**

List of products from Schüco International KG and their reference projects in Turkey, Thailand, Dubai and Spain respectively.

Ratios have been important throughout the entire history of architecture. The harmonious golden ratio of classical architecture or Le Corbusier's modular that creates a proportional system based on the height of the average french male are just two of many examples. Recent architectural production embraces new proportions. 1:10 is a proportion known to every (st)architect. Once the ratio between a building's width and the height reaches 1:10, the tower enters the club of super-slender towers. In this case, however, the proportion does not indicate harmony between the two dimensions, but simply is an entry point to the top league where competition is even tighter. Such maximisation of profit from a minimal piece of land, that this ratio indicates, has developed thanks to the state of the art technology in structural design and construction, that this race for the trophy of growth is driving. Their aesthetical appeal with frameless windows and smoothly cut Carrara marble is specially designed to please people of the highest class. Moreover, these super-slender forms result in a particular social condition where one lives in a strict centre of a megapolis without sharing walls with any neighbours.



Figure 3/Drifts of growth

"shopping maze" in Lech Walesa Airport,

Public spaces become stimulants for consumption. Drifts through the city have become instrumental in shaping the desires of flaneur and flaneuse whose main public activity becomes consumption. Stroller's desires are shaped through large transparent shop windows, where one can see exhibitions by leading figures in the world of design. Imagine a stroll through old Amsterdam or Chinatown in London. Your experience of the public space goes beyond visual stimulation; A bouquet of sounds and smells attracts new customers in a truly multi-sensory manner. Shopping malls consume streets, where the grounds level condition is multiplied in a climate-controlled space, concentrating and increasing the flow of people in this particular consumerist-oriented environment. These kinds of drifts of growth perhaps reached their final form in seemingly utilitarian projects like airports. Their pure utilitarian origin is appropriated by consumerism into a shopping machine where maze-like, convoluted walkways forget the pragmatism and efficiency of the airport in the name of maximizing exposure to an ever-increasing number of goods, and consequently maximising consumption and shaping consumer culture.

Cities play a major role in contributing to the project of growth. Over 50% of the world's population lives in cities, whose massive increase in size shows the success of the project of growth. However, it is not only their

mere size that matters, its form and spatial organization constitute crucial infrastructure for the growth project. Their management and organization follow "the regional territorialization of economic competition, the ideology of land scarcity, and institution of zoned property rights, which together make urban development an engine of growth." (Savini, 2021)

As Deleuze argued, a theory is not a mode of reflection but a mode of production. (Grosz E. 2003). Architectural writing and theory has been tuned and is tuning the practice towards the growth. Cities are understood as living systems, which on the conceptual level connects them to growth through evolutionary metaphors. Homes as machines for living were



Figure 4/ Evolution of growth

On the left: Growth and Form Exhibition 1951 - showing a "scientific imagery with aesthetic experience" (Kim, 2018)

Source: <https://www.medium.com>

On the right: Manifesto of Bjarke Ingels 2021 "BIG. Yes is More. An Archicomic on Architectural Evolution"

Source: <https://www.taschen.com/>

paralleling architecture with progress, and when modernity was at its full speed even *less* was about *more*. In the 90s, architects were so greatly attracted by growth, that they began to fantasize about bigness just because "it is there" (Koolhaas, 1995), which further strengthened their relation with the growth during late capitalism.

Design methods, that architects use are adjusted to the pursuit of growth. The study of gross floor area (GFA) is known by every practising architect. Every early design phase is basically devoted to the study of saleable areas where "unnecessary" is strictly regulated by the ratio between the net floor area and gross floor area. Liquidity becomes the paradigm of every development, where every square meter is subjugated to the rules of the market. On top of that, advancements in digital design tools help architects integrate the design in one virtual environment. This allows the calculation of every square meter of the project, through various parameters, thus establishing full "control" over the project. Moreover, that technology offers an abundance of ready-made models, plug-ins etc. all provided by leading companies in the building industry, significantly accelerating the design process.

Is in fact ecology of destruction

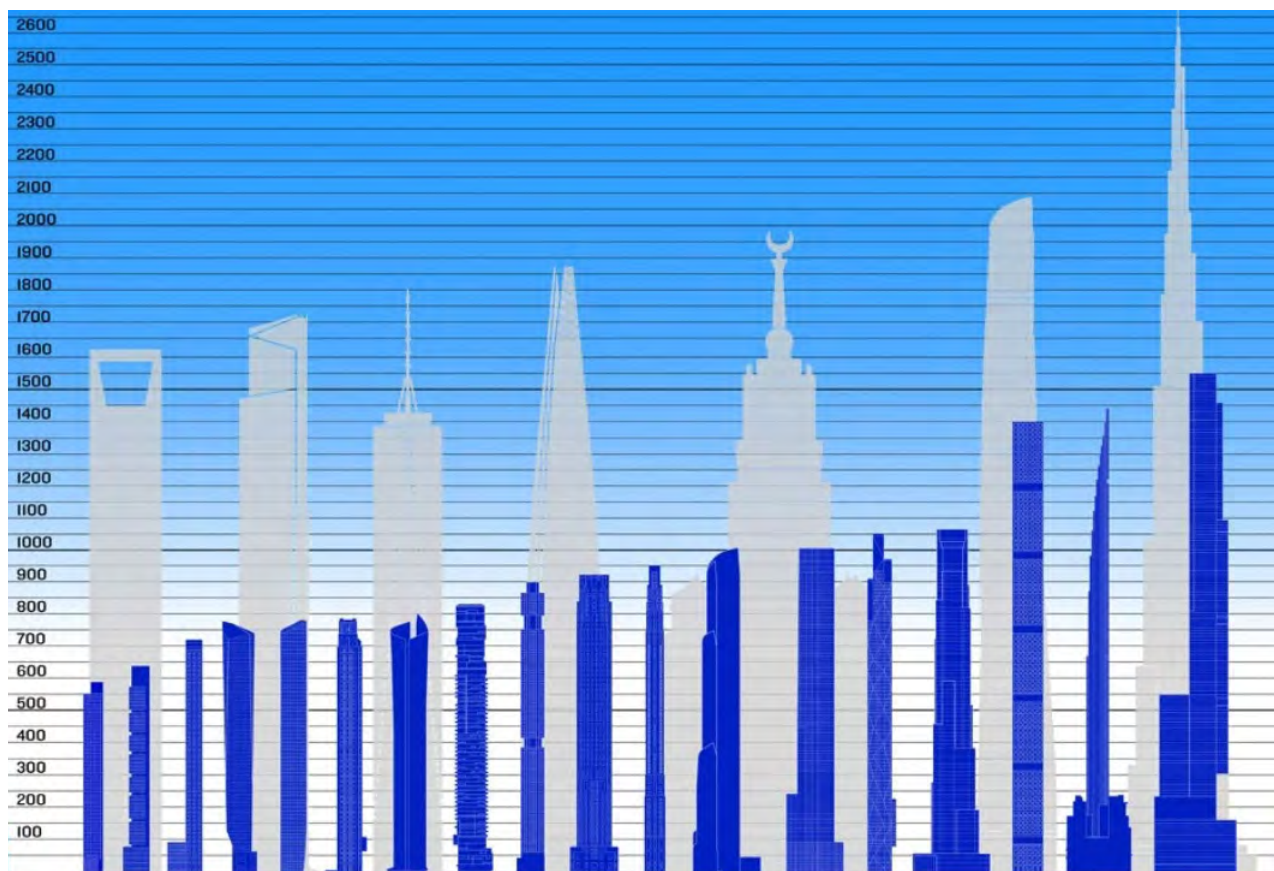
These scattered examples are just a few from the vast range of architecture's contributions to growth. In reciprocal relation, architecture was shaped by growth and architecture shaped the whole globalized world. The ideology of growth affects every part of the discipline, on each scale ranging from the detail to the whole planetary level, the design process, theory, methodology and representation. If Guattari argued for ethico-political articulation, which shows traversal relations between, environment, social

relations and human subjectivity, then each of these registers points out absolute devotion towards growth.

The growing trend of impermanent buildings clutters the environment with worn-out building parts. As an example, in places like Manhattan buildings are planned for just 30 years (Harper, 2019). Architects switch from artisanal detailing to picking the ready-made products, eliminate craftsmanship and concentrate the influx of capital into big corporations. The ongoing race for the super-slender tower trophy leads to overdevelopment in one place and results in underdevelopment in another. The ratio of contemporary architectural practice indicates the exploitation of the environment, the polarization of social relations and the constitution of the mental image of the modern metropolis fascinated by growth. Architectural writing shapes growth as an idea and design theories have been struggling with how to make growth justifiable. Architecture concepts become mere branding devices whose sole function is to enhance more capital, sacrificing any other ideal. High-tech advances in design tools increase the speed of the design process, which is a constantly accelerating world, becomes necessary to meet deadlines. That creates a sort of *Image of Thought* (Frichot, 2018), structuring the way of thinking in favour of their

control over the design process and consequently the whole industry to enhance the capital of the few. Design thinking through GFA has been subjugated to mathematical rigour, consequently sacrifice non-quantifiable qualities of architecture. "No matter what a person does, one "can't win" " (Bateson et al., 2007) this is a kind of "catch 22" or double bind that western capitalist culture has created. Architects either reinforce the structures of capitalism or completely fall out of it.

Design par excellence deeply structures everyday lives and people's realities, and consequently is central to the structures of unsustainability that established intensive use of resources, the devastation of land and exploitation of people (Escobar, 2018). The current western lifestyle requires maintenance of production and consumption at such a level that it renders them incapable of autonomy, and consequently the current power relations lead to the exploitation of the global south. Switching from the use-value to exchange value of things resulted in a situation where apartments are not places to live, but places to rent out. Items instead of being consumed, serve the role of capital accumulation. The architecture of GDPism gentrifies the places and eradicates the poor from their areas, which consequently increases homelessness as one



NYC super-slender tower comparison / Fig 5

In ONE57 (the 12th from the left) 77% of condos are owned by shell companies. (A. Jaque, lecture, March 17, 2022)

can see in cities like San Francisco, Seattle or New York. Highly polarizing tendencies of a deregulated, limitless, "winner-takes-all" system not only create a property-less, indebted underclass that "will survive by servicing the needs of high earners as personal assistants, trainers, child-minders etc." (Neofeudalism: The End of Capitalism?, 2020b), but also results in collapsed infrastructures, undrinkable water, mass extinction of species. It violates entire ecosystems, destroying the earth's general capacity to create basic livable conditions (Neofeudalism: The End of Capitalism?, 2020b) It is hard to imagine that architecture could have developed this ecosystem without its relation to the pursuit of economic growth. What was called the ecology of growth is the ecology of destruction, especially for those that



Figure 6/ Evolution of growth

"A house crushed by tailings in the company town adjacent to the Chiquicamata Copper mine, where copper for the Seagram Building's brass facade was extracted." (Moe, 2021)

Source: Unless: The Seagram Building

Degrowth is not another ideology

The degrowth social movement has been inspirational for this essay. It aims at challenging the hegemony of growth and "calls for democratically led redistributive downscaling of production and consumption in industrialized countries as a means to achieve environmental sustainability, social justice and well-being" (Demaria et al, 2013) Its name suggests the opposite, that in the context of this essay, could have positive connotations, however, it implies binary oppositions. French philosopher, a pioneer in the field of deconstruction, Jacques Derrida claims that western thinking heavily relies upon the "logic" of binary oppositions, body/mind, nature/culture, and growth - degrowth. For him and other post-structuralist thinkers, one of the terms is always getting a more privileged position over another, something that is typical for ideologies, resulting in a persuasive rhetorical force of "common sense" and "lived" ideology. In the context of infinite GDP, the privileged side of growth, development, expansion is seen as "natural" and "the way things are"(Derrida & Bass, 1978) However, opposition to growth, degrowth as normative imperative, which in some way bring to mind economic sanctions or austerity measures, would result in merely a reversal of the system rather than revolution of it. (Derrida & Bass, 1978) "either/or " dualism shows no inherent "logic" to Derrida because neither one of the opposition can exist on its own since both are related and interdependent. (Derrida & Bass, 1978)

to give anything an identity, to say what it is, is necessarily also to say what it is not. In this sense, presence contains absence. That is, to say that a quality is present depends upon implying what is absent (Burr, 1995, p. 107).

Degrowth movement, throughout their research, has already proposed certain characteristics of its society and as they claim, their focus does not lie in "less" but in difference. I would like to propose, that the difference that would disrupt the contemporary status quo would lie in post dualistic, relational thinking, consequently implying "both/and" logic, which according to Derrida and other post-structuralist thinkers would "challenge the orthodoxy of dominant belief systems and set in motion "another shift in thinking that was not permitted before dislodging the 'givenness' of the fixed sign." (Derrida & Bass, 1978)

Colonization of the idea

Having stressed the importance of relational thinking, various questions arise specifically about the underlying theme of this essay namely the relation of economy and ecology. Bruno Latour suggested there are two kinds of globalization. globalization "minus" that is problematic because the world is seen from one perspective, as it is in GDPism and globalization "plus" that by the fact that we are all connected is 'multiplying viewpoints, registering a greater number of varieties, taking into account a larger number of beings, cultures, phenomena, organisms and people.'(Latour, 2018) It is clear that we have multiple ecologies and each of them is characterized by its own logos, however, it is also clear that GDPism is a universal homogenizing force that imposes one way of looking at the world through the lens of growth. That causes the imposition of external power, rigid rules and abstract values on those various ecologies. Therefore by embracing a positive kind of globalization we cannot speak about one economy, that is heteronomy, but we should speak of multiple economies.

Even though by acknowledging the multiple economies and multiple ecologies, we still share one globe and therefore the nature of that relationship remains problematic. Problematic perhaps is the whole notion of economy. It always is connected with quantity, that is a number, an amount of something, hence it is measurable. That is something that cannot be said about ecology. Or rather it becomes problematic if one says so. If ecology, which expresses a certain mode of life, is subjected to economism as it is done in the GDPism, one tries to measure immeasurable. In some cases questioning some forms of life through the lens of growth. In that realm, what if one goes even further and argues for no economy at all. Are laws (*nomos*) of why to distribute things necessary if there is logic (*logos*) for how to place them? The word *oikonomia* firstly occurred as a term to keep the family account in ancient Greece and up until the 19th Century was not so widely used. Around that time it started to be used in advertisements firstly meaning "cheaper" and then "bigger thus cheaper per unit of the amount"(Definition and Etymology of Economy, 2022b) It gained its momentum within the acceleration of enlightenment through industrial revolutions, colonialism and development of modern thought in general and for that reason I would argue that GDPism is based on colonization of economy over ecology. On a global level the complexity of this relationship goes beyond the scope of this essay, but anyway it is important to highlight the role that the global economy plays today. Without going into the intricacies of how such a society would operate, just imagine how the rejection of the global economy would work in favour of diversity, plurality and complexity. In the context of growth, it is important to note that in dynamic system theory, the development of a system does not necessarily mean increasing in size but always increasing in complexity. (Thellen & Smith, 2006). The

Design for autonomy

A principle that seems to characterize the nature of the relations between different ecosystems and occurs in various publications is autonomy. (Escoba, A. 2018) The word autonomy is brought to counter the heteronomy of GDPism. It suggests "freedom to use its laws, independence"(Wikipedia contributors, 2022) and especially after being introduced to the ecology of growth, it seems to be contradictory to the task of design. In a way, the design we understand today is always imposing certain rules upon its users. To be a bit more precise, autonomy is not meant as neoliberal architectural "freedom" like in canary wharf for example, nor the kind of socialist form of autonomy provided by the state and its communist homogeneous architecture. (Esteva, 2019) But a kind of design that brings autonomy by the understanding of what is already there, embracing a plurality of beings without imposing preconfigured rules or imposing other values. (Escobar, A. 2018) Furthermore, once there is an understanding of that particular ecology the task would not be to isolate it, but quite contrary to relate it and understand its relation to other ecologies. Design, therefore, becomes the tool to either facilitate autonomy from the hegemony of growth or reimagine toxic ecology into a different world.

Moderns imagine the world as an inanimate surface to be occupied; for many relational cultures, on the contrary, humans and other beings inhabit a world that is alive. While moderns occupy space, non-moderns dwell in places. (Escobar, 2018)

Design without ideology

The ontological shift from modern industrial traditions towards architecture ecological forms of practices cannot take place through relaunching another style or another theory with a hegemonic vocation as some scholars suggest but through recomposition of the trade of the architect. (Radman, 2018) Architecture as material-discursive practice, as was shown before, is performative. Consequently, it should not answer the questions such as: "does this project mirror nature or culture?" but the questions should shift towards performativity, "to matters of practices/doings/actions;" and "what is this project doing?" The focus should shift from representing abstract, innate ideas and focusing on its performative material consequences and in that way challenge "the representationalist belief in the power of words to represent preexisting things" (Barad, 2003) Ecological practices should "debunk hylomorphism upon the inert matter from without and



Figure 7/Drifts of growth

Office for political innovation "Cosmo" - It is a assemblage of ecosystems that "makes visible and enjoyable the so-far hidden urbanism of pipes we live by" (Office for Political Innovation, 2022)

where the architect is seen as a god-given, inspired creator and genius – and to promote the alternative immanent morphogenetic approach that is at once more humble and ambitious” (DeLanda 2002: 28).

Ecologies of degrowth

Having said that and respecting the plurality of ecologies one could not speak of one ecological practice, but a multiplicity of different architectural practices, that would shape different ecologies. I agree with many scholars, however, that in the light of environmental exhaustion, creative practitioners have to confront “a politico--ecological imperative to mobilize creativity itself as a desperately needed resource in the reconstruction of the conditions of life’s ongoingness’ (Frichot, 2018) Following on from that thoughts and as a counterforce to the previously sketched out ecology of growth, I would like to speculate on some ecological practices. By referencing promising practitioners and cross reading the degrowth literature with theoretical readings I would like to illustrate the transition toward decreasing the consumption and production and more importantly towards the relational ecological practices of architecture.

Negative GDP is not the goal of degrowth, although it is a likely outcome of its actions. (D;Alisa et al. 2015) Degrowth is a chance to reevaluate our values, free ourselves from the hegemony of growth and most importantly give autonomy to those that are under the pressure of GDPism. If you ask a developer today what an architect does he will reply “he adds value” (Zimmerman, 2019) The role of the architect in ecological practice would alternatively make visible who, where and how the value is added and consequently from who, where and how the value is taken away. The task may therefore be to visualize networks, assemblages, ecosystems as it has been briefly done in the first part of this essay This task of connecting, which may take the form of visualizing networks of contemporary “western” architectural practice, through many registers such as social, mental and environmental to name just a few, would consequently alternate the practice through different heuristic methods.

Following on that thinking, perhaps something that I called the tectonics of growth, some practices could employ the ecological tectonics where it would not be treated simply as the art of assembling materials or products, but their underlying complex entanglements with politics, society, environment etc. should be revealed. Kiel Moe, having the environmental register in mind, paraphrased the father of modernism claiming that “Gaia² is in the detail” correctly points out the relation between the way we construct buildings and the environment. Perhaps in that realm, Miesian honesty of materials would change from just revealing structural principles of the building to showing its entanglement with the world. Perhaps the role of the architect concerning tectonics would not rely on the representation of structural principles of the building for example, but ecological tectonics would be obsessed with understanding the underlying processes of manufacturing, construction etc. (Moe, 2021) and its social, mental and environmental implications. Kiel Moe, in his work, mapped global energy flows that engendered canonical buildings pointing out their entanglement with the globe that in the light of reducing GDP is rather seen as counterproductive and consequently questioning their tectonics.

Relational thinking would render some building types and forms, such as super-slender towers implausible, it will, however, give birth to completely new forms and typologies. Co-housing is an important topic in degrowth literature and during the Enough: 2019 Oslo Triennale, contributors promoted four types to counter growth imperative: the library - which celebrates sharing, democratization and decommodification, the theatre - that reveals the constructed-ness of the world and stimulates questioning of the reality, the playground - to reclaim, explore and listen to the city, the academy - as a platform for discussion. (Harper, 2019) However since we are talking about thinking differently, I would be hoping that it could be something we have never seen before. "If to think differently we have to feel differently then the design of the built environment has no other purpose but to transform us." (Kwinter, 2014). Let it be the housing that stimulates the reciprocal exchange of goods or library of more than just books or information, but also objects of daily use, perhaps the theatre should not be designed to reflect the duality between the venue and the audience but it could disseminate post dualistic thinking by mixing the audience with actors. These are just some of many examples that the turn towards ecological practices could bring.

Dépense by Georges Bataille is the excess of energy understood from the anthropological perspective as a "fuel that calls us to act" (D'Alisa et al., 2015) It is a central concept to the Degrowth movement. It shows the importance of finding new ways of using this energy, that was misused by modern (D'Alisa et al., 2015). On the urban level, cities should reorient themselves from blindly stimulating toxic consumerist lifestyles and instead of 20th Century flaneur and flaneuse, the 21st Century cities could stream that excess of energy to shape glaneurs and glaneuse, that is those that stop consumptive face-paced consumerist lifestyle and start sustaining life in things. (Frichot, 2018). Bataille's dépense refers to practices that "burn" capital such as a collective feast or decision to leave a forest idle that in economic terms is strictly unproductive, consequently slowing the system down. (D'Alisa et al., 2015)

Without wastefulness or festive overspending there is only the vulgar economy. ~ Peter Sloterdijk

The governing of the city in that context should change completely. As degrowth papers suggest, the euclidean zoning, based on property rights, should perhaps be replaced with principles of habitability built on socio-spatial organization with balance and relation. Finitude would replace scarcity and consequently establish sufficiently. Instead of promoting intra-regional competition, the cities should give rise to socio-

ecological autonomy. (Salvini, 2021)

As Arturo Escobar suggested the practice will change through the analysis of the more than human worlds always in the process of being created by all kinds of actors and processes. Even though it is hard to escape the universalising strength of GDPism, the pluriverse is already here. It is therefore a task to recognize those multiple human and non-human worlds and give them autonomy from this hegemonic power. Design development perhaps should follow the principles of what Isabelle Stengers called *Cosmopolitics* - it "should proceed in the presence of those who will bear the consequences, who will be the victims of political decisions, in the presence not only of "humans" but also of the multiple divergent worlds they belong to, which this decision threatens." (Stengers, 2006) In the realm of design, Andreas Jaque proposes that designers just by drawing a minority group, non-humans actors, or things in general, give them a voice in the design. It is not that a drawing should mirror some kind of reality, but it could work as a kind of parliament to give them agency and therefore include them in the ecosystem. (A. Jaque, lecture, March 17, 2022) Another method would enrich the design process by imagining the world as seen from the non-human perspective as it is suggested by Uexüll in his Umwelt drawing exercises. These design methods could be just one of many ecological practices and possibly could equip humans "to live in a mutually enhancing way with each other and the earth" (Escobar, 2018). v

XL.L.M.S.

Even though the second part sets a more positive tone speculating on some degrowth imaginaries, the reality now is that not only the majority of architectural production but, every aspect of our human and non-human existence today, performs in the name of growth. Rising GDP that speaks of consumption and production, is in fact, talking about exploitation and destruction. Conditions of contemporary capitalism render all production, not only the construction of skyscrapers, as destructive; all consumption, not only sightseeing Venice, as destructive. (Lazzarato, 2022) In capitalism, not only all architects, in fact, all individuals, " are simultaneously reluctant "accomplices" of destruction, since they produce destruction by labouring and consuming, and victims of exploitation and domination since they are forced to manufacture catastrophe."(Lazzarato, 2022) The 12th of April 2022 was the overshoot day for the Netherlands, meaning that from that day onwards we exceed the use of resources the Earth can regenerate this year (OECD, 2022). In the meanwhile, once the COVID-19 pandemic is over, another crisis started, one that has not been seen in Europe for over 77 years. How is it even possible to mention the word "degrowth", once there is an armed conflict just behind the border of my country?

What perhaps has been the biggest discovery while writing this essay is the lesson given by the post-structuralist such as Jacques Derrida and Gilles Deleuze, or more contemporary thinkers that continue upon their work like Manuel Delanda, Arturo Escobar and Helene Frichot. Their writing gave the theoretical framework for this work, as thinking in terms of non-binary opposition, relations, entanglements and ecologies gave some possibility to conceptualize a hyperobject like growth.

What can be learned from them is the fact that growth is not an innate idea, it is produced. Its origin can be seen during the enlightenment, sharpened once the GDP was introduced and exploded during the global economy. If a mammoth compendium of OMA's project S.M.L.XL shows 20 years of architectural office when "architecture became a mere bystander to the explosion of the market economy and globalization". This essay shows that architectural practice was crucial for the global economy and consequently questions the bystander position taken by its authors. Battles, protests and revolts against capitalism are crucial and always on the table, but we need to be aware that our material world performs in the name of growth on social, mental and environmental levels. If the "coincidence" of radical changes that modern architecture had brought and the development of growth can be seen as a millennial project, then consequently one can imagine the production of a completely different reality in the 21st Century. Can we imagine XL.L.M.S as a compendium of projects that free itself and us from the imperialism of economism? What would be the architecture behind the crisis of the economy?

The degrowth movement is gaining some recognition and some of its ideas are starting to materialize. Cities like Amsterdam adopt Doughnut-economy³ policymaking as a model and the 2022 Mies van der Rohe award has multiple collective housing projects that follow some ideas of the degrowth movement. This does not, however, free architecture from the economy, it rather proposes its different form, nor does it free itself from rationalist thinking. Focusing on the material world and its performativity, as Karen Barad points out, is one of the methodologies that allow us to

break with innate ideas that supposedly shape our world. Another of the conclusions of this essay is following Arturo Escobar's writings, that there is a necessity to break with life-stifing dualist ontology and move toward relational modes of knowing, being and doing (Escobar, 2018) That dualism is so deeply embedded in our culture, that it will require unimaginable work from all kinds of creative practitioners. It is not only about the logic of growth/degrowth, but also nature/culture, built/unbuilt, man/woman that would require tremendous social, mental and environmental changes. How can one translate these notions into spaces? How would it alternate the design processes? How would it change the professions?

If the 20th Century world has seen architectural production on a scale never seen before, then perhaps instead of doing and making the same mistakes, the architecture of the 21st Century should critically respond to the culture it produced. Not by building and contributing to the system, but by rethinking, reconceptualising the profession by new versatile architectural theories that can engage the practice with the paradigmatic shift the 21st Century world must undergo.

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MAKE-OR-BREAK

Design Concepts and Their Value as a Communication Tool in the Architectural Design Process

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1 Introduction

In the field of architecture every project starts with a concept. These concepts form the essence of a design. It is the idea, thought or notion that forms the basis a project and becomes its driving force and identity. It serves as a tool and a guide for architects and everyone involved in the design process. Upon it we can frame the questions we're asking and let it guide us through the design process. It can be seen as a rule book for designing. When decisions have to be made or questions answered, the concept can be consulted and used to give direction or offer a solution within its own framework. The architectural concepts are what makes architecture what it is: otherwise, creating functional buildings with attractive shapes would be sufficient.

Architectural concepts are never generated out of abstraction or from a clean slate. They are most often generated from two key areas that are specific and unique to each project: the site and the design brief. The site consists of local or regional aspects that will influence the design. Things such as climate, wind, orientation, vegetation, history, legal regulations. Buildings don't exist in a vacuum and are bound to their surroundings. They can choose to create dialogue with their surroundings or choose to ignore it. The design brief on the other hand provides the project with information on the client and building requirements. This can consist of both qualitative and quantitative information such as program, beliefs, goals, budget, preferences etc. Combined, these constraints for the design offer a base on which the creative process can be incited and concepts can be created.

One singular concept can prove to be the driving force behind a project. This concept then becomes the overarching narrative throughout the plan. It is important to note however that a concept does not equal a project. By themselves, they cannot capture the richness and many layers of finished and realized architecture. Concept, percept, and affect are the three parts that inform architecture. Concepts are the means to understand architecture; percepts are the ways to visualize it; and affects, the sensations, desires, and emotions generated by both the concept and percept. All three are needed in order to make up architecture. Concepts themselves cannot be dissolved into percepts and affects. Tschumi (2012) illustrates this notion in a descriptive manner, as can be seen in the following passage from his book:

"Let's take an arch. It is a concept of sorts since it combines a given material (stone, concrete, or steel) with the force of gravity and defines a space. As soon as you either draw or build the arch it belongs to the world of perception, meaning that it becomes a percept. Now, let it decay. Let it be taken over by ivy and moss, its particular scent may trigger romantic nostalgia in the observer. The ruins of the arch now belong to the realm of sensation, experience, or affect. Both Gothic cathedrals and Renaissance churches embody a sophisticated game of mathematical proportions, soaring arches,

together they make architecture what it is." (Tschumi, 2012, p.746)

A concept is not static or always complete - it grows and shifts as a project evolves. At the beginning of its inception, the focus might be on one or two key elements, but as the project develops, this network of concepts expands and spreads throughout the design. Architecture can thus also not be reduced to one singular concept: rather its many concepts working together. Different individual conceptual approaches can be applied to various aspects of a design. For example, a work of architecture can consist of a combination of functional concepts, material concepts, structural concepts, organizational concepts, etc.

Adding to that, the design process is also not simple nor linear. Rather it's a very complex process. Here it is also where design concepts can become problematic for creativity when a design is being forced to fit within a certain concept when it would rather want to be something else. Sticking to the same strategy while facing changing or new information hinders creativity. The design process is a dialogue between many different parties and the concept ensures a topic for discussion. It is not something that should remain fixed and thus can never be altered. A concept is only as functional as it can be when it is put to work, made to do something - whether that is to develop an argument, inspire, generate discussion, analysis, produce effects and so on (Grosz, 2003).

In this thesis the aim is to research why some concepts thrive in the architectural design process while others don't. Is it even possible to define components of what makes them successful or fail? Can we then use this information to better the design process? A wide range of sources will be used to research this topic. The first is consulting available psychological research into human behaviour and how ideas in the design process are (successfully) created and communicated. The second is historical research in which a look will be taken at a few significant architectural styles from modernism to contemporary architecture and their key concepts. As the third and final source modern day architecture will be reviewed. How are ideas and concepts communicated? Is there a relationship between what is considered as successful architecture and the way in which its concepts are communicated?

2 Research

2.1 Communication in the Design Process

As buildings have become more and more complex over the centuries, so has the design process. Building design has in most cases become too complex for one single individual to undertake alone, apart from very small or straight-forward projects. This has led to a large increase of specialised designers and engineers. A construction project may sometimes begin with one designer, but as the design develops and the complexity keeps on increasing, the design team will tend to grow with it as well. Architects have an important role throughout all phases of the design process as they are the ones responsible for the overall building design and thus in charge of the overall concept. The concepts they come up with will be the basis on which other parties involved integrate their own concept. The benefit of teamwork over individual work in the design process is that it allows for a greater number and variety of concepts to be created. However, possible disadvantages of teamwork are the conflicts that could arise between team members. This could be the result of different interpretations or understandings of the concept that may become evident throughout the process, as well as that different design concepts may be

As previously mentioned, in most cases the design team on architectural projects consists of many different actors with different roles and skills. It will often consist of an architect, structural engineer, mechanical and electrical engineers, landscape architects, interior designers and other specialists such as sustainability specialists, acoustic specialists, fire specialists, etc. As the team consists of specialists from different domains with their own specialized knowledge, not all of which come from the same organization or culture, they will have to explore and integrate each others knowledge in order to develop the project (Sonnenwald, 1996). These specialists will become part of the design team whilst having pre-existing patterns of their own and unique work activities, their specialized work languages and methods of communication. Add in different expectations and perceptions of goals and the complexity of the design process is further revealed.

Koestler (1964) has proposed that creativity is based on a so called "*bisociative process*." This process occurs when a problem, idea, event or situation is perceived simultaneously in two or more "*matrices of thought*" or domains. When these two "*matrices of thought*" interact with each other, the result is a creative idea. This can be seen in Figure 1. Koestler is referring to an idea or concept in one individual's mind.

Due to the multi-disciplinary design teams, we however tend to look at the design process as collaborative and social and not as a process that is only experienced by one individual. Therefore, these matrices of thought are not always happening the mind of a single individual but may be occurring for more than one person in the group. This thought is supported by Fischer (2003), which argues that "*the unaided individual mind is highly overrated [...] much of our intelligence and creativity results from interaction and collaboration with other individuals*." It is postulated that each individual has a domain of knowledge and within this knowledge they have a collection of matrices of thought. One individual has only the matrices of thought available in their domain, but groups allow others to interact with each other and therefore externalize their matrices of thought and make them available for others.

The main goal of the design process is to come up with an integral design with contribution from all parties. Therefore the team will have to explore, negotiate, and integrate differences between one another. When the differences and goals are not properly explored and defined, each member could possibly make design decisions that have a negative impact on the work of others and the project as a whole. At the same time, the exploration of varied technical and scientific information by the team may already be inherently required for a variety of reasons including finding solutions to design problems or acquiring data and methods to support a design

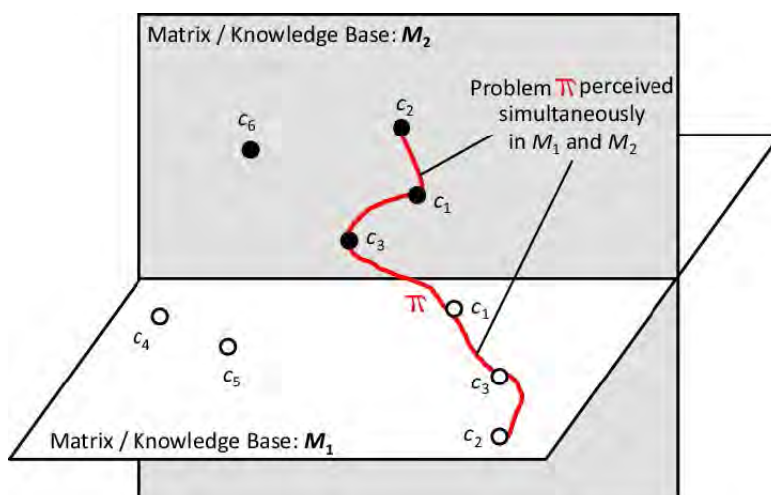


Figure 1

Illustration of Koestler's concept of bisociation (Dubitzky, 2012).

organizational structures and technical constraints may cause them to challenge or contest each others contribution. Sonnenwald (1993) characterizes this as *contested collaboration*. It can lead to conflict and have a negative impact on the quality of the design process and thus design outcomes. We should therefore always aim to improve and facilitate knowledge exploration and collaboration in multidisciplinary design teams. Clear communication strategies and defined roles help participants collaborate and negotiate their differences. The concept can be an important tool in achieving this communication, as it gives participants a common foundation for decision making.

Communication between different participants can also enhance individual's motivation to engage in the creative subprocesses and thus enhance creativity in two ways (Binnewies, 2007). First, when an individual "announces" that they are working on a creative solution for a specific problem they commit themselves to working on this problem. Committing to a goal publicly has a strong effect on goal pursuit and achievement. Communicating about ideas allows individuals to share their knowledge and own expertise with others. This then leads to others also bringing in their own knowledge and expertise to the conversation and as a result create new knowledge and insights together (Zhou & George, 2001). Secondly, an individual may also experience encouragement and emotional support to continue working on a creative solution when communicating their ideas. Receiving encouragement and support signals that ideas are valued and accepted by others and can thus increase an individual's motivation to continue their engagement in the creative process. Possible outcomes are further refinement of a concept, gathering of more information or the generation of new concepts and possibly taking a different approach. The idea-related communication can provide the individual with an evaluation of the ideas presented (Perry- Smith & Shalley, 2003).

2.2 Architectural Styles and Their Concepts

As the field of architecture has evolved over centuries, most architectural concepts that are created are related to concepts that preceded them. This makes concepts something evolutionary, as the architectural context is defined by time, space and technology (Tschumi, 2012). An example are the buildings that were made in the Roman era. It's programmatic concept for a colosseum, watchtower or basilica may be obsolete in the present day but their geometrical concept can provide a starting point for new spatial configurations. Another example that shows this evolution is related to the tower concept as new possibilities arose due to the invention of the elevator. Concepts therefore constantly evolve into other concepts and often create with their historical precedents.

During the twentieth and twenty-first century architecture has moved through a variety of approaches to the creation of buildings. There are five architectural styles which cover much of the last century of architecture: modernism, post-modernism, high-tech, vernacular and contemporary.

Jencks & Chaitkin (1982) outlines the characteristics of both modern and post-modern architecture. A total of 30 variables are pointed out in which the essential differences between the two movements on the grounds of ideological, stylistic, and design ideas are shown. Modernism is against concepts which include any sort of ornamentation, humour and also rejects historical references. It was a return to elementary shapes and geometric relationships. Modernist examples range from the work of architects such as Peter Eisenman, Le Corbusier to Mies van der Rohe. During this period, concepts such as the *plan libre* or the *pilotis* by Le Corbusier have been

complexity and eclecticism. Books published in 1966 and 1972 by the American architects Robert Venturi and Denise Scott Brown, *Complexity and Contradiction in Architecture*, and *Learning from Las Vegas*, were a big influence on the development of architecture in the post-modernism period. In the latter of these books they aimed to understand and examine the architecture of Las Vegas, where the concept of “symbolism over form” influenced the design language of the city, particularly on the commercial strip. Venturi and Brown divided buildings into two classes, each with a nickname. A building “where the architectural systems of space, structure, and program are submerged and distorted by an overall symbolic form” is defined as a “duck” and a building where ornament is applied independently of structure and program is called a “decorated shed”. This can be seen in Figure 2.

A key architectural style that emerged in later years is high-tech architecture. High-tech architecture is rooted in the period of late modernism, resulting from the outgrowth of modernist concepts such as the *curtain wall* from Mies van der Rohe. High-tech uses modern materials and places an emphasis on the possibilities of modern technology. Jencks & Chaitkin states (1982, p. 50) that “[in high tech] structural logic became structural exaggeration - structure as ornament”. A clear example of such structural exaggeration can be found in the Centre Pompidou by Renzo Piano and Richard Rogers.

On the other hand, neo-vernacular architecture is defined as looking away from technology and looking to the older existing traditions apparent in vernacular architecture. Neo-vernacular architecture is based on vernacular architectural, combined with modern technology and requirements. It is characterised by pitched roofs, natural materials, personalisation, and variable massing, giving the impression of construction through a number of years. Neo-vernacular concepts aim to “capture a former communal language” (Jencks & Chaitkin, 1982, p. 150).

The contemporary style is the architecture of the twenty-first century. Generally speaking, no single style can be seen as dominant. Architects nowadays work in many different styles, some of which are based on their precursors such as post-modernism, (neo-) vernacular and high-tech, while others are creating new architecture that is highly conceptual. Contemporary architectural style has developed into many different trends all over the world.

Most architectural works can be attributed to a certain architectural style or time period. In the previous passage, key characteristics of dominant styles over the last century have been discussed. However, this does not mean that the underlying concepts for buildings are always clear. Throughout architectural history many important buildings do not seem to possess a clear and identifiable concept at first sight. This has allowed

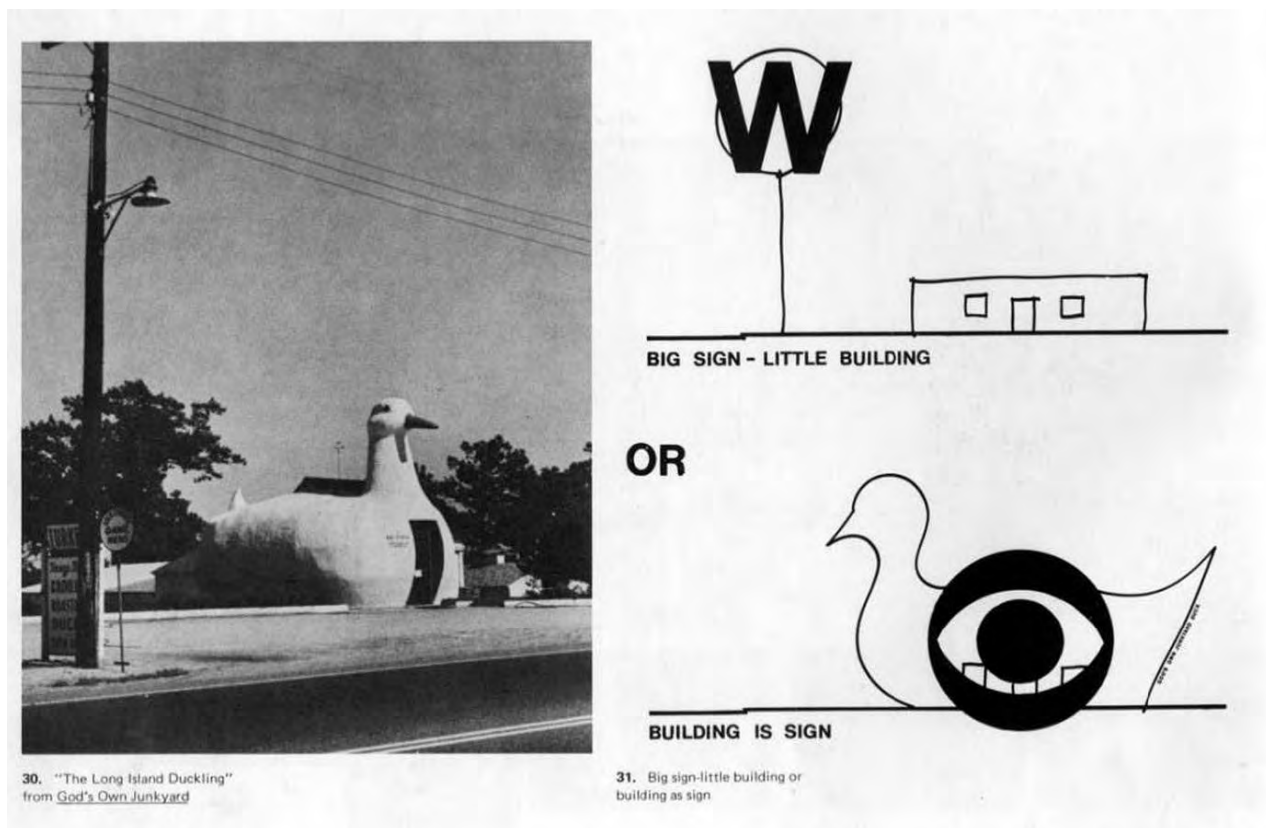


Figure 2

“Duck” and “decorated shed” concepts from *Learning from Las Vegas* (Venturi & Brown, 1972).

previously mentioned by Venturi and Brown (1966) as well as Koolhaas's manifesto *Delirious New York* (1978) and Aldo Rossi's book *The Architecture of the City* (1984) are examples of works in which authors analysed the existing reality and articulated an original concept in order to better grasp or apprehend that same reality (Tschumi, 2012).

2.3 Concept Communication in Present Day Architecture

In order to make design decisions and communicate about a project, architects rely on many different representation techniques. Representation used to be thought of as simply drawings or models, but over the last decades new possibilities have been created for designers to represent their ideas due to technological advancements. Architectural representation can now take form and shape in different ways, such as photorealistic renders, 3D modelling, films and virtual reality. Diagrams and sketches however remain nowadays the most used tools in the early phases of a design process to communicate about concepts. Diagrams are abstract drawings that represent natural and artificial phenomena such as sound and light, building elements such as walls and floors, and human behaviour such as sight and circulation, as well as territorial boundaries of spaces (Do, 2000). They are therefore not intended to represent what the project will look like but are mainly meant to serve as a tool for communication. Sketches in comparison are mainly about the spatial arrangements of physical elements and thus are more related to the realisation of architecture.

In comparison to the more visual types of representation common in the present day, architects in ancient Greece used to "draw" with words. While techniques such as architectural models were used as a means of communicating ideas as early as 725 B.C., architectural drawings (as in working drawings or sketches) are not mentioned in Greek historical or literary sources (Hewitt, 1985). In the fifth century B.C., architects like Ictinus and Kallikrates, which are best known for the Parthenon of the Acropolis of Athens, used other means to give builders accurate information in order to guide them in the construction of temples. These building types were highly conventionalized buildings by that time. The most important of the information provision, the so called "*syngraphai*", provided detailed and descriptive specifications of the building which even included dimensions. Details such as cornice molding and pieces of ornamental sculpture were described through the use of the "*paradeigma*", which is a full-scale mock-up or model, which might also be accompanied by the "*anagrapheus*", a two-dimensional template.

The conceptual project *Analogues* from Ogosta (2011) further proves that architectural concepts can develop and be communicated through words and word associations rather than only with images as is most common nowadays. The project was inspired by Richard Serra's *Verblast*, which was made by the American artist in the late sixties. Each list consists of descriptive variants of a single fundamental idea such as space, time, nature, architecture, or furniture. For example: *object*, *void*, *cluster*, and *field* are all categorized under *space*, while *rhythm*, *pulse*, *memory*, and *episode* are categorized under *time*. By strategically connecting and uniting two words from each list, new and provocative hybrid-concepts are created. The project shows how a table could be inhabited like a house, a garden can be a collection of roofs and a forest may be grown from a group of chairs. Some of these concepts were illustrated graphically to prove their validity as visual ideas. With this approach new possibilities for concepts and its representation are created. This can be seen in both Figure 3 and Figure 4.

I. SPATIOTEMPORAL	ATMOSPHERE AS MEMORY	KNOT AS SPEED	PATH AS MOVEMENT	INSTANT OF ATMOSPHERE	PATH AS CYCLE
TIME AS SPACE	ATMOSPHERE AS TORRENT	RHYTHM OF KNOTS	PATH AS ANTICIPATION	NARRATIVE AS OBJECT	CYCLE AS NATURE
TIME AS MOVEMENT	TORRENT OF ATMOSPHERES	NEST OF RHYTHMS	PATH AS WAVE	INSTANT AS LIGHT	CYCLE AS OBJECT
TIME AS SENSATION	TORRENT OF GRIDS	NEST AS GAP	VOID AS WAVE	INSTANT AS MATTER	CYCLE AS PLANE
TIME AS ATMOSPHERE	TORRENT OF NESTS	NEST AS ANTICIPATION	VOID AS EPISODE	INSTANT AS LINE	CYCLE AS POINT
TIME AS FIELD	NEST OF TORRENTS	NEST AS SPEED	VOID AS PULSE	STRIP OF INSTANTS	WAVE AS OBJECT
FIELD OF SENSATIONS	TORRENT AS POINT	NEST AS TIME	VOID OF EPISODES	STRIP OF INTERLUDES	WAVE AS FIELD
ATMOSPHERE OF SENSATION	TORRENT AS PLANE	NEST OF EPISODES	VOID OF INSTANTS	MONTAGE OF STRIPS	WAVE AS CELL
SENSATION AS PLANE	TORRENT AS VOID	NEST OF FADES	VOID AS SPEED	STRIP OF RHYTHMS	WAVE OF KNOTS
SENSATION AS MONTAGE	HOUSE OF TORRENTS	MEMORY AS NEST	PATH OF EPISODES	CYCLE OF STRIPS	WAVE OF ATMOSPHERES
SENSATION AS POINT	PATH OF TORRENTS	MEMORY AS HOUSE	PATH OF FIELDS	STRIP OF SPEED	WAVE OF LINES
MOVEMENT AS BOUNDARY	INTERSECTION OF TORRENTS	MEMORY AS PLANE	TUNNEL OF RHYTHMS	STRIP OF MEMORIES	WAVE AS CLUSTER
MOVEMENT AS EPISODE	BOUNDARY AS TIME	CLUSTER AS MEMORY	TUNNEL AS SENSATION	STRIP OF WAVES	WAVE AS FRAME
GRID AS MOVEMENT	BOUNDARY AS WAVE	MEMORY AS VOLUME	TUNNEL AS WAVE	NARRATIVE AS VOID	STASIS AS FIELD
NEST OF EPISODES	SEQUENCE OF BOUNDARIES	MEMORY AS ROW	TUNNEL AS GAP	NARRATIVE AS POINT	STASIS AS PATH
SEQUENCE OF POINTS	STASIS AS BOUNDARY	MEMORY AS GRID	TUNNEL OF CYCLES	NARRATIVE OF MATTER	STASIS AS HOUSE
SEQUENCE OF ATMOSPHERES	EPISODE AS BOUNDARY	MEMORY AS MATTER	TUNNEL OF TORRENTS	NARRATIVE AS RESISTOR	CLUSTER AS STASIS
LIGHT AS SEQUENCE	PULSE AS BOUNDARY	MEMORY AS OBJECT	TUNNEL AS PAUSE	NARRATIVE AS SPACE	VOID AS STASIS
LIGHT AS MONTAGE	PULSE OF BOUNDARIES	MATTER AS SEQUENCE	TUNNEL OF MEMORIES	GRID OF NARRATIVES	ATMOSPHERE AS STASIS
RHYTHM AS LIGHT	BOUNDARY AS LIGHT	MATTER AS WAVE	TUNNEL OF NARRATIVES	FIELD OF NARRATIVES	STREAM OF STASIS
RHYTHM AS BAND	SENSATION AS BOUNDARY	MATTER AS MONTAGE	FRAGMENT AS NARRATIVE	NARRATIVE AS STASIS	STASIS OF NESTS
RHYTHM AS VOLUME	KNOT AS TIME	RHYTHM AS MATTER	FRAGMENT OF MOVEMENT	CYCLE OF VOIDS	MOVEMENT AS PLANE
ATMOSPHERE OF RHYTHMS	KNOT AS SENSATION	MATTER AS INSTANT	FRAGMENT AS VOID	CYCLE AS LIGHT	MOVEMENT AS MATTER
ATMOSPHERE AS PULSE	KNOT AS EPISODE	EVENT AS MATTER	PLANE OF FRAGMENTS	CYCLE OF SPACES	MOVEMENT AS SPACE
ATMOSPHERE AS WAVE	KNOT AS FADE	MOVEMENT AS MATTER	KNOT AS FRAGMENT	SPACE AS CYCLE	MOVEMENT OF EPISODES
ATMOSPHERE AS EVENT	SYNC AS KNOT	TIME AS MATTER	FRAGMENT AS FIELD	CYCLE AS BOUNDARY	MOVEMENT AS INTERSECTION
ATMOSPHERE AS TIME	INTERLUDE OF KNOTS	PATH AS STASIS	FRAGMENT OF ATMOSPHERE	CYCLE AS NEST	MOVEMENT AS GRID
I. SPATIOPHYSICAL	ATMOSPHERE AS OBJECT	RESISTOR AS ATTRACTOR	NATURE AS GROUND	GRID AS POINT	MATTER AS FIELD
HOUSE AS FIELD	ATMOSPHERE AS PLANE	OBJECT AS RESISTOR	FRAME AS VOID	GRID AS ROW	MATTER AS VOID
FIELD AS OBJECT	LIGHT AS NATURE	ATMOSPHERE AS RESISTOR	FRAME AS ATTRACTOR	VOID AS GRID	POINT AS MATTER
SPACE AS OBJECT	ATMOSPHERE AS FIELD	OBJECT AS BOUNDARY	FIELD AS FRAME	NATURE AS GRID	ATMOSPHERE AS MATTER
FIELD OF FIELDS	PATH OF ATMOSPHERES	BOUNDARY OF VOIDS	LIGHT AS FRAME	OBJECT AS GRID	LIGHT AS MATTER
VOID AS OBJECT	ATMOSPHERE AS HOUSE	BOUNDARY OF ATMOSPHERES	HOUSE AS GAP	ATMOSPHERE OF GRIDS	MATTER AS INTERSECTION
OBJECT AS VOID	HOUSE AS NEST	SPACE AS BOUNDARY	GAP AS CELL	LIGHT AS GRID	SPACE AS MATTER
OBJECT AS PATH	NEST AS LIGHT	HOUSE AS BOUNDARY	OBJECT AS GAP	GAP AS GRID	NETWORK AS KNOT
PATH AS FIELD	NEST AS VOID	LIGHT AS BOUNDARY	MATERIAL AS GAP	INTERSECTION AS PLANE	OBJECT AS NETWORK
FIELD OF PATHS	PATH AS NEST	LIGHT AS CLUSTER	PLANE AS GAP	INTERSECTION AS NEST	NETWORK AS GAP
POINT AS VOID	NEST AS FIELD	CLUSTER AS OBJECT	GAP OF CLUSTERS	INTERSECTION AS OBJECT	NETWORK AS ATMOSPHERE
PLANE OF FIELDS	FIELD OF NESTS	SPACE AS CLUSTER	LINE OF GAPS	FIELD OF INTERSECTIONS	LIGHT AS NETWORK
VOID AS PLANE	ATMOSPHERE OF NESTS	FIELD OF CLUSTERS	SPACE AS KNOT	INTERSECTION OF ATTRACTORS	NETWORK AS KNOT
PATH AS HOUSE	LINE OF OBJECTS	CLUSTER OF CELLS	KNOT AS VOID	INTERSECTION AS ROW	POINT OF NETWORKS
OBJECT AS LIGHT	LINE OF VOIDS	ROW OF FIELDS	KNOT AS CELL	PASSAGE AS FIELD	NATURE AS NETWORK
LIGHT AS VOID	STREAM OF FIELDS	ROW OF VOIDS	KNOT AS GROUND	LIGHT AS PASSAGE	CELL AS NETWORK
PATH AS LIGHT	STREAM OF ATMOSPHERES	LIGHT AS ROW	FIELD AS KNOT	PASSAGE AS CELL	NETWORK OF VOIDS
MATERIAL AS VOID	OBJECT AS STREAM	CLUSTER OF ROWS	PLANE AS KNOT	ATMOSPHERE OF PASSAGES	PATH AS VOLUME
LIGHT AS MATERIAL	STREAM OF MATERIAL	POINT OF ROWS	ATMOSPHERE AS KNOT	PASSAGE AS NEST	VOLUME AS PLANE
VOID AS MATERIAL	CELL AS HOUSE	NATURE AS ROW	KNOT OF ATMOSPHERES	BOUNDARY AS PASSAGE	VOLUME AS GAP
FIELD AS MATERIAL	FIELD AS CELL	PLANE OF VOIDS	KNOT OF PLANES	GRID OF PASSAGES	CLUSTER AS VOLUME
SPACE AS FIELD	VOID AS CELL	CLUSTER OF POINTS	STRIP OF STREAMS	MATERIAL AS PASSAGE	VOLUME AS FIELD
NATURE AS OBJECT	NATURE AS CELL	POINT OF ROWS	STRIP AS HOUSE	SPACE AS SLOPE	VOLUME AS LINE
OBJECT AS NATURE	CELL OF LIGHT	NATURE AS ROW	STRIP AS OBJECT	SLOPE AS HOUSE	OBJECT OF VOLUMES
VOID AS NATURE	PATH AS CELL	PLANE OF VOIDS	CELL AS STRIP	SLOPE AS LIGHT	STREAM OF VOLUMES
NATURE AS PLANE	OBJECT AS ATTRACTOR	CLUSTER OF POINTS	STRIP OF POINTS	STREAM OF SLOPES	VOLUME AS INTERSECTION
HOUSE AS NATURE	VOID AS ATTRACTOR	GROUND AS ATMOSPHERE	NEST AS STRIP	NATURE AS SLOPE	NATURE OF VOLUMES
ATMOSPHERE AS VOID	ATTRACTOR OF FIELDS	GROUND AS VOID	VOID AS STRIP	VOID AS SLOPE	VOLUME AS VOID
MATERIAL AS ATMOSPHERE	MATERIAL AS RESISTOR	NEST AS GROUND	GRID AS SPACE	FRAME AS SLOPE	VOLUME AS FRAME

Figure 3

Spatiotemporal and spatiophysical concepts from Analogues (Ogosta, 2010).

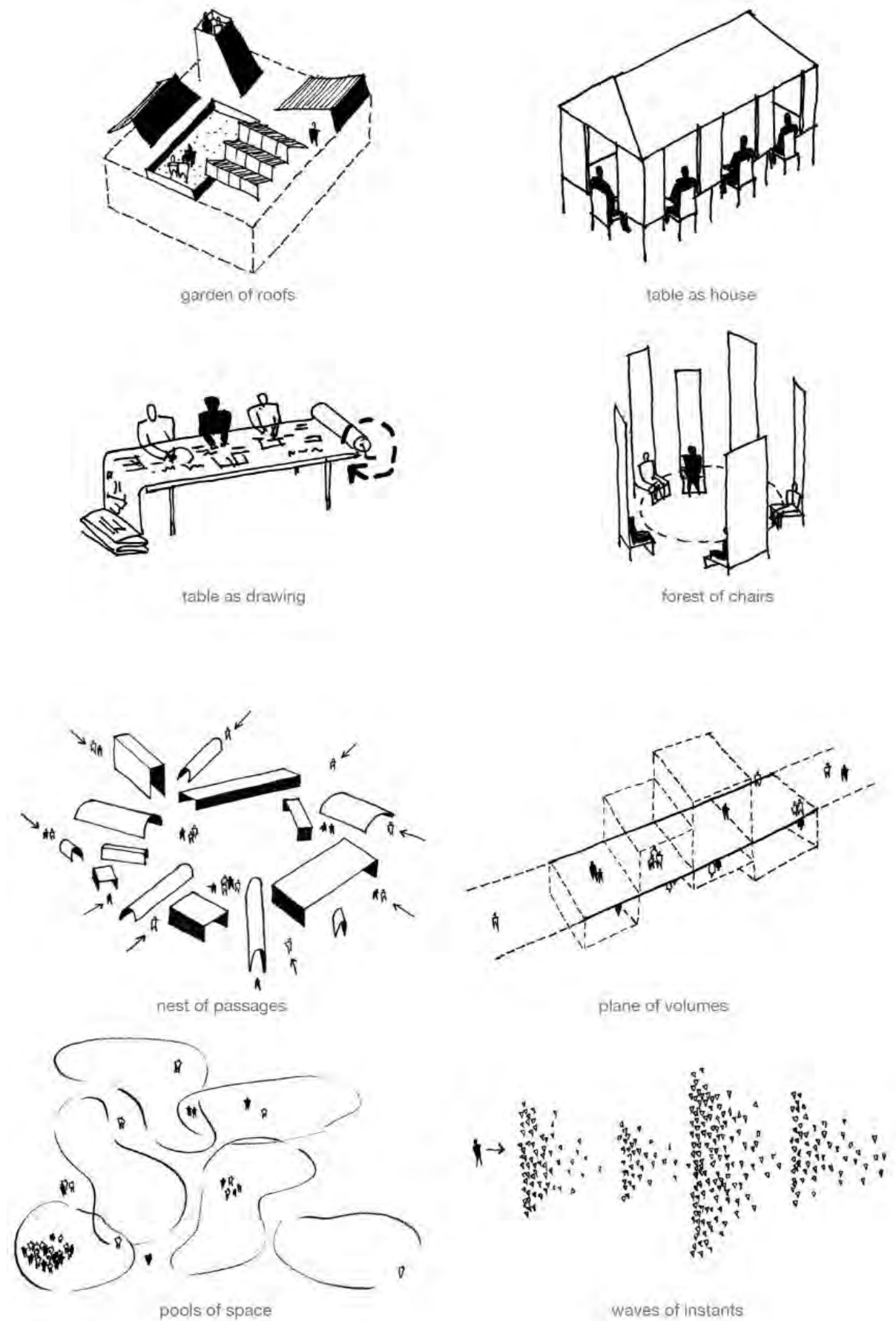


Figure 4

Diagrams generated from the concepts of Analogues (Ogosta, 2010).

As was discussed above, architectural concepts can be communicated in through different forms of communication. Can we then also define what makes a “successful” architectural concept? Is it one that allows the translation to a project that conforms to the Vitruvian virtues of *firmitatis*, *utilitatis* and *venustatis* (meaning stability, utility and beauty)? One that honors modernist principles, or one that follows closely the work of the so called *starchitects*? This question is one that can not be answered as there is not one singular answer. As Tschumi (2012) states, architecture is not about what is good or bad, right or wrong but asking the appropriate question and answering it through a coherent set of concepts or ideas.

Compared to other, more exact fields such as engineering and physics, architectural training is based on a relatively hands-on-approach. Students are learning from classical solutions from architectural history and current approaches in order to build up their repertoire of knowledge to then apply into their designs. Part of architectural training comes close to a form of instruction called *cognitive apprenticeship* by educational psychologists Collins, Brown & Newman (2018). In this type of training, the instructor coaches the student, makes explicit their own cognitive operations in dealing with a particular task, shows alternative ways of handling a problem, and gives active advice, all while leaving the student room to develop their own abilities. An important sidenote is that the study of architecture is much wider than just the *cognitive apprenticeship* part and also comprises the acquisition and production of theory and knowledge in other educational forms such as writing and lectures.

There is also no unified theory of architecture that is believed to be the correct one. For example, what makes a good floorplan is largely dependent on personal beliefs and judgements. There is neither an absolute nor objective way to decide whether a kitchen should always be an integrated part of the living room or be placed in a separate room. There are many factors that influence the decision making as the answer is mostly dependent on the lifestyle of the occupants. Here, again, there is no “good” or “bad” solution that fits into every concept and is suitable for every user.

Related to this, studies have shown that architects differ from non-architects in their assessments of the built environment (Brown & Gifford, 2001; Devlin & Nasar, 1989). More than other aspects of a design, the appearance of buildings remains a matter of subjective preference. Architects also tend to believe that their own favoured designs would be well received by end users, but this notion often becomes a discussion point with non-architect colleagues in the design process. In his book *Design by Competition* (1999) Nasar noted the difference between perceptions of architects and the public and made the argument that “we should no longer accept the counsel of those who insist on the primacy of elitist artistic statements” (Nasar, 1999, p. 163). Architects mostly believed that the public could and should adopt their values. For example, architects of the modern movement did believe they could shape and transform human behaviour through architecture and thus reform society as a whole.

These differences in architectural perception become visible in the research done by Devlin (1990). Here the perceptions of users, viewers and architects of two office buildings in Chicago were compared. They concluded that architects are more likely to evaluate buildings according to stylistic and formal category systems, while the non-architects typically rely on functional categories. The non-architects provided evaluations that were mostly descriptive, whereas architects provided evaluations that were more abstract and conceptual. A related study (Groat, 1982) determined the categories that architects and non-architects use to interpret buildings. According to their findings, non-architects tended to sort buildings on the basis of preference and type, whereas architects used different categories

have made it visible that the concepts used by architects are developed throughout their period of study and training. Seventy-five students in each year of a five-year architectural training participated in their research. They were asked to sort 26 examples of contemporary architecture according to their own criteria. The development of their architectural concepts during their education was then examined. The analysis related to the categorizations of buildings reveals that during the course of architectural education the students develop more increasingly abstract and differentiating concepts in order to organize their knowledge. The most central concept that was used to organize their understanding is that of architectural style, a concept that becomes more rich in its definition with an increasing length of education.

3 Conclusion and Discussion

The main aim of this thesis was to research why some concepts thrive in the architectural design process while others don't. Through the research that was performed the complexity of the design process was emphasized. The design process is a dialogue between many different parties, and the concept ensures a topic for discussion. The concept gives participants in the design process a common foundation for decision making. It is therefore important the main components of a concept are clear and understandable for everyone involved. Miscommunication could otherwise lead to potential problems further on as a result of different interpretations or understandings of the concept, as well as that different design concepts may be favoured by different members of the team. Communication has therefore in recent years emerged as a fundamental component of the design process. Different specialists work together as part of a design team and each individual has pre-existing patterns of their own and unique work activities, their specialized work languages and methods of communication (Sonnenwald, 1996). Add in different expectations and perceptions of goals and all of these factors highlight the importance of clarity in concepts even more. The value of concepts in the design process has been shown: concepts as a communication tool can lead to further refinement of the concept itself, the gathering of more information, or the generation of new concepts and possibly taking a different approach and can thus lead to overall development of an architectural project (Zhou & George, 2001; Perry-Smith & Shalley, 2003).

As the field of architecture has evolved over centuries, most architectural concepts that are created are related to concepts that preceded them. This makes concepts something evolutionary, as the architectural context is defined by time, space and technology (Tschumi, 2012). The research has shown how certain architectural styles are built upon the concepts of styles that preceded them. Concepts constantly evolve into other concepts and often create dialogue with their historical precedents (Jencks & Chaitkin, 1982). Furthermore it was highlighted how concepts can be represented through different forms of communication rather than only visually, as is most common (Hewitt, 1985; Ogosta, 2011).

The research into what makes a "successful" architectural concept has shown that there is no right or wrong answer to the question (Tschumi, 2012). This is due to the nature of the field of architecture and its (educational) training (Collins, Brown & Newman, 2018). Finally, points were raised which show how architects and non-architects differ in their assessment of the built environment (Brown & Gifford, 2001; Devlin & Nasar, 1989). This information can be used to adapt concepts to be more accessible for a larger audience and thus have the potential to facilitate and improve the design process.

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Environmental

05 The architecture of care

Asma Jemmali

The relationship between the human and the environment has been widely considered through a binary model of thinking that reduces its complexity. By adopting ecological thinking, this essay attempts an exploration of the overlooked relation between culture and nature that brings forward architecture's entanglement with the human and the non-human. It aims to theorize the invisible assemblages of relations, interactions and affective potentials between us and the built environment to suggest a novel approach to grasp our social world.

06 An endless discussion

Marsha Groen

A minimalist architectural design would promote several social values such as the value of freedom, time, nature and peace. Other sources suggest a minimal environment promotes focus and productivity. Due to the lack of research of this argument relating to adults with attention deficit symptoms due to ADHD, this essay investigates the hypothesis that because one is easily distracted, a minimalist office environment is preferred, to stimulate focus due to the lack of distractions in the visual environment. Through a combination of literary sources, one could find these did not agree with one another, as these argue positively and negatively towards the hypothesis. Most research does emphasize an adult suffering with symptoms of ADHD does not benefit of a minimalist interior when better focus is preferred, because one becomes unmotivated due to boredom.

07 Healthy Architecture for Children

Caroline Verboog

Adults sense the world through the notions of memory, experience and perception. As children are lacking the essence of memory and experience, they experience the world mainly through the unconscious kinaesthesia and hapticity. The here and the now defines their perception of space. Child development is influenced by the continuous interplay of nature and nurture. As most children spend a few years of their youth in kindergarten, its architecture and formation has a great influence on their behaviour and development. Healthy architecture in kindergarten

allows children to engage in their surroundings, whilst allowing them to retract from the crowd and active environment. It is a space in which contradiction should be able to form a coherent entity, in which children can recognise different spaces but lose their individuality in the chaos of unpredictable spaces. Architecture should allow their imagination to lead and invite children to develop cognitive skills.

THE ARCHITECTURE OF CARE

A Healing Affective Turn

Asma Jemmali
5509580

One of the points that anyone involved in the architecture or humanities scholarship would come to know is the complexity of the relationship between the 'human' and the 'environment'. This relationship has been widely considered through a binary model of thinking that reduces its complexity within the boundaries of societies, politics, economies and so on. By adopting ecological thinking, this essay attempts an exploration of the overlooked relation between culture and nature that brings forward architecture's entanglement with the 'human' and the 'non-human'. It aims to theorize the invisible assemblages of relations, interactions and affective potentials between us, as humans, and the built environment to suggest a novel approach to grasp our social world. The essay follows a symptomatological method within which experiences of everyday life are collected as syndromes to be phenomenologically read and interpreted through the theory of affects. It refers to the case of Tunisia, during the post-conflict era following the social revolt of 2011, to draw syndromes of tension reciprocity between the 'human' and the 'environment'. By reflecting upon the use, experience and perception of the built environment through an affective lens, the essay opens up new perspectives on architecture's healing process of care.

Keywords : Architecture – Human/ Environment – Affects – Healing - Care

The burning concern

"The world is on fire and we are the fire." This is how theorist Gökhan Kodalak described the 21st century's dreadful failure of what he calls "the life system"[1]. Despite its depiction of tragic reality, this description holds the allusion to not only the urging challenges of our world but also the unprecedented opportunities to face them. This ambiguous ambivalence is what made the 21st century a colossal shift in our way of thinking and engaging with our world. The pressure of an accelerated climate crisis, an untenable social, economic and political tension in contrast with an exponentially growing technology resulted in a tremendous change of focus in current discourses of various fields of knowledge. Architecture Theory in its turn, moved from the 'building's' autonomous aesthetic towards the essence of its existence to tackle not only theoretical but also practical concerns. The relationality between these seemingly unrelated concerns made us rethink the manners in which we analyze, structure and interpret the world. It made us question the fallacy of our 'modern' thinking as we tend to develop the critics of current phenomena by the firm distinction of what French sociologist, anthropologist and philosopher Bruno Latour calls "naturalization, socialization and deconstruction" of things [2]. It is this firm distinction between the three processes of thoughts that respectively eliminate the culture, scientific truth and real existence of phenomena and therefore reduce our understanding of the world around us. Taking gentrification as an example of today's concerning phenomena to be addressed, we are faced with the perplexity of different critics

alternatives. Is it to be addressed as the product of politics? What about thinking of gentrification as economic growth? What if it was a product of social segregation? Could we consider it through inhabitants' behavioral patterns? Isn't gentrification a city's natural adaptation for resilience? What about considering it through the lenses of city and urban spaces? Is it the representation of cities' mediatization? Who is even placed to reflect upon this phenomena? Each of these questions claims a form of criticism to be insightful in itself and not to be combined with the others. The reflection of gentrification phenomena, in this case, remains entangled between the boundaries of real facts, exercised power and constructed narratives. It is this perpetual shift between these boundaries that translates the fallacy of our distinctive way of thinking that reduces a bunch of differences to one difference. By doing so, we tend to presume that our world is safely split into completely separate sub-worlds of society, nature, realities, and languages to name a few. We deny that our world is surprisingly populated by endless assemblages of differences tightly related to each other in a network of intersections. We deny that gentrification could be a constructed phenomena of relatable pre-existing relations of affection between power, nature, society and language. Our held of similar phenomena is consequently reduced to generic givens that dismiss any different truth and therefore limit our grasp of the world around us into specific dichotomies. Thus, we can argue that dealing with this dilemma requires reading differences across the lines of distinctions between culture and nature. It requires digging for the roots of these givens to find out the first principles through which they are produced. This new way of thinking implies churning up the set grids of these binaries to theorize the invisible assemblages of relations, interactions and affective potentials between them.

Aligning with these lines of thought suggests that architecture theory, in its turn, is set to shift its concern towards architecture's position within culture and nature to reflect upon it as a dynamic mechanism rather than a static given of culture. Architecture is no longer kept in separate empires of discourses, technologies or societies but rather it is withdrawn to a broader scope of philosophical and ecological thinking. In this sense, reflecting upon current phenomena in architecture implies thinking of the affective relations between the 'parts' and the 'whole' they form. It implies our consideration of the overlooked relation between culture and nature that brings forward architecture's entanglement with the 'human' and the 'environment'. As we continue to reflect upon this ambiguous relation, daily life becomes increasingly reflective of this process of affection between Living / non-living, human/ non-human and object/subject. This reflection evolves to follow a symptomatological method within which the architectural thinking stands on the investigation of the genealogy of symptoms bringing architecture together with other disciplines from philosophy and humanities

to neuroscience and psychology. In this respect, thinking of architecture becomes the outcome of our interrogation and problematization of symptomatic observations that result in a rhizome of intertwined thoughts.

This essay takes as a starting point my gathering – as an architect – of several symptomatic encounters of everyday life pinpointing the relation of the 'human' to the 'environment' and raising questions of abstract realities. It is initiated by a collection of my own experiences and perceptions of syndromes in the built environment of my home-country Tunisia during a post-conflict era following the social revolt of 2011. This symptomatology method started with a tracing of users' psychological, economic, social and political intensities reflected on a pre-existing built environment. A radical change in the use, perception and experience of the built environment could be witnessed within the tension of the evoked intensities. These symptoms are accompanied by an altered atmosphere in the built environment that triggers, again, tension in return. The reciprocity of these symptoms constitutes a singular syndrome which, traced repetitively within different areas, triggered a thorough process of thinking. The attempts to study these tensions through the lenses of political, economic and social 'facts' brings us to the above-mentioned fallacy of thinking that keeps the reflection upon this syndrome entangled between the boundaries of given binaries of society, politics, economies and so on. What if we think beyond these givens and look at the initial actors of this tension? What if this reciprocity is underlining a mutual affection between the users and the built environment? Could this affective process pinpoint another perspective to the evoked tension? These questions bring forward issues that might not be addressed through a radical synthesis of facts but rather could be withdrawn into the realm of speculation.

In this sense, the observed syndrome of mutual influence between 'human' and 'environment' triggers a speculative reflection upon a pre-existing movement of affects generating these symptoms. This process takes us back to the initial concern of the thinking act of questioning architecture's position within culture and nature. Thus, the identification of this essay's problem lies in the accumulation of pre-existing concerns bringing culture and nature together in an attempt to grasp the process of affection between them. This essay is a process of intuitional and insightful investigation of not this relation itself but rather the action through which it is produced. That is to say, it is an investigation of not the given of 'what happened' but rather the fundamental 'why' of its existence.

This essay aims to grasp the power of affects in architecture to identify its potential to care and therefore to 'heal'. Its purpose is to problematize and ask questions rather than give answers. As German philosopher Friedrich Nietzsche affirms that "thinking differently"

differently" requires "feeling differently", thinking in architecture theory is tightly related to the extent of our responsibility towards the encountered modes of thinking and observed surroundings. It is this curiosity and wonder that makes the act of thinking in Architecture theory rely on a 'burning' concern.

The questioning of givens

The above-mentioned collection of symptoms could be phenomenologically read as syndromes translating the complexity of the relationship between the 'human' and the 'environment'. We could trace these syndromes in the limited scope of our relationship – as architects, thinkers and users – with the built environment surrounding us, particularly in our daily interrogations of this relationship. How do we influence the spaces we inhabit? How do our perception and use patterns alter the built environment? How does this environment, in return, influence us? These questions – bringing back again the above-mentioned reciprocity syndrome between the 'human' and the 'environment'- underline the stark alternatives of nature or culture, subject or object. Yet these alternatives mistranslate the broad complexity of this reciprocity since this latter does not rely on the simple shift between culture-nature or object-subject itself. It does not rely on the shift between one difference to another but rather it relies on the primary actions exercised by differences. For instance, we could consider the case of our house building. On one side, we shape our house to fit our own cultural, economic and psychological features to name a few. However, on the other side, we are confronted by the house building, in return, shaping our spatial use, psychological state and even our understanding of what a house is. Rather than reading this mutual influence through the study of its two sides' entities, which in our case are 'us' as humans and the house building, we could argue that addressing their prior capacities to act is fundamental. This means that the reflection upon this syndrome goes beyond the ontic investigation of differences to embrace their pre-existing ontological principles. To give more clarification, unfolding this relation requires reading differences ontologically to understand the action they exercise. As stated in the previous chapter, this point aligns with our clarification concern of not the given itself but its fundamental existence.

In light of this, we can reformulate our interrogation to ask: How do the actions of differences give rise to a relation between the 'human' and 'the environment'? In the case of our previous example, we can then ask: How does our and the building's capacities to act engender this syndrome of reciprocal relation? To properly raise this question, we first have to answer another: who – among the 'human' and the 'environment'- has an impact on the other? In other terms, 'who has the power to act upon the other? Coming up with these interrogations underlines a tendency of hierarchy that

defines one difference as the one and only possessor of this power to act. Within the same example, it is a hierarchy that uplifts 'us' or the 'house building' as the ultimate actor responsible for leading and establishing the relation in between.

Gökhan Kodalak refers to this hierarchy as an 'ontological bifurcation': a duality in the principles of being that creates a clear cut between 'us' and everything else [1]. This separation is what elevates the 'human' over the 'non-human', the 'living' over the 'non-living' and the 'material' over the 'abstract' to generate a vertical distribution of power. We can identify the traces of this hierarchy in architecture's instrumentalization as the mastery of nature offering the architect the genius of exercising authority over nature, culture, the built environment and so forth. We could argue here that this hierarchy is still valid in the opposite sense, in cases where the vertical line of this power distribution is reversed. But what does all of this have to do with the mutual relation between 'us' and our environment? How does this ontological issue translate into this compound syndrome? What does this hierarchy between 'us' and our house building tell us about this relation? With the addressed ontological issue in hand, these questions take us back to our initial attempt to figure out 'who is the actor'. They drive us to ask: What does it mean for our attempt if this ontological separation is an illusion? What if this hierarchy is a misconception? Here, we are invited to reconsider that our distinction between differences is rooted in the properties we tend to attach to them, mainly to their capacity to act. For instance, we attach the feature of being 'rational' to ourselves as humans, 'alive' to animals, 'static' to buildings or 'abstract' to feelings. Here, as we dismiss the long line of causation that comes before, we disregard that these givens are not properties but rather a description of several relations. As a result, as Latour states, the difference here is defined as an action that "is limited to what intentional, meaningful humans do", rather than a "passage from one experiential state" to another.

Therefore, a new ontological reading of differences could be suggested. According to Dutch philosopher Baruch Spinoza, "begins will be defined by their capacity for being affected, by the affections by which they are capable"[3]. This means that a difference is essentially a process of affects. Considered within the proposed example, this point suggests that humans' and buildings' capacities to act are fundamentally their capacity to affect and be affected. Although, due to their "elusive aspect" a definition of what affects are cannot be captured, "affects tend to be associated with how the body registers and experience [...] it refers to what connects us, [...] affect reside at the interstice of connections and interactions"[4]. By this definition, we can argue that our relationship with our surrounding environment is a movement of affects that makes everything relatable to everything else.

This point derives from French philosopher Gilles Deleuze and French psychiatrist, philosopher, semiologist and activist Félix Guattari's theory of bodies as an "assemblage" of differences [5]. Theoretically conceived through this theory of assemblages, a body – us, as humans, and the house building in our case – is not an autonomous system but rather an accumulation of activities, emotions, organs, behaviors, objects, and so on, linked by a tightly knitted network to another

accumulation, another body. To be more specific, we can conceive our house building through the accumulation of feelings, usages, furniture and materials to name a few. As users, we could be also conceived as an assemblage of organs, beliefs, experiences and desires. The affective processes between these differences are the thin lines by which a network of relationality between us and the building is woven.

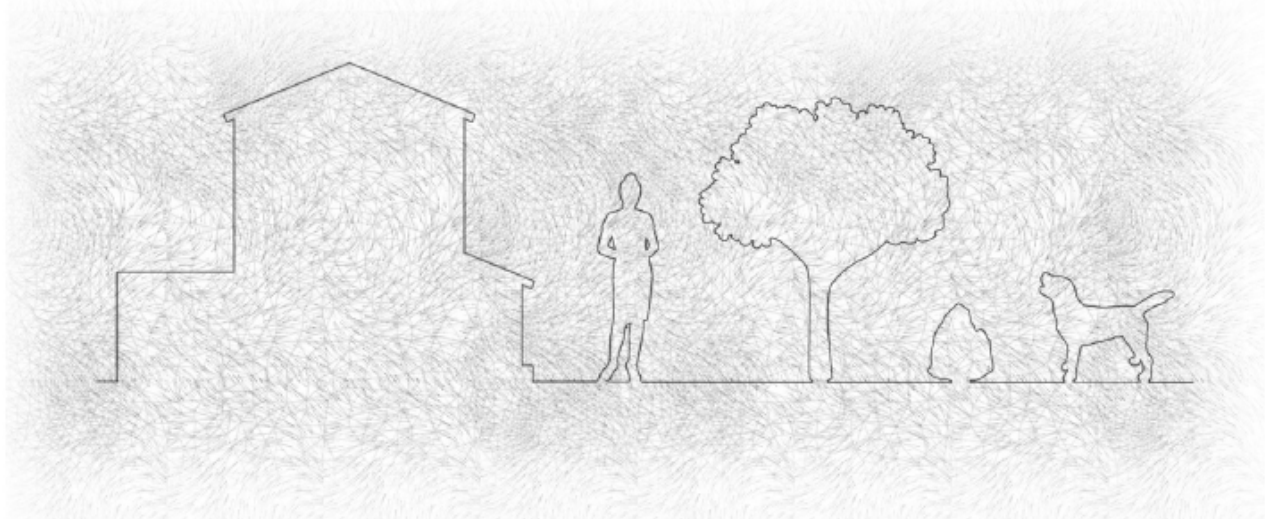


Fig1. The affective processes between differences are the thin lines by which a network of relationality between human and non-human is woven. Source: Author's illustration

Until here, we came to grasp that everything has agency. This deduction witness that our world is governed by a network of relations between 'co-producer differences, which Latour calls 'hybrids' [2]. In this network, hybrids of human /non-human, living /non-living, abstract /material, and cultural /natural are "full-blown" participants of the above-mentioned movement of affects. Undoubtedly, this participation has different gradations but is never hierarchical. The degree of 'affecting and being affected' is altered by differences "that necessarily change in nature as they expand their connection" with other differences[5]. A clear example of this point could be that an object might have a higher degree of affection once affected itself by our emotions. Thus, we can assimilate this perpetual and variable movement of affects with the complex and ever-changing relation between 'us' and the surrounding environment. At this level, we could ask what triggers this movement of affects? What causes this variation of affective degrees? Bringing to mind their above-mentioned definition affects pertain to the encountered forces that trigger a body to respond in a certain way. Thus, the intensities of these encounters are what give affective connections an aspect of fluidity.

complexity of this relationality between differences opens up the possibility to read our current social, political and ecological realities with a new affective lense.

According to the affects theory, we can deduce that the 'human' relation with the 'environment' is driven by unlimited and unpredictable networks of affects. The

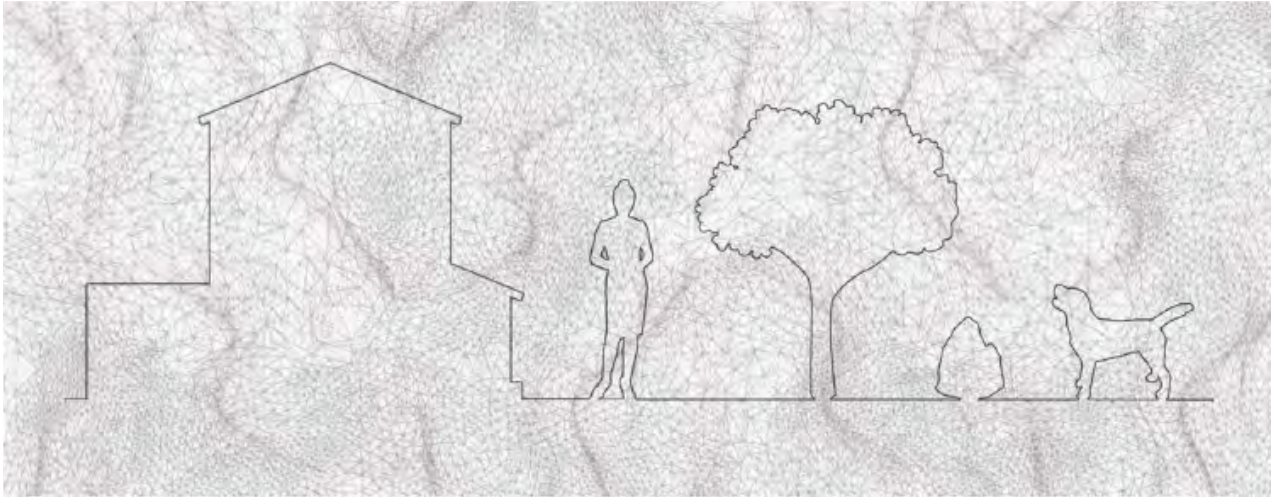


Fig 2. The 'human' relation with the 'environment' is driven by unlimited and unpredictable networks of affects. Source: Author's illustration

The embrace of differences

At this stage of thinking, we came to identify a fluid movement of bodies' capacities to affect and be affected. As mentioned earlier, the multiplicity of encounters gives an unlimited aspect to this movement of affects. This, in return, makes affective connections between bodies far away from any control or regulation. Therefore, we could not assume a rational order to any of our relations with the environment. We could not, for instance, regulate a standard of our perception, use or experience of space since they are set to be changed according to the affects movement. The act of perceiving, using or experiencing a space becomes then the result of varied connections that are enabled through pre-existing encounters. By this, we recognize that actions are not fixed or concrete interactions but rather a transformative process of connections. Focusing on this infinitely changing affective flow reveals new possibilities to understand our world through the nuanced lens of affects. Within the architectural context, the affect theory drives us to reconsider that our engagement with the environment emerges through the lived intensities of encounters. It offers us the opportunity to consider this relation through the circuit of forces between bodies, both human and non-human. Here, it is fundamental not to confuse affects with feelings or emotions in our interpretation of this relationality. Affects are the pre-personal registration of personally generated feelings and socially constructed emotions. Thus, contrary to feelings and emotions, affects are difficult to capture and conceptualize in language or representation. These aspects drive us to prompt the questions: How can we reconceive our relationship with the built environment through affects? How can we read this unrepresentable and abstract affective relationality in our lived experiences of everyday life? How are affects involved in our engagement with spaces and our daily use of them? Dealing with

these questions implies first our brief consideration of perception-action experiences within the environment. We can trace the basis of these interrogations in the investigation of actions arising out of the environment's interaction with other bodies. This is what American psychologist James J. Gibson calls "affordances". He associates this term with what the environment "offers the animal, what it provides or furnishes, either for good or ill"[6]. According to him, affordances are opportunities for action that came to the surface only in relation to an acting agent which, therefore "implies the complementarity of the animal and the environment". A clear, and perhaps obvious, example of this point could be that "a tree might look clim-able to a squirrel but not to me, while a floor looks walk-able to me but not to a fish"[7]. The question we could ask at this point is: do we all experience the same floor the same way? or do all squirrels experience the same tree the same way? From Gibson's point of view, everything in our environment offers affordances according to a set of real, objective, or physical properties. In the previous case, an example of these properties could derive from the tree's and the floors surfaces that make the act of climbing or walking possible. Here, we can argue that an object's affordances are considered through a functionalist approach according to which perceiving and acting depend only on the way the object functions and the role it plays. Affordances are then considered in isolation of the acting agent who is kept as a passive observer. For instance, the walk-ability affordance of a floor is considered solely through the floor's functional ends. Our perception and action upon this floor is therefore separated from any subjectivity deriving from variable perceptual encounters. An example of these encounters could be colors, textures, feelings, cultural and social connotations to name a few, that do not only imply cognitive responses but also give rise to affective ones. Considering the notion of affordances from an ecological point of view drives us to question the subjective basis of affordances and experiences of perception and action.

perception and action.

The theory of affects presents a framework to study this subjectivity through the relationality between differences. Reading this subjectivity through an affective lens implies our consideration of both the acting agents and the environment not as entities with specific properties but rather as agents with abilities to both offer affordances and act, which means with certain affective potentials. In this sense, we could recognize a movement of affects between the environment and the acting agent that makes affordances, perceptions and actions depending on the forces of encounters. At this stage, we could evoke a different interpretation of affordances, which we could call an "affective affordance." This new definition denotes that "we perceive [...] things as affording regulative opportunities to amplify, suppress, extend, enrich and explore [...] our affective experiences"[6]. For the sake of clearance, we could consider a bench as

an object of our environment. On one side, perceiving a bench as a sitting object is not only related to the bench's function and role as a sitting element. It is also broadly linked to our (humans) cultivated socio-cultural practices that would affect our action to sit on a bench rather than sit on the floor. On the other side, the same bench could be perceived as an object to stand, lay or lean on in response to different emotions of anger, fatigue, sadness and so on. In this case, sitting, standing, lying and leaning are only a few of the many variations of the same object's affordance that emerges through affective relations between us and the object.

The elaborated combination of affects and affordances allows us to map affects in our daily experiences with the Other of our environment (spaces, objects, animals, humans..). It also reveals how specific environments could be constructed as endearing and engaging while others are altered into objects of hatred and violence.

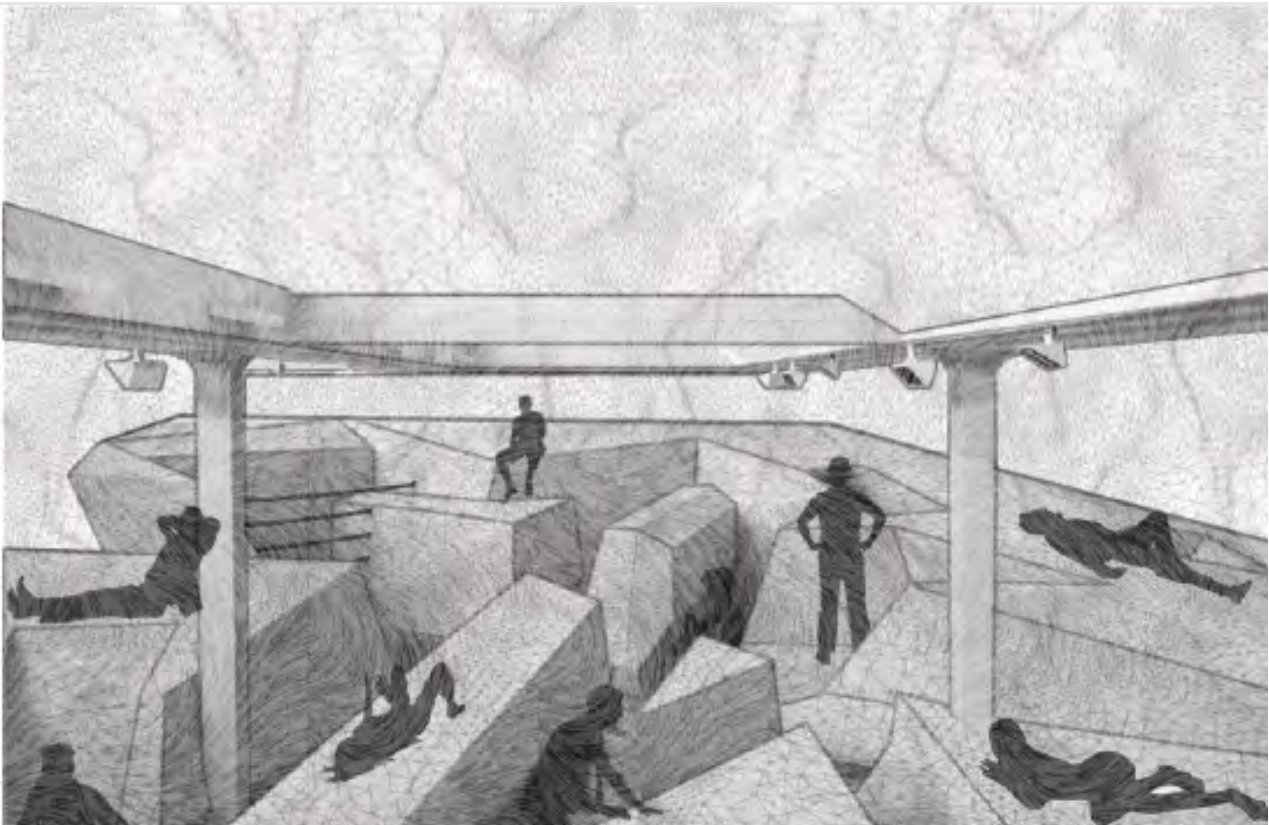


Fig. Affordances emerging through affective relations between the human and the object : Example of the bench. Source : Author's illustration + RAAAF and Barbara Visser, *The End of Sitting*, 2014. Photo: Ricky Rijkenberg

The healing process of care

Based on what has been discussed above, affect theory grants us a strong foundation to further analyze and understand social actions. By theorizing the 'social' as a pre-personal relational connection, affect theory

suggests novel potentialities for social transformations and interventions. As this essay might demonstrate, our consideration of these potentialities starts with a commitment toward questioning what has been described as 'social realities' and approaching our experiences within the environment as a variety of interactions. This is what scholars call "the affective turn." Here, the starting point of this essay could be a

a clear example of how the affective turn could reveal the unrepresented and invisible facets of our social world. Since the last decade, the tension evoked in Tunisia's case has been diagnosed as the derivation of the social, economic and political aspects of the post-revolt period the country is going through. Reflected on the built environment itself, on people's uses of urban spaces, on their interactions with each other and so on, this tension has been widely linked to all that constitutes the social reality of post-revolt Tunisia from the social conflicts to the economic crash and the political crisis. The clear demarcation of this tension within a cause/ effect and subject/ object boundaries is what made it ungraspable and never-ending. Here, the affective turn comes to the surface to move away from this traditional interpretation of given facts, subvert this linear way of thinking and suggest a more nuanced understanding of these social realities. Read through the affect theory, the identification of traces of this tension in the built environment of Tunisia suggests our consideration of the multiple encounters through which this tension emerges. Similar to the previous example of our house building, the relationship between Tunisian people and their built environment could be considered through the broader network of affective connections between physical and abstract assemblages (buildings, people, emotions, atmospheres..).

In this sense, mapping Tunisian people's social, economic and political tensions within their use, their perception and within the spatial atmosphere of the built environment could be interpreted through the affective connections that occur between Tunisians, as humans but also between Tunisians and the non-human environment. The social revolt of 2011, ending a long and brutal political dictatorship period, brought a transformation in the intensity of affective encounters. This context is what triggered the growth of the affective potential of feelings and emotions and therefore their transmission to not only the daily life experiences of spaces but also to the physical built environment. This change of encountered intensities takes us back to the above-mentioned affective affordance which suggests that perception is not only deriving from the environment's affordances alone and that a change in the perceiver implies a change in the perceived. In other words, the built environment, in Tunisian's case, is perceived as a "regulative opportunity" to suppress emerging intensities of anger, fear, suppression and deception to name a few. This affective affordance between Tunisian people and the built environment explains the observed reciprocity of tension that makes the relationship between people and their environment entangled in a continuous oscillation of encounters and responses.

At this point, we can raise the question: what if we consider this regulative potential of affordances to explore, boost and guide our affective experiences? How can affects regulate our daily experiences to potentially heal? As this essay might demonstrate

until this stage of thinking, reading our world through the affect theory implies our attention to the invisible affective involvement necessary for all types of relations between the human and the non-human. This attention is what we could interpret as a matter of care, in which our attentiveness is crucial when it comes to recognizing the unrepresented facets of phenomena. In this context, the notion of care could be defined within our level of responsivity and commitment towards connections and relations with the Other (objects, humans, animals) that go beyond the material, physical and given matters. Here, reflecting upon the practice of architecture is key. The line of thoughts of this essay suggests the urge of architecture practices' exposure to the broad affective world as it offers novel fruitful ways of engagement not only with our environment but also with ourselves. The affective turn's potential to heal what has been called social realities lies in the shift of the practice of architecture into a practice of care. It is through this shift that we, as humans come to grasp that we are not autonomous, our environment is not self-contained and our practice of architecture is not only physical. As architects, the act of caring entails our understanding of affects potential to shape and cultivate novel relations between people and their environment. It also implies our care for maintaining and 'feeding' these relations with positive encounters leading to positive affordances and therefore positive responses. Therefore, we can say that the healing premise of affects through the architecture of care is embedded in the recognition of everything's agency that allows us to design affective affordances rather than objects.

As stated in the first chapter, the aim of this essay is not to offer solutions or answers. It is a process of thinking through a different approach that brings to the foreground the backsides of givens. It is also an attempt to break with the fallacy of thinking through the binaries of emotional/ rational, object/ subject, cause/ effect and so on. To be more clear, our reading of the affective side of phenomena, rather than an ultimate solution, is a novel way of thinking through an intersectional framework that opens up new possibilities to analyze our world through differences. To conclude, it is worth noting that the act of thinking in this essay could be assimilated with psychotherapy in which the whole process starts with identifying our burning concerns, expands to digging into the unrevealed sides of givens, embracing differences, and finally comes to regulate our concerns. It is a process that does not provide us with ready-made solutions but rather offers us attentiveness and care to foster our healing.

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AN ENDLESS DISCUSSION

The effect of minimalist architecture on the productivity of adults with ADHD in the workplace

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Keywords | Minimalist architecture, ADHD, productivity, office

Introduction

The roots of minimalism in architecture can be found in Cubist design movements from the 1920's by De Stijl and Bauhaus. De Stijl focused on abstracting and simplicity by reducing art to its essential forms and colours. Theo van Doesburg and Gerrit Rietveld applied this based on functionalism, a lack of surface decoration and rectilinear planes. The Bauhaus approach shared the principles in cleanliness, functionalism, purity and reduced forms.

Mies van der Rohe summarised these minimalist philosophies in the phrase "Less is more" which refers to reduction of form to the bare minimum of elements. In addition to the approaches of Bauhaus and De Stijl, minimalist architecture was influenced by traditional Japanese architecture. Due to an appreciation of plain and simple objects, traditional Japanese design has always revolved around the idea of minimalism and focused on adding only what is needed and removing the rest. (Study.com, sd)

According to Gudkova (2016), minimalism provides several benefits, on an architectural standpoint for example lots of light, but more interesting are presumed social benefits; the value of freedom, time, nature and peace.

Not only do former architects provide this information, but present-day sources provide the same philosophy (Rathore, sd). Other sources will go even further and will argue minimalism provides more focus and promotes productivity, but the benchmark for these investigations are mostly averaged out to be people with a "regular" or even "long" attention span.

This essay will relate to the effects of an architectural minimalist design on patients with lack of this "regular" attention span. A short attention span can be a symptom of different health issues like, but not limited to, ADHD, Anxiety, Depression, Medication and Thyroid problems. Other symptoms of these mental health states include impulsiveness, mood swings, poor time management, continuous anxiety, indecisiveness, problems with memory and / or sleep (Liao, 2021) (Nall, 2019). To keep the research narrow, seeing the size of this essay, this essay will only be focusing on ADHD, as much research has been done about the symptoms, but not yet about the combination of minimalism and ADHD.

Because of above mentioned literary sources that argue minimalism promotes focus and productivity, one could ask oneself if it could be an (or even the) solution to minimize the attention deficit symptom of ADHD of adults. An environment in which productivity could come in hand is for example the office environment. Offices can get varying designs, for example the interactive design of Google, or a mostly white design, to keep it calming for the users. But what would be the most beneficial design for users experiencing attention deficit symptoms of ADHD? Because one is easily distracted, a logical hypothesis could be that a calming office would be preferred, due to a lack of distractions in the visual environment. The research question of this literary investigation to give a conclusion on this, is as following:

How does minimalist architecture affect users in an office setting with ADHD with regards to productivity?

The research will be divided in parts which are led by the following sub questions, following with a recommendation:

1. What is minimalist architecture?

2. How do adults with ADHD causing an attention deficit experience and work in an office environment?

3. How does a minimalist architectural design affect productivity of employees with ADHD symptoms?

This essay will be written using existing academic research. These will be searched for using several search terms: ADHD, Work, productivity, minimalist, minimalism, architecture, interior, environment and design.

Minimalist design

To start off, a rather important concept will have to be enlightened, the term minimalism in architecture. Reading several sources, minimalism seems to be a rather vague concept, being described with a lot of words, but not so much concrete terms or simple rules. According to some sources minimalism is even subjective, determined by the emotions felt by the

observer (Stevanović, 2012). Not a strong start off for the research, because setting the boundaries for this literary research is made difficult. What might even be more important is to question which emotions are meant. Peace possibly? Because this seems to be the general concept from literature. But this peace is even more subjective, how could this be made measurable?

To first look back at the definition of minimalism a little more, how does design look like when it is perceived minimalistic? According to Valsilski & Nikolic it is based on aesthetical and functional patterns. This comes from the fact it is an opposing movement to mass consumerism, which would have caused the overbuying of unnecessary objects leading to an overload of visual effects. A minimalist environment would bring "an oasis of peace in the cluttered and visually noisy space". (2017)

Several characteristics which are ascribed to minimalistic architectural and artistic styles are reduces forms, geometric shapes, a monochromatic and primary colour palette, simplified lines and flattened and clean surfaces, all coming down to "simple and reduced design" (Vasilski & Nikolic, 2017), with the least clutter possible. Non-essential elements are neglected, emphasizing the basic element or as the French writer Antoine de Saint Exupéry says: "perfection is achieved not when there is nothing more to add, but when there is nothing left to take away." Valsiki also calls it the "irreducible minimum", seeing as the actual minimum is not the basic value. (Vasilski D. , 2015)

Characteristics which are more general, called upon by Stevanović are also more centred around architectural design: minimal imagery, general strictness, repeating elements, technical precision and materiality, monolithic and simplicity of design, the distortion of proportions and pure expression without referring to historical allusions (2012). Another important aspect is non-materiality, expressed through natural materials, natural light and shade, shape and colour, with the importance of not the material itself, but the way it is used. The natural light is treated as a material as it has the ability to give life to materials (Meyers, 2006). Geometric shapes are defined as one basic shape or a few similar ones, as well as orthogonal forms. White as the base colour of the design is of great importance, because it emphasizes emptiness. But most important to keep in mind it is that a minimalist design is not focussed on achieving the actual minimum possible, but more so the "irreducible minimum".

But even after these concepts, how would the interior design of an office look like when it would be a "minimalist space". Seeing minimalism can be seen as the "art of the essentials", being perfect when there is nothing left to remove, then how would an office look like? And who would have to determine what the essentials are? Because essentials could be different from person to person, except for a couple basic ones, that everyone needs. Like a computer in the office environment. Or a write board to write thoughts down. Another important aspect to notice, is that minimalism is seen as function combined with simplicity (Vasilski & Nikolic, 2017).

In another source, minimalism is described as the opposition to accumulation, the maximalization of consumption and productivity, which are both essential to economic growth. Full time labour and busyness get renounced (Meissner, 2019). But then if the style minimalism is about the opposition of productivity, how could it even be beneficial for an employer to add it to the workplace, as it is probable he will lose profit. When it is not about full-time labouring, could minimalism make one productive enough, even more a worker with ADHD, to give back enough worth to the company and make it profitable to only work part-time? For example in the sense of four or even only three days in the week? Could the transfer from the full-time working employee to only part-time working employee, for example, make one more productive or creative. Instead of the tiring eight hours per day, could one work six hours per day? Because if one has the time to relax and bring the mind to rest, it could get to new hunches, which can potentially help the company creatively.

Or is minimalism the complete opposite of productivity, if minimalism is about the opposition to productivity? What does "productivity" mean and how can it even be measured?

Productivity has been called out to be rather

complex to describe. In several sources productivity has been defined as "the amount of outputs achieved by the use of various resource inputs compared to a similar ratio for a particular period" (Mundel, 1986). According to other sources, productivity is generally expressed in terms of efficiency, which means increasing the output for the same input or achieving the same output with reduced input will increase the productivity (Oseland, 1999; Haynes, 2007).

But defining productivity in the context of the office is challenging, as different tasks can require a different amount of time or different set of qualities and productivity is influenced by many factors (Buttonwood, 2013). One source has attempted to define productivity in the office as the amount of work that an employee accomplishes in a specific time frame (Pavlina, 2005). In this case it would be helpful if the productivity of employees with ADHD gets increased towards the level of productivity of the "general office worker". But defining what these levels are and if these get reached when the tasks are divergently different per office is nearly impossible. Even more so, because the specific influence of components on productivity is difficult to extract, seeing several factors cannot even be isolated (World Building Design Guide, 2012). This is also apparent in available research, as no sources with numbers or definitions could be found using used research terms. Nor would it be a fair comparison, seeing some people might have other disorders resulting in attention deficit, or, contrariwise, huge amounts of focus. for an user with ADHD.

Resulting, it would be more realistic to look at the current focus in relation to the distractions of an office worker with ADHD and look at how to improve this, instead of the comparison with "the general man". Afterwards, the minimalist architectural style can be compared to discuss if this would be an ideal situation

ADHD in the workplace

The main focus in this research are office workers with ADHD. Compared to office workers without ADHD, those with ADHD have a lower occupational rank, are more likely to be fired, are less likely to be employed full time, and are more likely to have a lower household income.

Most of the difficulties of ADHD centre around an inability to focus on tasks and use working memory. (Mannuzza, Klein, Bessler, Mallory, & LaPadula, 1993; Shifrin, Proctor, & Prevatt, 2010; Kleinman, Durkin, Melkonian, & Markosyan, 2009; Biederman & Faraone, 2006; Brown, 2008)

Symptoms of ADHD result in deficiencies in the areas of activation (organizing and prioritizing tasks, avoiding procrastination), focus, effort, emotion, short-term memory, and action/ impulsivity comparing to other workers. (Brown, 2008) According to a source, effective job performance relies on good time management, organization, problem-solving skills, self-motivation, and sustained focus. Deficits in these areas have been shown to contribute significantly to problems in the workplace and outway strong work ethic, adequate intellect, and appropriate motivation (Feifel, 2008; Barkley & Murphy, 2010).

Several symptoms of ADHD that cause complications in the working environment are shown in table 1. These symptoms together are associated with an average of 35 days of lost work productivity annually due to absenteeism or to low performance while at work (Kessler, Adler, & Ames, 2005), while being consistent with the stereotypical perception that individuals with ADHD have "impaired brain functioning and an inability to concentrate characteristics that are detrimental in a work environment" (Smitz, Filippone, & Edelman, 2003).

The diagnosis of ADHD is based on 18 symptoms categorized as inattentive, hyperactive, and impulsive (American Psychiatric Association, 2000). This study takes inattentiveness as its main object, taken this gives the problems with focus and productivity in the workplace, but other studies regarding the same interest can definitely be done, taking the two other categories as main subject.

ADHD Symptom	Expression in the Workplace
Inattention	Inability to focus on instructions or activities that require sustained mental effort Difficulties with information recall Increased number of errors Inability to meet goals or timelines Ineffective time management Procrastination Lack of organization Tardiness Absenteeism Increased accidents and injuries
Hyperactivity	Inability to sit still Roams, disrupts other with restlessness
Impulsivity	Speaks out of turn, interrupts others

Table 1

Symptoms which cause complications in the workplace combined with their main symptoms (Mao, Brams, Babcock, & Madhoo, A Physician's Guide to Helping Patients with ADHD Find Success in the Workplace, 2011)

If attention deficit results to the inability to focus in an environment, like the work environment, could it be beneficial to lower the amount of aesthetic / visual stimuli in the environment, to lower the option of focusing on other aspects?

Some sources suggest adults with ADHD may be better suited for careers that focus on creativity and spontaneity and frequently changing tasks rather than sedentary or repetitive positions that require attention for detail (Painter, Prevatt, & Welles, 2008).

But then what if a worker with ADHD does prefer jobs in the office or jobs that require attention for detail? And why would these workers even be beneficial to an office, because concluding from most literature they seem to have some flaws that workers without ADHD don't. Well, adults with ADHD tend to be more resilient and creative, have foresight and can generate ideas fast, which can offer performance advantages where rapid decision making or creativity is required (De Graaf, Kessler, & Fayyad, 2008; Feifel, 2008; Painter, Prevatt, & Welles, 2008). This also means they will in all probability be more successful in a stressful environment in comparison with a colleague with the same qualities, but without ADHD. If adults with ADHD are unmotivated by predictability, can they be motivated by the ability of changes in the environment whenever they would like to? Possibly flexible work spots would even be enough to motivate.

The importance of productivity

Seemingly adults with ADHD in an office environment are less productive, but why would it even be important to be productive and efficient? Productivity is of importance because business is competitive and human capital assets, the employees and the intellectual value, is one of the key components to company's success (Marilyn, 2007). If a worker with ADHD does have the motivation, intellectual value and might even be the best candidate for a position, a loss in productivity might be the reason one is not chosen. This means it is possible the best qualities available in a company, will not be put to use. Furthermore, workers that are productive feel more accomplished. Adults with ADHD have told before, they feel less accomplished due to a loss of productivity, resulting into feeling less happy. Another aspect to take into consideration is that workers will be less likely to go work at an office that is not inspirational versus one that is, because a modern and inspirational office is recognized as one of the most important criteria for choosing a job (after salary or professional development) (Marilyn, 2007).

Another aspect to focus on when designing an office is that employees, not only those who suffer symptoms from ADHD, with work-related stress are less productive and absent more often. Permanent stress

is the reason of many health problems. A good office design can be an effective factor to reduce employee stress and increase productivity. (Papiers, 2017)

Because of this, going on, this research will not just focus on productivity anymore, but also on the stress of employees due to the office environment. The hypothesis is that more visual stimuli to the end of overwhelming, leads to stress. Less stimuli will do the opposite and thus cause an increase in productivity. Not only for the general worker, but even more so for workers with ADHD, because stimuli would lead to distraction.

Techniques that would be applicable to lower stress levels in an office could be ergonomic furniture, natural light, plants, relaxation zones, a gym, a dining area and appropriate colours. Concepts such as Activity Based Working, Coworking, Biophilic Design are others to incorporate. Nearly none of these concepts are one an architect or designer of the visual appearance can incorporate. Some of these aspects have to be brought into use by the office itself. The aspects that would be able to change visually are the amount of natural light, plants and appropriate colours. The other zones, could be assigned to design by the architect, but are not perse applicable in the environment of one employee, but rather to a bigger scale; the whole possibilities in the whole office. (Papiers, 2017)

An important definition to talk about, is the one of stress, which is defined in Oxford Dictionary as a "state of mind, tension, anxiety which is caused by unfavourable circumstances" (2022). Under the influence of stress, an organism produces more substances, among others adrenaline, which improves the body performance but only for a short period (Lake, 2013). A too long period of stress reduces initiative, creativity, commitment and motivation, increases. Allowing employees to relax during working hours, possibly through design, increases productivity and relieves stress. (Lake, 2013)

There are two different sources of stress at work. It can be both physical stimuli such as noise, inappropriate lighting, too high or too low temperature and psychosocial stimuli (KISIEL-DOROHINICKI, 2012).

ADHD and productivity

A logical connection would be when if the productivity and health of the "general" office worker gets impacted negatively from excess stress through stimuli from the environment, someone with ADHD, who is more easily distracted, will also get less productive, if not worse. This would mean a minimalist environment, with the least possible stimuli, would be the best environment for an office worker, both with and without ADHD. But it is speculated individuals with ADHD may be able to lessen their symptoms of ADHD in adulthood by selecting high-stimulating working environments, if these are suited to their personalities (Barkley & Murphy, 2010). One study found that the difference of the extent of symptoms of ADHD between children and adults is caused by this difference; the option to choose ones environment. Reliant of this difference, two out of three adults diagnosed with ADHD as a child, perceived less symptoms than they did as a child. This can be explained by actions and thoughts arising from interactions between individuals and the environments in which they exist, which is explained through developmental psychopathology. (Rinck, Becker, Kellermann, & Roth, 2003)

Another source suggest the opposite; the physical workplace can best be customized to easily organize and minimize distractions (Sarkis, 2014). So if one source suggests the physical workplace can best be customized to organize materials and minimize distractions and another one says the opposite, what would be reality? Is there even a perfect setting or does one with ADHD need other commodities than another, because the origin of the ADHD actually might be different?

Most research does emphasize an adult suffering with attention deficit because of ADHD, is most probable suffering this because he or she is bored easily, causing this adult to be unmotivated. This motivates the theory that attention deficit is not static, but is actually the

inability to appropriately regulate the application of attention to tasks that are not intrinsically rewarding or that require effort (Rinck, Becker, Kellermann, & Roth, 2003).

This also motivates a tendency towards distraction translates into dysfunctional behaviour only in environments without enough stimuli. When stimuli arise, this will put stress on the adult and makes the context motivating, so distraction diminishes. According to literature this will make these employees work like they no longer suffer symptoms of ADHD. (Laksy, et al., 2016)

Concluding from this research, it might be beneficial to put adult suffering ADHD under distress, just for a short while or maybe even longer, to give them the ability to be creative and productive. In this case it is also important to grant these employee more free hours to let them rest and prevent them from experiencing to much stress, leading to health issues.

As can be read in the first part of this essay, minimalistic environments tend to have the least stimuli possible. Due to this, one can perceive these bore easily, granting these are totally unfit for persons experiencing symptoms of ADHD trying to be productive or even just trying to get some ease of mind. One could even say that in an environment with a lot of stimuli an employee with ADHD would be more productive or efficient than an employee without symptoms of ADHD. Important to keep in mind though is that each individual does have different strengths, weaknesses, intellectual abilities and severity of impairment (Mao, Brams, Babcock, & Madhoo, 2011).

Even when most do not perceive a positive impact on the mental wellbeing and productivity levels, some could still perceive the minimalistic aesthetic as one "suited to their personality". This is still dependent of the adult him- or herself.

Conclusion

To conclude this essay, the answer of the research question, which was as following:

How does minimalist architecture affect users in an office setting with ADHD with regards to productivity?

Can be answered with the revelation that a minimalist interior is not advised for users with symptoms of ADHD, regarding attention deficit in the office setting. This is because the user will become bored easily and will not be able to apply ones attention consequently to the wanted focus point. An employee would nevertheless benefit of an design with multiple stimuli causing stress, because of one's ability to focus in such environment, which is not advised for employees without symptoms of ADHD.

In this case it is advised to give more time off work to prevent health issues caused by long term stress.

When reading this essay, one must take into consideration it is just a brief overview of the available literature, due to it being just a small essay, written in

just ten weeks. A considerable amount of sources is used in this paper, to grasp the concepts of minimalism and ADHD, as neither has a clear stated definition and much research is done.

Unfortunately a lot of literature is outdated, as the available literature within used search terms barely are barely published within past ten years. This is partly to thank to the negligence of the relationship between psychology and architecture. In the future it is strongly advised to do more research to the connection between both branches, because as one could understand from developmental psychopathology, in which one argues, one's thoughts and actions arise from interactions between individuals and the environments in which they exist.

Further research into the connection between ADHD and the productivity and wellbeing, is also recommended. This could be research towards the specific attention deficit effect of the several symptoms, but research towards other symptoms could very well result in new revelations. Another research possibility lies in the relation of the research of this essay to other attention deficit disorders, as symptoms are corresponding, but conclusions could be different because the origin of the symptoms is very different.

Lastly the research could be expanded towards children at school with ADHD or for example the possible importance of a differently designed environment between the office and the home environment, because one spends a lot of time in both. If both designs put out the same stimuli, this might bore too.

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HEALTHY ARCHITECTURE FOR CHILDREN

The design of kindergarten for the development of the child

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4594126

The term "kindergarten", descending from the German language, dates back to the 19th century. The first to depart from the mechanistic training in young children to the encouragement of play activities, Friedrich Froebel (1782-1852), referred to this analogy as "The playground is a Garden of Eden" (Day, 1996). The image of Adam and Eve's innocence in the Garden of Eden and young children possessing the pure spirit of natural phenomena. He refers to the notion of the school as a metaphorical garden, insinuating to the idea of the children as unfolding plants. The word Kindergarten was invented by Froebel as he symbolised his vision for early childhood education:

"Children are like tiny flowers; they are varied and need care, but each is beautiful alone and glorious when seen in the community of peers."

(Froebel, n.d)

According to Froebel, kindergarten should be a microcosm of the positive diversity from the real, adult world. Kindergarten as a city of children. A place which takes into consideration the needs of children at a specific stage of their development. Children need to be nurtured and cared for just as plants in a garden. With emerging information supporting children to have the ability to focus and expand cognitive and emotional skills, Kindergarten became a place for the development and flourishing of children through self-directed play with the supervision of a teacher (Dudek, 1996).

Early symbolic interactionists referred to the importance of non-human objects and places for the development of the self. George Simmel (1858-1918) was the pioneer for architectural sociology. His attention was brought to the consequences of the city with its intense social interaction, stimuli and continual change for the individual. There is an interrelation between the self and the city, and even more general, the self and place. One distortion in the physical environment may obstruct the individual and could in turn alter their behaviours and performances as a response to that environment (Smith & Bugni, 2006).

Environments affect how we think, feel and behave. It shapes our habits, norms and values and expectations of reality. As environments affect us physically and psychologically, it can nourish and destroy mental, social and physical development. Its influence is rather vigorous, especially during the summit years of human development; childhood (Smith & Bugni, 2006). Architectural sociology should serve as a fundamental aspect within architectural designing. Collaborations between sociologists,

environmental psychologists and architectural anthropologists should contribute to the architectural study of physical environments and their implications, especially in architecture for children.

This thesis intends to address the notion of healthy architecture for children. Healthy architecture can be defined to enhance the cognitive development of children. The necessity in understanding children's psychology and development in kindergarten design can answer the concept of healthy architecture. In order to respond to this aspect, a close look will be taken to the effects of architectural space on human behaviour and psychology. Thereafter, general influences on child development will be explained and defined, with a focus on children attending kindergarten. Finally, an interrelation between child development and effects of architectural space can be made.

The human in the environment

Buildings and the urban environment serve to provide places where we can live our daily lives. Every aspect of it shapes our actions and experiences, to which our experiences are determined by our individual perception. Humans rely on their senses to understand and interpret their surroundings. Environments therefore have a wide range of psychological effects on human life and its development (Mistrey, 2011).

Since the emergence of post-structuralism, belief rose that modernist architects lacked meaning and vitality. The notion of people's lives being shaped by events and experiences surfaced, and thus architecture needs to be intrinsically connected to the user's experience. Bodies, movement and senses are tangled in architecture and should be interconnected in design. Human senses are related to spaces and events, whereas events, in turn, are related to architecture and spaces. Depicting the relationship between architecture, bodies and events. Post-structuralism implies for architecture to design

regarding humaneness and not merely for vision or beauty (Mistrey, 2011).

Post-structuralism involves architectural psychology which refers to the school of thought that addresses psychological results in the urban and built environment on people through material, colour, light, pattern and shapes. Psychology is a soft science, with no strict set of rules, truths or predictions to be made. This complex department cannot not entirely anticipate how people will react to their surroundings due to its subjective aspects of emotions and senses. The general senses, taste, hearing, sight, smell and touch can be broadened with the additional senses of hapticity, kinaesthesia and synaesthesia. The main experience in architecture is hapticity which refers to the sense of touch in a three-dimensional way. The sense of the skin is the bridge between the body and the surrounding world. Kinaesthesia is the notion of exploring the world through movement, through the eyes or the body. Movement through space is the experience which adds the dynamic to architecture and an experience which can only be replicated on site. Synaesthesia is the phenomenon that transfers sensory information from one sense to the other (Mistrey, 2011).

Along with the rise of post-structuralism, the Gestalt theory emerged. Guided by the principles of holism, the Gestalt theory observes the human mind and behaviour as one and the whole. The whole is greater than the sum of its components. It is related to the understanding of an individual's perception of their environment along with space, objects and other people. The senses and the human mind work together to create the phenomenon of perception of the world around us. The perception and comprehension of the world around us depends on the appearance and actions of the whole instead of the individual aspects. Our minds tend to perceive objects as elements of more complex systems (Susman, 2022). The consecutive sensory stimulus of the world around can lead to a perception of patterns which can be understood through experience. This consequently ties together memory, experience and

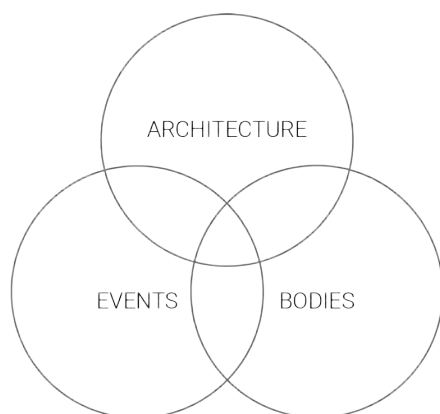


Fig I : Trilogy of architecture, events and bodies. Own image

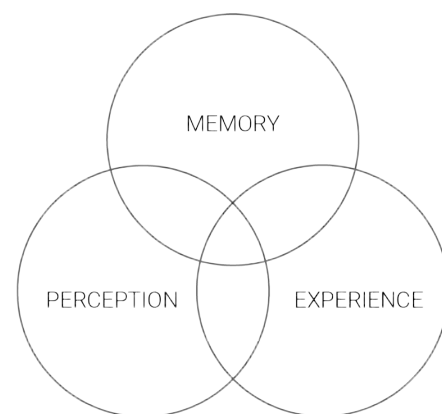


Fig II : Trilogy of memory, perception and experience. Own image

Midst of human development

Childhood is the most rapid stage of human development. The first years of the human life cycle, from birth to the age of eight, are the most critical to establish a healthy cognitive, social, physical and emotional development. Early childhood is an influential time for the determination of child growth, and behavioural and mental development. During these years, a range of stimuli influence the prosperity of the human being; their parents, genes, classmates, toys, and the natural environment. Through the sensory mechanisms of the visual, tactile, aural, olfactory and the haptic, a child's evolution is enhanced (Day, 2007).

A child's development is influenced by a continual interaction between the notions of nature and nurture. They contribute to the traits of human behaviour, such as personality, cognitive traits, temperament and psychopathology, a Gestalt for psychiatric disorders (Schultze-Lutter, 2018). Nature refers to biological or genetic influences on human traits, whereas nurture defines the influences from the individual's environment. Early childhood events and entourages have the most impact on what kind of adult we become, in comparison to genetics. Behaviour is a complex phenomenon that cannot solely be defined by a quantity of nature or nurture influences. It can not be expressed numerically or solved in a quantitative manner, but nature and nurture are constantly intertwined. Children cannot be influenced by genetics independently of environmental factors, but always cooperate to form human traits (McLeod, 2018).

Developmental psychologist and philosopher Jean Piaget (1896-1980) developed his theory of cognitive development in children which is influenced by the notions of nature and nurture. Similarly, he depicted this development as a combination of continuities and discontinuities that work together from birth to propel forward. Children are mentally active from the moment of birth from which mental and physical activities contribute to their development. Children construct intelligence for themselves in response to their daily experiences. The three most important continual processes are generating hypotheses, performing experiments and drawing conclusions from their made observations. Additionally to this theory, children gain more knowledge through their own successes and mistakes instead of depending on instructions from others. They are intrinsically motivated to learn, but do not need rewards from others when they do so (Siegler et al. 2017). The theory of cognitive development is based on four stages which are organised in patterns of habits of behaviour in daily life. Each stage represents a coherent whole to understand an individual's experience with discontinuous intellectual transitions from one entity to the next. In each stage, the child exhibits new abilities of understanding the surrounding world. The four stages are: the sensorimotor stage (birth to two

years), preoperational stage (two to seven

years), concrete operational stage (seven to twelve years) and the formal operational stage (twelve to adulthood) (Siegler et al. 2017). A child in kindergarten is situated in the preoperational stage. During this stage, a child commences to have the ability to manipulate information logically. A child develops the ability to think and understand its observations, but it does not have the competence to transform, combine or separate ideas (Lewis, 2020). They learn by experiencing the world around them without being able to manipulate the information they received.

During the stages of cognitive development, the environment has various interrelations with the development of children. Children in the first stage do not comprehend the phenomenon of distinguishment. Everything is a "oneness" in which they cannot separate their feelings and surroundings. As emotional qualities are accorded to things and places, the aspect of being is more important than the appearance of it. Inanimate things are mediators of the soul and will and thus children use their environment to understand themselves and their social relationships. As space and time consciousness develops, children develop self awareness too. They begin to form a distinction between the self and the environment to which the concept of the "mine" and the "I" emerges. They seek for their own personal space in their journey of individuality. Between the age of three and five years old, on the edge of the kindergarten frame, children commence to differentiate their own mood from place mood. On the border of the kindergarten period, the usage of space begins to wander in the children's mind. They begin with the creation of spaces with fabrics, furniture and other items which adults assume had other functions. From the age of seven on, children no longer duplicate their environment, but distantiate themselves from their surroundings. They are led by feelings accorded to events for inspiration and willingness to learn. Their conscious emotions are emerging and begin to understand the notions of right and wrong. It is only from the age of eight and nine years old that their sense of space rises. They begin to envision space and move around it in their minds. Whereas young children learn through the sense of touch and hapticity, children of this age understand norms and values without the need of bodily experiences. They evolved from the ability to copy and observe to the awareness of the individual. Around the ages of thirteen to fifteen, teenagers attribute conscious values to aesthetics of their surroundings. Surroundings can make them feel positive or negative about themselves (Day, 2007).

A multitude of researchers have been investigating the development of children, to which they all have a similar outcome. Active construction of knowledge in children can be achieved through discovery and curiosity, which

can only be activated through perpetual interaction with the environment and people. Environments in which children are not engaged to be curious to the world around them, will not motivate them to learn by themselves.

Invisible education through architecture

As stated, the early years of a child's life are particularly important for the development of human life. Many children spend most of their days in kindergarten; environments that become their microcosms of cognitive, physical, emotional and social development. Buildings and spaces designated for children should be designed to positively influence them and their progress of learning about life. Spaces should be designed to make children feel safe and secure in order to develop in the unconscious. Architecture should support the health of children through the prosperity of development. There are a lot of aspects known to please a child's perception and sensation of a space, such as material, colour, noise and many more. However, what should the architecture in kindergarten stimulate to become healthy for children?

As adults perceive the world through perception, memory and experience, children are lacking knowledge of the world. Children form a connection to their environment through the use of all of their senses to which their perceptual systems evolve during the period of infancy. Through exploration and unambiguous interaction with their environment, children broaden their mental and emotional abilities. As motion and touch permit children to obtain more information, kinaesthesia becomes an important aspect in designing spaces for children. A child's environment should force a child to be alert to

external stimuli by means of movement, and social actions should encourage them to form a connection with that place. Personal connection between a child and its entourage is needed to create opportunities of engagement, discovery, creativity and revelation. Allowance of gradual change or diversity keeps the child constantly fascinated. Adults have the ability to classify spaces and buildings as distinguished functions, whereas children allow their imagination and creativity to transform spaces into their own little worlds (Mistrey, 2011).

Christopher Day (2007) uses the word predictable to define spaces that are safe and legible, but yet stimulating and flexible. Growing up in predictable environments filled with character, giving children the opportunity to create personal identity along with place identity and emotional security. However, predictable environments can also become unexciting for children causing a lack of identifiable character. When children are placed into such uninteresting spaces, without the overview of an adult, A common issue in many schools can evolve; bullying. This problem can scar children for life, but the bully can also be caused as a result of insecurity due to its environment. It can be argued that bullying could be decreased through the correct formation of scholar architecture. The implementation of defensible space and no unsupervised areas should reduce opportunities of the emergence of aggressiveness. Children attending kindergarten can often distinguish moods to a place and begin to be interested in the usage of space. Once children can be aware of their individuality, they inhabit a world in the midst of themselves and the environment. It is an untouchable space between fact and fantasy, in which they have the power to shape creative thinking and

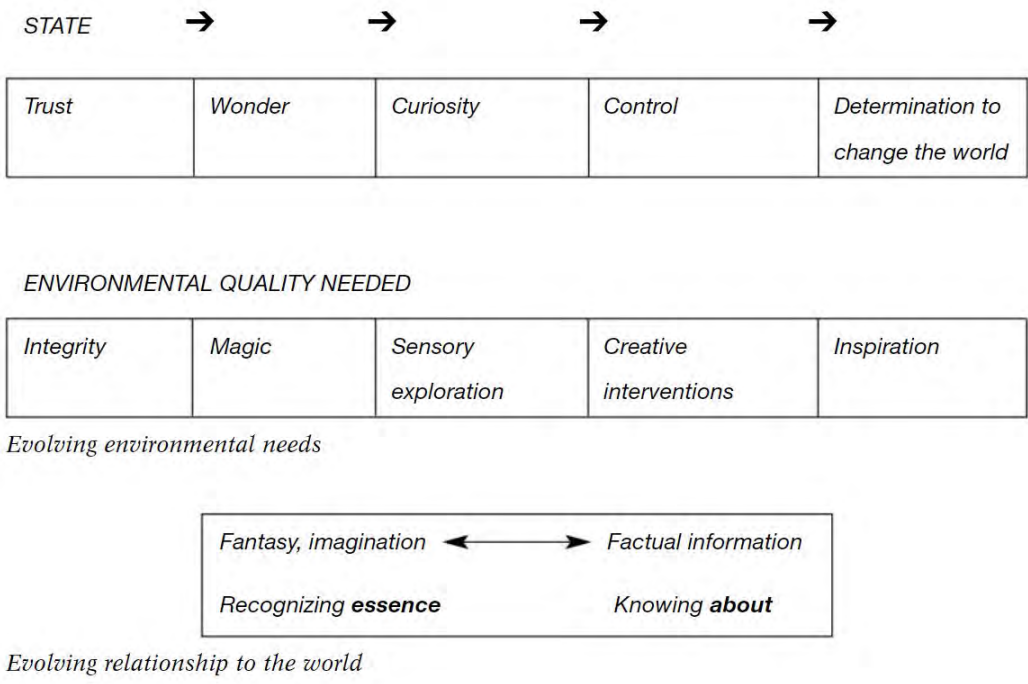


Fig III : Interrelation of fact and fantasy (Day, 2007)

achieve individuality. Imagination guides children to regulate thoughts and feelings, to which fantasy and symbolism is essential for the intellectual and emotional development of children.

With the consideration of imagination in architecture for the young, sterile buildings and rectilinear rooms extract the fantasy out of the child's mind and withdraw the envy to play in a creative manner. Adaptability is necessary for the increase of creative play, and solid buildings can permit a sense of security for children. Experiential possibilities in the surroundings increase their inventiveness and challenges provide children the option to explore the little world of kindergarten. Simple architecture can convey moods and character recognisable for children. Mood individuality in spaces can transfer distinguishable identities that they can optionally relate to function; cosy and warm, spacious and airy, soft and quiet or light and open. This distinctiveness in spaces has a major significance for the building of identity and character, but it should preserve coherence throughout the whole. A lack of coherence can cause children to feel disjointed and insecure, as they can not understand their surroundings. Creating this sense of spatial individuality has its focus on the usage of form and materials. Hence the broad research about the application of colour in children's environments (Mistrey, 2011). Children are the main characters regarding their own development in which the environment should be the reactor to allow children to be in a constant interplay of activities that stimulate their development. The cognitive development of children is a reaction of the entire ecological environment in which a child has been placed by external factors. Areas should be distinguished and give children the opportunity to choose a place that matches their current mood. A messy or clean, soft or intense space can correspond to various envies of children, it should engage in their level of activity and physical energy.

An important aspect of kindergarten architecture is the open versus closed plan facilities. This reflects on the relationship between spatial flow and the child. Closed-plan facilities have, against expectations, more noise disturbance and less structure activity arrangements. Open-plan facilities, on the other hand, endorse the application of organising the space into a multitude of large and small spaces that allow children to have an overview of the possibilities of playing, while also providing an intimate space in which they feel protected from noise and visual disturbances (Dudek, 1996).

Contradiction lies central in children's developmental needs. The conflicting ideology of the known and the unknown or the challenge and stimulation in contrast to the reassuring constancy characterises the conflict of child development. Stimulation is essential for a healthy life, as life would become boring without. However, unrelieved stimulation can cause stress to emerge, and thus children need the space to release this energy. A combination of stimuli enhancing areas and areas

lacking stimuli where calmth can be found, should be available within the same environment. The necessity for balance between the sameness (or predictability) and contrast (stimuli).

With the emergence of post-structuralism, humanness in architecture has taken its space in architecture. Psychology of space and its impact on humans is important to take in cognisance when designing for children. Adults sense the world around them through the trilogy of memory, experience and perception. Children are lacking the essence of memory and experience, and consequently perceive the world differently. As children are born as a blank slate, with no experience of the world, they are easy to influence. Behaviour and development are complex phenomena, which can not solely be dependent on nature or nurture. It is influenced by the perceptual interaction of nature and nurture. Early childhood events and surroundings have a significant impact on the adult the child evolves to. The sense of kinaesthesia and hapticity become the leaders in their unconscious exploration of their surroundings. During the stage of kindergarten, the environment influences the notion of the self and can enhance social relationships. They begin to understand functions of space and can become frustrated when those are not comprehensible. Active construction of knowledge can be formed through the alternation of discovery and curiosity, in which children are engaged to be curious to its surroundings. As children spend most of their childhood in kindergarten, its environment, and thus nurture, has a great importance on the child. Healthy architecture for children can be defined by its ability to improve cognitive development. It is a complicated matter, in which contradictions occur. Spaces should be stimulating and flexible, but calm and secure at the same time. Spaces should stay interesting, but also have the opportunity for children to lose the realm of the stimuli. Individuality should be supported, while also giving children the space to hide in the crowd and the dynamic. Buildings should give freedom to express their imagination that will energise children to creative play through inventiveness and challenges. Healthy kindergarten architecture are spaces and buildings that are designed to become a medium for the cognitive development of children through active and exciting architecture, whilst also allowing children to seek for serenity. Architecture for children is of major significance for the development of the future self and should be carefully considered when designing. As a Swedish proverb mentions:

"The child has three teachers: first - other children, second - tutor, the third - space"

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Experimental

08 City Design for low-rise Jasper Koops

The thesis provides options for high-dense cities with limited space to expand in a sustainable way using low to medium-rise typologies. The most important factor for dense cities is minimizing the need for long distance transportation of people and goods. For an effective decrease in infrastructure and more independent neighborhoods, there is more needed than just investments. People need to be able to accept live with less private space, in exchange for living in the city. Two conceptual urban models are provided that can be used as a starting point.

09 UNSOLVED Jaqueline Mongeroth

This essay attempts to unfold new possibilities for dealing with complex problems and conflicts in the city by deliberately experimenting with conflicting situations during the design process. Starting from Richard Sennett's findings in his "Homo Faber" trilogy on cooperation and connecting them with the underexplored concept of design diplomacy, a new process of design is proposed. In this new way of doing, diplomacy becomes a central skill to be developed both by the designer and the habitants of the city, in a diverse, inclusive, and cooperative process. Moving away from the idea of conflict resolution and focusing on the learning process behind conflicting encounters, the co-creation of the built environment could in turn create more diplomatic, cooperative citizens.

10 The Hierarchical/Egalitarian office Nick van den Oever

The office layout is to some degree a reflection of how a company functions internally and how it wants to be perceived by potential clients. The aim of this research is to differentiate the perceived image of a hierarchical office culture from an egalitarian office culture, and how this may reflect the office layout. The research consists of literature studies based on the sociological influences of office design and several case studies highlighting specific elements that influence this relevant matter of companies with a strong hierarchical or egalitarian work culture. The emphasis of this research is on the different characteristics within a company that are associated with a certain work culture and how this directly influences the office layout. The results can be used to define the "hierarchical office" and the "egalitarian office".

CITY DESIGN FOR LOW-RISE

Designing for sustainable city expansion based on low-rise

Jasper Koops
4671732

Problematization

High-rise is often seen as a fairly sustainable option for fast city expansion. However, recent studies have questioned the sustainability of dense high-rise cities in comparison with low-rise cities with a similar amount of citizens. This recent development became visible when considering the entire life-cycle of a city's built environment (Butters, Cheshmehzangi & Sassi, 2020). Medium and lower rise typologies offer advantages in terms of energy and climate. Most research about this topic assumes that high-rise is the only option and necessary for growing cities with limited space available. This research on the other hand will focus on using low-rise cities as a starting point, instead of only attempting to 'paint' the high-rise cities green (Moore & Brand, 2003).

The increasing amount of high-rise buildings has led to another problem, the decrease of social qualities. Resulting into a negative impact on health and well-being of citizens. The idea that high-density of cities creates less social interaction and more loneliness than small towns seems like a contradiction. More people should imply more interaction. However the increased globalization gave us the options to only interact with people that are similar and have the same opinion as us, wherein were not willing anymore to befriend our direct neighbors anymore. This only brought us further from each other. Maybe there should focused on creating more smaller communities (Meredyth, Hopkins, Ewing & Thomas, 2004).

At the moment many large cities deal with housing shortage which are, because of the limited space, often solved by high-rise. City development is focused on making one-off landmarks to show off, which don't benefit the citizens and have no connection with the overall city (van der Berg & Toornenaar, 2018). Is high-rise the only option for these cities? Therefore the paper will provide options for high-dense cities with limited space to expand in a sustainable way using low to medium-rise typologies.

Methodology

This research will be done in several parts. The first part will be about what the most important factors are that make a city sustainable. Therefore this part shall aim to get a better understanding what the role of density is in the context of sustainable cities and what makes high-rise cities so unsustainable.

In part two, there will be looked at how to improve/make high-dense cities and how the density of existing cities can be increased. This will be done by studying several case-studies on large medium-rise cities, like Paris and high-dense suburbs in Tokyo. In addition, with solutions brought up by experts in the field, that apply to low-rise buildings.

The third part is about making conceptual urban models based on important factors found in the second part. These urban models will be

Part 1

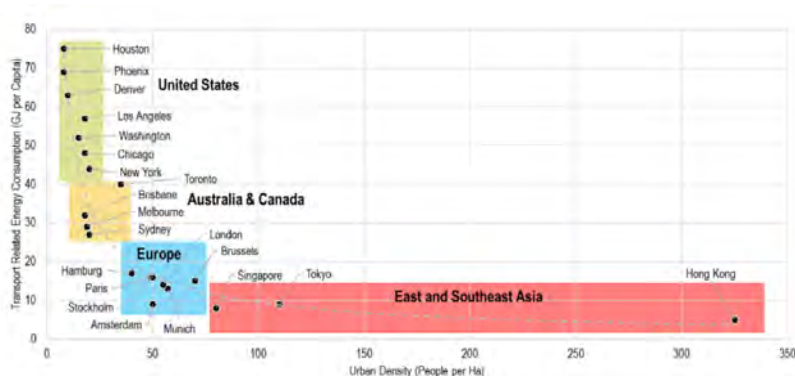
Density vs high-rise

To start, it's important to understand the type of density relevant for this topic. There is a big misconception that high-rise cities are always very dense. In a city with a lot of skyscrapers the building density (plot ratio) is often lower than that of lower typology cities (Ng, 2009). Even a city like New York city, famous for its many skyscrapers, doesn't even have a higher density than Paris. Paris can house more people, even with mostly low-rise buildings, resulting in a density of 145 thousand people per km². That is more than twice as dense as New York city, with only 70 thousand per km² (Small, 2016). Furthermore, the world's largest and second densest metropolis, Tokyo, achieves this feat with mainly low-rise buildings as well. Many houses in the Tokyo suburbs are not even more than two floors high (Smith, 2012). Only Hong Kong, the densest city in the world, has made use of mainly high-rise buildings. This result in a density more than 7 times larger than the average city (Rodrigue, 2020).

Recent studies, tested on existing neighborhoods, showed that taller buildings increase the greenhouse gasses emissions of the whole life cycle by +154%, while low-density urban environments increase the land use by +142%. However increasing urban density without increasing height reduces the most amount of greenhouse gas emissions, while maximizing the population capacity (Pomponi, Saint, Arehart, et al., 2021).

High-rise buildings have to be built further apart; for structural reasons, urban policies, urban regulations and to preserve reasonable standards of daylight. The increase in the building's tallness results to a reduction of its compactness, which is detrimental to space optimality. This leaves high-rise with a lower density than is expected. Furthermore, low-rise urban environments allow to choose from more construction materials than the standard steel, reinforced concrete, aluminium and glass, which are one of the most energy consuming materials to mine, fabricate and transport. It also limits the architectural creativity. The high-rise seen in cities like New York are not optimal. It is higher density that is needed for the growing urban population (Pomponi, Saint, Arehart, et al., 2021).

Hong Kong is often used as an example to prove that the sustainability of high-rise, however Hong Kong's achievement of becoming one of the most sustainable cities in the world has little to do with its 'green' high-rise projects. Many of the world's most sustainable cities can indirectly be related to their density. Higher density means a lower travel distance, resulting into a decrease in energy consumption for traveling. Transportation is the largest contributor to greenhouse gas emissions (Rodrigue, 2020). Most of the higher city density are created as the result of the limited space available, but this has also contributed to lower energy consumption. So, how do these cities create such a high density?



Urban density and energy consumption of large cities (Rodrigue, 2020).

Part 2

Spatial analysis

In the 20th century, cities developed new urban structures based on motorized transportation, particularly the privately owned car. Large modern cities usually increased around the main center until you can barely reach it anymore because of too much traffic and too far to walk. In old European city, everything was based on be able to walk, so the higher density came in naturally. If the city got too large that you couldn't walk to the market anymore, the citizens started a new city or new market center. This changed with motorized vehicles, where distance didn't seem to be an issue anymore (Rodrigue, 2020).

The amount of urban land devoted to transportation is often related to the level of mobility. In the pre-automobile era, only about 10% of the urban space was used for transportation, which consisted of mainly simple streets for pedestrians. Meanwhile, the amount of space used for motorized transportation, both moving and parking, is significantly higher. A motorized city devotes on average 30% of the surface to roads, while another 20% is required for parking. In North American cities have the highest amounts of roads and parking lots, account for between 30 and 60% of the total surface. This can be related to the low-density of North American cities, making motorized transport necessary (Rodrigue, 2020). This results in a snowball effect. The lower density increases the use of motorized vehicles, creating more need for roads and parking lots, lowering the density further as a result.

According to research in the Paris region, the private car accounts for 33% of total trips, which consumes 94% of road space/hour. While the bus, with 19% of total trips consumes only 2,3%. In other words, a bus consumes 24 times less space per passenger than a single car. Other public transportation does consume even less

space. A full train decreases the space usage from 16 m² per one person in a car to less than 1 m² per person (Camagni, Gibelli & Rigamonti, 2002). An extreme option would be a complete metro station system where all motorized transport happens underground, leaving all space on the ground for pedestrians. High-density cities in south-east Asia have invested a lot into public transportation, since it is a prominent factor in keeping the high-density cities of large sizes mobile. The Tokyo railway network is one of the most heavily used networks, providing frequent, all-day service to central city and its surrounding suburbs (Calimente, 2012).

This does bring up the question on the optimal city size. Many of the world's largest cities can be labeled as dysfunctional because as city size increases, the rising operational and infrastructure complexities are not effectively managed. This results into constant traffic jams, damaging the mobility of the city (Rodrigue, 2020). Investing in more roads only solved the traffic jams temporarily. The increase of infrastructure in general leads to more usage of this infrastructure, because of the less traffic jams, resulting into the same traffic problems only a few years later (Harre, 2017). Even a successful public transportation system, like Tokyo's, has its limits. Intense traffic impact can emerge quickly, even if vehicle usage remains low (Barter & Paul, 1999). Therefore minimizing the need for motorized traffic should be the priority. Walking remains the most sustainable way of transportation.

Many European cities have seem to notice this and invest in making city centers car-free, giving the space back to the pedestrian. Some European cities go even further to get rid of the private car. Hamburg wants to be completely car-free by 2034, leaving all long distance travel to public transportation. The city has plans to change all highways through the city into one big public park. This will provide almost 7000 hectare of green space, making up 40% of the whole city. It brings the



Figure 2

This can also be done on smaller scale with 50 km roads. For example, the Krakeelpolderweg in Delft as seen in figure 3. Removing these roads would easily make enough space for an extra row of houses and keeps around 8 meter street for pedestrians and cyclists. There wouldn't be any need for a new urban structures, if new buildings can fill in the gaps created by the removed infrastructure. The car is slowly removed from the city and the future will have more efficient transportation options. At least that's the hope in European cities.

Meanwhile, most modern city expansion tends to focus on decentralization in a futile attempt to decrease the pressure on the city center. Starting over somewhere else tends to be easier, with no existing urban structures to take into account and cheaper ground prices. These urban expansions undermine the sustainable development created by features, such as density and diversity of buildings, seen in traditional European cities. Expansion plans consist of adding houses on the edge of the city, but without the same facilities that the center provide it only increases the traffic towards the center.

An effective way to decrease pressure on the city center is through polycentric urban structures. Creating multiple compact centers that can function on their own, well connected through an effective network of public transport (Camagni, Gibelli & Rigamonti, 2002). This prevents the need for long distance travel and makes space for pedestrians, which can be further improved

by making car-free areas. The streets changes from traffic area to public space, creating a place to stand and interact with others, instead of constantly on the move.

The step towards a more polycentric city is another important factor that made Tokyo one of the best livable cities. The Tokyo government puts railway ahead of roads, expanding their networks through the city and even underground. Offices and shops are clustered around transport hubs, promoting the use of trains and subways. Tokyo Created many small hubs that helped to make the city more polycentric. With it's safe neighborhoods and clean streets Tokyo proves, that it's possible to have a livable city at any scale (Sumner, 2021). However, there is still a lot to improve to make these hubs independent.

In theory, the urban areas could develop in so called urban villages, where the neighborhoods are completely independent and have no interaction with each other. However, this is unlikely and has no example in the real world. The spatial distribution of shops and businesses tend to benefit from a central position to maximize the costumers. They are unlikely to only operate in their own neighborhood, especially for large or highly specified businesses. This will always create some sort of main city center (Harre, 2017). Therefore, proper infrastructure between neighborhoods remains necessary. Not just for people, but for goods and services as well.



Figure 3

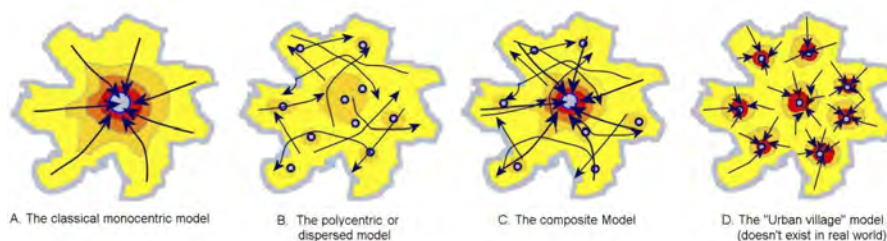


Figure 4

Urban farming

Another large problem for high-dense cities, the food distribution. 15% of the global greenhouse gas emissions can be attributed to international trade, mostly in food and other biological products. Food production is often outsourced to large scale farmlands, long distances away from the consumers in the cities (Porter, Dyball, Dumaresq, et al., 2014). This result into the need for a lot of traffic and infrastructure. Even effective densification designs, like the polycentric urban structure, seems to be primarily linked to more efficient use of the public transport and reduction of private car usage. Food supply seems to be mostly forgotten (Vale & Vale, 2009).

Not only the transportation, but also the production of food itself need a lot of space. According to the 'fair earth square' defined in 1996, it shouldn't take more than 1,8 hectare to feed a person. The average in the western world is like 1,63 hectare leaving very little space left for buildings, transportation and clothing, while the world's population continues to grow (Vale & Vale, 2009).

In the late 17th century, Paris was a hub for urban agriculture and nearly agriculturally self-sufficient. Back then, the amount of land used to supply one person with fruit and vegetables was around 50 m². The food production could be more incorporated within the city and produce food for local usage. However this still uses a lot of space, decreasing the overall density of the city (Apur, 2017). Unfortunately, most large cities do not have the land available nearby to replace the large scale food production (Specht, Siebert, et al., 2014). To bring the food closer to the cities, more space is needed.

The solution could come in the form of rooftop farming. Previously regarded as unusable space, rooftops are being reclaimed for productive and sustainable purposes. First using roof space for solar panels and water storage, there is now a growing interest to use roof space for urban farming. This would not only bring the food production closer to the costumers, but also provide a lot of useful space for buildings. Paris is a great example, because it has invested a lot in urban farming on rooftops in recent years. Besides the potential of urban farming, green roofs also decrease heat stress and improve air quality and water storage, making the city more adaptable to climate change (Lin, Philpott, et al., 2017).

Rooftop farming can be done in the naturally climate of the city, but there is also potential for indoor greenhouses and other techniques, to create ideal conditions and further optimize the food production (the Guardian, 2019). It is unlikely that large scale production will be replaced completely. Filling all rooftops with urban farming won't be enough to provide food for all citizens, but traffic and need for infrastructure will be decreased drastically (Lin, Philpott, et al., 2017).

Urban farming also offers the opportunity to involve local communities with the food production. It is an option to leave the urban farming completely to professionals, but a combination with the local community seems to be more beneficial. This gives people the feeling that they have influence over their own neighborhood, which often improves their involvement and thereby strengthen their bond (Lin, Philpott, et al., 2017; Specht, Siebert, et al., 2014). However, urban farming can only be successfully embedded in urban areas, if consumers perceive urban farming positively and accept it in their community. Although the integration of urban farming embedded in a neighborhood is new and knowledge of citizens about the topic is quite low, the associations with urban farming seem to be mostly positive (Greibitus, Chenarides, et al., 2020).

Living space

The last factor that Tokyo uses to create such a high density is decreasing the size of their housing stock (Smith, 2012). Many cities already have quite small apartments, which are often seen as for the poor. But with the housing crisis that many cities face, even the wealthier starters struggle to buy a proper house. Land in the city is often very expensive. This results in either bigger houses build outside the city center or tall skyscraper trying to get the most out of the expensive land (Shearer, Bares, et al., 2018). In both cases, this does not contribute to more sustainable cities and leading to the same problems as mentioned earlier. Smaller houses could be an option for more affordable houses.

Large and expensive houses have proven to be less sustainable in many ways; socially, economically and environmentally. Large scale project are very difficult to change, while the city and its citizens continuously change demands. Smaller houses require less energy for materials, heating, lighting and can easier adapt. This makes small houses not only more sustainable, but also cheaper, quicker to build (Shearer & Burton, 2019).

Citizens see their house as their living space, more than just a place to cover from the outside weather and to sleep. This begs the question if large houses are necessary. Could the citizens start to live smaller, not just live in their house, but live in their city. Live less inside your house, but more in the collective public space. This creates more social interaction and stronger communities along the way. So far tiny houses, has mainly been individual houses on open gras fields, but not integrated in larger apartment buildings. The idea of living more sustainable and with less seems to be mainly connected to living in nature outside the city (Shearer & Burton, 2019). It seems to be difficult to make people excited to live smaller. So far, more compact housing is more used as an option to meet increasing housing demands, which unfortunately shows itself mainly in high-rise (Mutter, 2013).

The human perception of density

Higher density provides options to increase sustainability of cities and could solve the housing shortage in places where space is limited, but how does it affect the citizens. The human perception of density depends on how many people you come across, but is also depending on individual attributes and socio-cultural factors. This means that in many cases people can get used to the new situation. The unpleasant feeling of overcrowded areas is more felt by high people density than by high building density (Ng, 2009). This could be interpreted as that smaller streets would make it feel less crowded than bigger streets.

Narrow streets are often seen as unsafe and unpleasant. The problem is that narrow streets often have no interaction with the buildings, have only closed walls, resulting in dark places. According to research, the perception of pedestrian safety is mostly influenced by proper street lights. Followed by activities from other pedestrians, such as various business types, outdoor dining and street performers (Ng, 2009).

This does not mean that big open spaces has no value, but that increased building density has no negative effect on the social aspects. Large open spaces do contribute to more social interaction and are necessary for many social activities, like sport and other forms of recreation. Either way, high building density itself doesn't tend to create unpleasant feelings.

Part 3

Urban models

Now that the different aspects for sustainable city expansion have been analyzed and how higher density can be achieved, there can be worked on the urban models. In the models all building blocks are replacements for actual architectural designs. Like mentioned before, part of a city's quality is its diversity. The building blocks are kept small, since large project/buildings tend to be less flexible and therefore less sustainable over time. In the end qualities and demands are ever changing and so should the buildings. Furthermore, the buildings should have a roof suitable for either urban farming or public use. The urban models will be valued based on different aspect. These are:

- Density (the amount of citizens that the area can house)
- Infrastructure (the mobility through the city)
- Self-sustainability (The independence of neighborhood and the necessity for long distance travel)
- Diversity of buildings (the variation in housing types and diversity of the citizens)

-Flexibility (how easy individual building can adapt to new demands)

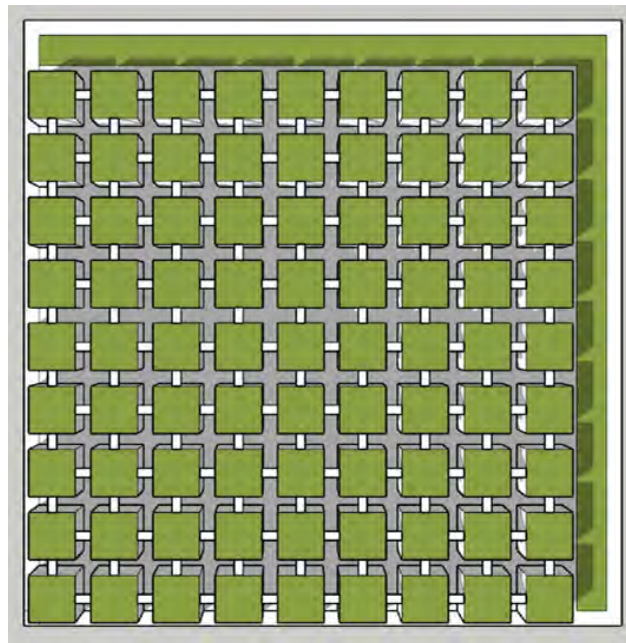
-Social interaction (how the design promotes interaction with other residents)

Option 1

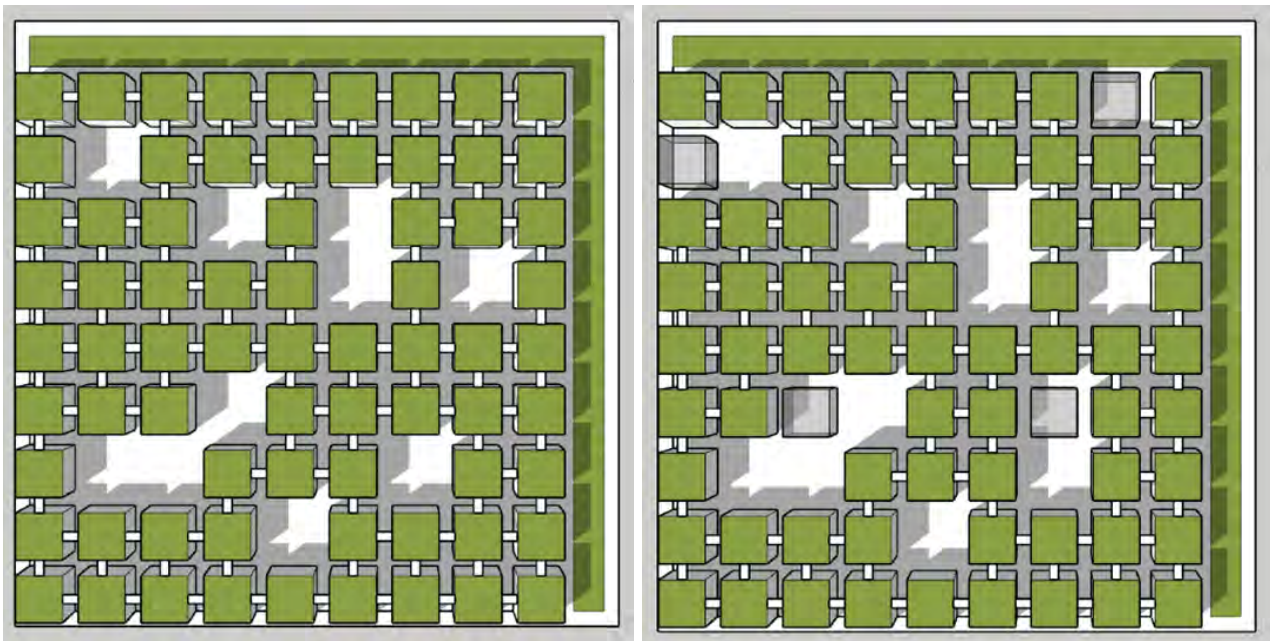
The first design consists of a squared grid, providing daylight and view on all sides of the buildings. Focused on looking at the streets, with both the shops and offices on the ground floor and from people's apartments, keeping the narrow streets safe. The streets are 5 meter wide for pedestrians, but are also wide enough for motorized traffic if necessary. There should be easy access to public metro for long distance travel, connecting the different neighborhoods. Out of sight, leaving more space for buildings and not hindering the pedestrians. The grid allows for smaller stand-alone building blocks that do not hinder the other building or spaces, creating great flexibility. Not all functions can fit in the blocks, however larger buildings can just combine the blocks in the grid, creating more diversity in its grid. The design has medium high buildings of 15 meter. Blocks of 15 by 15 meter. That can be divided in 8 apartments per floor of 25m², so 32 per block. This would be a density of 800 houses per hectare including infrastructure for pedestrians.

The rooftops are connected with air bridges, creating a second layer of public area. Making maximum use of the roofs, that also minimizes urban heating effect and improving the water management. Shops and offices are distributed over the city, mainly on the ground floor, keeping all facilities nearby. Keeping houses small, focusing more on public space and living in the city.

To overcome design shortcomings some additions have been made. The narrow streets can create more urban heat islands, where the green roofs might not be enough to counter this effect. A good amount of the roofs should be used for urban farming and the roof parks cannot replace all park activities like sporting. This can be partially solved by removing some building blocks in the grid, so small squares or parks can be created. Even replacing some buildings blocks with greenhouses on some strategic places for more optimal urban farming. In addition, this creates more clear centers where communities can meet and shops can cluster.

**Figure 5**

First design focused on lowering private space and living more in the city.

**Figure 6**

Additions to first design with more open spaces and building specifically for urban farming.

Option 2

For the second design, there is more focus on creating smaller communities centers. The design allows for some private gardens on the ground floor and small public parks accessible from tunnels under the buildings. Public spaces for the community enhancing the bond between citizens from different social classes. The shops and businesses will be on the edges of the neighborhood, keeping the inner gardens free for the community.

The building blocks are very close to each other, with always daylight from one side, ideally two sides. This creates a higher density overall and minimizes façade surface, which is often the most expensive part of the building. In addition, the improved compactness of the buildings reduces energy consumption for heating and cooling. By minimizing the outside façade and places circulation of people within the buildings, energy for heating and cooling can be reduced. This is especially an advantages for extreme climates, which will be more common considering the climate change. Similar to the first design, the building blocks of 15 by 15 meter can house 32 apartments. This design result in a density around 1000 houses per hectare.

This design has some more space for faster traffic, like providing more cycling roads around the neighborhoods for medium distance travel. The broader streets could also provide the option for tram transportation between hubs, but the streets should remain mainly for pedestrians. Circulation between the neighborhoods can be extended by putting houses over the roads. Connecting both the inside circulation as well as the rooftop parks and further improving the density.

For effective urban communities, it is important that people can stay in their house throughout their whole life. Therefore, building and even individual houses need to be adaptable to new situation, such as family expansion, divorce or children moving out. The removal of flexible walls can create different sizes of houses, adaptable to these new situations. This can also be applied to the first design.

This second design does limit the shape of the buildings because of the indoor circulation and reduces the overall flexibility. Some areas can struggle to get enough daylight, so the building block really should remain small to get daylight deep within the buildings. Focusing fully on small communities is also a big commitment and highly depends on what the citizens make of it themselves. This might not be suitable for all groups in society. An intermediate from between the two different designs was made, however this new design doesn't have any benefits over the other designs.

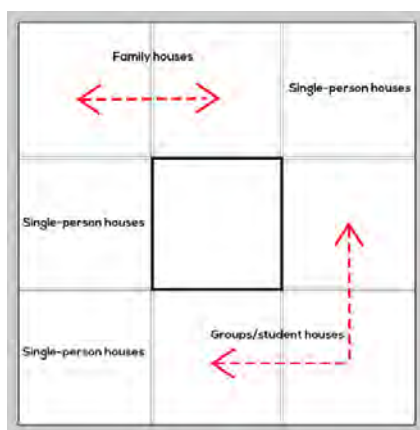


Figure 7

Flexible houses with adaptable sizes.

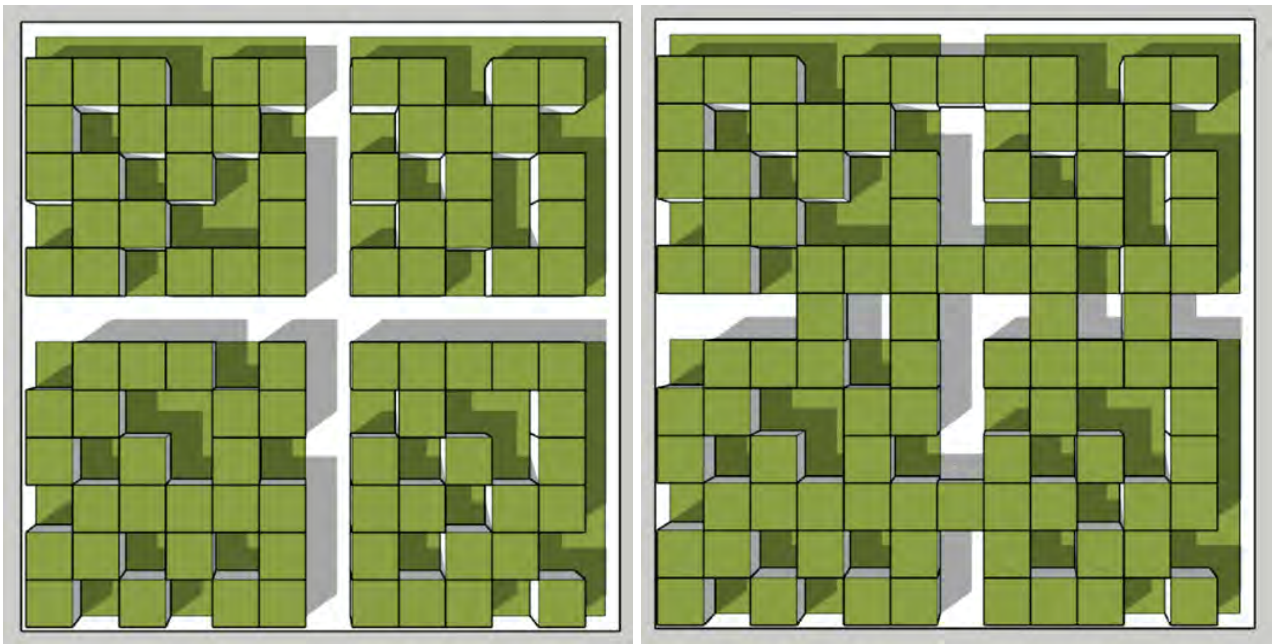


Figure 8

Second design more focused on self-sustainable communities.

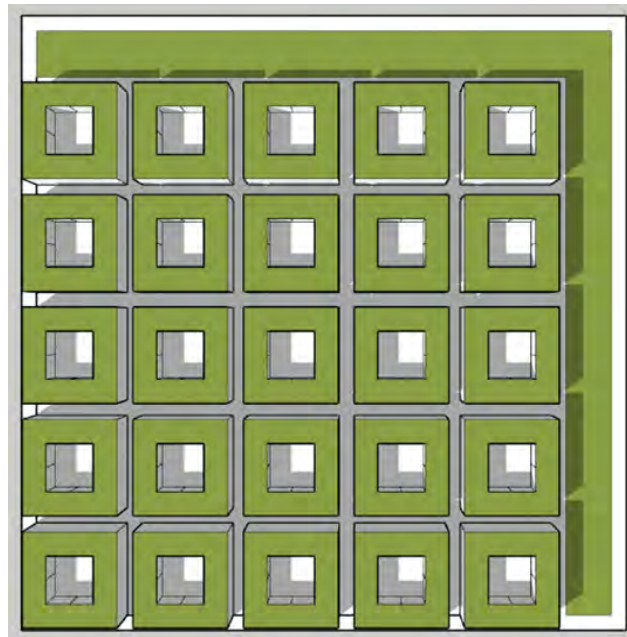


Figure 9

Intermediate between the two different designs.

Conclusion

There is a big misconception that high-rise cities are always very dense. In a city with many skyscrapers the building density is often lower than that of lower typology cities, which creates lower density overall. Many of the world's most sustainable cities can indirectly be related to their density. Higher density means a lower travel distance, resulting into a decrease in energy consumption for traveling.

The most important factor for more dense cities is minimizing the need for long distance travel of people and goods. With the introduction of the private car, infrastructure has increased up to 60% of a cities space. European cities do this better with around 30%, but cities based on walking only devotes 10% of its space to infrastructure. Investing more in effective public transport systems could drastically reduce the space needed for infrastructure, however walking remains the most sustainable way of transportation. Long distance travel can be decreased by creating multiple compact city centers that are able to sustain themselves, so called polycentric urban structures. However There will always be some sort of main city center, since businesses tend to benefit from a central position to maximize the costumers. Therefore proper infrastructure between neighborhoods remains necessary.

To improve the self-sustainability of cities and neighborhoods further the food production should get closer to the consumer. Most large cities do not have the land available nearby to replace the large scale food production. Urban farming on rooftops could partially provide this space. Urban farming can be done by experts, but a combination with the local community seems to be more beneficial. Giving citizens the feeling that they have influence over their own neighborhood can improve their involvement and thereby strengthen their bond. Citizens seem to be mostly positive about urban farming. Higher building density doesn't seem to have much negative influence on the citizens as long as these narrower streets are protected by public activities. Unfortunately, making citizens excited to live in smaller houses seems to be difficult.

For an effective decrease in infrastructure and more independent neighborhoods, there is more needed than just investments. People from different social classes need to be able to accept living with less private space, in exchange for living in the city. The governments need to be able to provide these opportunities. This won't be easy to create on large scale, but can slowly be incorporated in standard city expansion and development. There are two conceptual models made that can used as starting point for these new city developments.

It is important to note that the urban models are for the Dutch climate. There are very different climates that would influence the ideal result heavily, so this could not simply be copied for other parts in the world. The urban models are not meant to be copied over a whole city, just to see what would be possible or what can be done. Most issues often seen with high-rise, such as decreased social interaction, flexibility, building diversity and overall sustainability can be improved with these designs. In addition, the urban models show that higher density can easily be reached, without the need for high-rise.

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UNSOLVED

Diplomacy by Design

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Our world is a world of crises. Political, social, climatic, economic, environmental, humanitarian, military, the list goes on. There was never really any lack of them to name. As I write now, we are unimaginably going under two major crises simultaneously; a two-year ongoing pandemic and a near world-war. Even before this unfortunate coincidence, my concern has been on how design can mediate conflict and influence crisis situations. Better, how design processes can affect conflicting relations. And this is no coincidence at all. Despite a relentless succession of crises, as we are seeing, we still struggle to manage them. So why is that? What makes dealing with conflicts so difficult and what role could design have on it?

Understandably, times of crisis are often times of despair. But strangely, as it may seem at first, a series of crises throughout human existence have brought us a long way nonetheless. The term "*crisis*" is defined as a time when a difficult or important decision must be made; a critical, decisive, turning point or crossroads; a moment of truth when an important change takes place. The very word *crisis* in its origin means a *new beginning*. In his book, *Building and Dwelling*, Richard Sennett reminds us that for the Greeks the word *krisis* "meant a decision, required when things come to a head and can be no longer avoided;" while the Roman poet and philosopher Lucretius had a more cool, stoic view on the matter defending that "we have to decide calmly what to do when faced with a crisis" and avoid the "crisis mentality which is driven by hysteria or terror"¹.

Taking in consideration this lighter, optimistic version of the crisis meaning, we must consider that what makes going through times of crisis so difficult, I want to argue, is not the crisis for the crisis sake. The real problem is that we go against it instead of going towards it. Rather than facing the challenge the common reaction is usually to fight it. Not properly understanding the matter, since we don't dwell much on it, the consequence is collision. We divide forces. We lose energy. We give up. In his previous book, *Together, the second in the Homo Faber trilogy*, Sennett gives as an enlightening example of how a craftsperson usually deals with material resistance. The most effective way is found not in fighting against it, but to "employ minimum force"². The lesson is then that going against the matter will put the focus on eliminating the issue instead of understanding its nature. Elimination, removal, exclusion of the difficulty, the different part or piece that seems an impediment to proceed, is always an unnecessary loss in content. Differently, in compromising with the matter, by working with the resistance, a deeper engagement is possible. By going around the problem, carefully examining its symptoms, giving the time and space necessary for it to present itself, it becomes tangible, understandable, and can be transformed and kept as an integral part of the whole.

1. Sennett, *Building and Dwelling*, p. 291.

2. Sennett, *Together*, pp. 208-209.

Instead of going through a series of defeat battles, what I want to propose then is to favor the challenge. Why not give it a chance? Further, why not provoke and test conflict in our design process instead of trying to solve it with our rather arbitrary designs? This is a quest for collective problem-finding instead of problem-solving in design thinking and making. Since while we are more concerned with trying to solve quasi-problems, we are less concerned with truly finding them. Where the problem lies, not what the solution is, we should ask. For the solution arises from the problem itself.

Seeming to be inevitable, crises aren't necessarily desirable. Conflicts, on the other hand, mostly being avoidable, could turn out to be necessary. The thing is how to manage conflicting situations so as to avoid their development to an unforeseen critical moment. My speculation is that conflicts could be seen as beneficial opportunities if managed properly in the design process rather than tackled by the design product. Through being embraced instead of fought, bringing conflicting parties to the design processes could foster cooperation. Cooperative skills such as making something together, listening to each other, and negotiating rules could be practiced through the process of designing the city in a participatory setting. The way how people collectively participate in designing the city influences how people will live together in the city.

Sennett also talks about the possibility of "productive conflict" and how expressing conflict, or "putting things on the table," is a way of promoting social bonding. It opens up the discussion and then new possibilities arise, making people cooperate better.³ In this sense, conflicts are not only necessary, but potentially desirable. Conflict can actually be seen as an opportunity since tension precedes change. Disagreement means plurality of cultures, diversity of ideas, representativeness. Difference is creative potential and creativity should be praised in its full richness of "what it could be"; innovation, moving forward. If challenges, crises, and changes are constants we should embrace them as valuable opportunities to reinvent ourselves, to reinvent our city, the way we make it. Embracing conflict is trying to understand why it is a conflict in the first place. Conflict not being a problem per se, not knowing how to deal with it certainly is.

The idea of conflict "re-pairing" as a way to reformulate the problem so it mutates while holding its complexity seems to be a much more tangible option

than the illusory conflict resolution idea. Matters aren't there to be settled, but to be respected in their ambiguity.⁴ It is necessary to face once and for all the reality that the complexity of such conflicting matters aren't crafted to be resolved. Human conflicts are not puzzles to be solved. Since their pieces aren't made to fit, the game then is to find a way to put them together on the table and work to find a comprehensible, cooperative way of re-making themselves. It is fundamental to develop better ways to engage the public in the social dimension of design. Foremost, it is time to question our current design processes and experiment with new modes that involve and mobilize people – so they can critically participate in their own processes of world building.

In thinking about what not only brings, but also binds people together, Mallgrave went on to explore the origins of human sociality. His findings show that our capacity or rather necessity of being social was a feature developed throughout our evolution history as a species. From gathering around the fire to creating hunting strategies, cooperation between humans took the shape of primitive common rituals that are still very recognizable in creating social bonds today. Moreover, this points to the fact that human sociality precedes the existence of well formed civilizations. This means that we became social despite the existence of the city and not because of the city as Aristotle imagined. The city came to be because of our sociability and sense of community, not the opposite⁵.

If human sociality is accepted, less comprehensible is why then our "natural sociability" is not enough when dealing with differences. Sennett makes the point that our "sociality" is a fraternity feeling that people share when "doing something together rather than being together." And, that by being involved in an activity with others, the attention goes to the task at hand, shifting away from oneself or the other. Thus, personal agreement does not precede cooperation. Rather, what binds people together is commitment. When people commit to a certain activity where cooperation with others is necessary to be completed, personal disputes seem to fade⁶. Therefore, if the built and cultural environments implicate our sociality, the act of building or making them could do as much so⁷.

The question lies on who builds or makes the environment we all live in. When solely left to experts as tradition has been carrying, design loses most of its social, bigger, transformational potential. It's not about what we're designing, but for whom we are designing for. This is the pursuit for a true collaborative process: from designing for to designing with. The ritual of creating something together, which fosters social bonding and

the sense of community, could be replicated in the participatory design process. By acting cooperatively to solve the challenges of the decision-making process that designing carries, people could learn and practice the cooperative skills that would facilitate the daily conflicts they encounter on the streets. By making the city they live in they could develop a new way to live in the city. What Sennett calls the "open-planning" is still concerned with the form the city should take in order to be open and foster cooperation amongst its "urbanites"⁸. Although his approach to urban planning leaves room for future changes, my interest rests on present participation.

Ideally, it shouldn't matter what the final plan is, as long as the planning phase is an inclusive, diverse, cooperative process. Simple, everyday social activities such as cooking and eating together, shouldn't be taken for granted since they are part of a long evolutionary process of human ritualization and socialization. Socializing to share an activity together is a distinct characteristic of humans, so we could consider it to be what "makes us humans" or our essential humanity. This is a crucial fact when trying to understand ways people come together. Modest gestures like sharing a meal has the same cognitive roots as doing complex activities which demands coordination, tactics, and strategic thinking amongst a group so the task can be achieved⁹. The Aristotelian view that "a city is composed of different kinds of men; similar people cannot bring a city into existence" followed by the conclusion that the city then "obliges people to think about and deal with others"¹⁰. But the question that arises from this conclusion is, why to leave people to deal with their differences "on the ground" if much of the undesirable consequence of unmanaged conflicts, such as violence, could be avoided if people were brought together in the thinking and making of the city?

Cooperation is the process of working together to the same end. Sennett defines it as "an exchange in which participants benefit from the encounter"¹¹. His definition is much similar to the idea of reciprocity in which the practice of exchanging with others brings mutual benefit. In turn, reciprocity aligns with the practice of diplomacy in which foreign relations need to be managed so trade and deals between parts can be made. Here cooperation, reciprocity and diplomacy come together in their ideals of exchange for mutual benefit. While some argue that being able to work on such terms is an individual predisposition, Sennett defends that cooperation in reality can be learned, practiced, and mastered as any other working or crafting skill¹². This could be due to the fact that in order to be able to execute things which cannot be done by oneself alone people have to cooperate in the shared effort to get things done¹³. Cooperation is thus a basic human feature as seen in the relationship between the baby and the mother where one has to find ways to communicate and negotiate with the other in order to get what one wants. This is an essential part of human development where the need to cooperate follows the recognition that one is part of something external before recognizing oneself as an individual.

Evidence from research on early childhood also shows that game-playing is the process in which children develop negotiation and cooperation skills. By playing together over and over again and taking over the rules of the game from the command developed over time, children become bonded to one another. The pure sense of community is created around the game since they developed it together. Certainly, developing the skills of cooperation under these circumstances is not easy. Nonetheless, is

3. Sennett, *Together*, pp. 227-228.

4. Sennett, *Together*, p. 229.

5. Mallgrave, *From Object to Experience*, p. 145.

6. Sennett, *Building and Dwelling*, p. 259.

7. Mallgrave, *From Object to Experience*, p. 138.

8. Sennett, *Building and Dwelling*, p. 260.

9. Mallgrave, *From Object to Experience*,

the very difficulty of the community playing that makes concluding the game rewarding¹⁴. Overcoming the challenge of going through the process in a collective, thus more complex setting and still concluding the task becomes an earned experience, the learning of dealing with that situation, moving forward, not giving up. Playing on those terms becomes part of a ritual of social practices which alter and incorporate new forms of behavior and promotes social development¹⁵. The lessons we should keep from our childhood playfulness is then giving space to complexity and ambiguity of tasks and of others; constant practice which develops new habits in time and promotes reflexive learning. In truth, we should really just hold tight to our early diplomacy.

Diplomacy is defined as the skill of managing relations and the art of dealing with people in a sensitive and effective way. It also, of course, relates to strategy and tactics. These "tactics" come from the same word root as "tact"; being thus correlated to the sensitivity, sensibility, and understanding necessary to deal and negotiate with difficult people, topics, or situations. Diplomacy is also an exercise whereby focusing on the realities of everyday life people can transform their differences into advantages and learn from them. The American architect and congressman Richard Swett defines design diplomacy as a way of "expanding 'design' from its limited aesthetic sense to incorporate people, society, and quality of life issues, shifting the paradigm from design of buildings to 'design' for solving problems in society."¹⁶ Swett, also a former U.S. ambassador in Denmark, remarks the central role design has in the social education of the Danish people. One example is a course module on design every child follows early at school intended to prepare its citizens as "informed design consultants"¹⁷. This is notably not only a good way to promote the importance of design as a strategic way of thinking, but also to form a better informed public about the important social roles they can play in the making of their society.

From his experience on politics Sewett also calls our attention to the strange current order of things in many collective efforts: "It's an 'us or them' situation, not a collaborative effort. Groups seek to block a project after its design has been announced, rather than influencing the design to include their needs. Ours is a system of adversaries, not advocacy. We resist what we dislike rather than cooperatively promote what we feel is beneficial." Given these circumstances, design diplomacy represents a socially responsible design practice. Co-creation is fundamental in this process. A design process which educates and not only allows, but also drives cooperative skills development. The design process, the act of making, not the designer or "who makes"; works as an intervention for conflicting

situations. The process functions as the medium which mediates those people and provides them the social space necessary to cooperate. Diplomacy by design as the process of design which includes and forms more diplomatic citizens. The true experience of design being held in its process, not the object of design.

As seen, we are all already sort of diplomats. Through "everyday diplomacy" people relate to each other on the street, at work, at home when challenged by conflicting situations.¹⁸ The formal profession of diplomacy has in fact a tradition of informal communication rituals coded as recognizable sorts of behaviors. These professional mediators rearrange the situation and manage its outcomes to become productive by exercising "soft power". This balance between formal and informal conduct softens the differences between people and allows them to cooperate.¹⁹ Taking diversity and inclusivity as premises for diplomatic actions, when incorporated to design the term diplomacy should make up for these values. Further, design diplomacy can be considered as a practice based on the exchange of ideas, ethics and values, strengthening relationships and promoting diverse interests. Diplomacy by design being then the open process of design for more diplomatic citizens. Open-by-design is an ambiguous idea in itself. The proposed open process doesn't limit itself to being an "open-ended" process. Rather, open implies both the end result and the means in which the design is produced. One is open-to-possibility, constantly in the making, evolving, changing design product. The other is open-to-participation, inclusive and diverse process. The open end result is future oriented. The open making process is present based. In sum, the difference lies in what could be done then and what should be done now.

Unsolved conflicts are far better than solved ones. Since still holding the tension and challenge of the differences they represent the full possibility for change. Those complex, open, evolving problems are the real ones that should take our attention. An open process is a challenging but exciting one full of the potential of "what has yet to be." Our design practice should open up for being a more inclusive, diverse, therefore diplomatic one. By active participation in those processes citizens could develop themselves to better cooperate with each other for living in the city by making the city together. For Sennett the true ethics for the city lies in the modest encounter between the urbanist and the urbanite.²⁰ For me, more than modesty this encounter calls for the generosity of the designer in sharing with others the design process. For by opening the process we can open ourselves.

17. Swett, Design Diplomacy in Denmark.

18. Sennett, Together, p. 203.

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THE HIERARCHICAL/ EGALITARIAN OFFICE

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"You never get a second chance to make a great first impression" is a phrase that is deeply ingrained into our thoughts. In order to make a good first impression, you would have to make sure that you're able to showcase the best version of yourself, be authentic and make sure that you're a reflection of who you are as a person, because like the phrase mentioned before, you'll never get a second chance. Similarly, the interior space of an office plays a major role into the first impression of a company, and could positively, or negatively, influence potential business deals or clients based on this first impression. The office design is a reflection of how a company functions internally and provides a clear insight into the organizational structure, and could therefore be a great indicator for business deals to succeed or fail. As the world becomes more global, and businesses start to pursue new endeavors overseas, many companies are struck by the different work cultures around the world and how this internally could cause friction between both parties. These differences could ones again, make or break potential business deals, and it's important to anticipate adequately. These differences are based on the work cultures, and ultimately the different office designs that coincide. More specifically, the differences between a hierarchical work culture and an egalitarian work culture.

Research has shown that employee behavior is in fact influenced by office layout, and throughout the years companies have tried to redesign or design new office spaces to enhance the productivity of its employees. Aesthetic appeal, work efficiency and many more aspects have been studied overtime to improve these spatial features, however, there's a limited amount of information regarding the direct influences of the office layout on the organizational culture and how this might influence the employee's behavior. The office layout refers to the physical office space and how objects are arranged within this relevant space (Lee, 2010). Companies with a strong hierarchical work culture tend to have a different office layout compared to offices that prefer a more egalitarian work culture, and these differences have an influence on the internal communication and social status within the company. The significance of understanding these spatial differences within an office layout, and how this directly reflects the preferred work culture, could be used to enhance the internal organization of an office and the external appearance for potential future clients or business deals. The research question is therefore as follows: How does the corporate office-layout reflect the work culture, and what differentiate the hierarchical office from an egalitarian office? Effective research requires the inclusion of a wide set of perspectives from different approaches; therefore, research has been conducted from various sources to acknowledge these spatial features at different scales, ranging from cultural differences globally to specific office features. In order to gain a deeper understanding of the 'hierarchical' and 'egalitarian' work culture, cultural differences are showcased that differentiate certain socio-cultural factors, in which thereafter spatial qualities are analyzed based on a select group of countries that are positioned at the far end of the spectrum and later on compared. This would lead us to the key features that characterize a hierarchical- and an egalitarian office.

Understanding cultural differences within the corporate world

In a world that is becoming more global, in which companies are expanding their businesses overseas, merging with other companies or simply seek new business endeavors, it's important to be able to bridge these cultural differences and anticipate on them. Business is conducted in different ways worldwide and there are different preferences for how an office is designed. The design of an office therefore is an important aspect for the first impression of potential clients and how the company wants to be perceived. Erin Meyer, American author and professor at INSEAD Business School, located in Paris, France, explains the different barriers between different work cultures and how it can influence the office floor plan. (Meyer, 2014)

Hierarchical vs. Egalitarian work culture

One of the most evident indicators between a hierarchical and egalitarian work culture is the preferred type of leadership. Erin Meyer (2014) indicates that the difference can be translated into the power distance between the employee and the employer. In a hierarchical work culture there is a high power balance, in which the boss is a strong director who leads from the front. There is a multilayer organizational structure present and the communication within the company follows hierarchical lines. Especially within countries with a strong hierarchical work culture, such as China, Nigeria and Japan, status is very important as a boss, in which you're expected to portray a certain image that fits the quintessential appearance of a CEO. On the other hand, egalitarian work cultures are based on a low power distance between a boss and their subordinates. A boss could be described as a facilitator among equals, and this is present in many egalitarian countries such as the Netherlands, Denmark and Israel. The organizational structures are flat and communication internally within a company skips hierarchical lines. (Meyer, 2014)

Ulrich Jepsen, a Danish executive at Maersk, a Copenhagen-based multinational, illustrates the differences in work cultures and the direct effect on the use of space within the office. Denmark tends to have an egalitarian work culture, in which there are no hierarchical lines within the organizational charts and the managing directors and CEO are seen as facilitators among equals. This correlates to an open-door policy within the company to emphasize on the preferred work culture. Ulrich Jepsen however, took it one step further with his open-door policy, which is where he chose to not have a private office space at all. Instead he works in an open space among his employees, and in case he needs a private space to hold a meeting or a quiet space to talk, he could use the conference rooms. The Maersk Headquarter took the initiative to implement this idea, where there are almost no private office spaces available and the conference rooms became a multifunctional space. (Meyer, 2014)

Consensual vs. Top-Down decision-making

Erin Meyer (2014) stresses on the fact that there are multiple layers associated with the so-called 'leading scale' and that this is not the only way to distinguish different work cultures. From the leading scale, for example, Japan is labeled as a strongly hierarchical culture, placed at the far end of the spectrum. Nevertheless, when it comes to decision-making, Japan is very consensual. Japanese decision-making culture is based on the so-called *Ringi System*, which is a management technique in which low-level managers discuss new ideas among themselves and come to a consensus before presenting it to managers that are positioned one level higher in the company's organizational chart. The end result of this management technique is that the responsibility is spread out among many individuals rather than it being concentrated to one or only a few. This emphasizes on the hierarchical lines that need to be followed, while still making sure that every member is on board with new regulations to submit and implement later on. This process of informally making a proposal, getting input, and solidifying support is called *nemawashi* (Meyer, 2014). The office floor plan of a Japanese company is therefore based on this form of communication. In which a large room is centrally located, equipped with a large number of cubicles for the employees. *Ogata heya*, which translates to a large room, is not purely an efficient use of limited space, but it encourages employees to collaborate and come up with new ideas. Surrounding the *ogata heya* are several private office spaces in which people of the same managing level are able to discuss new ideas among themselves. The conference rooms are mainly used to give a formal approval of the initial plans, even though it was already approved by all managers from various levels (Kopp, n.d.).

To make a comparison with another hierarchical work culture, such as China, it is clear that their preferred management style is top-down, where an individual makes the decisions, which is usually the boss. There's a strong hierarchical line present in the company, which is where management can submit ideas to the boss, but can't implement ideas themselves without any approval. The office layout is similar to a Japanese office, but the use of a conference room is completely different. Instead of approving decisions upfront by the different levels of management, decisions are made during a meeting (Meyer, 2014).

Unlike Israel's hierarchical political background, it has become a very consensual country regarding decision-making in politics and the corporate world. Lewis Brownstein, associate professor of political science at the State University of New York states: 'it is not simply that former leadership has been blamed for the mistakes, which led to the reverses of war. Rather, the war revealed fundamental weaknesses

in the structure, functioning and value orientation of its society, perceived by some before the war, which could not be ignored after it. The result of this changed perception has been an intense reexamination of many aspects of the society, including its goals and the way which its decisions are made' (Brownstein, 1977, p.259). Based on Erin Meyer's leading scale, Israel is categorized as a very egalitarian country and includes a consensual based decision culture. Hierarchical lines within an office aren't present and decisions are made in groups through unanimous agreements. This reflects the general office layout of Israeli companies, in which 'the open-plan' concept is a common occurrence. The sense of equality between the boss and subordinates translates to open workspaces, which is where all parties have the same amount of space, emphasizing on collaborating on their work as a team (Meyer, 2014)

Task-based vs. Relationship based

Within a business environment, finding new clients or business opportunities is crucial and can offer a lot of potential for the company's growth. There are different ways on how one can build trust with potential clients, and how this influences the layout of the corporate office. Based on the trusting scale, Erin Meyer (2014) categorizes countries from the task-based culture and the relationship-based culture. There is a link between the hierarchical countries that embrace a more relationship-based culture and the egalitarian countries that tend to be more task-based. Task-based trust is built through business-related activities. Work relationships are built within a short timeframe, but could be dropped easily, based on the practicality of the situation. Contrariwise, relationship-based trust is built through sharing personal time in a corporate- or private setting in, for example, a restaurant. Work relationships are built up slowly long term. When it comes to building trust in countries such as Nigeria, China and Saudi Arabia, it is important for clients to create a personal bond before you talk business. This might take some extra time in the early stages of building a social relationship, but later on will be valuable for future business deals. Once trust is built, clients tend to stay in touch and will pursue business ones there is an opportunity. Relationship-based countries tend to have a strong hierarchical leading culture. Within a corporate setting, the office of the CEO or managers tend to have a private or common sitting area, in which they'll be able to build a personal connection with potential clients. This could be either a tearoom, which is more common in Asian countries, or any other sitting area that could be used to enhance social contacts. While it is more common to built trust outside of the office, which tend to be not during working hours, there is always space reserved in the office for private social meetings with potential clients (Meyer, 2014).

The relationship between workspaces and organizational cultures

Previous studies have pointed out a strong link between the corporate culture of a company and their organizational space. The organizational space of an office can have an important impact on the productivity of the employees, the possibility of collaboration and innovation. Studies have shown the impact of space on behavior and how this could influence the employee's productivity. Our built environment can stimulate, or even discourage or distract, ourselves from our work and to provide the office layout that reflects the preferred office work culture could be of great importance. Office design therefore can be considered as one of the visual elements and signs of culture, its support and symbolic representation. Modifying office spaces could indicate an internal change in the work culture, for example, the sense of territoriality, or even the lack thereof when an office space is modified to a open-plan layout. Monika Maślikowska, researcher from the Università Della Svizzera Italiana, Switzerland, indicates that there's in fact a direct relationship between the physical office space and the organizational culture. By means of a deductive approach, using a series of two case studies, Maślikowska wanted to illustrate this relationship, indicating that in fact modifying spatial features within an office could directly influence the organizational structure. (Maślikowska & Gibbert, 2019)

The United Parcel Service, also known as UPS, is the biggest package delivery company in the world. In order to portray themselves as an egalitarian company, they've opted for open spaces on the main floors, which include modular workstations, divided by small hardboards, to create a sense of equality. According to the architect, the homogenous, identical (non-personalized) and non-modifiable spaces of the company emphasize on their vision, which is to have a very limited budget on office design, to not invest in their employees, but to invest in their machines and improve the main processes of the company. (Maślikowska & Gibbert, 2019)

The open-plan concept on the main floors promotes collaboration, which is part of the day-to-day tasks of the employees. The upper floor contains closed office spaces, which are more suitable for the character of activities that are performed on this particular floor, such as HR and Accounting. This fact illustrates that the spatial qualities of an office could only be appreciated when the character of activities matches with the space. Confidentiality could play a major role on the appreciation of certain spatial features of an office, in this case, closed off office spaces. Whereas, an open-plan could promote collaboration within a more collaborative setting, which focuses on the ability of asking questions internally without any formal boundaries, which gravitates more towards an egalitarian work culture. It appears that an important factor to employ people would be to reduce the need for potential employees that need to adapt to the company's work culture. According to interviews

from employees from UPS, it appears that the so-called "right fit" is a good indication for hiring new employees and that it's quite difficult to be able to adapt to a new work culture. (Maślikowska & Gibbert, 2019)

In the case of a Polish corporation, which specializes in outsourcing services for the Polish market, including work organization, selection of technology and human resources management, underwent a major organizational change, from a hierarchical work culture, which is referred to as a "pyramid culture", to an egalitarian work culture. In order to expand globally, the company wanted to build a new office to attract potential investors for their expansion plans.

The previous office used to be an old factory, which was later on renovated to meet the standards of their corporate needs. The office was a great representation of their preferred work culture, including the pyramidal space that was divided into four hierarchical floors, based on the management levels. The interior of the office was very subdued and formal, which had to relate to the company's image of being formal, classic and reliable. An interesting aspect about the interior spaces was the internal hierarchy that was visible by the standardized office spaces of the regular employees, and the state-of-the-art office spaces of the top management, that was designed by an architect. The standardization of the office furniture illustrates the lower-rank offices, compared to the carefully designed, and more expensive, office spaces of the top management. (Maślikowska & Gibbert, 2019)

Following the increased competition and plans for the global expansion, the company wanted to modify their image to a more innovation-driven brand. This includes a change into the current work culture, which was hierarchical and top-down, to a more egalitarian work culture. Followed by the implementation of modular open spaces, some employees had to follow these spatial relocations in the new office. From a floor with closed offices, to an open-plan layout with clusters of workstations that were divided by cardboards, the HR and Accounting department had to adjust to a new working environment. Initially, the adjustment would be inevitable and likely not cherished, but surprisingly it was well appreciated by the employees. Mainly approachability was the main improvements from the employees' point of view. The results demonstrate that, indeed, there are personal factors on how a spatial relocation might be received by an employee, but there's no doubt that subconsciously the spatial features of an office space directly influence the organizational culture. It could cherish a social ladder within a company or value approachability and social equality. Maślikowska concludes that there are other moderating factors influencing these outcomes, such as the type of job and the different personalities of its employees. It's not only the organizational space and culture that drives the outcome in these cultural changes, but the match between space and the type of job, the employee's

personality and seniority of the users of the relevant space. As Maślikowska (2019) cites: 'The development of the sociological model and the modification of the spatial "context" to evoke certain culture (from "Pyramid" to "Module") within the embedded unit level of the empirical analysis demonstrated that there, in fact, is a significant interaction between work group culture and space, which can override the general "fit" on the company level. However, the change of space on its own is not sufficient for the cultural change.' (Maślikowska & Gibbert, 2019, pg. 1162)

Kimberly D. Elsbach (2007), professor of Management and Chair in Leadership (2005-2021) at the Graduate School of Management, University of California, points out the growth in academic research on office design, with new findings in two important fields. First, research in the areas of environmental psychology, organizational identity and organizational symbolism acknowledges the relationship between office design and the employee's behavior. And secondly, research based on the area of sociology, on how groups interact with each other within an organization due to the office layout. Office design can therefore signal status, or a sense of ranking, but it can also stimulate collaborations and solve problems internally in a more informal setting. (Elsbach & Bechky, 2007)

Throughout the years, designers and architects have pondered on office design and how to improve employee's productivity based on the office environment. The perception of office design has changed gradually towards a more egalitarian office layout and this is due to companies preferring a more egalitarian approach for their management, and indirectly their office environment. A significant change has occurred in times from the Cube Farm, which originated in the 1980s to 1990s, based on the Landscape office design, which was introduced in the 1950's, to collaborative work spaces that became the latest buzzword of today. Collaborative workspaces originate from the dot-com boom that brought a new office typology called 'the office campus.' An office building designed like a campus, that provides ample flex workspaces that could be used by all employees and common areas/amenities throughout the building to enhance the employee's work performance. (Ward, 2014)

These interchangeable and adaptable office spaces have been fundamental for today's organizations that tend to move more towards an egalitarian work culture. Non-territorial workspaces that aren't assigned to specific employees enable others to make use of it to ensure maximum occupancy rates of these enclosed office spaces. It provides a sense of equality and blurs the feel of bureaucracy between managers and their subordinates. It also enhances collaboration between coworkers and facilitates social interactions between different groups, and this in turn, would boost internal social relations and the overall work environment. (Elsbach & Bechky, 2007)

As an example, the headquarters of Herman Miller, a cutting-edge office furniture company, designed an open-plan office space for their employees, while still maintaining some private personalized space for the senior leadership spaces. Marilyn Zelinsky, expert in commercial interior design and workplace environments, reports:

'Front doors give clients access to the fourteen executives that are co-located, but backyards let executives meet, relax, and concentrate in private backyards away from the tour groups. The rule is that neighbours share backyards, but customers can't be invited into that space because it is specifically there as a sanctuary for the executives to use.' (Elsbach & Bechky, 2007, pg. 87)

A sense of social status can appear to be an important aspect in organizations, which clearly indicates the preferred work culture. In the case of the headquarters of Herman Miller, it wants to be perceived as an egalitarian company with non-territorial workplaces for the subordinates, while still providing some private workspaces for the executives. This indicates a sense of hierarchy within the organizational structure, with the use of exclusive common areas, while on the other hand providing semi-public common spaces for clients to meet the executives, which could be seen as a more approachable place for the subordinates to meet their leaders as well. This illustrates the influence of the office environment on the employee's behaviour and possibly their sense of hierarchy in the company. By discouraging or eliminating visible status symbols, employees will get a sense of equality with their leaders and therefore executive lunchrooms and different office furniture, based on organizational ranking, should be eliminated. Little to no personalization has great effect on producing non-territorial workspaces, which could be used by all employees. (Elsbach & Bechky, 2007)

The same applies to the access to certain objects and places in an office environment, which refers to the private senior leadership spaces at the headquarters of Herman Miller. This environment can be produced by shielding off spaces for a select group of employees, who are given status by the company that allows them to perform better at their job and experience more control over their work. On one hand, this will improve the productivity of this particular group of people, but could cause friction between all the employees or leave the impression of an internal hierarchy in the company. On the other hand, the new headquarters of the New York Times in Manhattan, New York, deliberately designed the stereotypical authoritarian spaces into the common areas, in which the corners of the office were designated for the staircases. This illustrates the equality of the employees and that the best views of the office are accessible by all employees. The private office spaces were placed near the core of the office, which allowed the open-plan workspaces to take full advantage of the windows and natural lights. In this way, the company symbolizes their commitment to an

egalitarian work environment. (Elsbach & Bechky, 2007)

The open-plan office concept

The open-plan concept has been adopted by many corporations and dates back to the early 1950's. Originated from the German term *Bürolandschaft*, which translates to office landscape, was the first movement in open-plan office spacing. The social-democratic approach to this new working environment roots back to Scandinavia, which is where employees were able to have a greater voice in the workplace. (Higgenbottom, 2020) What is interesting about this fact is that a comparison can be made with the research of Erin Meyer (2014), where the so-called pioneers of the open-plan working environment mainly come from countries with an egalitarian leading culture. This is due to the preference for a transparent workplace, in which no hierarchical lines are present and it is important that research is carried out into the correct proportions and how the space should be arranged.

Jeremy Myerson, director of Worktech Academy, states: 'The reality is that unless the open-plan is well thought out with a high degree of segmentation of different tasks and a high degree of choice for the individual that is not the case. A simple, low-choice, open-plan environment with an ocean of desks is not good for communication or team-working' (Higgenbottom, 2020, pg. 2). Myerson believes that there are three distinct phases of organizational design, which is command and control hierarchy, the rise of the egalitarian work community and the networked organization, that could be seen as both physical and digital. As Myerson is noticing within many corporate organizations, the idea of rank and hierarchy is becoming less in the corporate world and they put emphasis on blurring the lines in their organizations. An open-plan working environment reflects more of an egalitarian structure within the company. (Higgenbottom, 2020)

Mark Swain, director of partnerships at Henley Business School, states that adopting an open-plan environment removes the obvious demarcation lines that exist in a hierarchical organization. When there's a physical barrier between a senior partner and an employee, it will ultimately create a social barrier within the company too. When you remove these physical structures of rank, such as closed office spaces, the status of leadership within the company immediately changes. The physical appearance of an office has a strong influence on how people interact with each other. In addition, Mark Swain indicates that the open-plan ensures that people within the company are less likely to want to be promoted to a higher position. Employees now have the opportunity to look behind the scenes, in which they can experience the amount of stress the managers have to deal with on a daily basis. Of course, this does not apply to everyone, but it does indicate that making the company transparent has some negative consequences. It does however give the employees a sense that their CEO

or managers are more approachable, and are able to collaborate more effectively. (Higgenbottom, 2020)

Many capitalist businesses struggle to shift to the more open, democratic and trusting culture that a social-democratic model of community demands, Jeremy Myerson concludes. "They are much happier with command and control, supervision and surveillance than empowering people, which takes time and effort, and requires new spaces, collaborative technologies and ways of behaving. But they will have to face the challenge sooner rather than later" (Higgenbottom, 2020, pg. 5)

On the other hand, millennial employees tend to prefer an open-plan office space compared to a more traditional office layout. For example, Ken Theis, President and Chief Executive Office of Dewpoint, mentions that for a company that is tied to technology, and employs a lot of millennials, an open-plan office supports an energetic culture. The company designed the office that emphasizes on collaborative work, in which Ken Theis states; "We need to be an organization that can collaborate across different functions" (Hirten, 2015, pg. 2) The office trappings and structure support this goal. The company specializes in providing business and technology solutions for their clients, in which much of the internal work consists of clusters of workstations and several office spaces for managers and executives. The Dewpoint office had a clear hierarchy in the old office layout, in which they wanted to change this within their new office. It has been proven that it's not always easy for companies to completely change the layout of the office and the associated adjustments. Companies therefore, like Dewpoint, try to adapt as much as possible into realizing an open-floor plan, while still including certain hierarchical structures. (Hirten, 2015)

Russ Hinkle, a senior associate and architect with Hobbs & Black, who worked on the office transformation of Dewpoint mentions that there are advantages but also challenges in adopting a new workspace model. In the case of Dewpoint, they wanted to include certain hierarchical elements, in which they chose to keep the traditional boardrooms, but changed certain elements to create a less formal atmosphere. One boardroom includes a workbench table with high seating and video display, while another boardroom includes a nonstandard seating arrangement that isn't associated with a traditional boardroom. The cafeteria functions as an escape valve, where people can gather in smaller groups, and several power outlets have been installed so that the employees are able to work in a different setting and change their scenery throughout the day. Flexible workspaces throughout the office are one of the most important principles, which stimulate the productivity of the employees and provide them a sense of comfort. (Hirten, 2015)

Brennan et al. (2002) conducted research on the transition of an office space and how it subconsciously affected its employees. The company changed its floor

plan from a traditional cellular office to an open-plan office, which was meant to illustrate a more egalitarian work culture that emphasizes on collaborative work between employees. The main conclusion that was drawn from the research was that there was dissatisfaction with their move to an open-plan office and that the dissatisfaction remained after the six-month adjustment period. The openness of the office was found to be counter-productive for the employees, based on increased disturbance and distractions.

An open-plan office can make a positive contribution to a company, but this mainly depends on which work activities take place in the office and whether collaboration between them is important. This can affect the work field of the company, in which some fields are focused on collaborations or individual goal-oriented assignments that have to be carried out. (Haynes, 2008) In the case of Brennan et al. (2002) research was conducted on a company that might have been better off with cellular office spaces, based on the needs of its employees and the different day-to-day tasks.

The influence of office layout features on the organizational culture

Office layout features are a minor detail regarding office design, but play a significant role into the impact on employee's behavior and the organizational culture. The features, or elements, of an office space are related to the sense of hierarchy and the hierarchical space is produced through three intertwined processes: proliferation, familiarization and ritualization. Zhongyuan Zhang (2014), researcher from the School of Management at the Zhejiang University, China, conducted a ten-month ethnographic study of a government office in China, in which he specifically focused on the three processes mentioned prior. 'It proliferates as employees actively seek out signs of hierarchy in the organization's space; it becomes familiarized as employees fabricate and circulate fanciful narratives about their spatial environs; and it is ritualized by employees acting out hierarchical relations across the organization's space.' (Zhang & Spicer, 2014, pg. 1)

Zhang notes that office buildings are designed based on the factors, which in turn, produce certain power relations within a company. This translates to, for example, spatial ordering, in which employees are assigned different places. From the floor plan, this would produce a division of different social groups, such as the CEO and his/her secretary, or for managers, who could benefit from the strategic location within the company in order to execute managerial surveillance. Space could enchant people with encoded meaning. As an example, Zhang illustrates how government organizations try to get rid of the image of bureaucracy, in which they're aiming for more modest-looking buildings. This illustrates how certain buildings from its exterior could affect the perceived image it has on people and how this could portray dominance or in this case a bureaucratic feel. Lastly, space enacts: it prescribes certain patterns of mobility in the workplace. In order to reduce communication barriers, companies tend to opt for a more open-plan office layout, which generates new power relations and could therefore, based on the preferred work culture, be a great way to define these territorial boundaries. (Zhang & Spicer, 2014)

Proliferation of hierarchy

The sense of hierarchy could be integrated on different scales within a building, but the exterior plays a key role to the perception of the space and how a company might be run internally. How the company is situated could already give a great indication of the sense of dominance and power that it may radiate. In the case of Zhang's research, the government building was elevated from its surroundings, which illustrates a visible gap between the prestige of government and the 'lower' civic lives. It dominates the skyline of the city due to the building height of 140 meters and the irregular trapezoid shape of the building, which was referenced after an

Aztec pyramid, which in turn, could reference to the hierarchical 'pyramid' structure of the company. Aside from the general contour of the building, there was a physical hierarchy present on the different floors within the company. Auxiliary workers, which tend to have a 'lower' ranking within the company, occupied the lower floors and the top floors were appointed for the director's personal suites. The floors in between, ranging from the 11th to the 21st floor, were assigned to unit-chiefs and office clerks. The core units within these eleven floors were located at higher levels, to illustrate the ranking of the unit-chiefs and how close they were to their leaders.

Another facet of proliferation of hierarchy is the use of materialization and decoration of office spaces. Zhang illustrates how a contrast in materialization could lead to the sense of distinction between different social groups within a company. In the case of Zhang's analysis, there was a clear distinction in for example the office furniture. Office clerks were assigned to shared-workspaces, which included eight plastic cubicles with built-in desk panels in each unit and these rooms tend to be the most crowded within the company and lacks privacy. Whereas the unit-chiefs were provided with high-quality furniture, which would include a wooden desk, leather sofas and chairs, and these units would be provided with more privacy. The directors' suites, described as the executive floors, were richly furnished with heavy wooden doors, television sets, bookshelves, genuine art works, bathrooms and even bedrooms. They were the only floors that were provided with red carpet flooring, wood veneers and artwork throughout the hallways. It was even carried out through to the stairwells, which only had a marble finish on the top three floors and would be bare concrete on the other. Common areas or even the elevators were altered to create a sense of hierarchy, in which many personal features were added to enhance the day-to-day life of the executives. According to facility maintenance staff, when not in use, two elevators were programmed to wait on the 24th floor to facilitate use by the directors, and one in the executive parking lot, which was located in the basement. There was even a so-called 'priority button' installed at the chief secretary's desk, which would allow the secretary to summon an empty elevator directly to the executive floors. (Zhang & Spicer, 2014) Certain spatial qualities of an office could have a great affect on the perceived dominance, or the importance of a specific space. Ceilings, the finishing of a ceiling or the ceiling height, could have an indication of importance, or the amount of care that has been carried through the interior space. Minor details such as office views could identify differences in the organizational hierarchy of an office and based on Zhang's findings we can conclude that there is indeed a direct influence on the sense of hierarchy based on the interior space of an office. (Zhang & Spicer, 2014)

Familiarization of hierarchy

Employees were not only looking for meanings of hierarchy in probable and improbable places in the building. They imbued these places with imaginative and highly descriptive narratives, so that the hierarchical space became familiar and meaningful aspects of their daily lives. An example could be the 'priority button' mentioned prior that indicates territorial behavior and this could become an aspect of the employee's daily life. Additionally, the government building was designed with a centrally located opening in the façade, in order to provide more natural daylight into the center of the building. However, the employees related the shape of the building to a Chinese character, similar to the family name of the ex-director. In this way, assumptions were made about the possibility of turning the government building into a personal memorial to the ex-director. While this may not be the case, it does come across that way from the employee's point of view and therefore could be an indirect indication of power. And on top of that, there was a similar concern about the water fountain, located outside the building's main entrance. Although it was supposed to enhance the aesthetic of the government building, it was however interpreted differently. In the Chinese language, the character for 'water-flow' was similarly pronounced the same as the chief-director's family name. (Zhang & Spicer, 2014)

Ritualization of hierarchy

Zhang (2014) notes that the hierarchical work culture at the government building was established through daily practices, in which some observations became common rituals. This could be illustrated as using leaders' titles and treating certain spaces as leaders' reserved territories. As an example Zhang refers to the acknowledgement of the upper floors and how these are meant for the leaders' proper residence space. Occasionally when a chief-director has a meeting on a lower floor, this would automatically mean that the restroom facility would be sealed off purely for the chief director's use. Employees placed great emphasis on acting out respect for bureaucratic hierarchy within the company. The leader's parking lot was strictly meant as a parking facility for the executives only, and even during an overseas business trip—in which they wouldn't be present at the government building—the parking lot would be empty at all times. Within the Chinese culture, and even several other Asian countries, hierarchy is shown in specific personal traits. This could mean that there's a hierarchy visible in seating order or specific walking orders, to let the person of power walk in front of their subordinates. This illustrates the diverse layers of hierarchy that are deeply imbedded in the hierarchical work culture of a country such as China. We could argue that there's a connection between the socio-cultural factors and the spatial qualities of a company, and how this could influence communication and other social aspects. (Zhang & Spicer, 2014)

Organizational culture

Edgar H. Schein, former professor at the MIT Sloan School of Management and author of the book *Organizational Culture and Leadership*, states how often the topic of office layout features has been discussed, and how it can influence employee behavior and what it symbolically represents. He refers the term organizational culture as: *'A pattern of shared basic assumptions that a given group has invented, discovered or developed in learning to cope with its problems of external adaption and internal integration and have worked well enough to be considered valid, and therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.'* (Schein, 1984, p.3) Creating psychological barriers with the use of office furniture could be a great way to embody hierarchical lines within a company, or show a more egalitarian approach. These physical barriers could, in turn, create social boundaries between subordinates and their managers, which directly influences the working environment of an office.

Privacy is an essential element when it comes to the physical environment of an office. It can have major consequences on the productivity of an individual, or could cause daily distractions, which would indicate a lack of privacy. Architectural privacy refers to 'the visual and acoustic isolation supplied by an environment' (Sundstrom et al., 1980, p. 102) It could be a great indication of how an office is managed internally, in which the use of interior walls is the most frequent aspect. As mentioned earlier, the office floor plan varies based on the different work culture and this is mainly visualized based on the interior walls. In a hierarchical work culture, office spaces tend to be closed off, predominately for the managing level, to optimize productivity without any distractions. This however could cause a physical barrier between different levels in the company. The use of walls depends on the level of collaboration, which is more emphasized in an egalitarian office, in which an open-plan is preferred based on the amount of collaborative work between coworkers. Blurring these physical boundaries makes an egalitarian office more productive by getting rid of these walls to enhance collaboration and communication. Therefore it can be noted that architectural privacy could be an indicator of the preferred work culture of an office, or that it's based on the type of job. (Zerella et al., 2017)

While the visual component of architectural privacy applies to being exposed to coworkers within a workspace, visual access depends on the amount of physical barriers in the office space and being able to see other coworkers from one's workstation without the need to stand up. This feature tends to be more visible in an egalitarian office, in which there's a minimum amount of physical barriers, such as walls, which enhances the visual access of employees. This, in turn, improves the amount of communication between the employees and indirectly blurs the hierarchical lines in the workplace. It

facilitates a better relationship between managers and subordinates and could strongly impact productivity due to the fast response time when asking a question to, for example, a manager. (Zerella *et al.*, 2017)

Research on the physical distance between people in a workplace, referring to the physical proximity, argues that the distance between employees increases the amount and the quality of communication. (Kiesler & Cummings, 2002) Studies have been conducted in the past on the consequences of spatial distances between people and how this could improve communication within a space. Edward T. Hall (1966), American anthropologist and cross-culture researcher, categorized four different scales of proxemics based on the amount of social interaction that fits certain dimensions. The so-called intimate/personal/social/public zones could be used to indicate the preferred distance between employees in an office. The personal zone, ranging up to 1,2 meter, should be reserved for private space, in which an employee could feel at unease when they're placed next to a coworker within this dimension. The social zone, which extends up to 3,7 meter, provides enough space for people to socialize or communicate properly with their coworkers, while providing them a sense of personal space as well. (Hall, 1966) In today's offices, it is quite common to have workstations with a minimum surface of designated workspace, which range from 1,4 meter wide to even 1,1 meter, which will be perceived as an intrusion of space and could cause discomfort for the employees. Besides, it can also generate more noise in the open-plan office, due to a greater density of coworkers and could cause more distractions. (Oseland, 2009)

In an egalitarian office, these spatial aspects could have a great impact on the work environment, while still maintaining the concept of an open-plan office space. In order to create spatial barriers in an open-plan office, managers could be provided with more space, compared to subordinates, while still working in the same open space. This however, wouldn't be characterized as a strongly egalitarian office, but for companies that still prefer some sense of private space in an open area, this could be a solution. (Zerella *et al.*, 2017) Similarly to architectural privacy, there's a preference based on the type of job and the amount of communication needed to be as productive as possible. In hierarchical offices there tend to be a larger spatial distance between subordinates and the managing level, which could be illustrated based on separate wings of an office floor, or creating distance vertically, in which floors could indicate the hierarchical lines of the company. Based on Zhang's (2014) research, mentioned earlier in this chapter, the Chinese government office floors and even the exterior shape of the building could reference to the hierarchical 'pyramid' structure of the company.

There are many spatial elements in an office space that could create physical barriers between employees, while there are symbolic elements that might not seem as important or relevant, but do tend to have

quite significant effect. One of these features is workstation equality. While mentioned earlier that certain key factors such as architectural privacy and physical proximity could be an indicator of the preferred work culture or purely based on the preference of the job, workstations are a strong indication of symbolic hierarchy within a company, of course, there could be a personal preference present of the size of a workstation and that it might vary between employees, it does however not effect the job satisfaction or productivity. Companies with a hierarchical work culture tend to have a difference in workstations based on the significance or ranking of the employees. This could be translated to the difference between cubicles and detached desks that are often made out of different materials. In an egalitarian office this translates to either one specific type of desk that's been used by all the employees, or long workstations that accommodate workspaces for several people. In the second example, there's still the possibility for employees to show territorial behavior by using more space than necessary, but this could be seen as a personal issue that wouldn't effect the work environment or level of communication between employees. (Zerella *et al.*, 2017)

McElroy and Morrow (2010) conducted a research, based on the key office layout features, about a large financial service organization, to detect the differences in perception of the workspace from the employee's point of view and how the office layout can result from this. Results show that there's a correlation between the perceived organizational culture and the office environment. McElroy and Morrow's study has shown that during the move of the financial service organization, the employees perceived the company to be less bureaucratic, less formal and more innovative and autonomous, after they've changed the office layout from a cubicle- environment to an open-plan. Cubicles tend to be associated with a stronger hierarchical work culture, compared to an open-plan with a different workstation layout. This attributed to the sense of a blurred work environment with no physical barriers and the consequence of this led to cross-departmental collaboration and the development of a collective learning culture, which applies best to an egalitarian work culture.

Conclusion

In the end, it all comes back to that crucial first impression, in which companies try to showcase themselves in the best possible way. It provides an inside on the organizational structure and the overall office environment. Designers and architects have pondered throughout the years to improve office design and how the perception of the office layout has changed over time based on the preferred work culture. Therefore the research question; how does the corporate office-layout reflect the work culture, and the differentiation between the hierarchical- and egalitarian office, could be answered from various standpoints. There is a clear distinction between the hierarchical- and egalitarian office, which traces back to socio-cultural factors and the spatial qualities of a company. Multiple layers are associated with a certain work culture that could be preferred by many, or undesired by others. Cultural identity plays a major role on specific characteristics in the corporate world that traces back to a country's identity, in which for example Japan is known for their decision-making culture, called the Ringi-system, which translates to a specific office-layout that identifies their organizational structure. While some countries favor a hierarchical work culture—by portraying dominance, creating a visible distance between groups based on a company's ranking system, or even marking territory—others might prefer an egalitarian approach that radiates a homogenous appearance, with identical (non-personalized) and non-modifiable spaces that stimulate collaboration between coworkers in an open-plan layout. Nevertheless, there's always a middle ground, in which companies prefer to have an egalitarian approach, while still maintaining certain hierarchical elements that emphasize on the hierarchical lines in the company, or vice versa. This approach could be realized by office layout features, which could produce physical barriers between employees, or stimulate collaboration and teamwork by eliminating these barriers. Minor details of an office could have substantial influence on the employee's perception of the organizational structure. Materialization, especially a difference in materialization of office furniture, or even flooring, could be an indicator of ranking in a company, which radiates a pyramid culture. Whereas, views, the quality of interior finishes and even ceiling heights could indicate hierarchy ones there is a difference based on ranking. A homogenous interior space, that provides non- territorial workstations, of similar measurements and materialization, blurs the hierarchical lines of a company and the sense of bureaucracy. There are, however, certain tasks or assignments that have the need for private space, or private access to certain spaces to enhance their work performance, in which we can conclude that certain spatial elements should be designed based on the type of job, instead of overall "work culture". It might not always be as desirable for some employees to follow the company's spatial relocation, while results demonstrate that, indeed, there are personal factors on how a spatial relocation might be received by an employee, but there is no doubt that subconsciously

the spatial features of an office space directly influence the organizational culture. It could cherish a social ladder within a company or value approachability and social equality. Therefore we can conclude that there is a significant influence of the office layout on the organizational structure and that it influences employee's behavior and their perception of the work culture.

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Adaptation

11 Languages in Music & Architecture Gijs Jacobs

The essay establishes a theoretical link between music and architecture through the similarities of the processes within both arts. A framework to compare the two participatory arts in terms of their roles and the language that connects them. By surpassing the material qualities of both arts, we enter the realm of universals that allows us to get a better understanding of these processes. The goal of this paper is to apply the theoretical body behind musical design to reevaluate architectural methods of design and communication.

12 Architecture *in-between* Fashion Mimi Cepic

Architecture and fashion are both design disciplines that push the capacities within their domains to address the issues between culture, media, and technology. This thesis seeks to explore the entangled relationship between the disciples of architecture and fashion design through a critical analysis of 20-plus year collaboration between luxury fashion house, Prada, and renowned Dutch architecture office OMA/AMO. The hybridization of the two worlds is a multiplicity of potential capacities that generates the production of new concepts - concepts that transcend the boundaries of their respective domains.

LANGUAGES IN MUSIC AND ARCHITECTURE

Applying musical total serialism to architectural design

Gijs Jacobs
5261856

Introduction

There have been many artists that attempted to create an analogy between music and architecture. The relation between them is still very unexplored, however many practitioners of the arts have experienced and used this relationship productively in the past. Often the comparison provided no more than an arbitrary inspiration or translation, however this recurring theme has also been of interest of philosophical discourse, and can lead to many interesting insights.

This essay was inspired by a design assignment of a music building (Figure 1), in which I got myself into the beautiful mess of this comparison. Intrigued by it, I engaged a process of unraveling layers of the methods of design, in which each insight lead logically to the next. All I had to do was follow the lead, whilst staying wary of descending into ambiguous metaphors.

This essay is in essence nothing more than this trip from the specific to the universal. By simply following the train of thought, I cannot help but logically arrive at a new approach to architecture. Perhaps there are some aspects that I have not foreseen, but the base framework that I lay out in the essay has opened my eyes to a whole new realm of design in architecture.

Chapter 1

How could music & architecture learn from each other within theoretical discourse?

- *translations* - The comparison between the arts seems to the eye contradictory because of their material dissimilarity - one is communicated by arranging matter in space, the other by arranging sound in time-. The most predominant example of such literal comparisons is one between a cathedral and some classical music performance, However any total translation of architecture to music or vice versa seem to be at least partly arbitrary, as one would not be able to reverse such a translation to extract back the initial piece of art. The only thing we can literally translate is the mathematical relations that reside within the works of art. These *transpositions** can be used as inspiration to design but fail to ground a theoretical comparison between music and architecture.

Music first has to be translated to math before it can become architecture, however after that initial step, the mathematical proportions and relations can no longer be regarded as the original work of music as it has lost its absolute properties and values. For those relations to then become architecture, an individual must arbitrarily add new properties and values to those relations. The incompatibility of properties and values of sound and matter make 'translations' between arts effectively arbitrary.

* some examples of computational transpositions (Ham, J., Harvey, L., Schnabel, M. A., & Prohasky, D. 2016; Hansen, J. H, z.d.; Parthenios, P., & Liapi, M. 2011)

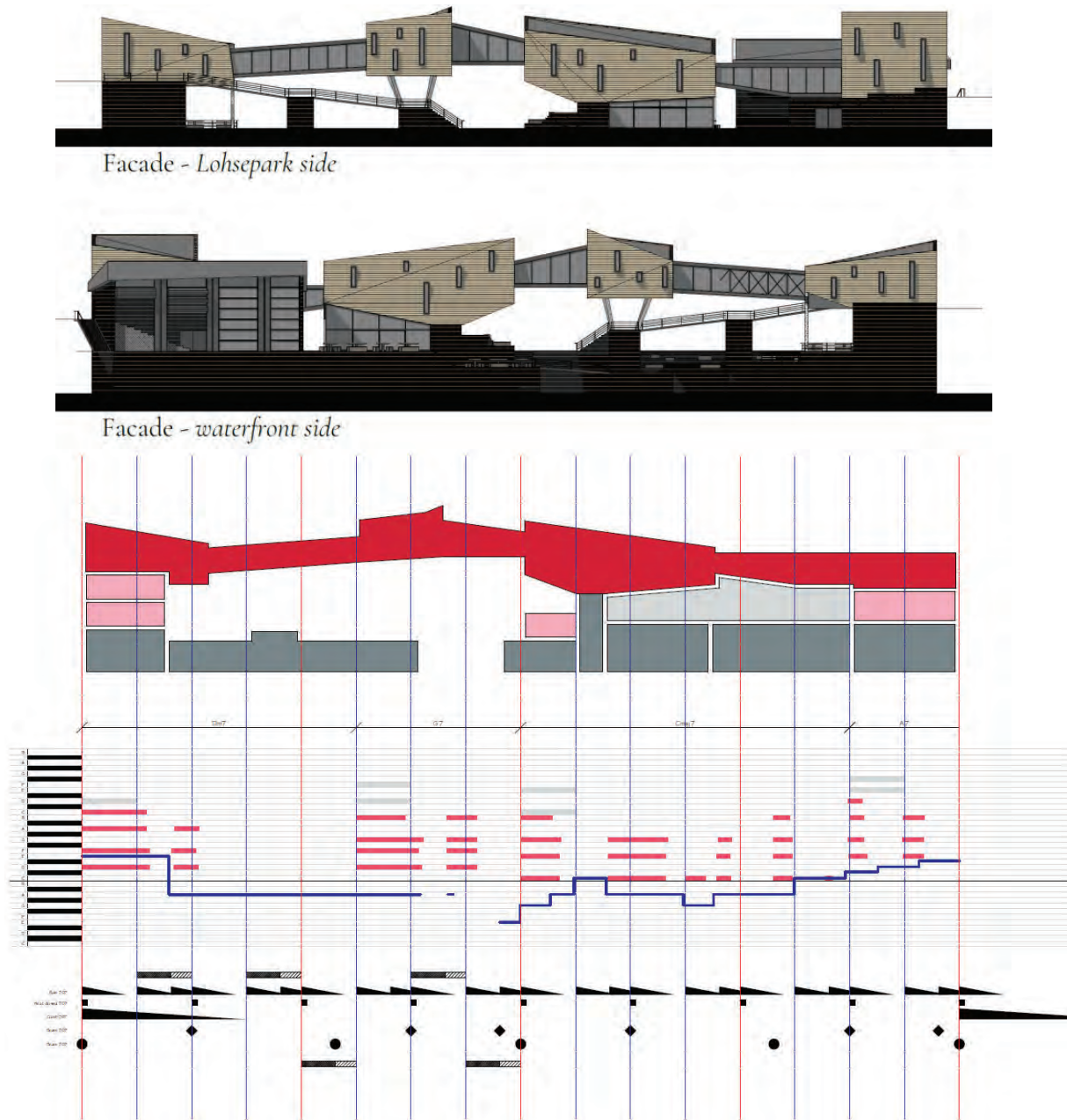


Figure 1

The design process of a musical piece – in music softwares – along side the design of a building, using the clever relations within music as a starting point. Whilst the concept is interesting and was very inspiring for my project, I quickly realized it provided nothing but arbitrary transpositions of proportions. Nonetheless this project has functioned as an entrance point into this very interesting topic, leading to a fascination for the theory that underlines this basic idea of crossing knowledge of different domains.

Brick cannot be translated to violin (properties), meters cannot be translated to seconds (values). They can only be transposed.

- *process of design* - However similarities are quickly exposed when looking at the process of design, rather than the product of it. Looking at design allows us to surpass the material differences of the products, to then compare the design methods within both domains. Both architect and composer use certain rhythms, relations, textures, etc. to create a composition. This might also explain the reason these similarities are often described by those who have practiced both arts, have gone into discourse with the respective other. – J. von Wolfgang / Le Corbusier and Xenakis / ...

When looking at process of design, the domains all of a sudden have a lot in common. This can be exemplified by the way musical terms are almost perfectly compatible to the design process in architecture - rhythms, harmonics, timbre, texture, form, tone, brightness, darkness, dynamics, etc. - These musical terms work so well that some of them in fact have become part of common architectural jargon, which hints at the theoretical link between the domains that I wish to explore further in this essay. The architectural building and the musical performance are very similar in how they connect to the perceiver. Both arts have the capacity, unlike the other arts, to completely surround the 'spectator/listener' (to which I will just refer to as 'spectator' from here on). The subject is surrendered to the phenomenon of music and architecture, unlike in painting, sculpture or literature which we allow to overwhelm us. We can look away of the painting at any moment, but we cannot close our ears to the music or our senses to the environment.

- *perception* - The fundamental aspect that allows for a comparison to be legitimate, is to acknowledge the element of perception as separate from material qualities. For this reason, this essay is built upon Maurice Merleau Ponty's phenomenology of perception (1945). In his work he elaborates on the concept of 'sensation', explaining in the process some of the many prejudices at root of the act of perceiving.

"We must recognize the indeterminate as a positive phenomenon. It is in this atmosphere that quality arises. Its meaning is an equivocal meaning; we are concerned with an expressive value rather than with logical signification."

~ Maurice Merleau Ponty, 1945

When modeling, sketching or experimenting with new concepts the designers themselves act as a 'test-perceiver'. We can theorize new concepts, but we cannot know the full quality of those ideas until we put them to the test by sketching or realizing those ideas in some way or another. What immediately becomes apparent of this is that it is not so much the material qualities (or logical signification) that make architecture aesthetically pleasing (there nothing inherently good about bricks), but rather their perceived qualities, or in other words the 'qualia' (Jackson, F., 1982). The qualia is the sensed quality, and may be impossible to describe, yet it is that which the designer seeks to control. The architect sketches and makes models to refine a shape, just like how the musician plays a chord progression over and over to refine the voicing. In both cases the designer is testing new concepts by using his own senses to judge the quality of those concepts.

A comparison between music and architecture can be made when looking at how designers seek to control the qualia. One differentiation that is often made between music and architecture is that one is static and the

other dynamic, but also this is no longer relevant when the analogy surpasses the material difference between the arts and instead focuses on phenomenology of perception. Architecture is static and music is dynamic, yet the perception of both are linear (Galia Hanoach-Roe, 2007).

Chapter 2

Why and how could architecture learn from music?

- *difference within comparison* - Now that we have established a legitimate comparison between music and architecture, we can explore the differences to understand how designers in both cases seek control over the qualia of their works of art. To me, it seems as if music does a much better job at connecting to its perceivers than architecture. Whilst this is a subjective statement which may vary per person, we can clearly see that music has integrated into our lives like no other art has. It is uncontested in its ability to affect the perceivers of the art, from the general public to the professional. Architecture, whilst also integrated in our lives, seems like it can only be properly appreciated by architects and enthusiasts. Certain knowledge is required in advance in order to fully appreciate it. Architecture does not seem to have that power to make the average person want to dance or scream just by perceiving it.

- *restriction in architectural design* - Looking at architects and their approach to design, it is typical for architects to start the process by arbitrarily designing / sketching / etc. on an empty canvas. I say arbitrary as the architect has to first come up with a certain concept, principle or idea, which provides the basis that enables the architect to start designing. This initial step is not one of reason or aesthetics. Perhaps it is the sense of ambiguity (due to the infinite possibilities at the start of a design process) that forces the architect to cling to some theme in order to 'comprehend' the process of design. There is always this first step from the infinite that leaps to the tangible. It is only then that the architect can start to 'create' within that basic idea.

The architect has an infinite number of options within the boundaries of gravity and function. I want to mention these restrictions as they differ from the type of restrictions we will find later in music. The first restriction – gravity – is a natural limitation, which is a universal limitation to all things. Architecture is limited by the nature of matter, whereas music is limited by the nature of sound. Some structures just cannot exist in this world, just like some sounds cannot either. We simply cannot imagine sounds that cannot exist as our imagination is not able to conjure up something at all, whereas it is easy for us to imagine a flying object. But if you try to think of a color that does not exist we clearly

see the similar nature of these restrictions. Natural limitations are not relevant to the question of *how we create something aesthetically pleasing* (architecture or music) *from something ordinary* (matter and sound) within those boundaries.

Then there is the restriction of function that architecture has to deal with which, to some, differentiates it from music. 'restriction' has a negative connotation, yet it is meant in the most literal sense of the word. It limits the number of options a designer has.

"It would appear from this that music must be either the highest or the lowest in the scale of the arts; because, whether highest or lowest, it is free of function."

~P. Waterhouse, *music and architecture*, p. 324

However, whether music has a function and what architectural function means in this comparison is not relevant to the question posed in this paper. Having to implement function into the art of architecture limits designers, yet there is a distinct difference from the previous type of restriction. Functions pose a set of requirements rather than a limit to possibilities. Any combination of functions could still be realized in an infinite number of ways. Again, the job of the designer here is to create something aesthetically pleasing (architecture) out of something ordinary (functions). The difference in having or not having a function does not limit our comparison between design process, it is just the tools with which we can make the art that change. The same could be said for any other number of restrictions an architect might encounter, like the context of a building, culture, etc. These are all externally imposed restrictions in which the architect has to create something aesthetically pleasing. The architect, already limited by these external restrictions, would never dare to unnecessarily restrict oneself...

- *restriction in musical design* - Composers on the other hand start off designing with a set of playable notes (12-tonal system) (M. Bandur, 2001). What is interesting here is that this seemingly large restriction of an infinite number of playable frequencies to just 12 in an octave is a 'self-imposed restriction.' Perhaps it is the lack of function that has left musical theorists in the past dazzled by their infinite number of options, which forced them to narrow down these options, just like the architect's initial leap from the infinite to the tangible. These design 'restrictions' in fact give the composer a head start as opposed to the architect. The composer starts designing using a set of 12 cleverly proportioned frequencies and then focuses effort on how to cleverly arrange those proportions. This method of design, allows all musical works to be of a certain intellectual sophistication at the very least since the tonal system already establishes a bottom line of coherence - harmony - This is not to say that the system 'better music,' as I would still be able to make

horrible noise when randomly slamming piano keys. However, by limiting the number of keys on the piano, the composer is not lost in the infinite and can therefore more easily develop an understanding of those 12 tones and their relations to each other. Furthermore, instruments use these 12 tones and proportion them to the human body. This makes the process of reflecting on concepts ('test perceiving') more accessible and gives the composer a better comprehension of the design process. The 12 tonal system is an example of theoretical discourse 'design within an art, which ultimately provides a necessary compromise of beauty and practice, the world and the human body, reality and consciousness.

"it is not sufficient to have the whole world at one's disposal the very infinitude of possibilities cancels out possibilities, as it were, until limitations are discovered"

~ Roger Sessions, 1962 p 31

- *participatory arts* - This distinction between 'the empty piece of paper in the architect's sketchbook' and 'the 5 horizontal lines of the western musical scoring system' as starting points of the design process in the respective domains is quite remarkable. This comparison however reveals yet another universal that bridges the two domains, as both music and architecture are participatory arts; works of arts in both domains are created by at least more than one person (aside from the shed and the soloist, which I will not address in this essay) and often these are individuals who had nothing to do with the 'initial' design process of that piece of art. Both arts require certain people with specific abilities to come together and create something, which, in all its glory, can succeed the sum of its parts. In order to perceive a musical work or a building, some form of communication between individuals must first occur. And the communication we use should therefore be closely examined, as it allows, or disallows, the creative intents of the designer to be successfully communicated and realized. These languages are not limited to just common languages, as we are dealing with the phenomena or perception, or in other words; that which exceeds the spoken and the thinkable. The design process is based on experiences, as the designer tries to evoke certain qualia in the spectator and therefore needs to communicate those qualia effectively to the musicians. These musicians and constructors then translate these ideas once more, to finally realize the work of art so that it may be perceived by its spectators.

- *communication in participatory arts* - Both arts deal with this necessity of communication in different ways, as both had to find a way within the boundaries of their respective medium. The 12-tonal system is part of the western musical language often referred to as 'serialism'. Architecture has no official universal language, but in western architecture the communication between designer and constructors mostly consists of the 2D plans (floorplans, facades, sections, situations etc.) and the 3D models (digital and physical).

The architect's method of communication is of material nature, as the goal of the plans, facades and sections are to compress the material qualities of the building into a comprehensible amount of information. The architect is often seen as ultimately responsible for the work of art, and therefore keeps 'creative methods' within the architectural office. Only when the design process is finished, it is compressed into an efficient description of its material qualities so that it can be communicated.

Music however, was forced to take a different approach as the limits of time make it is very unpractical to use sound as a means of communication- It would require the composer to play all pieces in advance, which is equivalent to the architect building all components of a building in a 1:1 model -. This is not sufficient, as it fails to practically

compress the information, which is a fundamental task of language. It compresses the absurd so that we can speak of it, and so too the languages within the arts compress information in order for them to communicate effectively the unspeakable phenomenon the architect or composer wants to evoke. This might seem like a contradiction because the unspeakable seems ambiguous, yet by using other means than words we are capable of communicating differently. An image of a smiling face will communicate other qualities and qualia than a telegraph or poem about that same smiling face.

As sound is not a viable medium for effectively communicating within the musical domain – due to the limitations of time,- the most obvious alternative is to create a visual language of sound. In order for such a language to be constructed, a human agent has to transpose that perceived sound into visual notions of it. The complete language of these notions have the ability to transpose certain perceived qualities into a visual notion of it. We use the words and symbols of such notational systems as direct reference to the experiences we have when perceiving them – our interior worlds -, instead of the conventional languages, that function to categorize the exterior world so that we can navigate it.

This is where Music and Architecture differ within the comparison. The nature of communication in both arts has evolved differently. Musical terminology can be applied to both architecture and music, as the terms were originally used – in music - to grasp the perception of things rather than their material qualities. This distinction between the nature of the languages of music and architecture is a peculiar one and could lead to new approaches of design within architecture. And the applications of this are not limited to the designer, as these languages are relevant to all participants of the art and even the spectators as we will later see. Due to the successful application of musical terminology to architecture, it seems like music has done a better job creating an effective language than architecture and for this reason I want to explore the comparison by learning from music for architecture. It should be said that this relation could likely be productive the other way around as well.

Chapter 3

What can architecture learn from music?

- *learning from each other's language* - Throughout the comparison in the previous chapters I have laid out an analogy between several elements of both design processes (Figure 2). Starting with the *composer & architect* (Figure 1) who create a design, to the *languages* (Figure 2) that are used to communicate that design to *musicians & constructors* (Figure 3), so

that it can ultimately be perceived by the spectator (Figure 4). Within this framework we can further examine the function of language in the 2 domains, respectively. Here musical total serialism reveals itself at one side of the analogy, and the technical drawing on the other.

- *language, restriction and design* - Note that language, restriction and design are closely related as language compresses the absurd and unspeakable into clear categories and things so that it can be spoken and thought of. Restricting the infinite to the tangible is in fact the primary function of language. We can only design the tangible, so therefore we need to restrict if we want to design. The act of designing itself is the very act of eliminating options and the continuous restricting of alternatives. We should not be afraid to restrict ourselves as long as the restrictions help us grasp the process of design. This, I think, is the main lesson we can learn from musical theoretical discourse. Of course, it is as important to stay vigilant of the type of restrictions we will allow, as to not lose too much of the potential that resides in the indeterminate. The languages of an art – and the restrictions they imply - should be flexible, like the languages we use in daily life, so that we can equip ourselves with the tools to explore the realm of the unknown and adapt to it – be it science or art-.

- *representational & expressive symbols* - Here I feel it is necessary to stop and further explain what I mean with 'language', as it is a philosophically loaded term. In this essay I use the notion of 'language' as it is used in Nelson Goodman's: 'Languages of Art - an approach to a theory of symbols' (1969). He uses 'language' and 'symbol system' interchangeably, and so will I. This means we should also consider gestures, musical scoring, pictures, creative methods and other symbols as part of their respective language. His work on the languages of art is very extensive and brings many exciting ideas in relation to this topic, but for the sake of clarity I will not go into unnecessary details. In the beginning of his work, he distinguishes symbols that refer to objects - representation - and feelings - expression -. Taking this basic notion can help us reexamine the languages used in Music and Architecture, without having to resolve to deep philosophical notions. Whilst things gets nuanced with some symbols, we can see how the basic idea can be applied to both languages mentioned:

- *language and the constructors* - The architects' final drawings in the shape of plans, facades and sections are representational symbols. The technical drawing represents an object, independent of our perception of it. Each symbol, visual or written, is used to efficiently describe the material quality of the building rather than the perceived quality. This is not to say that such drawings are not useful, but rather to stress the fact that architecture does not currently strive to communicate expressive values to those who construct

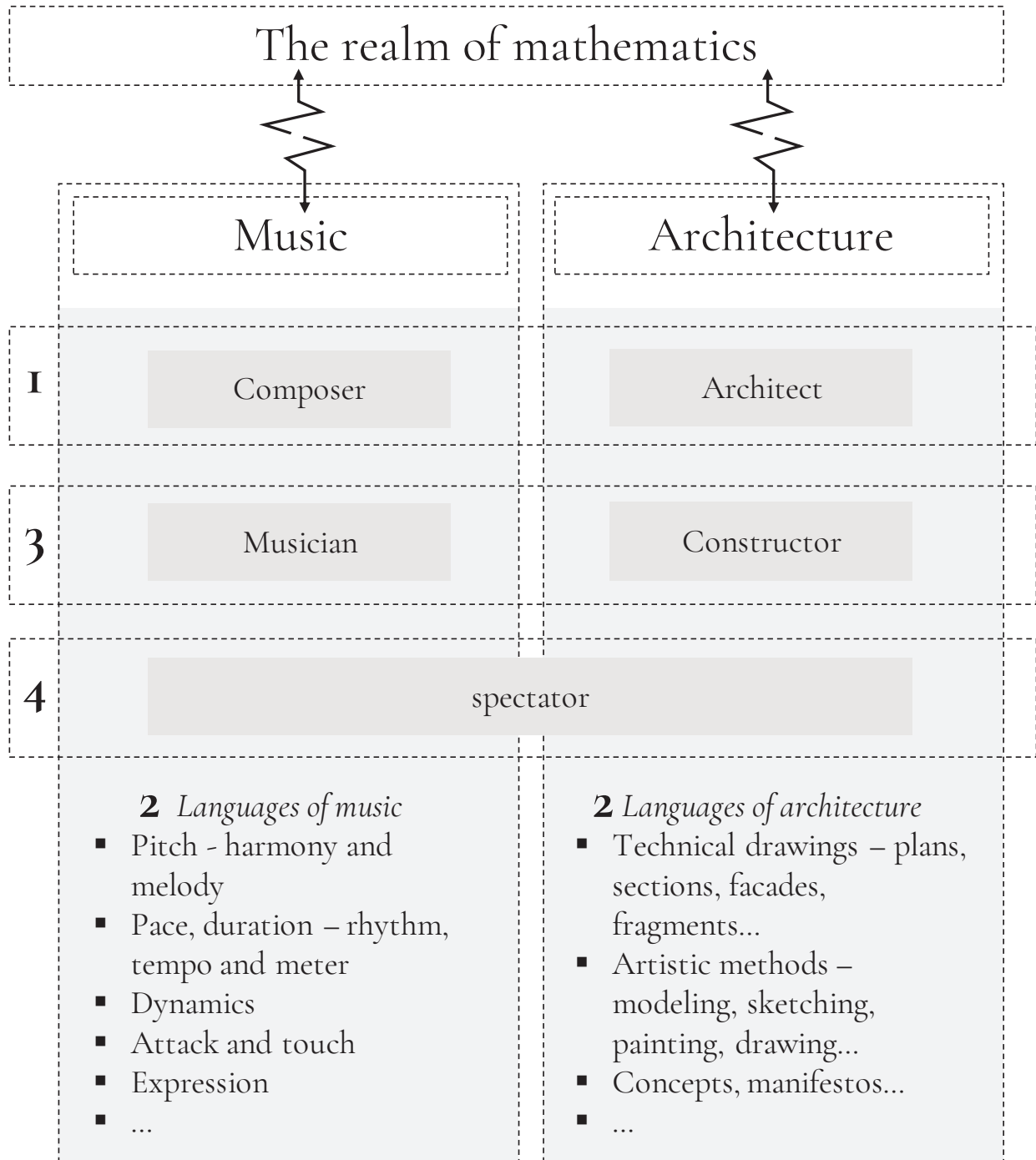


Figure 2

The process of creating music & architecture consists of 3 involved roles: composer & architect; musician & constructor; spectator. Works of art may be transposed via the mathematical plane but lead to nothing but arbitrary comparisons. However, a theoretical analogy between domains can be found within the similarities of these roles. All of them go through similar processes regardless of the difference in materiality of both domains. Languages within the arts connects all parties and allow us to communicate and create participatory works of art. These languages dictate what and how we can think within each domain. See examples of musical and architectural languages in figures 3 and 4.

Nocturne Op.9 No.2

Chopin

Andante espress dolce

Piano *p espress dolce*

The image displays the first ten measures of Chopin's Nocturne Op.9 No.2. It is written for piano in a 3/8 time signature with a key signature of two flats (B-flat and E-flat). The score is presented in five systems, each with a treble clef staff on top and a bass clef staff on the bottom. The tempo and mood are indicated as 'Andante espress dolce'. The first system includes the dynamic marking 'p' and 'espress dolce'. The second system starts with a measure number '4'. The third system starts with a measure number '6' and includes a trill ornament (tr) over a note. The fourth system starts with a measure number '8' and includes a trill ornament (tr) over a note. The fifth system starts with a measure number '10'. The music features a flowing melody in the treble clef and a harmonic accompaniment in the bass clef, with various articulations and dynamics throughout.

Sheet Music from 8notes.com © Copyright Red Balloon Technology Ltd 2011

Figure 3

The scored representation of one of Chopin's most famous pieces: the notes are representational and harmonic within their particular scale; terms like 'express dolce' indicate a sense of 'sweetness' and 'tenderness'.

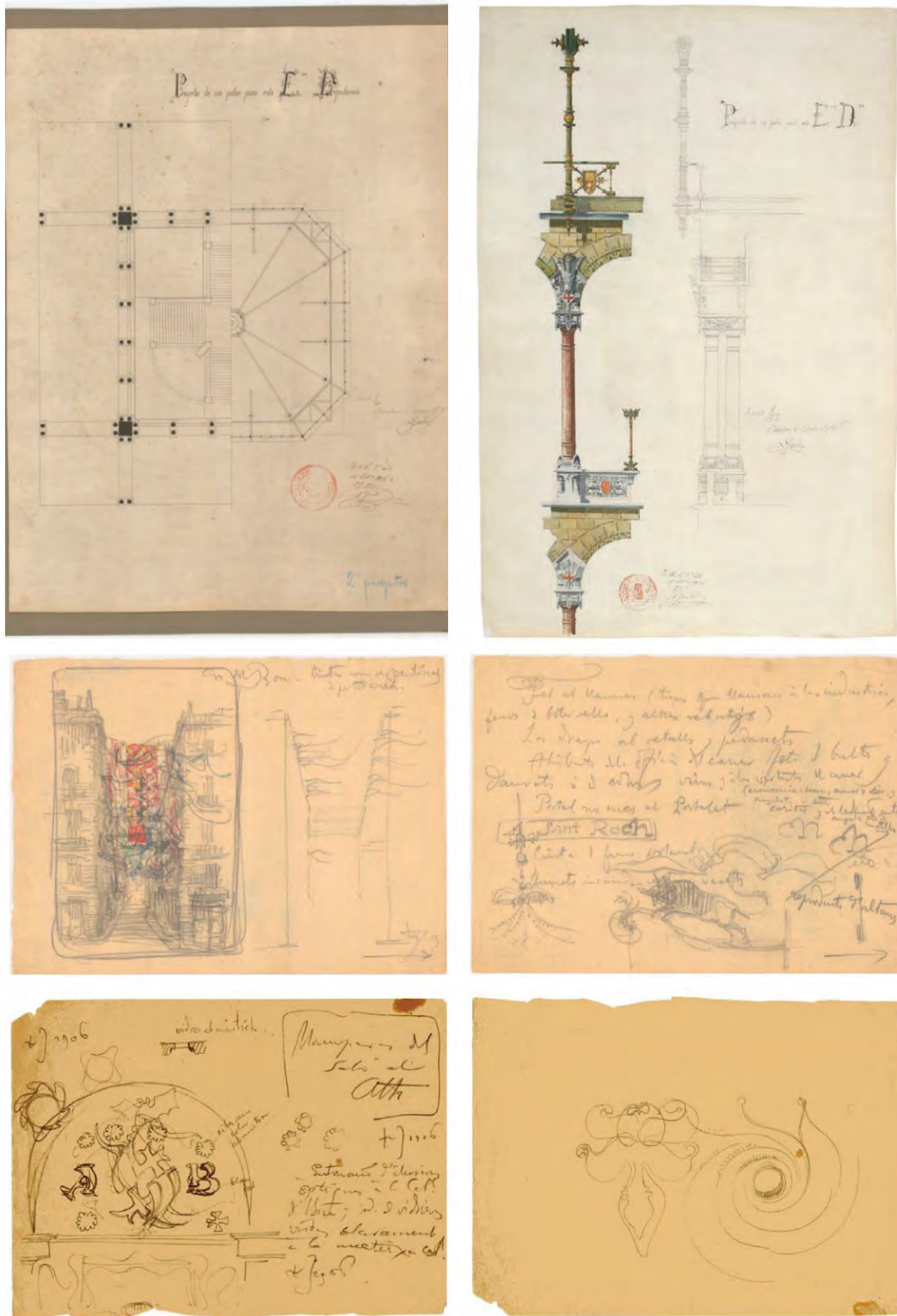


Figure 4

Some of Antoni Gaudí's archived drawings from several projects. (1874-1954). The section, plan and fragment are very efficient in communicating spatial proportions, whereas the sketches and scribbles allow for some level of interpretation of atmospheres and ideas.

the building. The architect uses expressive languages all the time (sketches, modeling, etc.), and one could say that these expressive values are translated into those final drawings. But to say that the material qualities that make up the final drawings still possess the same qualities as intended by the architects' sketches, models etc., would be just as crude as assuming that a telegraph of a smiling face would be a sufficient description for the feeling of someone seeing that person smiling. The expressive languages of architecture are trapped in the architects' office. Architecture does not acknowledge its participatory nature in the same way music does, as these artistic languages are often seen as tools for the architect alone. They are solely seen as mediums which help the architect achieve a proper final result.

- *language and the musician* - Musical scoring consists of both representational and expressive symbols and thus attempts to communicate both some material qualities and some expressive values. The notes within a musical score, like the technical drawing, refer to absolute values independent of our perception, in this case of frequency. Terms like 'express dolce' (figure 3) or 'fortissimo' are expressive, as they inevitably deal with the qualia. There are no complete descriptions for 'harmony' and 'texture,' but we can still comprehend these phenomena by expressing them. Similar to how we use words like anger and sadness, these words refer to 'things in the inner world.' Each individual may experience different qualia when they feel 'sad,' but these terms work well enough to identify and communicate these absurd inner states. These expressive symbols are essential to the musical language and without them we would not be able to accurately document the symphonies of all the great musicians in history. Communicating these expressive values allow us to emphasize and highlight certain aspects of the communicated material qualities, creating sound that is an extension of our inner worlds.

The act of performing is very different when considering this type of information. Rather than the composer finalizing the work of art, leaving no room for further interpretation or adjustment, we involve all participants of the art in the creation of it!

- *language and the spectator* - The expressive languages of architecture are trapped in the architect's office. It might reach the contractor, but it will seldom reach the spectator. The contractor is limited by the finalized drawings of the architect, which leave no room for further interpretation and effectively stop the creative process at the moment the final drawing is created. In music the expressive language is communicated to the musicians, who use this information to perform it to the general public. As for the spectator it is much easier to tap into this language as (a) it is more emphasized by the musician and (b) the spectator is often already accustomed to this language. Total serialism is learned through cultural appropriation, just like any other language (speech, bodily language, math, dance). By

always hearing music in the same tonal system, we can accustom our ears to the familiar frequencies and combinations, and the way they are used across genres. The educated spectator can surpass that first level of harmony in order to dive into all layers of complexity that art can provide us with. Total serialism helps the spectator bridge that initial leap, that same leap that confuses the designer at the start of the process and disallows the spectator to 'join the conversation.'

Chapter 4

How could serialism practically provide a new approach to architecture?

Now to put theory back to practice, we can see these types of languages already exist within architecture to prove not only the concept, but also to show its potential. Keep in mind that the following examples are not perfect but provide a proof of concept to a new way of approaching design. Inventing a language is difficult and takes time, but only through trial and error can we explore the unknown.

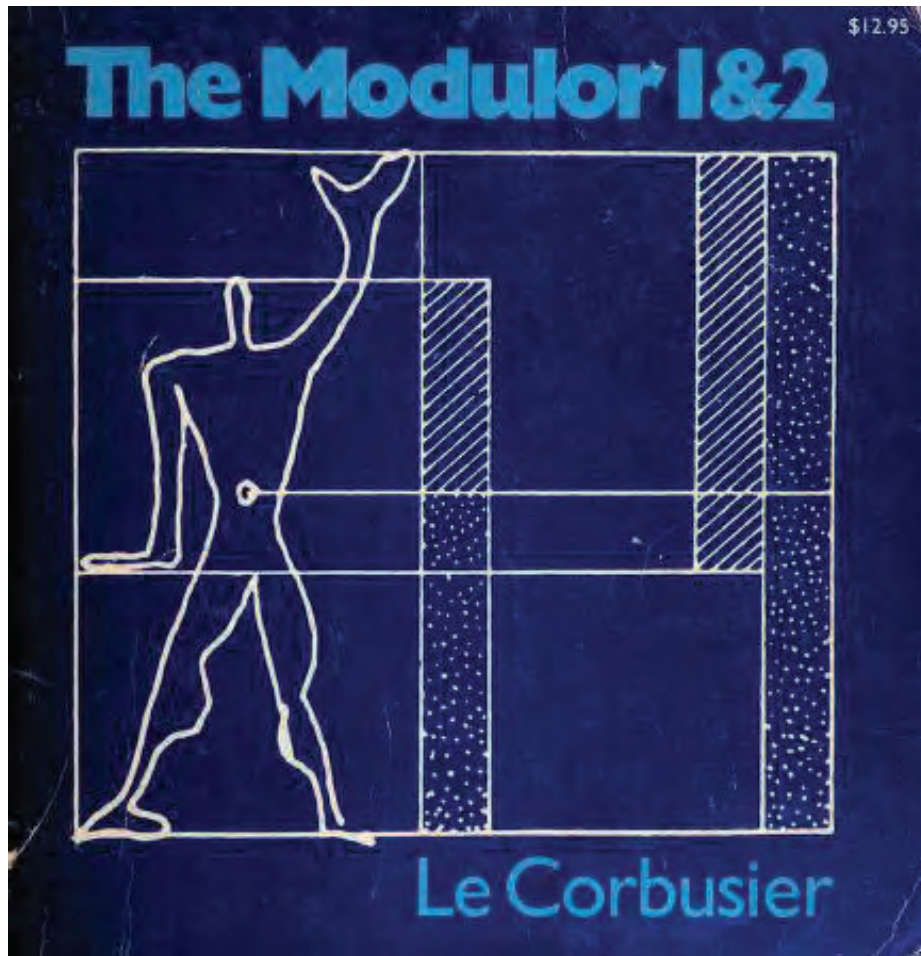
- *Le Corbusier* – The very famous architect had a close relation to composer Iannis Xenakis (Sven Sterken, music as an art of space: interactions between music and architecture in the work of Iannis Xenakis). It is hard to say to what degree this impacted Le Corbusier and his way of thinking, but it is safe to assume that he was familiar with the comparison of music and architecture to some extent. Some of his designs, like the Philips pavilion and the Monastery of La Tourette, were experimenting with the transposition of musical proportions. However, here I want to specifically focus on the language aspect of Le Corbusier's design methods, starting with Le Corbusier's 'modulor' (Figure 5). The concept of relating the architectural dimensions to a set of human-friendly proportions provides the designer with a spatial-serialist approach to design. It restricts the infinite possibilities of spatial dimensions into a cleverly proportioned set, so the designer can redirect his efforts to proportion these measurements into layers of complexity. The proportions are not only functional as they are also often considered aesthetic – we call it the golden ratio for a reason.

On top of that Le Corbusier also proposed other types of languages. He applied a similar idea to the realm of color. He believed in the concept of a color palette (Figure 6) and released some to the public which are still popular today. This serial approach to design can be seen in many of his ideas (see also 'the 5 points of architecture'). All of them 'serialize' architecture and succeed to some degree in making design more tangible.

- *Galia hanoch-Roe* - Galia's essay '*Scoring the path: Linear sequences in music and space*' (2007) was influential for the writing of this essay. In her work she proposes the notion that architecture is linear, just like music, as both are perceived through time. She analyzes scoring systems across several artistic domains and proposes a new scoring system for paths in landscape architecture (figure 7). Her goal, like with musical scoring, was to create a language that can communicate effectively the quality of a design. The architectural score could function as a tool to grasp the process of design, as well as additional information on top of the plans, facades and sections to be communicated with the constructors. It should be said that I think the language she proposes has flaws, yet that is only natural in the process of creating a language. It does however succeed in its ability to kickstart a conversation that can more consistently refer to the qualia that we seek to control as designers.

- *The next level* - The two examples mentioned give a good hint at the direction architecture in general still has not explored well enough: designing with qualia, rather than with qualities.

The methods are mostly directed to be used as design tools, as these languages dictate how and what we can think in the first place, just like with common languages. Expanding the boundaries of these



Architectural Polychromy

The architectural colours – Le Corbusier's Architectural Polychromy is a masterpiece. The ideal tool for masterful architectural colour design. It offers 63 fascinating shades that Le Corbusier created in two colour collections – in 1931 and 1959. All shades are eminently architectural, naturally harmonious and can be combined in any way. Each hue has its relevance and embodies specific spatial and human effects.

Figure 5

The cover of Le Corbusier's book: Modulor 1 & 2, (Translated By Peter De Francia And Anna Bostock], 1980)

The colour palette of 1931



Figure 6

Le Corbusier's colour palette. This image is a screenshot of Le Corbusier's patented website. Note how the last sentence of the caption describes the theory of a serialist approach to design, very similar to that of the 12-tonal system. (Le Corbusier's Colour System - The Architectural Colour Palettes, 1931)

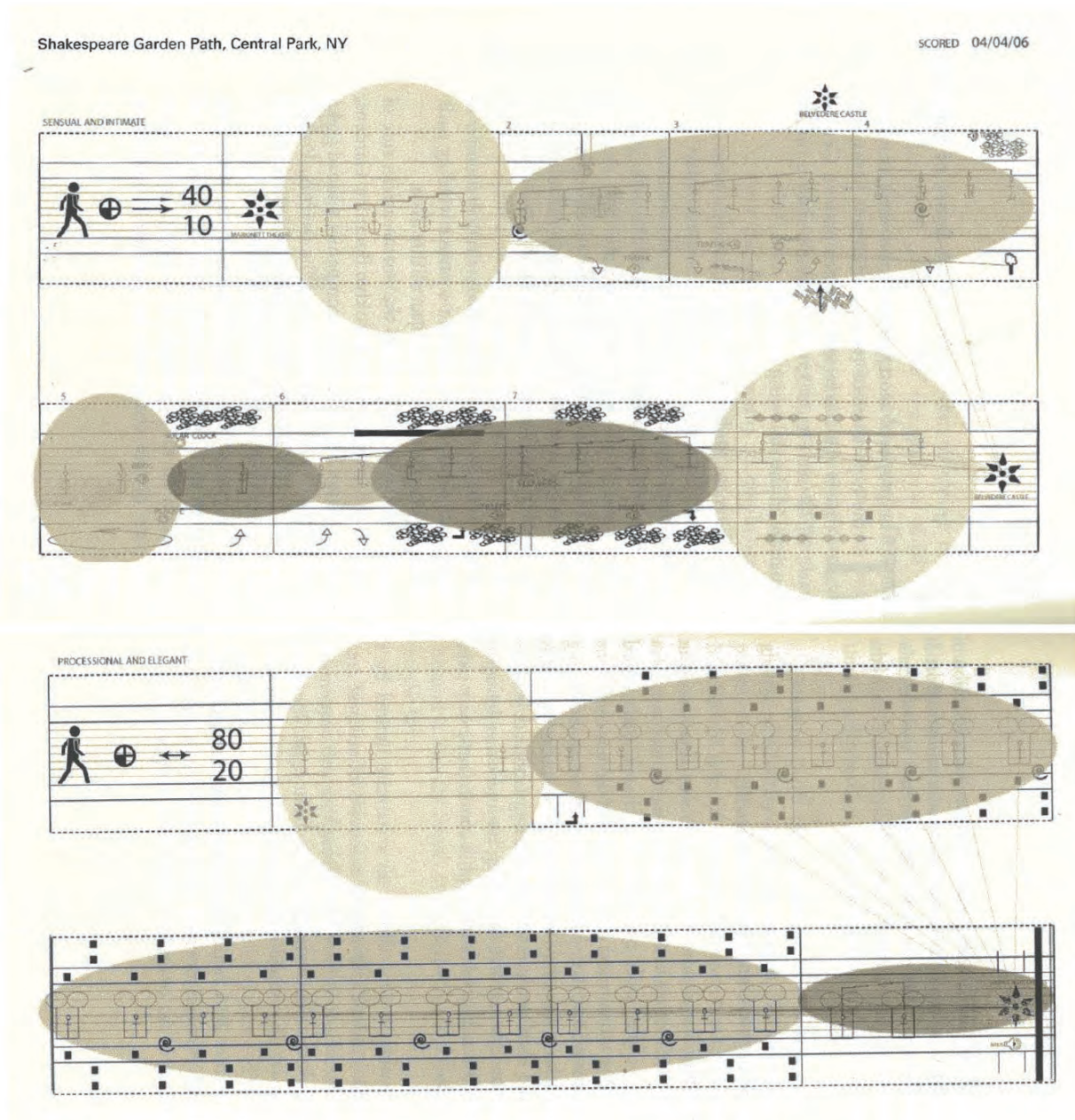


Figure 7

The scoring system for scoring paths in landscape architecture, proposed by Galia Hanoch-Roe. Inspired by scoring systems of other kinds, especially musical scoring, she attempts to create a new language for linear perception of paths including ideas of rhythm, path enclosures, views and other qualia of the path.

languages, expands the boundaries of design potential.

Both examples also attempted to use their respective languages as means of communicating. Le Corbusier made color palettes for wallpaper companies. This could be seen as an attempt to uniform languages of architect and constructor. The same can be said of Galia's 'additional' drawings for communicating the qualia of a path.

For a multitude of reasons, both methods have not been universally applied to architecture, which means there is still a next step in this analogy to be explored – the spectator. Unlike musical serialism, the spectator has not been able to appropriate these languages of architecture. This basic knowledge of tones and their usage in certain contexts in music is the bridge that allows spectators to enter the conversation of composer and musician.

Conclusions

The playful relationship of Music and Architecture is a tree of fruits offering many more branches to be explored. It allows us to surpass the world of objects to trespass into the realm of universals. In this realm, no longer distracted by specifics, we can compare knowledge across domains. It allows us to escape some of the prejudices that limit us from expanding the boundaries of knowledge.

In this essay a relation between music and architecture is established by looking at them through the lens of design. Following this train of thought, the architect and composer immediately expose a fundamental difference within the similarities of both approaches. The 'self-restricted' design approach of the composer is a phenomenon that is not generally seen in the design approach of the architect. At the root of this difference lie the languages that are used by both domains. When looking at the means of communication in both domains we can see that musical scoring and terminology has the ability to refer to the perceived qualities – the qualia -. Here, another universal difference between domains is discovered: Both arts are participatory arts and use languages respectively. Within architecture we tend to forget the participatory nature of our 'art.' Creative methods are limited to the architect's office, who then compresses that information into a material representation of the design (in the shape of plan sections and facades). Looking at total serialism as a language within western music culture, we can see how proper usage of languages not only helps (a) communicate between participants of the art, but also (b) helps designers grasp the process of design and (c) provides spectators with the basic knowledge that allows them to admire and partake in the complexity of the art.

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ARCHITECTURE *IN-BETWEEN* FASHION

The exploration of architecture within the design discipline of fashion

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5504090

Introduction

Architect / noun / a person who plans, designs and oversees the construction of buildings

Fashion Designer / noun / a person who creates the ideas and concepts of new clothing style

Where problems arise, design surely follows. Design is the process of creating concepts out of problems. It is through problematizations that imagination is sparked and designers are found taking on challenges that vary in complexity, scale, environment and purpose. Materialized forms that surround our environment are the elements that have been actualized through the production of concepts and the process of design. "It is precisely the lack of clear line between human and world that provokes or energizes design as the attempt to draw such a line" (Colomina & Wigley, 2016). In order to understand the full potential of design, we must understand the coexistence of the virtual and the actual. French philosopher Gilles Deleuze explains that "the virtual is opposed not to the real but to the actual. The virtual is fully real insofar as it is virtual" (Deleuze, 1987). With every actualized object, coexists its infinite virtual capacity, - fog of mental images that we can imagine, but only through memories or abstracted fragments. "In no case can the relation between the actual and the virtual be established between two actualities" (Deleuze, 1997). An object is only as real as the virtual images around it. They must always be understood as a multiplicity - a process of becoming.

The disciplines of architecture and fashion share the common domain of design. Generally defined, architecture is the design and creation of buildings, and fashion is the design and creation of clothing. Both disciplines derived from the same human need for shelter - shelter of space and shelter of skin. The virtuality of architecture and fashion became actualized when humans gave each domain a function, and as a result a distinction in their purpose was established. Both disciplines have simultaneously evolved, and are driven by the technical innovations and creative capacities of their domains. However, if once recognized as sharing the same function for different forms, there is motive to investigate the potential capacities that take place in-between architecture and fashion. I share no interest in defining the role of an architect nor the fashion designer. I seek not to argue the absolute truths of what it means to be either kind of designer, rather my curiosity forms around the design potential that takes place when the boundaries of these disciplines begin to blur.

Chapter 1

Architect meets Fashion

*"Ideas in disciplines help to shift and form ideas in other disciplines"*¹

- Rem Koolhaas. architect, theorist, urbanist, and professor

Architecture responds to its environment, it embodies representations of social development and technological innovations and outputs spaces for humans to engage with the material world and with each other. Buildings are forms generated out of problematizations. The role of the architect is being challenged constantly. It requires a deep understanding of context, structure, function, materials, movement, and aesthetic. The complexity of the discipline makes its borders difficult to define, which results in new capacities for actualizing virtual realities.

In 1998, Miuccia Prada shows up to OMA's doorstep looking to talk. The Head Designer of luxury fashion brand, Prada is "bored with the Prada stores" (Koolhaas, 2018, p.15) and is curious to know what the well-established Dutch architecture firm, OMA can inspire from their problem. With some theoretical knowledge on the scale of shopping and no practical experience in designing commercial buildings, OMA Founder, Rem Koolhaas takes about three months to decide whether or not it is a problem his office can address. Koolhaas seeks "to define a number of points of departure and to test whether they were amenable to the problem" (Koolhaas, 2018, p.15). Architecture has been confronted by fashion. It is similar in that it shares connections of design processing, the production of concepts and the fabrication of physical forms. Both fashion and architecture require creativity to continue the innovative advancements of their professions. Their curiosity to extend towards the boundaries have naturally led them to confront each other. How does the role of the architect fit in-between fashion design? What happens when the disciplines begin to entangle, how will they interact? And most importantly, what is the capacity of their bond? These are the questions that drive my fascination with the relationship between fashion and architecture. This manifestation of interdisciplinary play will be explored through the critical analysis of the collaboration between OMA/AMO and Prada.

The designers agree to blur the boundaries of their professions and the collaboration begins. The architectural practice is now "dealing with another world that [is] almost more disciplined than the world of architecture. It [is] also more connected to far more diverse sources of influence than the world of

architecture" (Koolhaas, 2018, p. 15). It is critical that the differences between the disciplines are presented because those elements are precisely what inspires each other's counterpart. Time is a substantial difference. The lifespan of buildings versus garments is incomparable. Architecture is considered to be timeless. It is constrained by area, existing context, durability and program. It is guided by the needs of clients, and with each client comes a new set of parameters in which the architect can begin forming a design concept. The role of the fashion designer functions differently. Inspiration is sourced externally to create unique collections every season. Fashion brands must provide fresh perspectives and new ideas while maintaining their identity and style. The outcome must always be desired, because in the end the clothing, shoes, and accessories produced are products that need to be sold. The most successful haute-couture fashion brands are the ones that are able to maintain a status of luxury - desirability, while outputting an endless amount of new looks at an accelerating rate. The process of fashion designing is the production of new concepts.

"Fashion seems to be a kind of frivolous domain when actually it is an almost scientific domain. It is incredibly rigorous in terms of procedures and how something is translated into a piece of clothing; it is very precise in terms of international distribution. There's nothing frivolous about fashion except maybe the first moment of inspiration. But even that is not exactly frivolous." (Koolhaas, 2018, p. 15)

Luxury fashion house Prada has been a leader in the fashion industry for over a century. Established in 1913, it has grown exceeding recognition for its originality and openness to explore the borders of the fashion discipline. This driving force of curiosity is exactly what landed Prada with OMA. To be able to survive almost 110 years of ongoing business, it can only be assumed that there are infinite virtual potentials that can be experimented with, and the processes must be tried exhaustively until they are proven to be either iconic breakthroughs or tragic 'fashion-flops.' Prada exemplifies that the push to stay stimulated with the experimentation of design has led to revolutionary breakthroughs in the fashion world. Prada continues to evolve, beyond just the production of clothes but now the desire to produce spaces dedicated to its identity and empire. This collaboration with OMA "enable[s] them to not simply be reduced to fashion, but to extend their so-called deliberate weirdness or calculated weirdness to other domains" (Koolhaas, 2018, p. 16).

Fashion meets Building

Interdisciplinary design offers an exchange of knowledge between the two worlds. The principle of this exchange is to be open and allow room for play. One year after Prada acquires Koolhaas for

collaboration, OMA establishes "AMO, a research and design studio [which applies] architectural thinking to domains beyond" (Koolhaas, 2018). This 'think-tank' studio within the architectural office enables the exploration of developments that might not fit within the boundaries of a typical architecture project. The hybridization of OMA/AMO stimulated new possibilities for what their collaboration with Prada might formulate.

One of OMA/AMO's first commissions for Prada was the Prada Epicenter in New York City, built in 2001. Unlike previous Prada stores, the Epicenter sought out to confuse the Prada consumers' perception of the fashion brand. Olv Klijn, from de Architect explained how, "the shop is not simply a shop but part of a world-wide marketing strategy aimed primarily at continually redefining the Prada identity" (Klijn, 2002). Through research and analysis of shopping spaces and contemporary cities, the position was made to merge the two into a multi-functional hub of exclusive retail space, public space, performance space and even a laboratory. A luxury fashion brand requiring a function such as a laboratory is peculiar. Most of fashion designing is done privately and only displayed when collections are presented in the seasonal fashion shows. Prada is shifting its brand identity by promoting the openness to explore new conditions for its products to be commercialized. The Epicenter directly mirrors Prada's desire to extend its brand beyond the pre-assumed typology of its brand. This is an outcome of architectural thinking and urban city research that has been proposed in the concept development of a new fashion store. Koolhaas' strategy is "to counteract and destabilize any received notion of what Prada is, does, or will become" (Koolhaas, 2018). It promotes uncertainty and change led by future actualizations of their collaboration's potentials. While the intentions of the project were research-based and sought out to bring something different to the market, it received all sorts of commentary. "The place where this hybridisation appears to have come about is not the actual space of the Prada shop, but that of the media, where the discussion about Prada/OMA is taking place" (van den Heuvel, 2002). Some comments were positive, others negative. In the end, any media is media because it manifests a virtual multiplicity of what this collaboration may conceive. It is "the interdisciplinary co-operation between Prada/OMA and the blurring of the boundaries between culture and commerce, [that] will lend new 'strength' to architecture" (Bouman, 2002). The New York Epicenter became one of many, OMA/AMO continued to expand their partnership, constructing Prada spaces in London, San Francisco, Los Angeles, and Shanghai. Each Epicenter further experimenting with retail culture and Prada's brand identity.



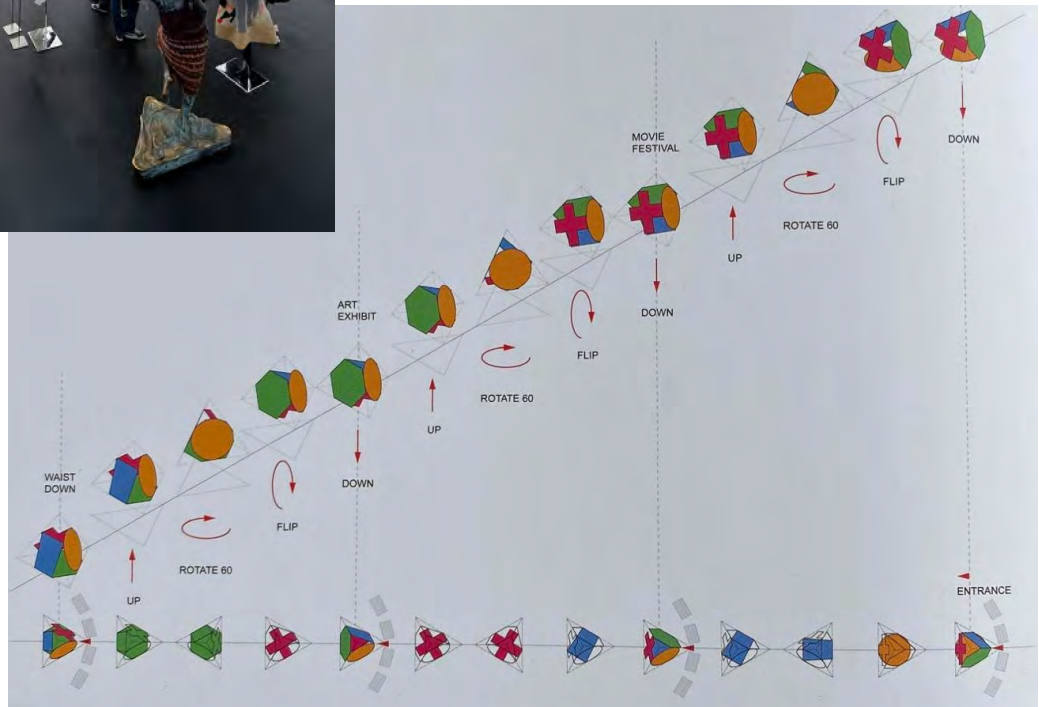
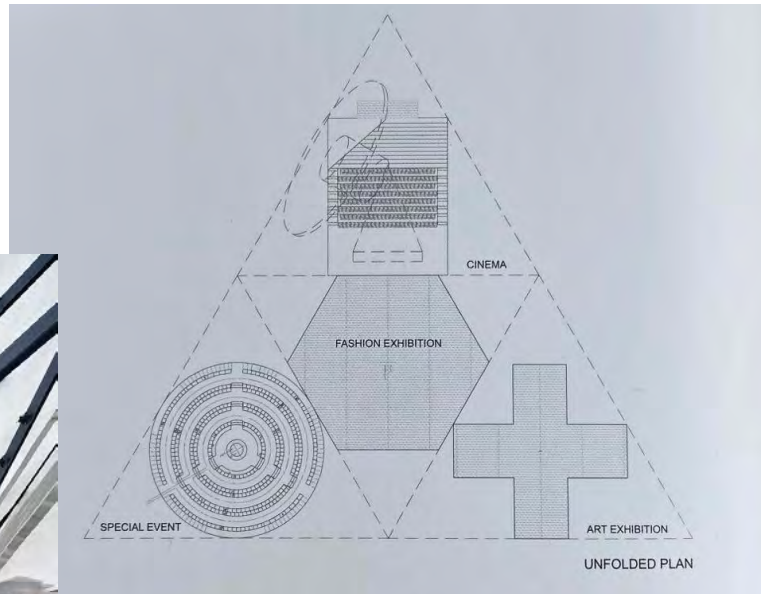
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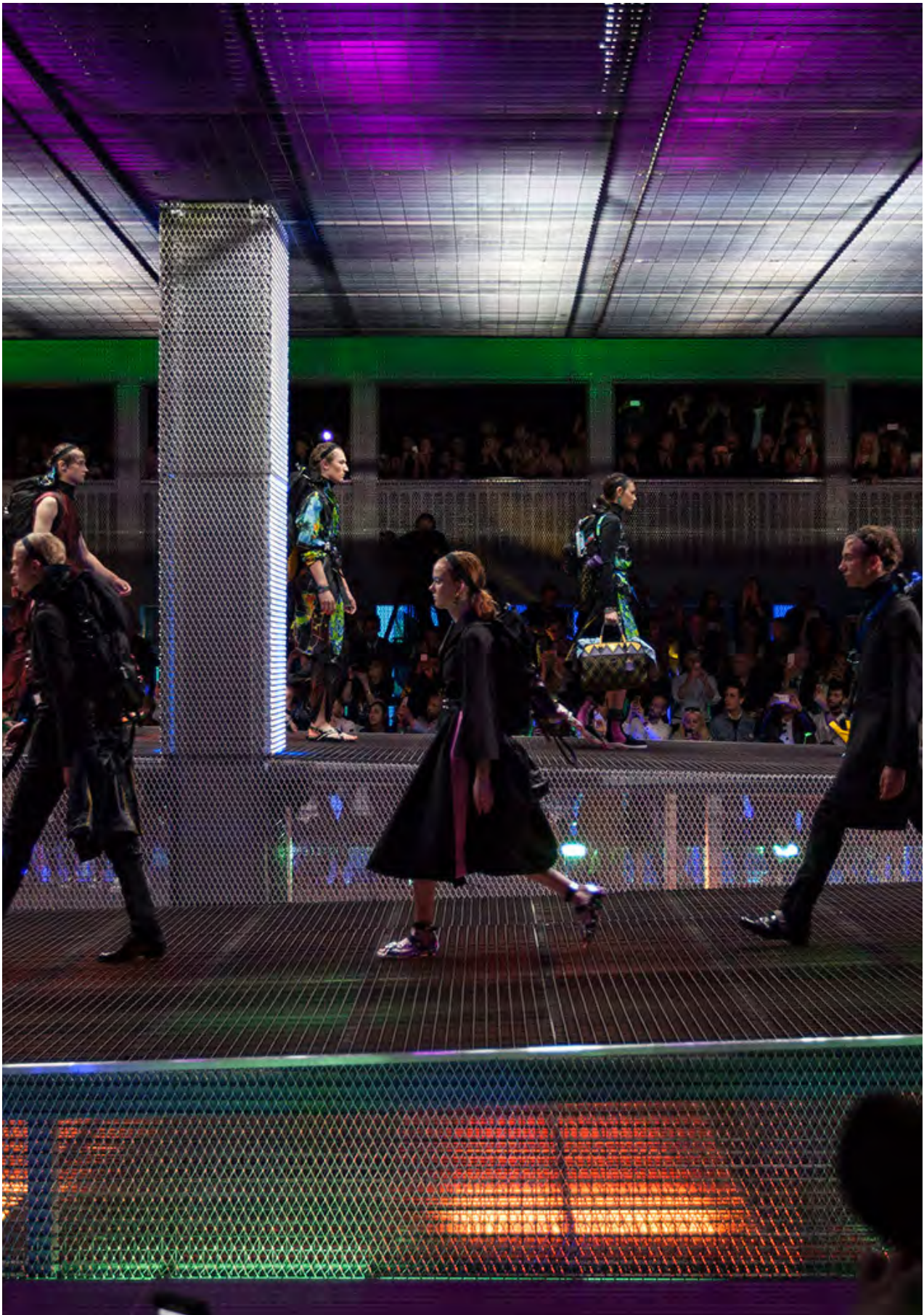
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Transforming Space

Almost a decade later OMA/AMO has been an influence from customer interfacing all through the design and construction of Prada stores as well as the renowned Prada Fashion Shows which will be further examined in Chapter 2. The team is working on a new sort of development, a 20m tall pavilion entitled the Prada Transformer. Completed in 2009, the structure is situated beside the 16th-century Gyeonghui Palace in the center of Seoul, South Korea (Koolhaas, 2018, pp. 286). The form of the building is composed of four shapes - a circle, a cross, a hexagon, and a rectangle - that act as their own surface, meeting along the edges of their geometries, then enclosed by a translucent skin membrane. Folding together into one multi-faceted form, the pavilion presents a transforming space for cultural gathering. Each shape/side serves as the plan for the different functions of a fashion exhibition, a film festival, an art exhibition and a student takeover event. Each function has a duration of 3 months, whereby the skin is removed, the structure is lifted, rotated, flipped and enclosed again for the next exhibition. While the innovative concepts of the structure are presented quite literally through the transformation of the space over various conditions, it is worth noting the elegant influence of fashion partaking on the architecture. The envelope of the pavilion is a semi-sheer tensile fabric that wraps itself around the rigid edges of its body. Like a garment, the envelope protects its body and generates its own external shape that is peculiar and intriguing. Nothing about this project is conventional and nothing about it is strictly architecture nor fashion. The entanglement between OMA/AMO and Prada is resulting in a continuous blurring of the lines between not only the fashion and architecture world but all art worlds. The collaboration responds to the culture and media of its time through the curation of different types of art installments. The architect and the fashion designer provoke each other, and their design processes intertwine through the production of new concepts. The Prada Transformer's capacity to transform a single space into a complex display of interdisciplinary expositions embodies the essence of actualizing a virtual potential within the relationship between architecture and fashion. This project differs from any typical store, or even an expected fashion show. It is a hub of cultural manifestation and it is an instance of time that demonstrates the hybridization of disciplines yet it could not be predicted prior. It is independent of the other Prada commissions, yet it takes part in the larger vision of Prada and OMA/AMO. Each project between the designers is its own, yet altogether they formulate the terrain of play in-between architecture and fashion.

The Prada Transformer





Prada SS17 Mens and Womens Fashion Show

Chapter 2

A Space for Play

*"Both architecture and fashion are based on structure and shape and turning basic necessities (like clothing and shelter) into art"*²

- Zaha Hadid, architect, artist and designer

Through the blurring of the disciplines the architect and the fashion designer must develop a common language in order to communicate their intentions for a project. Both fashion and architecture focus on the perception of objects and forms within space. There is a desire to express the virtual images that cloud a concept in order to actualize its potential. "The consciousness that catches the reality through sensuous perception and imagination is the real creative process because it achieves a higher degree of order than the simplistic method of testing, recording, proving and controlling" (Ungers, 1982). Between OMA/AMO and Prada, the designers share a common taste for visual aesthetics. It becomes evident that working with the layering of images and abstraction of ideas over fully articulated renderings and diagrams excels the concept development and provides more room for interpretation and influence. Koolhaas explains how OMA and Prada share a "baseline language and a set of feelings in common. [They are] all open to being influenced by [each other's] arguments as well as [their] shared aesthetic" (Koolhaas, 2018, p. 16). By establishing this formula for producing an abundance of design narratives, it has led the collaboration to exceed the fashion industry's expectations of the fashion show experience.

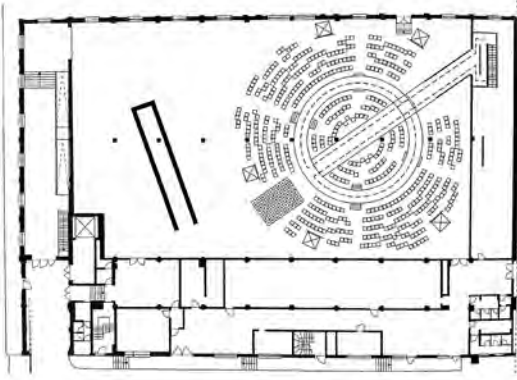
From early on in their partnership, Prada has commissioned OMA/AMO to develop the set design for their most-anticipated events of the fashion house, the semi-annual Prada fashion shows that display the seasonal menswear and womenswear collections of the brand. Each year a total of four shows are presented; two mens and two womens for the fall/winter collection and the spring/summer collection. Thinktank, AMO experiments with breaking the fashion show typology by reinventing its state every season in order to push the boundaries of fashion beyond the collections that are being modeled down the runway. The Prada vision is consistently being manipulated, shifted and reconstructed. Since 2004 OMA/AMO has designed a variety of catwalks that differ in intention, orientation, circulation through space as well as the relationship between fashion and subjects. It is to be noted that the menswear shows are always presented first and the womenswear shows are typically inspired or further experiments of the men's shows. "More than the strength

of any one show, the collection is remarkable in that it evidences a sustained and seemingly inexhaustible creativity" (Schafer, 2021, p. 10). My fascination lies in the venue of the show as it has proven to provide the ultimate space for play. For 14 years, the Prada catwalks have been hosted in the same venue, Via Fogazzaro - every season, that is 56 shows reinventing the brand identity of Prada. The Via Fogazzaro space is a long concrete hall, windowless with a row of columns running through the center. It is "the plan's 'two-dimensional discipline... [that] creates undreamt-of freedom for three-dimensional anarchy" (Koolhaas, 1978). There are three main influences that define the experience of a fashion show; the fashion, the subjects and the space. While Prada is directly producing the garments that will establish the trends for the coming seasons, the space around the catwalk and the subjects perceiving both fashion and architecture are to be experimented with. This entangled relationship of three entities influences a field of potentials for an ever changing experiential fashion show. The Via Fogazzaro acts as a vacuum in time, hidden from the conditions of everyday life. It presents a new fashion world with each show through OMA/AMO's study of spatial relationships between fashion and subjects. "OMA reinvents the nature of the fashion show itself, at times drawing attention to the unspoken but relentless hierarchy granted to the front row seat, as well as to the space of the catwalk itself" (Schafer, 2021, p. 9).

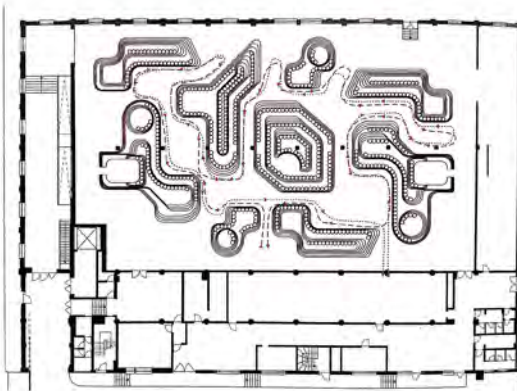
Each show establishes a clear division of space. There is a highlighted catwalk that circulates throughout the hall, while the subjects are seated around its edges. OMA/AMO plays with the potential of catwalks by proposing a new path of circulation each time (fig 1). By breaking the traditional linear runway where the models approach and recede the audience, it enables a new perception of both the space and the fashion each time. "We felt that fashion did not need or would not benefit from the dense reality or architecture, so we tried to create something that was between real and virtual and simply less dense" (Koolhaas, 2018, p. 16).

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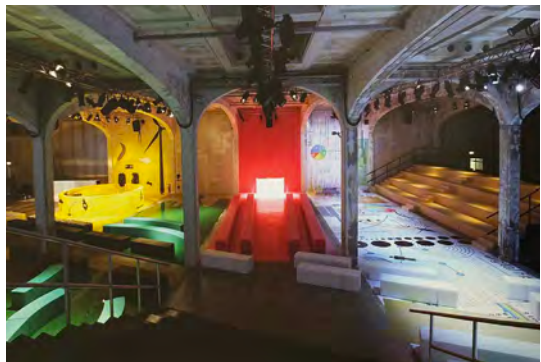
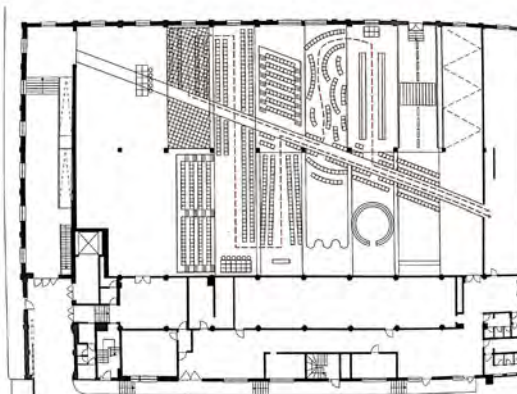
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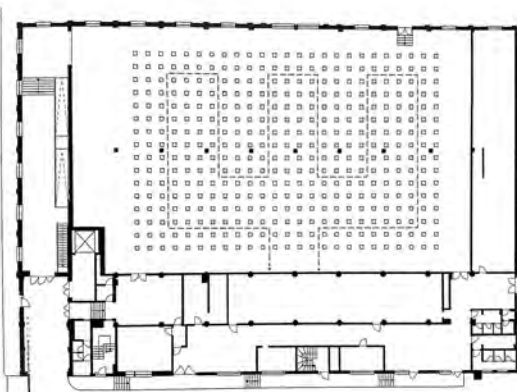
2008 Fall/Winter Womenswear



2009 Spring/Summer Menswear



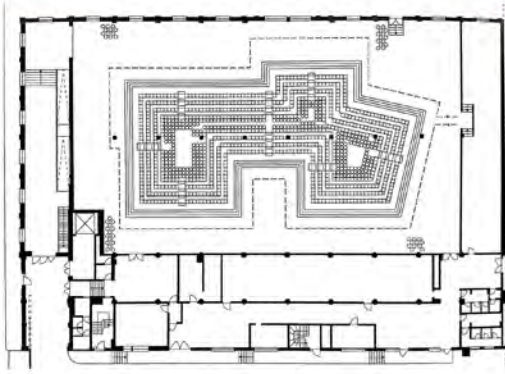
2010 Fall/Winter Womenswear



2012 Spring/Summer Menswear

Selected Prada Fashion Shows at Via Fogazzaro, by OMA/AMO / Fig 1

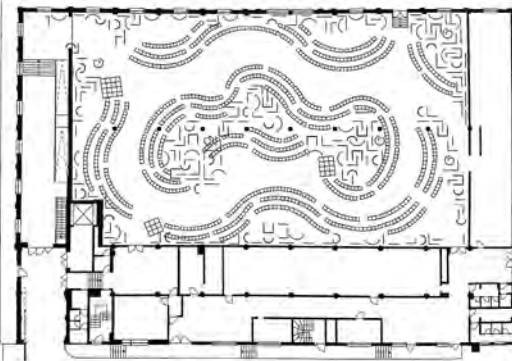
Drawings scanned from Source Books in Architecture No.14: Rem Koolhaas / OMA + AMO Spaces for Prada
Images sourced from OMA's office website, Dezeen and Archdaily



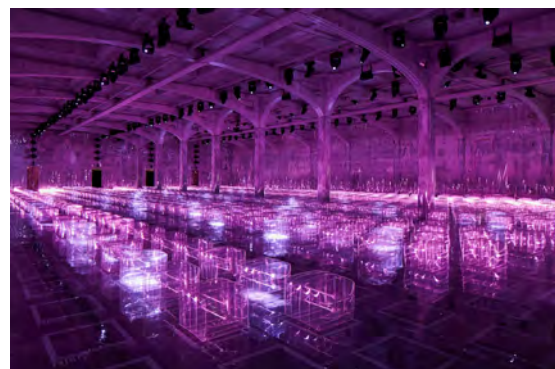
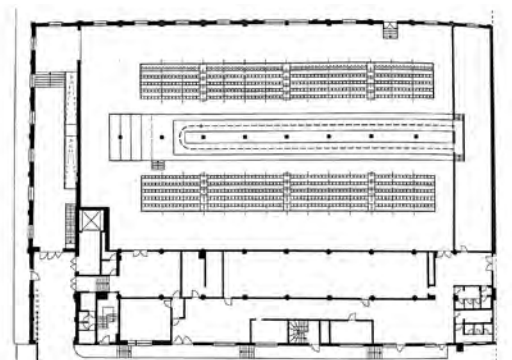
2013 Fall/Winter Menswear



2015 Fall/Winter Womenswear



2016 Spring/Summer Menswear



2019 Spring/Summer Menswear

The hyperreal fashion shows are created with the addition of architectural elements such as ramps, stairs and stepped seating, along with the implementation of sectional variance.

For example, in the comparison of the 2009 SS Mevnswear fashion show to the 2013 FW Menswear show (fig 1), there is a dynamic shift in hierarchy. In the 2009 show, the subjects are pushed above the ground line of the space through the implementation of organic stepped seating composed of composite wood. The material adds a warmth to the space, along with a softness derived from its curving forms. In this spatial condition, the fashion is perceived from below. The first row naturally is closest to the catwalk while further rows are pushed out and up. In the 2013 show, conditions are almost reversed. In this instance, the subjects perceiving the fashion are placed in the center of the Via Fogazzaro hall, while the catwalk outlines their perimeter. This time the catwalk is elevated and the subjects' eyes are forced to look upward in order to witness the collection. Between these two shows, the perception of space is entirely different. Now let us further compare the shows to the 2012 SS Menswear show. I find this show specifically to be quite compelling because it completely breaks the hierarchy of the exclusivity of the 'front row' experience. In this show, the seating is placed in a large gridlike system. Each seat is placed at the same distance from its adjacent neighbors. The front row disappears. The models are directed to walk in between the audience. This show specifically challenged the fashion industry's constant drive to create consumer desire to take part in the exclusivity of haute couture. It is understood that the displays of garments are in fact products which are motivated to sell to the fashion consumers. However, Prada's efforts to challenge the current fashion typologies with the ongoing work with OMA/AMO has proven that this hybridization of disciplines provides far more than just a fashion show. "[Collaboration] influenced us deeply in extending the repertoire, techniques, and horizon from which we consider things. If you're not influenced by collaboration, then things become increasingly dense and more akin to one-way conversations" (Koolhaas, 2018, p. 23). The openness between architect and fashion designer provides the space needed to truly investigate the full creative capacities of each profession. Space for play is a space that falls in and out of phase with the virtual potentials and the actualized capacities that exist within the relationship between the two design disciplines.

Conclusion

The collaboration between OMA/AMO and Prada has evolved from a store commission to an ongoing twenty-plus year relationship of interdisciplinary entanglement. The complexities derived from the blurring of boundaries between fashion and architecture has resulted in an in-between space that is not constrained by conventions or designer roles, rather it promotes openness for experimentation and play. In the concluding chapter of the Source Books in Architecture No.14: Rem Koolhaas / OMA + AMO Spaces for Prada book, Galo Canizares writes:

"What if the projects are not primarily about punchy graphic design and temporary structures, but about the lives of models themselves? Or the relationship between a billionaire fashion designer and a celebrity architect? Or the role of branding on the design of the self? These questions poke at architecture's broader role in culture, which is undeniably shaped by both fact and fiction" (Canizares, 2021, p. 321).

As the design world continues to surpass the rate of biological evolution within humans, there is more obligation to deconstruct the

established typologies within the design disciplines, and create new potentials through external influences beyond domains. It is through the willingness to develop a common language between disciplines where virtual capacities may be actualized in the material world. There is something compelling about the role of the architect situated in the fashion world. To require architectural thinking in a place of accelerating trends and freedom, is to manifest the production of new concepts in an industry of exhausted ideas and appearances. Koolhaas leaves us with this advice, "openness is critical to any kind of relevant practice with respect to being an architect. It's important to have very few prejudices and to start every project with a declaration of ignorance. It is a crucial part of how to do architecture in my view" (Koolhaas, 2018, p. 307). The willingness to approach the unknown with open arms has led fashion and architecture towards an uncertain future - one of many potentials, just waiting to be brought to life.



Prada SS22 Menswear Fashion Show

<https://www.dezeen.com/2022/01/21/prada-2022-menswear-show-fondazione-amo-sci-fi/>

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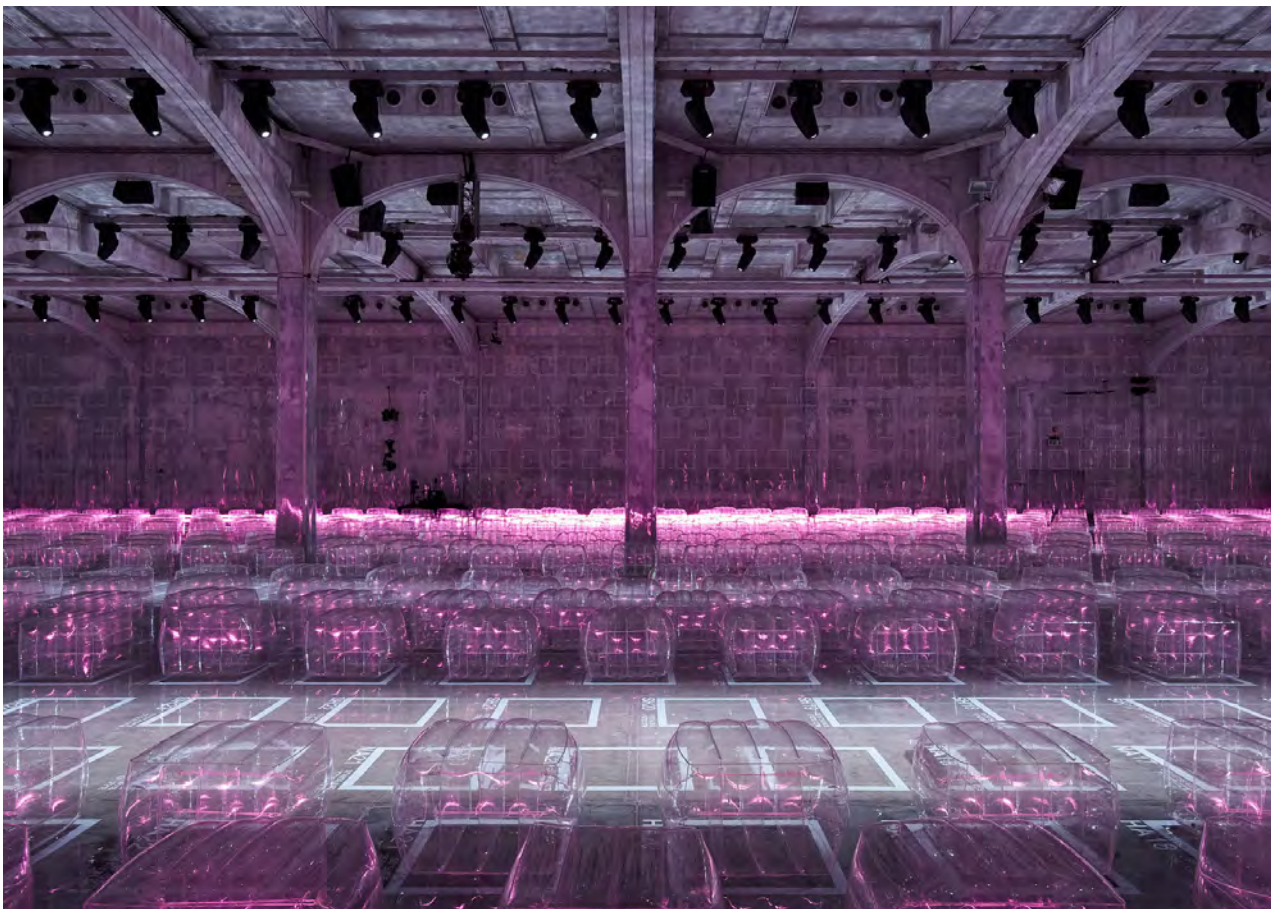
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Prada SS19 Menswear Fashion Show

<https://www.oma.com/projects/2019-ss-prada-man-s-show-cartesian-space>



Architecture Philosophy and Theory Group

AR2AT031

COLLECTIVE THESES ISSUE: INCLUSIVITY

2021/2022 - semester II - spring 2022 - Q3

Architecture Theory Thesis

**Writing seminar:
Thinking/Reading/Writing**

Andrej Radman Group

Inclusivity

... By breaking through preconceived disciplinary boundaries and engaging with, well, everything through spatial and temporal nesting where the smaller units of multiple levels of structure are embedded in the larger ones, and the events of shorter duration in the longer-lasting ones.

... By accepting that a race horse has more in common with a racing car than with a plough horse which is closer to an ox than to a race horse. Deleuze and Guattari write about affects as a set of incorporeal transformations, bifurcations that move the body into a different region of its phase space, allowing it to enter new assemblages, new forms of interaction with other bodies to form new machines. As capacities, affects are virtual or intensive as opposed to the extensive parts that form the longitude of a body (of architecture in our case). Affects are "what a body can do." Defining bodies by affects is not the same as defining them by genus/species. Grouping bodies by affects breaks open the organic stratum to the 'machinic phylum' that cuts across it.

... By avoiding determinism and teleology through a relational and contextual judgement in the sense of the Spinozian ethics of assemblages: considering whether the new assemblage has contributed to the newly created situation, whether it has degraded it, or possibly caused no change at all.

TABLE OF CONTENTS

01 Cinematic Architecture

Almira Tanrikulu

Architecture and cinema intersect at many points such as time, movement and space and are in an inevitable relationship. Cinema creates mind spaces and poetic images and architecture uses the mind spaces and images to understand and design the cities. Cinematic architecture offers a new perception for understanding the lived spaces which exist between existential and experiential space. This paper will explore the interrelationship between architecture and cinema and look at the architectural spaces through the lenses of cinema in order to understand the representation of architectural spaces and to use it further in the architectural practice.

29 3D-Printing and Circular Architecture

Fabio Sala

The rising 4.0 industry, characterized by automation and the digitalization of the building process, has been using 3D-printed elements to reduce waste, increase the efficiency of the product production, and limit the environmental impact through less carbon emission. Do these promises, given by the additive manufacturing, actually help the transition from a linear present to a circular future? Through four examples, the promises are studied and addressed.

13 A Contemporary review of Critical Regionalism

Anjès Swart

Problems like lack of identity and meaning, or the pressing need for more sustainable architecture have led architects and scholars to search for answers in the past. This paper reevaluates the concepts of Kenneth Frampton's theory on Critical Regionalism, to determine its relevance for architectural design in the 21st century. Critical Regionalism offers a great base for modern design as it offers an approach for meaningful design using place as a source for identity. And despite it not being the original intent, Frampton refers to many concepts that are relevant for sustainable design. However, Critical Regionalism does not hold all the answers. Modern technology has become an asset rather than the adversary. So perhaps we should stop questioning whether to revert to the past, or to further develop the modern. But rather try to find a symbioses between nature (the past) and technology (the future).

41 Reading the Dirty, Thick, and Open

Kevin LAI

This thesis is a theoretical endeavour to understand digital mapping beyond the convenient dichotomy, and find our position as readers. Two theoretical lenses are borrowed from the field of anthropology and art history: "thick description" (Clifford Geertz) and "open work" (Umberto Eco). The thesis concludes by emphasizing the significance of the role of the "reader" in digital mapping, for the greater public as well as the discipline of architecture could then reclaim our agency in the flood of data with a shared "digital literacy".

21 Production of space in the digital age

Beatrijs Kosteljik

The digital turn has influenced human life and thought immensely. This paper discusses the influence of digital technologies on the way we shape our environments and what socio-political implications this has for our society. Our digital networks in combination with consumer capitalism and digital ideology seems to have subverted ethical values in society. The paper researches the relevance of plurality and diversity in our virtual and physical spaces and how a posthumanist approach to design might be a solution to exclusionary design.

51 Communication Is Participation

Maria Opłatek

Following the trilogy of Christopher Alexander completed in 1977, many theorists acknowledged that user participation advocates for more humane design. Interestingly, that opposed the ignorant processes such as the early sites and services proposals, that were so rejected by Doshi and Corraera throughout the entire '80s. Parallel to that debate appears the question of how users shall part take in the process. This paper deals with the issue by researching how toolkits contribute to participation in the context of the Global North.

63 Harmful Oversight

Nona Storm Dalman

The current built environment is often designed with no regard for disabled people. Therefore, visually impaired people, ranging from completely blind to partially sighted, encounter different obstacles on a daily basis, when moving from one place to another. These encounters can cause stress and discomfort. This essay contains a description of the experience of and navigation through space of visually impaired people and offers practical solutions for architects to improve the experience of visually impaired people.

107 The dystopia in cinematic space

Szu-Yin Huang

The tangible and intangible in architecture are not limited to space and form but are also spatial and temporal. Therefore, we need to be aware of the connection between architectural space and its surroundings and the events that take space. Our society comprises visible and hidden hierarchies of highly complex and subtle layers. With a single perspective, it is almost impossible to grasp fully our surroundings and incidents that have already happened or are about to occur. The power of the medium of film allows us to trace the subtle levels of these conclusions in a short period, and that is the power of cinema.

75 The Architecture of Disney

Paulina Panus

This paper is an exploration of cinematic architecture in the real world and the effects it has on public spaces and the architectural design of cities. It examines the way film influences and shapes the spaces we live in and interact with, exploring it through the typology of 'Disneyland,' being that it is a literal extended perspective of cinematic architecture. Disneyland is an example of how films and screens, have begun to close the gap between two-dimensional representation and a three- or four-dimensional experience. They permit the creation of tangible spaces that we occupy in our imagination, influencing architectural designs in the past and present. It will understand the reciprocity of the modern real world and the filmic worlds of human imagination and design, thus shedding light on the ideology of utopian public spaces and architecture in real world environments. The concepts of 'globalization,' 'gentrification,' and 'gatekeeping' will be analyzed regarding cities' aim to utilize the value with such flagship projects that are Disney theme parks.

119 Aesthetics of Appropriation

Tolga Kologlu

The Netherlands has an important history of squatting, particularly since it grew into a considerable movement from the 1960's onwards. Among the various forms of squatting, one is of particular interest for this research. It consists of certain large, industrial or office buildings, squatted and transformed by a group of people or movement, with the intention of creating not only residential spaces but also social and cultural activities. These play a crucial role in the production of culture by providing spaces for functions that could not exist otherwise. They are self-organized, transformed and built by its users through improvisation and incrementality. Despite their conversion not being planned, it appears that they share a particular aesthetic. The resulting spaces are expressive, complex and provide rich sensory experiences. This is a result of the common practices of recycling materials and objects, low budget, collaboration, immediate needs and desires, creativity and craftsmanship. Temporality appears to have a strong influence on the spatial qualities of these squats. Normative forms of architecture, living and social relations are challenged and transgressed in various ways through the spatial practices of squatting. The resulting spaces can make us establish new connections, reinterpret the world and the way we inhabit it and provide one with an active engagement with and awareness of their environment.

85 Designing for elderly health conditions

Rutger Kok

In the Netherlands, nursing homes are under pressure because of the ageing population and the decreasing mortality rates. This amount will increase heavily in the near future. The three biggest causes why elderly people have to move to a nursing home are physical problems, dementia and depression (nearly 80% of all causes). This thesis describes how to design housing for elderly people that will prevent people from getting these diseases or decrease the amount of complaints so that the pressure on the nursing homes will reduce.

97 Feeling of Home

Sare Genc

We experience an environment with different sensory strengths, and this differentiates our experiences and the way we perceive that space. Home is not only a shelter above our heads, but it has a deeper meaning ideologically and symbolically. Our idea of home is defined by our individual frame of reference. This thesis hopes to connect how multi-sensory experiences could create emotional phenomena in space by linking theory, psychology, and relative research from literature and synthesizing the information into the home concept.

129 Architecture as extension of life

Youp van der Weijde

Ai Weiwei finds it his obligation to use art as a medium to join the political dialogue and to call for action. Architecture needs to be an extension of life but is now often more focused on function and aesthetics. The central question of this thesis is therefore what architects can learn from Ai Weiwei's approach to art, to make architecture an extension of what is happening in the world.

CINEMATIC ARCHITECTURE

Perception of Existential Space

Almira Tanrikulu

4546490

Introduction

Architecture has always sought connection with other fields of arts such as painting, sculpture, literature, music, photography, and in the last century with cinema. The relationship between architecture and cinema starts with the very first film ever produced. Consciously or not architecture exists in every film let it be as a background or foreground. Architecture and cinema fall closely together, especially through some shared ground: space and time for that neither can exist without it. These two fields create and mediate images of life. As Juhani Pallasmaa states:

*"In the same way that buildings and cities create and preserve images of culture and a particular way of life, cinema illuminates the cultural archaeology of both the time of its making and the era it depicts. Both forms of art define the dimensions and essence of existential space; they both create existential scenes of life situations."*¹

The change in society and living style starting with the industrial revolution has gotten an important place in the cinematic world and so has the ever-changing city representation. The city has become the image of new technologies and mass production and started turning into a communication tool through its images, spaces, and environments. Architectural spaces become more than mere backgrounds and important tools in achieving the essence of the film.

A combination of past, present and future city images has the power to generate urban narrative. These images give a glimpse of what the future might look like, make us aware of perhaps disregarded or passively consumed everyday life and postmodern city or they can criticise the present, and doing so can affect the architectural design process. Architects such as Rem Koolhaas and Jean Nouvel admit that their designs are influenced by cinema. Therefore this relationship between architecture and cinema comes to be essential for research and study, especially for the architecture discipline.

Architecture and cinema intersect at concepts of space and time which are the key elements of creating new worlds in both disciplines. They both find a common ground also by framing the space and people, therefore, it is impossible that they don't affect and intersect with each other which makes it an interesting study since both can benefit from that interdisciplinary relationship.

The aim of this research is to understand the interdisciplinary relationship between the cinematic and architectural representation of spaces and to look at architecture through the lenses of cinema in order to understand the perception and narrative of space and urban phenomena for further discovery of the architecture practice.

In this study, I will mainly examine and focus on the lived spaces and the experiential spaces created by cinematic imagery because cinematic

¹ Pallasmaa, J. (2001). The architecture of Image: Existential Space In Cinema. Rakennustieto.

imagery influences our perception of urban space and it is an important tool to understand and design the cities for architects and urban planners. In order to understand the perception of space in cinematic imagery, it is important to first understand the term space itself and the imagery it creates therefore in chapter I will explore the notion of space and image. In chapter II space in architecture and cinema will be examined in light of the intersection points of the two disciplines and their effect on each other. In chapter III the architecture will be explained through the lenses of cinema. Chapter IV will analyse a case study film, *Wings of Desire* by Wim Wenders in the light of the previously introduced themes. Finally, in chapter V, the value and possibilities of studying film for architecture practice will be discussed.

I. Notion of Space & Image

People tend to fabricate a relationship with their surroundings in a spatial context such as inside-outside, above-below, near-far away, etc. Our existence and actions take place in space that we relate to and try to explain at first attempt with physiological, biological, and natural laws. This process of positioning ourselves in the world has a spatial aspect related to orientation and existence and therefore is called existential space. A city or urban environment can be described, in basic terms, also in that frame of physical properties. Such an approach to the understanding and study of the cities requires then specific knowledge and expertise in that same frame. However, when the city is described only within those physical properties, it lacks humanity and is seen as a non-human space by planners and architects. Cities can not solely rely on the field-specific study of space but must incorporate the social-lived space with human experience. This social-lived space is called experiential space. It is the space where we create an image of the world around us. The experiential space and reality are immersed in and can't be taught separately from the perception, memory, and imagination of places. As Jonathan Raban effectively identifies,

*"City as we imagine it, the soft city of illusion, myth, aspiration, nightmare, is as real, maybe even more real, than the hard city one can locate on maps, in statistics, in monographs on urban sociology and demography and architecture."*²

There are images that intentionally direct our attention to an object and entertaining images that numb our senses and tire our sense of self, whereas *poetic images*³, as Pallasmaa names the sort of cinematic images, that sharpen our sense of perceiving the world and sensify the boundary between ourselves and the world. They are images that free our imagination. Imagination is, by dictionary meaning, the forming of images. However it is more than just forming images, it is the process of de-composing the immediate images we perceive and changing them into something new. If there is no change or fusion of the unexpected, then there is no imaginative act. Poetic images are made up from many experiences, percepts and ideas. Film director A. Tarkovsky states that there is only one way of thinking in cinema: poetically which offers a particular way of relating to reality and world.⁴ Poetized architecture of cinema offers us architects a chance to recapture the symbolic and representational aspects of life and architecture.

This pushes us to question the relationship between the mind space and bodily sensation of external-existential space. If one can find that the sensation of thinking of a physical space is utterly alike to that of thinking of a space remembered from a film, then one is closer to the filmic space than he/she might anticipate. Cinema represents things about architecture

² Raban, J. (1974). *Soft city*. Dutton.

³ Pallasmaa, J. (2001). *The architecture of Image: Existential Space In Cinema*. Rakennustieto.

⁴ Tarkovsky, A. (1988). *Sculpting In Time* (K. Hunter-Blair, Trans.). University of Texas Press.

and yet what it represents isn't architecture itself nor its copy but it is to some extent the interpretation of architecture. Film is the representation of pictures from life but not a copy of real life so as the cinematic space. Cinematic space is rather something new with its own reality.

II. Cinema, Architecture & Space

Since the second half of the 20th-century architecture sought a connection with other art forms and disciplines in a new way even though it has always been in an inevitable relationship with them. It was its reaction to the modernist professional practice while starving for new inspirations in order to break through the unified modernist world-view. Around the same time, the study of the relationship between cinema and architecture became inevitable for both disciplines to intersect with each other in many ways.

Both cinema and architecture articulate spaces that are lived and experienced by people. Both disciplines mediate images of life. Buildings and cities create and preserve images of culture and way of living meanwhile cinema throws light on those images through its narrative and three-dimensional nature. Both disciplines designate the essence of the existential space, and then they both construct new mental images or in other words mind spaces that exist in the experiential realm. Hence, architecture and cinema cannot be taught apart from each other by their very nature. Cinematic expression is inherently architectural as much as architectural experience is cinematic in its essence. Every film contains architecture either just as the background where events take place or as the foreground in which case architecture becomes part of the narrative and experience. In the latter case, the viewer becomes more than a mere observer through the existential and tactile space presented by the film and regains his/her body. Meanwhile, architecture is truly experienced only when there is a movement and narrative through time and space which is also essentially cinematic. This complex interrelationship creates a multifaceted dialogue between the two disciplines.

In this interrelationship and intersection points, I am interested more in cinematic architecture, the architecture expressed in the films, and the way it affects our perception of cities and lived space. Cinematic architecture influences our perception of space through the imagery it creates in our minds. This imagery is also a reflection of thoughts and emotions of the human mind which can't be always communicated through the traditional medium of expressing architecture such as in the plans, sections, and drawings. Cinematic architecture awakens a specific mental state, it becomes the architecture of happiness, boredom, terror, alienation, etc. depending on the narrative and director's intention. When looked at from a cognitive point of view, the purpose of buildings and cities is to position ourselves in the world and state the space between the experience of the self and the world. In a way, a film director does the same with his/her representation of spaces, he/she articulates the lived space. Pallasmaa defines 'lived space' as follows,

*"Lived space resembles the structures of dream and unconscious, organised independently of the boundaries of physical space and time. Lived space is always a combination of external space and inner mental space, actuality and mental projection. In experiencing lived space, memory and dream, fear and desire, value and meaning, fuse with the actual perception... We do not live separately in material and mental worlds; these experiential dimensions are fully intertwined. Neither do we live in an objective world."*⁵

Even in the existential realm of architecture the material building is

⁵ Pallasmaa, J. (2001). The architecture of Image: Existential Space In Cinema. Rakennustieto.

actually no more than an image object. Building is the medium where the mental image from the experiential realm of the architect is transferred to the mental realm of the observer. Even though the architectural images are immortalised in physical material while cinematic images are mere visions on screen, at the end both disciplines interpret frames of life and understanding the world. If we can challenge the established approach and view the city through the lens of a camera or in other words through the eyes of the filmmaker, then we can gain a new perspective and meaning of our understanding of the city and urban space.

German filmmaker Wim Wenders believes in an obvious overlap between the work of film directors and that of architects: that they both have the same obsession with 'the sense of place.' However, Wenders warns that a 'certain modesty' is required from filmmakers when they compare themselves to architects because "... *buildings are very real, after all, and they really determine and condition people's lives. Films sometimes form people's visions and dreams, but don't have such an immediate impact on their reality. Or am I wrong?*"⁶

Movement in Cinema

Another important point cinema and architecture intersect is the movement, especially since it is one of the key tools in achieving cinematic imagery. Film and architecture are both kinaesthetic by the means of experiencing the space as Pallasmaa indicates. Movement is a fundamental characteristic of cinema which is why it is often called a moving image. Cinema contains various sorts of movement such as camera movement, movement of objects, actors, light, vehicles, time, and movement from space to space and from real to imaginary. Camera movement in space is particularly essential to the cinema, let it be a linear or circular movement, or a zoom in and out movement which is not possible to carry out by human eyes. Additionally playing with the speed of motion, being slow-, fast-, reverse-, and freeze-motion, gives the director the possibility to create a new reality. As Bordwell states, "*Different sorts of camera movements create different conceptions of space.*"⁷ Likewise, the movement of other cinematic elements mentioned above can also bring the space out by means of creating perspective and suggesting depth and therefore bring our attention to the certain space and its experience. All these movements take place in a new space which is the cinematic space. In architecture, space is static while the people are the ones on move; meanwhile in cinema representational space moves and the viewer is static. Thus the static architecture represented in cinema achieves movement through the '*mobile shots*'⁸. The movement of the camera is what gives architecture the dynamic experience on a two dimensional audio-visual screen.

Framing the Everydayness

"80% of the elements and objects that help us to live are only perceived by us in our everyday lives, while 20% are actually seen [and taken notice of]. From this, I deduce the cinematographic revolution is to make us see everything that has been merely caught sight of... The dog that goes by in the street is only perceived. Projected on the screen, it is seen, so much so that the whole audience reacts as if it discovered the dog for the first time [...] that's the value of framing an image judiciously. Bear this in mind – this is the crux of this new art form."

⁶ Macnab, G. (2014, February 12). Robert Redford and Wim Wenders on new architecture film *Cathedrals of Culture*. Independent. other. Retrieved April 4, 2022, from <https://www.independent.co.uk/arts-entertainment/films/features/robert-redford-and-wim-wenders-a-3dfilm-project-about-the-soul-of-buildings-9122224.html>.

⁷ Bordwell, D. (1985). *Narration In The Fiction Film*. Methuen.

⁸ Deleuze, G. (2005). *Cinema Vol. 1, The Movement-Image* (Tomlinson H.-Habberjam B., Trans.). Continuum.

⁹ Léger F., & Morris, G. L. K. (1973). *A Critical Essay on the Plastic Quality of Abel Gance's Film The Wheel. Functions of Painting*. (E. F. Fry, Ed.) (Ser. The documents of 20th century art, 1973: 1). Thames and Hudson.

Sometimes most compelling cinematic architecture is hidden behind the representation of ordinary events. As also Georges Perec points out in his book *Species of Spaces & Other Places* what we call everydayness is not evidence but opacity; a form of blindness, a mode of anaesthesia.¹⁰ It's from those basic remarks that his book has developed a diary of a user and space. Perec hinted at a literary enterprise associated with the anthropology of proximity and sociology of the everyday - while he interpreted the film texts as a spatial ethnography of the everyday. Films compose an accidental archive of architectural spaces and elements showing how we use and inhabit them. Looking at how the film focuses on a particular space and filters pieces from regular everyday life that otherwise would be devoured by the urban landscape, it is astonishing how the camera transforms spaces and their elements. Looking at the city through the lenses of the camera or in other words through the eyes of the filmmaker invites people to rethink the spaces they inhabit.

Directors build a world that we are invited to enter and share with others just as if we were to enter a café, home, station, or museum. We might get absorbed by the feeling and atmosphere without holding the essence of the story but then we gain something else. Francois Penz defines that discovery as a hidden dimension between the perceptual and the effect. In real life, we often experience space perceptually but not always emotionally. However, through the narrative of the film, the emotional dimension is acquired from people who are spatially organised. The film almost simplifies the real world through the use of emotions and space to bring our attention to a certain point. In everyday life, our mind shifts from place to place and might leave many things unnoticed but through the cinematic framing, our sight is narrowed down to what matters to the cinematic realm. "In particular we start to participate in the everyday life of others that so often eludes us. It ranges in scale from large scenes to smaller details, as any given film can bring something to our explicit attention within the framed image, and within the represented and fictional reality of work, that would not normally be selected [...] in everyday life experience or, indeed in other films. [...] bubbles forming in a cup of coffee in a Parisian café..."¹¹

III. Case Study: Wings of Desire (Der Himmel über Berlin) by Wim Wenders

In the light of previously discussed themes, this chapter offers an analysis of the film *Wings of Desire* by German director Wim Wenders. I will first introduce the director and his approach to space and film-making. Later spaces and elements in the movie will be defined by the technique they are presented.

Wender's Approach to Film & Space

Wenders' films have their own reality. Through his films, he tries to make sense of chaos in life and expresses his way of seeing life. He collects the pieces of chaos, which to him is a representation of life, and creates a narration, a whole within them. His film forms during the shooting like a journey on the road, not everything is scripted and planned beforehand. There is space for spontaneity and improvisation is valued. Wenders invites the viewer to feel like a part of the movie so the camera acts as the eye of the character in the space. The message is carried through emotional involvement. Space and content are mainly in the foreground and are the narrative.

¹⁰ Perec, G., & Sturrock, J. (2008). *Species of Space and Other Pieces* (New, Ser. Black Classics). Penguin.

¹¹ Penz, F. *Cinematic Aided Design: An Everyday Life Approach to Architecture*. Taylor & Francis Group, 2016. ProQuest Ebook Central, <http://ebookcentral.proquest.com/lib/delft/detail.action?docID=4913198>.

Just as he picks pieces of chaos in life, he also picks pieces of chaos in architectural spaces, frames them, transforms them, and forms them in a sequence to create his cinematic realm. In his films space is not represented for its physical architectural character but rather its place in people's lives. His cinematic space is rather social, reflecting the chaos of life and society. Spaces in Wenders' films usually also have a symbolic aspect of the story or the society. In his road films, the city usually symbolises the man who lost touch with the world and the road symbolises the moving man. Moving is the way he lives and shoots his movies. He uses real space rather than the decor. He usually chooses to express exterior spaces and his characters are always on the move either on the road or in the city, meanwhile, interior spaces are rather temporary, cold, and foreign.

Wenders uses certain techniques that are inherent to his movies. Space is always in motion and characters are always passer-byers. Space is perceived through the movement of the camera which follows the moving characters. He uses superimposition and juxtaposition of images within the cinematic frame. He only uses natural light or the city lights and he usually prefers to shoot his movies in black and white with some moments of colour interruptions. There are also some elements that are common to his cinematic space; the road which represents seeking, city which is a break or a connecting moment, and vehicle, the medium through which his characters experience the city or the road. Changing and dynamic character of the space in his movies also turns architecture into a character and a symbol for contemporary society. His way of representing space can be used by architects as a tool to understand and analyse the social aspect of the space.

Wings of Desire (Der Himmel über Berlin)

The original title of the movie, which I find more befitting is *Der Himmel über Berlin*, translated as the sky/heaven over Berlin. The movie is the story of Berlin and an angel who wants to become a human. Berliners are not the only inhabitants of Berlin but also angels inhabit the city. They are not visible to humans but only to children which seem to forget them right after seeing them. One of the angels and protagonists of the film, Daniel, decides that he wants to become a human and shares his desire with Cassiel, his fellow angel. There are two more main characters Homer, the old storyteller, and Peter Falk, a fallen angel now acting in an American film about the Nazi Period. On the other hand, Homer tells the story of past Berlin, representing the collective memory and the spirit of Berlin who mourns the vanishing of the city in the war. In the meantime, Daniel falls in love with a trapeze artist and at the end of the movie his wish becomes true and he falls from the sky, or in other words from heaven, and becomes a human.

In one of the scenes, there is a dying man on a bridge. As the man rambles with his flying thoughts in his mind, the camera swings like a pendulum, and as it swings the viewer's perspective changes. Camera swings accentuate the flying thoughts of the dying man and it seems like it symbolizes the swing between death and life. This scene is a good example of the symbolic use of space.

Wenders' angels cannot feel. Even though the angels can observe the city and hear its people anywhere and anytime, they do lack all the perception and experience of living. They are above in the sky and yet are nothing more than mere observers, away from all the feelings that the experiential space has to offer. Angels see the world in black and white while humans have a colourful world. Colour changes in the scenes indicate the change



Figure 1. Dying man scene, camera right



Figure 2. Dying man scene, camera middle.



Figure 3. Dying man scene, camera left

of viewpoints. That representation is actually not that far off from the viewpoints of the lived space and material/physical space, cinematic and architectural space, soft city and hard city, the imaginary and the real.

Architectural spaces that are represented and articulated in the movie are Berlin, the city itself, the Wall, the library, and the circus. Berlin is the symbol of the divided post-war life, the Wall is the transition from past to present and is the symbol of the war which is constant on-screen and shows that it is a part of the life in Berlin. Library symbolises history and the collective memory that is perceptual. Meanwhile circus is the identity, feeling of belonging, relationships so all the positive facets of life and yet also temporary concept of it.

The first thing framed in the movie is Berlin from above the sky showing the big scale city. Then it zooms into the buildings, enters in the apartments through the windows, showing pieces of life scenes, zooming into the interior space scale and wandering around to jump into the next one. All divided by walls like little cells, offering the first glimpse of divided spaces in Berlin. However it is also represented as a specific metropolitan and cosmopolitan city of 1987 with people from different countries we hear them speaking/thinking in different languages.



Figure 4. Berlin from above, buildings



Figure 5. Berlin from above, streets



Figure 6. Berlin from below, interiors



Figure 7. Berlin from below, interiors

Wenders also goes back in the time through the film within the film, by using the images of the film set of Peter Falk, the fallen angel previously mentioned, in a ruined air raid shelter representing the Nazi period. Instead of using flashbacks, he brilliantly uses the *documentary material and film in film to create shifts in time*¹² and the *past dissolves into the present, and back again*¹³.



Figure 8. Ruined air shelter, film set in film

¹² Green, Peter, 1988. Germans Abroad, Sight and Sound, vol. 57, no. 2, pp. 126-130.

¹³ Ehrlich, Linda C, 1991. Meditations on Wim Wenders's Wings of Desire, Literature / Film Quarterly, vol. 19, no. 4, pp. 242-246.

In Berlin people live on the street meanwhile the angels are free from the restrictions and boundaries of space and time. When Damiel falls, he becomes a human, switching from angels' Berlin to human Berlin. This transformation is inherently the transition element from imaginary to real, from anywhere to here, from monochrome to colored world. Wenders' Berlin is symbolic, it is the symbol of survival, transition, juxtaposition, no man's land, desire, and above all the history of Germany. Wenders focuses on the social aspect of the city and architecture and their meaning for the people of the city. He communicates his understanding and perception of society and space through cinematic space and architecture. A city and its people are inseparable so the city is also as alive as its inhabitants. They together create the lived space.



Figure 8. Angel's perspective



Figure 9. Humans perspective

IV. Conclusion

This study aimed to discover the phenomenology of perception of space, especially cityscapes, through the moving image. It also inevitably sought to understand the interrelationship between architecture and cinema through the terms such as space, imagery and movement. It mainly focused on the architecture presented in cinema, in other words cinematic architecture and ended up using it as a tool to understand the built environment and to give it new meanings. This intersection of architecture and cinema is still a merely discovered area of study and needs a further exploration for it would be a very valuable tool for practitioners or students of architecture discipline.

Cinema constructs spaces in mind and architecture uses mind spaces to design. Cinematic architecture provides a vast encyclopaedia of everyday life information of how we use and inhabit the space, how we interact with it and it also provides perceptual equipment and inspiration for architects and urban designers. Jean Nouvel, for instance, declares cinematic imagery and experience as a significant inspiration for his architectural work:

"Architecture exists, like cinema, in the dimension of time and movement. One conceives and reads a building in terms of sequences. To erect a building is to predict and seek effects of contrast and linkage through which one passes... In the continuous shot/sequence that a building is, the architect works with cuts and edits, framing and openings... I like to work with a depth of field, reading space in terms of its thickness, hence the superimposition of different screens, planes legible from obligatory joints of passage which are to be found in all my buildings..."¹⁴

The medium of film has provided new perspectives in which the city is presented or perceived and eventually has an effect on our being in space and our collective image about the city. Cinematic architecture supplies us with the perceptual equipment to grasp the complexity of the architectural space and city which contains more than just bodily experience but also mental experience. It takes our ever wandering nature of gaze and attention to a specific point. It makes us aware of space in a new way according to the director's depiction or perception of the world. Learning from filmic spaces can help understand and design the cities of past, present, and future. Recent years in the architecture discipline, there is a growing interest in film, film history and film theory in order to make sense of the places. If we use film as a lens through which we look at the city, it can divulge cinematic phenomena and attributes that occur in postmodern landscapes which otherwise might miss our attention or are merely consumed.

For instance, AlSayyad comments that Berlin's modernity was the product of a new experience of space, time and motion, and demonstrates that the concept of the modern city and street life was the sharing of the same characteristics as those found in cinema, thus providing a collective understanding of place.¹⁵ Cinema harbours a vast library of architectural spaces and building elements and how to use them: an incredible archive of lived spaces and a particular record of post-occupancy studies. However it is yet a mostly disregarded and undiscovered resource. There is a large archive of city films that have formed our collective urban imagination which deserves further exploration.

¹⁴ Rauttenbury, K. (1994). Echo and Narcissus. Architectural Design Profile, Architecture and Film.(112). p.35.

¹⁵ AlSayyad, N. (2006). Cinematic Urbanism: A History of the Modern from Reel to Real. New York, NY: Routledge.

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A CONTEMPORARY REVIEW OF CRITICAL REGIONALISM

The relevance of Critical Regionalism in designing culturally relevant and sustainable architecture in the 21st century.

Anjès Swart
4437543

Introduction

"The phenomenon of universalization, while being an advancement of mankind, at the same time constitutes a sort of subtle destruction, not only of traditional cultures, which might not be an irreparable wrong, but also of what I shall call for the time being the creative nucleus of great civilizations and great cultures, that nucleus on the basis of which we interpret life, what I shall call in advance the ethical and mythical nucleus of mankind."
– Paul Ricoeur

The concern Paul Ricoeur brought forward in his essay, *Universal Civilization and National Cultures* is about the paradox in which a country or a region has to abandon its traditions and heritage in order to become part of an universalized world that allows them to take part in the scientific and technological advancements, yet simultaneously needs to be rooted in its heritage in order to maintain its identity. Ricoeur was unable to answer this question at the time, but the problems of universalization and generic architecture stated in his essay lay at the base for Frampton's theory on Critical Regionalism. Frampton's original text *Towards a Critical Regionalism: Six Points for an Architecture of Resistance* was written in a direct reaction to the modernist movement. In a time where the globalization caused for a new 'world culture' that has been argued to result in an increasingly generic architecture. At the same time there was a debate on how to continue after the modern movement, while not falling into a regressive state like the regionalist movement². Frampton's theory on critical regionalism was a further conceptualization of a previously crafted concept by Alexander Tzonis and Liane Lefaivre³. The theory is grounded in the vernacular and regional architecture, the 'rooted' culture but would also take part in the 'world culture' to not become regressive. This cross-vitalization is named Critical Regionalism⁴. The reference to vernacular architecture for meaning is not surprising. Vernacular Architecture as defined in the latter half of the 20th century, refers to 'traditional' or 'popular' architecture as opposed to 'scholarly' architecture. This is architecture that is created without an architect, built using indigenous science of construction and local materials. This is contextualized architecture which belongs to a particular country or region, and emerges from the 'genius loci'. Therefore this architecture perfectly embodies the spirit of a place and its people, therefore, architects and scholars have taken this as base in their objection to universalization in architecture⁵.

Despite the fact that Frampton's text was written almost forty years ago, the theory of Critical Regionalism is still found relevant by scholars. Following the OASE issue *Critical Regionalism Revisited* this paper takes a look at the relevance of Critical Regionalism in architectural design today. Similarly to forty years ago, architecture seems to find itself on a crossroad, asking itself some of the same questions as during the time of Frampton's

Footnote

1 (Ricoeur, 1965, p. 276)

2 (Frampton, *Towards a Critical Regionalism, Six Points of an Architecture of Resistance*, 1983)

3 (Popescu, 2019)

4 (Frampton, *Towards a Critical Regionalism, Six Points of an Architecture of Resistance*, 1983)

5 (Guillaud, 2014)

original essay. The issue of cultural identity has become increasingly relevant again in recent years. As the presence of cultural identity within contemporary architecture has become essential in creating uniqueness in an increasingly global environment⁶. Simultaneously there seems to be a growing desire towards participatory architecture, placing citizens and users at the heart of the design. Brining back community engagement, ownership and pride. Despite these concerns the largest issue that architects of the 21st century have to tackle is the issue of sustainability. The climate crises demands for a reconsideration in the use of materials and the way architecture uses and produces clean energy. This paper will place Frampton's theory on Critical Regionalism in the present time investigating its relevance and its shortcomings. This not to propose an alternative theory, but rather build upon it.

1. The spirit of time

To better understand the nuances of Critical Regionalism and apply it to contemporary times it important to comprehend the context in which Critical Regionalism came to be. As mentioned before, this theory was developed in a point of time where the architectural community was reevaluating the way that architecture was constructed. At the first Venice Architecture Biennale, the 'The Presence of the Past' in 1980, the main question that was asked was on how to continue after an era of high modernism? Whether to continue in the trend of the high modernism, or whether to revert to the past. Frampton was one of the co-curators of the exhibition but resigned a few months before the opening of the exhibition due to his criticism of the direction the theme was pushed in. Paolo Portoghesi the main curator of the biennale had a very clear idea about where architecture should go. He believed that architecture should only use elements of the past. He asked the other architects what would happen if you would deconstruct the architecture of the past and reconstruct it in the present, as so to give a modern interpretation of the past⁷. Frampton found this idea regressive and wrote his essay *Towards a Critical Regionalism: Six Points for an Architecture of Resistance* three years later in 1983⁸.

"The fundamental strategy of Critical Regionalism is to mediate the impact of universal civilization with elements derived *indirectly* from the peculiarities of a particular place.⁹" Frampton believes that Universal civilization and world culture cannot sustain society. As "it is true that modernization can no longer be simplistically identified as liberative in se¹⁰". Simultaneously, merely looking at the form of the past is regressive and holds no meaning. Therefore Frampton proposes a critical 'arrière-garde' that removes itself both from the ever growing desire of technological advancement and the constant present tendency to regress onto nostalgic historicism. It is important to understand that Frampton did not wish to create a copy of the regional architecture, but rather borrow aspects from it. Therefore he did not concern himself much with form, but rather focusses on place, the only factor that actually retains value over time^{11,12}. In the end critical regionalism can be understood in either of two ways, "as an interest in the cultural and material histories of a specific site; or as an awareness of the technical constraints and opportunities that a site can imply.¹³"

This question whether to advance or move back to the past is a question that is still asked today, and it could therefore be argued that it is worth it to investigate Frampton's response. I do however believe that a certain nuance is necessary. Critical Regionalism originated out of opposition and aversion and proposed an alternative. Architecture in the 21st century however, cannot afford to be this singular as it needs to be simultaneously social, economic, cultural and sustainable. In reevaluating Critical

Footnote

⁶ (Salman, 2019)

⁷ (Avermaete, Critical Regionalism Revisited, 2020)

⁸ (Avermaete, Patteeuw, Szacka, & Teerds, 2019)

⁹ (Frampton, Towards a Critical Regionalism, Six Points of an Architecture of Resistance, 1983, p. 21)

¹⁰ (Frampton, Towards a Critical Regionalism, Six Points of an Architecture of Resistance, 1983, p. 19)

¹¹ (Frampton, Towards a Critical Regionalism, Six Points of an Architecture of Resistance, 1983)

¹² (Frampton, Prospects for a Critical Regionalism, 1983)

¹³ (Szacka & Patteeuw, 2019)

Regionalism I seek to build upon this theory by letting the past strengthen the future and vice versa.

2. Identity

The main objective for Frampton to include concepts of regional architecture was to bring back meaning. As a part of the larger debate that was going on at the time of Frampton's original text, newness was seen to call interest and excitement, while refereeing to tradition was a reference to boredom. Yet it is this sense of rootedness and belonging that grounds us as human beings¹⁴. To not revert to symbolism Frampton choose not refer to shape but rather to the place as a source of identity. This chapter will examine how context can be used to mitigate meaningful design. It will also touch upon an aspect that was not evidently put forward in Frampton's text on critical regionalism, and that is how the user can influence the meaning of architecture.

2.1 Place and Locality

Frampton sets up the relation between culture and nature as one of the fundamental aspects of his theory. As an opposition to the modernist views of preparing a site to a flat surface and 'dropping' a building, Frampton believes that a close connection between the building and its natural surrounding prevents 'placelessness.' He advocates to trace the site and to react and engage with it, in other words he seeks to 'cultivating' the site. This "in-laying of the building into the site holds much significance as it has the capacity to embody, in build for, the prehistory of the place, its archeological past and its subsequent cultivation and transformation across time."¹⁵ The essence of place is captured profoundly in vernacular architecture. This architecture is developed over a long period of time and in accordance with the natural surroundings, it reacts to the topography of the site and to the local climate¹⁶. However, referring to the traditional and vernacular asks for caution as I believe that this reverence can revert from the true intention. It is important to understand that the relationship between the building and its surrounding in vernacular architecture was made out of necessity and in essence, for survival. Whereas Frampton seeks to ground the building and create harmony¹⁷. These approaches are different in principle and I therefore believe that Frampton's connection with nature stand quite far away from the connection that vernacular architecture has with nature. The reverence to tradition should therefore be taken as an poetic meaning, not as an example.

The decision to choose place as the main focus is interesting and also what distinguishes Framptons's approach from other traditionalist schools. Perhaps it is this that makes his theory so relevant. "Identity means being unique and distinguished from others"¹⁸ but a person's identity is also an ever growing and evolving phenomenon. Yet a place can be seen as part of self-identity while simultaneously allowing for individual interpolation¹⁹, making it perhaps the only steady factor of identity. The inclusion of nature can be done, as Frampton mentioned, thought the experience of the different seasons and the way the light enters the building at different times of the day. Making these element precent in the building or its direct surrounding intensifies this relationship as it "guarantee the appearance of a place-conscious poetic."²⁰ The application of a poetic relationship with nature defiantly holds meaning today, its application open for interpretation. The implementation into an urban environment could be challenging, but maybe by adding more green and allowing buildings, or cities to copy and

Footnote

¹⁴ (Pallasmaa, 2012)

¹⁵ (Frampton, Towards a Critical Regionalism, Six Points of an Architecture of Resistance, 1983, p. 26)

¹⁶ (Salman, 2019)

¹⁷ (Frampton, Towards a Critical Regionalism, Six Points of an Architecture of Resistance, 1983)

¹⁸ (Salman, 2019, p. 3)

¹⁹ (Handa, 1996)

²⁰ (Frampton, Towards a Critical Regionalism, Six Points of an Architecture of Resistance, 1983, p. 27)

resemble the layers of the landscape, creating depth, a less rigid urban fabric could be created, and nature could become more present.

2.2 People and Identity

An aspect that has not been very present in Frampton's text, but has gained relevance in the past decade or so is the principle of user based design. Besides place, another form to create meaning and identity is to focus on the user and its needs. This principle originates from vernacular and traditional architecture that was created directly according to the needs of society. Communities would be self-sufficient and all necessities for daily life would be in close proximity. Interestingly the principle of form follows function was developed during the modernist era. An approach that is perhaps not that different from the traditional approach, except for the scale and reasoning behind it. The presence of function based design in the modernist era could potentially be the reason that the need to discuss this was less present. However, in contemporary architecture it could be argued that one has slightly drifted away from this, and the focus on form has been found of higher importance the functionality and practicality. I therefore find it important to touch upon this subject.

I do not believe it is as simple as to move back to the modernist approach or even to the form/function of vernacular architecture. But rather take a similar approach as Frampton did to place. The principle of participatory design goes back to the development of the original vernacular settlements. The creation of a community where everyone helps and has a voice is perhaps to idealistic, yet it hold certain ground. In the creation of a building the architect should try to meet the needs of its users, but also allow room to let the user further personalize the building. Creating not only meaning and identity, but also a sense of ownership²¹.

3. Sustainability

The issue that is perhaps most pressing today is sustainability. The 21st century is burdened by the largest climate crisis in human history and architects and designers have to drastically change their approaches. " With 36% of global energy devoted to buildings and 8% of global emissions caused by cement alone, the architectural community is deeply entwined with the flows of materials, energy, and ideas that relate to climate change, both causes, and solutions²²."Frampton wrote the theory of Critical Regionalism in a time where the concern for the climate was a lot less pressing, but despite this, his approach does touch upon various aspects of sustainability. Both in the field of energy consumption and use, as well as material use. This chapter uses Frampton's theory as a starting point to then further expand upon.

3.1 Climate and Place

The relationship between the building and its surrounding does not just hold relevance for the concept of identity, but also plays a major role towards the sustainability. Frampton does not approach the aspects of sustainability as so, but rather sees the focus on natural climate as an aversion from the modernist movement, where universal techniques and technology close off a building from its natural surroundings. The indoor climate would then be regulated using technology, and with that, energy. A building that is aware of its surrounding can benefit greatly when it

Footnote

²¹ (Salman, 2019)

²² (Walsh, 2021)

comes to lighting, ventilation and heating. On top of that experiencing these natural senses inside the building can have a positive effect on the human body. Vernacular architecture uses, and responds to the climate in such a way, that it both protects itself from the negative influences of the climate, as well as it uses certain climatic conditions to its benefit. Many of these techniques have been reinvented within the field of passive building. Passive buildings are a great foundation for sustainable architecture as it uses and responds to the natural climatic conditions to decrease the energy consumption. The architect should strive to create a symbiotic relationship with the surrounding, following the example of vernacular architecture. "Recognizing the micro climatic factors of a site in which a building is located can enhance much of the building natural energy patterns. Building and site orientation to solar exposure, wind, the effect of vegetation and their arrangement in space create a specific microclimate²³."

On the other hand technology has developed a lot further in the past forty years. The implementation of these new technologies can strengthen and not oppose a sustainable energy approach. It can increase the energy production, and also help reuse energy within the building. Therefore, passive strategies like, passive solar heating, shading southern walls and passive cooling should be at the base of every design, but it should not stop there. We have to realize that modern technology can be a great addition, as long as it is used in symbioses. For example by reusing the heat from shower water for floor heating. A symbioses between the natural and technological benefits is what truly evolves architecture from a sustainable perspective.

3.2 Materiality

Lastly, and perhaps the most prominent aspects of Frampton's career in general, is the tectonic form. While again, the reasoning towards tectonics in the original text *Towards a Critical Regionalism: Six Points for an Architecture of Resistance* was not intended from a sustainability perspective, there is a strong tie. The original intent of tectonic was to create a poetic interplay between material, craftwork and gravity, to represent the place and its heritage²⁴. The use of natural and local materials as opposed to the highly modernized materials enriches the experience and "transcends the mere appearance of the technical²⁵." Today the use of local materials have gained an added value. The energy consumption for the shipment of materials for new construction makes up 10% of the total energy use alone. On top of that this transportation causes for a major increase in CO2 emissions. The use of local materials could be part of the solution here. Local materials are often readily available and less costly, and by reinventing some of the traditional techniques energy consumption could be massively decreased. I do however not propose to completely revert to the use of local materials alone. There has been a lot of innovation within the field of sustainable materials, using natural recourses in new ways. But also improving the way materials can be recycled or re-used with the goal of circular design. All the inventions hold ground in the original intentions to improve meaning and sustainability²⁶. In the end also here new technology can improve on traditional ways.

Conclusion

The intention of this paper was to reevaluate the relevance of Frampton's theory on Critical Regionalism on architectural design in the 21st century. And I do believe that there is still relevance to be found in the concepts

Footnote

²³ (Kazimee, 2008, p. 11)

²⁴ (Frampton, *Towards a Critical Regionalism, Six Points of an Architecture of Resistance*, 1983)

²⁵ (Frampton, *Towards a Critical Regionalism, Six Points of an Architecture of Resistance*, 1983, p. 29)

²⁶ (Cooman, 2019)

that were first mentioned forty years ago, yet I believe there is a flaw in the point of departure. Critical Regionalism comes from a point of aversion, offering an alternative. Architecture cannot afford to be in a way this single minded. I therefore think that the question shouldn't be whether to revert to the past, or to further develop the modern, as this seems to be counterproductive. The goal should be about finding a symbioses between nature (the past) and technology (the future). Architecture should not be a form that mediates between the past and the present, as this would imply that is not possible to do both.

Frampton's theory is very focused on bringing meaning and identity back into architecture, after this was lost during the modernist movement. This is not done by copying the past but rather by using the place as a reference point. Contemporary architecture can build upon this through the creation of a poetic connection between the building and the natural environment. In times where it is not possible to relate to the original typography, the architect can still insure that the user experiences the different reflection of light throughout the day and the different seasons. Focusing on the users needs and letting them personalize the building will further increase a sense of identity and ownership. Critical Regionalism also holds lots of ground for sustainable design despite the fact that that might not have been the original intent. Using local materials does not only strengthen the connection to the place but also reduces the energy and CO2 emission used for transportation. The further implementation of passive strategies ensures that a building is at its core energy efficient. This does not mean that modern technology can not help and improve these strategies. Finding a symbioses between the natural and technological benefits is what truly evolves architecture in a sustainable perspective.

Critical Regionalism is by no means the whole solution for the problems architects in the 21st century face. Yet, it does hold a lot of ground for reinterpretation, and by not focusing on finding an alternative strategy but on combining all the knowledge we have, and encouraging further development. I believe that there is a significant opening to create meaningful and sustainable architecture.

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PRODUCTION OF SPACE IN THE DIGITAL AGE

And its socio-political implications

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Introduction

The rise of the internet in the '90's was accompanied with promises that weren't modest. It would promote democracy and prosperity, create communities, erase borders, and provide information at the touch of a button. The early ideology of the internet was imagined as a network for freedom, individual autonomy, and equality as it 'could not "see" race, sex, age, or infirmities' and it would provide the ultimate democratic public space.^{1 2} Almost 30 years later, Big Tech companies have grown uncontrollably. Critics have claimed that contemporary digital networks foster racism, inequality, self-interest, individualization and even extinction.

In this paper I want to research how the digital turn has influenced human life and its environment. Environments are produced by action-perception. How we perceive our environment is determined by our capacities, which influences our behaviour and sense perception.³ For Aristotle, the organization of the polis is related to the human capacity of *aesthesis*, the perception of beauty not just in the sense of aesthetics but also in the sense of ethics. Communities and cities are produced according to what we perceive to be beautiful and good or bad. The nature of our sense perception is not just influenced by social circumstance but also by new kinds of media, such as photography but also digital media, that change the function of works of art, as they easily reproduce and proliferate. This in return changes the way in which people view and co-produce their world and environments.⁴

As the digital turn has shaped our capacities, behaviour and perception, so has it influenced the production of our environments. While humans developed computers and programmed algorithms in order to ex-organise themselves, in return people's capacities, behaviour and perception are programmed too. The digital turn is inherently material and spatial. Digitalization has rewired our brain, our attention, our habits, our way of thinking and more importantly, our world. In this paper I want to research the effects of digital technologies on the way we shape our environments and what socio-political implications this has in our digitalised society based on theories by Hannah Arendt, Wendy Chun, Deleuze and Bernard Stiegler. Ultimately I want to find out what role a posthumanist approach can play to the production of our digital technologies and our common world.

The Production of a Common World

Although Hannah Arendt hasn't lived during the digital age, it is useful to review her take on the emergence of a technological world. The core of her theory is that we are political animals, capable of political and critical thinking and action in the public sphere, which elevates us from docile animals to *zōon politikon* and what gives our lives an individual character. Politics arises between men, she writes, thus creating a common world.

¹ Chun, W. (2021). *Discriminating Data*. The MIT Press. p. 1

² Kneuer, M., & Datts, M. (2020). E-democracy and the Matter of Scale. Revisiting the Democratic Promises of the Internet in Terms of the Spatial Dimension. *Politische Vierteljahresschrift*, 61(2), p. 285–308.

³ Frichot, H. (2019) *Creative Ecologies: Theorizing the practice of architecture*. Bloomsbury Visual Arts. p. 55

⁴ Martin, L. (2003). *Aesthetics*. University of Chicago. Visited on April 13th, 2022 from <https://csmt.uchicago.edu/glossary2004/aesthetics.htm#:~:text=The%20term%20itself%20is%20derived,intellectual%20concepts%20or%20rational%20knowledge>

But in her book *The Human Condition*, she writes that since the emergence of a technological worldview people have been deprived of this capacity.⁵

With the invention of the telescope, among other things, human mankind started to realize that we are not the centre of the universe and that our senses can't be trusted. This led to the Cartesian doubt and the distinction between *res extensa* and *res cogitans*. According to Arendt, because of this we turned away from our senses, as they can't be trusted, towards technology. Producing and using tools, like the telescope, allowed us to experiment and collect data about the world around us. Today still, we measure, test, and experiment with predictive models and data science, which has become the main source for knowledge. As a result, Arendt writes, the subject of science shifts from the question 'what is knowledge?' to the question 'how is knowledge created?'

*"The shift from the 'why' and 'what' to the 'how' implies that the actual objects of knowledge can no longer be things or eternal motions but must be processes, and that the object of science is no longer nature or the universe but the history, the story of the coming into being, of nature or life or the universe....Nature, because it could be known only in processes which human ingenuity, the ingeniousness of homo faber, could repeat and remake in the experiment, became a process, and all particular natural things derived their significance and meaning solely from their function in the over-all process. In the place of the concept of Being we now find the concept of Process. And whereas it is in the nature of Being to appear and thus disclose itself, it is in the nature of Process to remain invisible, to be something whose existence can only be inferred from the presence of certain phenomena."*⁶

At the same time our inner subjectivity became increasingly important as secularization deprived us of eternal life. What people are left with is the earthly life, the here and now. People are thrown back on themselves with the emphasis on the interior, the bond with the exterior broken. In this earthly life, pain and pleasure became the benchmark of a good life.⁷

Not just the natural order is understood as a process, but also the human order. The state has come to understand itself as the guiding principle of the process of human life. The knowledge of the engineer and the expert became the guiding principle for political decisions that involve measuring, testing, and steering. In our informational society technological innovation and knowledge has become the main source of productivity.⁸ Statistics and test science became a big part of the state ideology as the state has to control the life process.⁹ Think, for example, of the corona crisis in which politicians speak about the 'corona dashboard' and 'the models that have predicted that this or that will happen.' Science, technology, and politics are becoming more and more entangled.

While scientists and engineers largely determine political decisions, the 'rest', Arendt writes, is condemned to labour. In a society where decisions are made based on rules, protocol, efficiency, and digitalized programs which solely quantify, people lose the capacity to critical thinking and imagination.¹⁰ Without the capacity of imagination there can't be empathy, which lies at the basis of ethics. This becomes especially clear from the expression 'computer says no.' We are thought to follow protocols, without thinking about what is actually needed in the specific situation you are in. A digital proletariat arises that is no longer capable of idealizing and realizing a collective world and of activity in the public sphere that according to Arendt is so important. We are merely capable of satisfying needs, roaming the internet and consuming whatever there is to consume. Instead of researching and inventing new things, we select from what others have and do because we spent hours per day looking at their feed. What does this mean for how we shape our lives, mind and environments?

⁵ Arendt, H. (1958). *The Human Condition*. The University of Chicago Press. p. 248 - 325

⁶ Ibid. p. 296

⁷ Ibid. p. 248 - 325

⁸ Castells, M. (2009). *The Rise of the Network Society* (2nd Edition). Wiley-Blackwell. p. 1 - 25

⁹ Arendt, H. (1958). *The Human Condition*. The University of Chicago Press. p. 248 - 325

¹⁰ Ibid.

Consequences of Digitalisation on the way we shape our Common World

In a capitalist economy where efficiency, productivity and ease are the goal, instead of being critical thinking human beings we are expected to be as productive as possible. This consumptive attitude is especially stimulated in the digital realm and is amplified by the emphasis on the inner subjectivity, pain and pleasure.¹¹ The problem with this attitude is that it accelerates the process of alienation and individualisation. People increasingly become detached from their direct surroundings including other people. While the amount of single-person households rises and people live isolated from each other in their tiny appartements in huge skyscrapers, more and more people today probably recognize the alienated feeling after having bingewatched their new Netflix serie. People interact and communicate more and more via the safe and shielded off space of the virtual, keeping other people at a safe distance behind the screen.

With this consumptive and isolated attitude, Arendt writes, comes the disintegration of a distinction between private life and public life.¹² The private used to be the space where you had time to practice the contemplative life. The public is the space for the *vita activa*, meet different-minded people, talk with others, exchange ideas, and discuss the public interest. In the public sphere there is a need for plurality and exchange of ideas. It is not a space meant for pure pleasure and ease but the space where ideas collide, where you disagree and where new ideas are born. But in order to be as productive as possible these traditional uses of the private and the public are replaced with consumption.¹³ In her time Arendt was thinking of the private as the connection with tradition, ancestors and individual identity that were being replaced with popular culture but today we can see this especially play out during the Covid pandemic where we rely so heavily on the internet and the distinction between work and home life has blurred even more. This results in the incapacity to use the private as a space to think critically and (re)invent yourself, and the public to exchange these new ideas with others, leading to a homogenous mass of individuals as everyone comes to consume, think, act and live the same. This mass of people doesn't just look, think and act homogenously but also consists of isolated individuals who are constantly present in the public domain, being surveilled and tracked. In this surveillance capitalist system, your private home life that used to be tied to tradition and your ancestors has now become part of the social sphere, which unfortunately is not used for public activity but mostly for consumption, data-extraction and the maximalization of productivity.

As a network scientist, Wendy Chun writes that this is reinforced by the fact that at the core of network science lies the principle of homophily. Methods that are used for pattern recognition and prediction assume that you are naturally comfortable around people like you. She explains that our networks are based on the idea that similarity breeds connection.¹⁴ Network algorithms that work in terms of target groups create vast abstractions. To try to describe and understand the world through data and by quantifying reality you become incapable of encompassing human experience of life and meaning. This is why understanding the construction of race and gender performativity is ignored within network science. Identities are based on immutable difference instead of fluidity of (racial) identity and gender performativity.¹⁵ In other words, racism and inequality are embedded in our network algorithms. People are judged according to their social networks, and recommendations are based on what your perceived network neighbours liked or bought, which creates filter bubbles, clusters of sameness and real-life echo-chambers.¹⁶ In doing so it prescribes what it describes. In the organisation of our spaces segregation is recovered due to this principle of homophily. Surrounding

¹¹ Han, B. C. (2020). *Palliativgesellschaft*. Beltz Verlag. p. 9 - 61

¹² Arendt, H. (1958). *The Human Condition*. The University of Chicago Press. p. 22 - 78

¹³ Ibid.

¹⁴ Chun, W. (2021). *Discriminating Data*. The MIT Press. p. 158 - 159

¹⁵ Ibid. p. 105

¹⁶ Chun, W. (2021). *Updating to Remain the Same*. The MIT Press. p. 54

¹⁷ Chun, W. (2021). *Discriminating Data*. The MIT Press. p. 106 - 110

yourself with the same is comfortable so likeability perpetuates the same.¹⁷ Using models and data we calculate and predict everything in order to avoid pain and culture is economized and commoditized. This on the one hand creates homogenous bubbles where everything and everyone thinks and becomes the same and on the other hand these homogenous bubbles are highly receptive to polarisation as they never come to interact with each other anymore due to segregation. When we look again at the pandemic we can indeed see this polarisation with on the one hand the people that rely on the government and its scientific and predictive models based policies, and on the other hand the people that mistrusts these policies and rely on populist ideas.

The problem with this, like Arendt describes, is that there won't be any clash of ideas and discussion without diversity. The clash reveals what apparently is important to you. Pain is a reliable indicator of truth; it tells you what is dear to you. Without it we sink into in-difference.¹⁸ That is why we need the purifying experience of aesthetics and katharsis. In our palliative society where efficiency, ease and pleasure are the goal, there is no opportunity for katharsis, leading to estrangement from the world, the other and even the self.¹⁹ In a palliative society there is no opportunity for revolution, pain simply isn't recognized and therefor it is not shared.

Where does this culture of likeability come from? In a society where everything has to be instagrammable and where we embrace being surveilled constantly in order to feel safe, there seems to be a generalised fear of pain, which extends into politics and takes hold of society. In his book *Palliativgesellschaft* Byung-Chul Han writes how society and politics are avoiding any radical reforms that might be good, but painful.²⁰ The assumption of homophily that is embedded within our digital networks corresponds to his notion of algophobia, which intensifies the pressure to conform and reach consensus, resulting in more sameness. It shouldn't be surprising that algophobia emerges in a society where everything has to be consumable, that is likeable.²¹ The digital domain especially is dominated with a consumptive attitude and brings forward hedonistic bodies.

In his book *Symbolic Misery* Bernard Stiegler describes how digital audiovisual technologies have become a means of 'controlling the conscious and unconscious rhythms of bodies and souls.'²² His analysis of the relationship between politics and aesthetics is linked to Aristotle's notion of *aesthesis*. In today's control society the majority of people is subjected to the aesthetic conditioning of marketing. Cognitive capitalism has created an attention war, estranging us from the experience of aesthetic engagement and inquiry, while losing the capacity of founding a new communal sensibility and aesthetic community.²³ As Aristotle's word *aesthesis* is both linked to ethics and aesthetics, so does Stiegler appeal to the arts to take up its political role in order for us to develop a political sense. Ethics and aesthetics are intrinsically connected. According to Stiegler the emergence of the digital world means that we are no longer able to see that this medial space is at its core a political matter because it so heavily influences our *aesthesis* and which all it tries to do is make us consume more.

Digital Technologies as a pharmakon

Fast development of digital technology in combination with consumer capitalism seems to have subverted ethical values in society. But what role do digital technologies actually have in this process of depoliticization?

Allow me to tell you a story that goes a tiny bit further back in time. When

¹⁸ Han, B. C. (2020). *Palliativgesellschaft*. Beltz Verlag, p. 35

¹⁹ Ibid. p. 9 - 61

²⁰ Ibid. p. 9

²¹ Han, B. C. (2020). *Palliativgesellschaft*. Beltz Verlag, p. 10

²² Stiegler, B. (2014). *Symbolic misery*. Polity Press.

²³ Ibid.

the Gods formed mortal creatures in ancient Greek myth, they gave Prometheus and Epimetheus the task of giving all creatures its qualities. Epimetheus persuaded Prometheus to allow him to do the distribution of the qualities and so he did. But by the time Epimetheus arrived at giving mankind its qualities, he had run out of qualities. Prometheus therefor stole fire, the symbol for technology, from the Gods and gave it to mankind to help create a better human life.²⁴ What couldn't be foreseen is that with powerful technologies comes great responsibility.

Technology acted as a catalyst for the rapid progression of civilization. It gave human mankind the power to harness nature for their own benefit. This led to the humanist worldview that humans are exceptional, God-like creatures that are blessed with reason and have the capacity to produce and use tools and technologies to dominate nature. Humanist humans transcend nature and technology as they ultimately dominate the non-human order. Instead of God being the creator of the natural world, humans themselves started to shape and create the world around them.

The myth of Prometheus doesn't just tell us how technology has increased human agency, it also tells us that technology has been part of human life since its very own origin. According to Bernard Stiegler human life is entangled with technology and humans are technical beings. As a posthumanist, he believes humans don't transcend the natural and technological order, but rather that humans are part of natural and technological processes.²⁵ Isn't human behaviour also predictable, following rules, irrational and not that different from other non-human processes that are getting better at the things that were supposed to be our special domain of reason?

Stiegler describes the ambiguity of the subject, and in the same move the ambiguity of the object. When it comes to the relation between the human and the technical, the "who" and the "what" are in an undecidable relation. Does the human invent technology, or could it be the other way around? But if technics invents the human, would technics not then be the "who" and the human the "what"? For Stiegler, technology is both object and subject, as are humans. In his understanding, humans are born out of technical exteriorization of memory. This tertiary memory is embedded in the human world that is made out of tools and artefacts such as art, writing, machines but also architecture and urban planning. They are produced during exosomatization, the outsourcing of memory from the organic. A human being is an unfinished being that produces exosomatic artificial organs outside of its body and in between bodies, thus forming a social body. This ex-organisation of artefacts produced during exosomatization within the spatio-temporal organization of material environments changes the conditions for next generations in a nonbiological way. This process is co-evolutionary but according to Stiegler not humans, but technology has the initiative in this process as individuals are born into a technological environment which doesn't just steer our evolution but also determines our worldview, and so do our digital networks.²⁶

This doesn't mean we are marionettes of our digital technologies. Technologies, including digital networks, Stiegler writes, are like a pharmakon. They can be a poison as well as a medicine.²⁷ If technologies are at the origin of mankind, and at the origin of the openness of human existence, they can't just be a deprivation of our liberty and subversion of our values. It is true that Facebook determines a great part of how we understand friendship, but at the same time it creates opportunities that weren't there before. On the one hand technics and technology determine a great part of human existence, but at the same time it creates autonomy, freedom and new opportunities for human life. How to co-exist than, with our digital technologies? Although the digital seems to subvert our capacity for political action, the early promises of the internet weren't all

²⁴ The myth of Prometheus by Plato (Protagoras) in Stiegler, B. (1998). *Technics and Time*. Stanford University Press. p. 187 - 188

²⁵ Stiegler, B. (1998). *Technics and Time*. Stanford University Press.

²⁶ Ibid.

²⁷ Ibid.

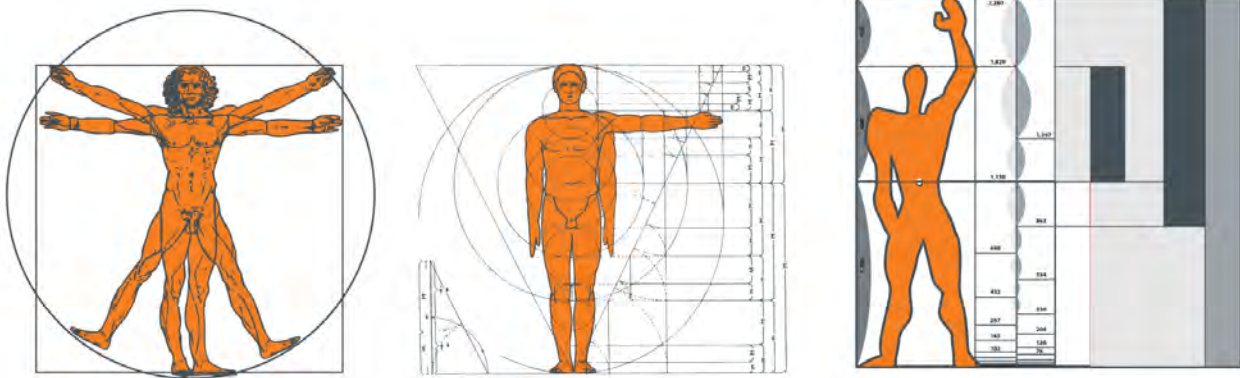


Fig 1. From left to right: Leonardo da Vinci's Vitruvian Man, Neufert's Das Mensch/Das Mass Aller Dinge, Le Corbusier's Modular Man.

false. The question is not how to eliminate dominant technologies but how to use them so that they can become a medicine instead of a poison.

How to turn our Digital Technologies into a Medicine

Stiegler questions whether human existence is merely one part of all the natural and technological processes. The humanist approach to architecture in the modern world has been shaped by the act of elevating man over the natural and technological realm, resulting in Protagoras's Man as the "measure of all things", which is repeated in Leonardo da Vinci's Vitruvian Man and ultimately echoed by Le Corbusier's Modular Man, representing a standardised and normative body and excluding both the perspective of those who struggle to be considered fully human such as women, queers, the disabled as well as the perspective of non-human life. But as we are gradually becoming aware that man is not the centre of the universe we must ask ourselves what it means to be human today and what this means for how we relate to our environments.²⁸

Arendt already advocated for the plurality of human beings. All unique human beings are equal in their singular specific uniqueness that manifests itself in the absolute distinction of one equal from another.²⁹ In our unicity and at the same time plurality, we all share the same common world. Difference between things creates the possibility for newness. It's the very difference in every repetition that accounts for continual change, for evolution, for newness, for creativity and freedom. Plurality therefore is important for the act of natality, continual rebirth, our capacity to initiate something new. It's an infinite process of communication and interaction in order to stay clear of fixed, clear truths and to produce a continuous reconfiguration of morality. It is precisely in the transition to the public sphere that Arendt sees the possibility of a new beginning.³⁰ It's why Deleuze emphasizes the importance of multiplicity, which escapes reductionism. Instead of homogenous consensus we should critically engage with the world. Arendt advocates for amor mundi, an attentive attitude that is curious and that pursues involvement with the world. What is important in order to build a stable and collective world are imagination and critical thinking instead of efficiency, protocols, and quantification. We are not technocratic beings, we are creative beings capable of imagining a better world. But this isn't possible without plurality in the public domain. Democratic spaces are not about achieving a stupefying consensus with each other. They are about the importance of disagreement.³¹ They are not about social peace but about an endless constant interaction between the institutions and the attempt to change these institutions to be able

²⁸ Raina, A. (2019, 11 maart). *What Does "Posthuman Design" Actually Mean?* Eye on Design. Visited on April 14th 2022, from <https://eyeondesign.aiga.org/what-does-posthuman-design-actually-mean/#:~:text=Posthumanism%20refers%20to%20a%20critique,research%20work%2C%20design%20and%20artifacts>.

²⁹ Hannah Arendt and the Notion of Plurality. (2022). *Filosofisk Supplement*. Visited at April 13th, 2022 from <https://filosofisksupplement.no/arendt-and-plurality/>

³⁰ Arendt, H. (1958). *The Human Condition*. The University Of Chicago Press. p. 176

³¹ Guattari, F. (2000). *Three ecologies*. The Athlone Press. p. 33

³² *In a nutshell: Manuel Castells on the power and the counter-power*. (2019, 4 november). [Video]. YouTube. https://www.youtube.com/watch?v=ZOIGzD7tmco&ab_channel=AlexandervonHumboldtInstitutf%C3%BCrInternetundGesellschaft

³³ Arendt, H. (2005). *Introduction into Politics*. Schocken Books. p. 176

to introduce new values and interests in the institutions and values and norms in society.³²

"... Human beings in the true sense of the term can exist only where there is a world, and there can be a world in the true sense of the term only where the plurality of the human race is more than a multiplication of a single species."³³

This is why Yuk Hui coined the term technodiversity. Because we have for a long time understood progression as becoming more western we have created a huge blindspot for other types of technologies with other cultural backgrounds. In order for our spaces and socio-political environments to become more diverse, we must recognize diversity instead of marginalizing it. Like Stiegler's pharmakon, we shouldn't think in terms of good and bad in order to come up with universal solutions but accept variation.³⁴ Where humanists thought in terms of the binary opposition of the human and the Other, posthumanism deconstructs any hierarchy so that humans can be juxtaposed with any other. What we need therefor, Chun writes, are networks infused with critical theory, not based on immutable difference but on mutual indifference. Homophily is not common sense because it is mutual indifference that a city runs on.³⁵

Conclusion

The claims that both cyberutopists and critics have made about contemporary digital networks are not all false. The thing creating problems aren't the digital networks themselves, but the initial conditions of the people making these networks.³⁶ These initial conditions are neoliberal consumer capitalism and humanist digital ideology. The internet is a mirror of society. It is idealism and reductionism that cause the problem. Although our digital technologies, media and communication systems are new, the social struggles that come with it aren't all that new.³⁷ This means that the solution isn't to condemn digital technologies but to infuse them with critical theory and posthumanist thought.³⁸ This is why Stiegler's notion of the pharmakon is so applicable. The internet is neither good nor bad, neither is it neutral. It is very powerful and should be handled with great care and responsibility. In a society where efficiency, ease, profit and growth are the goal and digital technologies are created by neoliberal-driven Big Tech companies, people alienate from their surroundings, becoming increasingly isolated from each other, incapable of initiating any socio-political reform in our common world. What we need is to return our attention from the endless optimisation to reality and embrace the risks of sometimes disagreeing with each other and getting hurt.³⁹

Digital space must be recognized as a public, open, heterogeneous and political space as it can play an important part in the organisation of our spaces and of people without and around the established institutions. What complicates this is the global aspect of our digital networks, making it difficult to regulate, resulting into a laissez-faire public space that becomes more and more commoditised. In order to counter the ever growing power of Big Tech companies we need at least the power of Europe to democratise the digital and thus the physical realm, and preferably even a global, which isn't the same as international, organisation of the internet. As a start, Europe could take an interesting position in this. With on the one side America, where surveillance is based on the market, and on the other hand China, where surveillance is based on social credit system employed by the state, Europe could create a digital system based on dignity, integrity and inclusivity.

3D-PRINTING AND CIRCULAR ARCHITECTURE

Fabio Sala

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Abstract

Currently, more and more the appearance of 3D printed architecture and architectural elements has been justified as a logical step into a more digital, efficient, and sustainable future. More and more architectural firms utilise the Additive Manufacturing industry to fabricate either the whole design or parts of the design and indiscriminately use terms such as “more sustainable” or “more circular” to every project they design.

Even if the need of a shift from a linear to a more Circular Economy (CE) has been clearly needed this field, the largely common trend of using vague and meaningless words has been confusing and ambiguous.

Certainly, the intuition of keeping circular concepts and applying them to the building industry, has been generating a new era of constructing. Understanding and applying concepts such as Reuse, Reduce, Refurbish, Recycle, is letting the life cycle of used materials to be prolonged and has become of major relevance in the fabrication process. The rising 4.0 industry has been characterized by automation and the digitalization of the process and the reality of 3D-printed architectural elements has been a way to reduce waste, increase the efficiency of the product production, and limit the environmental impact through less carbon emission.

However, within this encouraging future, some clarification over whether utilising this fabrication process has actual positives aspect or not has to be made.

Furthermore, design freedom, mass customization, total adaptability, low cost and high speed of construction, use of biomaterials and renewable power sources are some of the circular features of the AM industry that are going to be discussed.

Introduction

The possibilities of using 3D printed elements in the building process has been innovative research within the built environment and, as nowadays, more and more companies are investing into using these techniques to address the non-circular problems of the industry such as short-temporality of structures, after-demolition material repurpose and large waste production within the process.

In the last few years, the need of a shift into a more circular economy has been needed and researched. The Circular Economy (CE) theory, being a totalising theory, has been expanding in many different fields in order to start the conversation about radical change and, hopefully, find feasible solutions to current problems. Understanding and applying the ‘Rs’ concepts such as Reuse, Reduce, Refurbish, Recycle in different fields has become of major relevance since the resource consumption has been

in conflict with the environmental protection. Among the manufacturing fields, where circularity has been largely researched for economic reasons, the architecture field has been striving to find feasible solutions and application of this theory.

The 3D-printing (3DP) has been suggested as a convergence point where production efficiency meets complete customisation and, in this paper, the topic is analysed under the eyes of circularity.

Since the rise of the industry in the late 1980s, saving resources, creating further value over time and complete customization have been the major opportunities and, nowadays, have been the focus of interest in studies that investigate the possibility of a shift from a linear to a circular economy. This innovative industry has been suggested as one of the many promising solutions that will help to face the current and hyper-scale and multifaced problems that are currently on-going. In addition, design freedom, mass customization, total adaptability, low cost and high speed of construction, use of biomaterials and renewable power sources are some of the circular features of the AM industry that are going to be discussed.

This paper, through an initial analysis of what the 3D-printing is and what can be considered relevant within the CE, and a following analysis of some virtuous examples, tries to outline a toolkit / check list to identify where and if the usage of 3D printing techniques can be useful or not.

The investigation process has been outlined with several and subsequent sub-questions that will help with conveying the narrative in the right direction and will make it easily perceived.

Sub-questions:

1. What is the Circular Economy?
2. What is the 3D Printing Industry?
3. What are the Circular goals achievable with the 3D printing industry?
4. How is AM applied in the architecture field?

1. What is the Circular Economy?

The circular economy is a theory, developed in the late 2000s that is based on a closed system in which the value of components, that have gone through any process, don't lose any value.

From the beginning of the process where raw materials are mined to the final product, the circular approach aims to have the least amount of residual waste. The concept has been developed in contraposition to the linear approach and tries to overcome some of problems that the now-old way of managing processes.

The traditional way of extracting, using, and dumping of materials and energy has been found to be unsustainable and not environmentally friendly¹ because it disrupts the natural circular pattern of re-introducing natural resources into the environmental system.

If we surrender and learn from the cyclical model of nature, we understand that each biological component remains useful in every stage of its life.

From the outset to the end-life and even to stages of transformation, some parts or even the whole component is resourceful. Surpassing the throw-away culture we got used to and redesigning the linear production process into a non-waste-based one or one in which waste becomes capital, is the objective of a sustainable future.

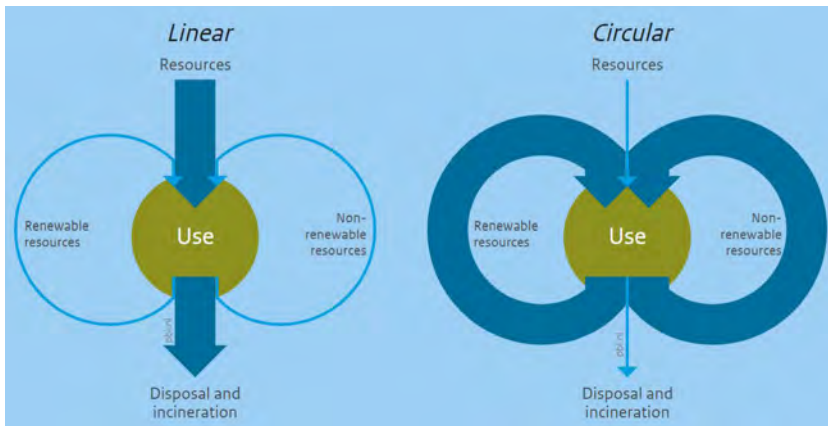


Figure 1: Linear and Circular Concept

As shown in the Figure 1, the contrast between the linear and the circular cycle mainly stands in the possibility of having an endless cycle. Despite the fact that the endpoint remains the same, the circular approach tries to have adjustments and measurements in order not to throw away nor to dispose. In this theory, both renewable sources and non-renewable sources contribute to the maintaining of value across time.

This different model of consumption tries to address global and current hazards such as climate change, biodiversity loss, waste, and pollution through the proposal of the main three "Rs".²

- Reduce: minimum use of raw materials
- Reuse: maximum reuse of products and components
- Recycle: high quality reuse of raw materials

However, since the nature of the theory is all-encompassing and tries to tackle all every aspect, the shift from a linear to a circular approach has not been in any case straightforward in neither of the fields where this has been applied.

Currently, the building sector, produces and is responsible for circa the 40% of the global carbon emission: this unhappy reality should accelerate the research and application of innovative and more sustainable methods.¹⁹

Therefore, even with its hard feasibility, this way of applying circular manners to the current state of art must be applied also in the architecture field and new innovative and sustainable design strategies have to be found.

2. What is the 3D Printing Industry?

The 3D printing industry also inferred as "Additive Manufacturing" (AM) is considered when the production is made as a stratification of layers in which the new material is continuously added. The possibility of using a computer-controlled manufacturing system, allows a complete control and

overview over the process and precise material placement and efficiency.

Additive Manufacturing, the technical industrial name, goes through a 3D digital representation and builds the product thanks to a process of stratification that overlays layer by layer. The fabrication technique expands in different industries and it is utilised in fields that spans from healthcare, fashion, jewellery and different printing techniques, materials and software are utilised but the three main requirements for the process remain the same.

The need of a digital model, the choice of the printing technology and the material used, are permanently required in any printing process.

Digital model:

The digital model, made usually through a modelling programme in a (CAD) is the digital representation of the physical object. The reciprocation between the digital and the physical counterparts, allows the computer-based intelligence to retain information about the object taken in consideration. Since the nature of the design programmes used for the product, freedom in creativity is a major part of this first requisite and not only improves the individual artistry of the process but, with the use of cloud-sharing, allows innovation due to the distribution of information in the whole community as well.¹⁶

Printing technology:

Printing technologies are still being developed each day and strongly depend on the technological progress and materials properties discoveries. As of today, all the technologies that will be listed below respect the additive aspect of the process and are classified in different categories but none of them will be further explained in order to avoid the technicality of the process and focus on conceptual opportunities of the process.

The different typologies and technologies vary, particularly, in the methodology used for the additive process.¹⁶

- Extrusion: extrusion of molten material
- Direct energy deposition: melting using an energy source
- Solidification of powder: fusion of particles
- Photopolymerization: solidification of liquid polymer
- Sheet Lamination: bonding of sheets

Material to be printed:

Hypothetically, all types of materials can be used for the manufacturing of a product, but it might be that the technology has not progress enough to let us do it. The possibility of melting the material and placing in the wanted spot, theoretically allows and permits the use of more materials. However, the full potential of this breakthrough, for now, cannot be exploited to the full potential since many biomaterials or sustainable ones, are able to be printed.

Materials can vary from sand to metal, to ceramics to bioplastics or carbon fibres but as of today, the most widely used material is still plastic. As of 2020, the first materials are fossil-based, and plastic is in first place with a usage of 64% of plastic materials. Due to its convenience and its easy availability, it is nowadays the most common and used material in domestic printing or in prototyping.¹⁶

But progress in material development has been going quickly and new printable materials are being discovered and new techniques of mixed materials are being experimented. But even if the potentials of this industry have been spreading fast, the 3D printing techniques have been applied in minor sectors such as industrial production of furniture, fashion industry, home production and student prototyping in universities but has not still been applied, majorly, in the architectural field.

3. What are the Circular goals achievable with the 3D printing industry?

Some of the general missions, set by the circular economy theory that seek to reduce the production carbon footprint, require to be translated and converted into feasible goals. In the paper "Exploring the potential of additive manufacturing for product design in a circular economy" some of these parameters are listed but only a few can be considered relevant in view of a more circular future.¹⁶

1. Design for attachment and trust:

Making products that will last in time and will be trusted to their durability could allow the consumption process to slow down and will heighten the chances of reuse or repair in the future.

2. Design for reliability and durability:

Age lasting and quality persistence across time is still one of the main researched purposes and still needs to be counterbalanced. However, regardless of the hard reachability of the equilibrium, printing setting customisation and immediate accessibility at structural and time simulation programmes, will allow large space for improvement.

3. Design for ease of maintenance:

Possibility of repair becomes of major relevance when the manufacturing enters the domestic realm and possibility of replacing broken elements and parts.

4. Design for upgradability and adaptability:

Including opportunities of product improvement or advancement is a key element that improve the longevity of any product. In mutable conditions and in changing environments, facilitating the adaptation to a more efficient or effective solution will endure the performance quality over time.

5. Design for standardisation and compatibility:

Promote inter-conformity between different products has the spark to be the next step into a future that will allow different product integration. Even if the total customisation promise could be easily achieved, the future, and the past, has been researching for a reasonable equilibrium between modularity and personalisation.

6. Design for disassembly and reassembly:

Ensuring that the product can be separated and reconstructed is another aspect to consider in the product design. Strategies to improve the interconnectivity between elements and materials will also improve the possibility of maintenance and repair.

7. Design for recyclability:

Vital part of the process is to aim to the use of sustainable materials first, but secondly, the possibility of reusing the material has become of major relevance. In order to continuously use materials and slow the process of resource mining, proper materials that have the option to be reused obtaining the same quality needs to be utilised.

In conclusion, this initial analysis has led to the identification of main issues that these two different topics can brought to our attention and now this paper will try to investigate the possibilities of using 3D printed elements – considered in cases where are architectural elements - to show that waste limitation, easy assembly and disassembly, durability, recyclability, and carbon emission limitation can be addressed while maintaining building complexity and low cost of construction.

4. How is AM applied in the architecture field?

Through the analysis of four examples, I hope to show the feasibility of using printed elements with their advantages and disadvantages.

1. Project Milestone, 2016-2019

The project is located in the city of Eindhoven and consists of a small neighbourhood of five 3D printed houses. The project stands out particularly because it is the first 3D printed housing complex that is being commercialised and sold to the public on the market. The process is consequential and allows error-fixing during the construction process. The first one has been a single-level house while, the future ones will be multi levels and their construction process will be re-evaluated and adjusted after the printing process of the previous ones.

The residential projects, fits into the new trend of house printing. The construction industry has taken the concept of the Additive Manufacturing process and applied it to a lager scale, obtaining what is seems to be low cost and high-speed of construction. ¹



Figure 2: Project Milestone

This is being investigated and researched as one of the methods that can lead to a better structural optimisation while using minimising the material usage and the waste production.

However, on a general note, full replacement of old construction methods with additive manufacturing ones has counterparts that need to be considered. Certainly, there are advantages since the materials utilised is concrete. Less material usage due to material efficiency, waste minimisation since no on-site moulding structures are required, less carbon production since less material needs to be transported and reduction in cost and faster construction are some of the features that utilising only one construction method has.

On the other hand, field experienced figures, such as design and construction specialist need to be supervising the whole process, lack of regulations because of its innovativeness and lack of complete structural studies are some of the issues that this industry is facing.

While being a revolutionary construction technique that explores a different way of housing fabrication, the material utilised is still a material that has no possibilities of being reused, reprinted, or recycled. Additionally, concrete has been responsible for almost for 1/10 of the industrial water usage, it adds to the heat-island effect and limestone quarries and cement factories are air pollutants.²⁴

The largely usage of accelerants added to the cement mix are strong air pollutants and make the cement not recyclable. Lastly, the possibility of printing walls must not be confused with printing the whole house. Printing a portion of the entire wall structure means that problems such as insulation, ventilation, cooling, and heating of the housing complex are not addressed.

Since the technology has potential but it's still at its infancy stage, the next step is to have a holistic approach to the construction process to transform it into truly sustainable.



Figure 3 & 4: Europe Building

2. Europe Building in Amsterdam, DUS Architects, 2015

In the project "Europe Building" by DUS Architects, some elements of the façade have been manufactured using 3D printing techniques. The choice has been made to address the temporality of the building since it will be used for the 6-month event of the EU Presidency.²³

The design has taken inspiration from the sailing vessels and is fabricated utilising bioplastic and a concrete outer finish. The sailing design allows the formation of more isolated and private spaces that make space for the 3D printed benches. The sustainable making and repurposing of the bioplastic material is reflecting the temporal nature of the building since the benches can be easily detached, dismantled, and re-printed in the future.

This project is able to show that, at times, choosing the additive manufacturing process, can lead to a more sustainable and circular approach. Durability, adaptability and recyclability improve the design and allow the project to fit into a more circular process where the resources are not wasted. Using materials such as bioplastics, due to their quality durability over heating processes, allows reprinting even after the life of the product ended.

However, this can be further developed since this project shows how the manufacturing of a product can be done with 3D printing but does not let the particularity of the process change the design.



Figure 5 & 6 & 7: The Cabin of 3D Printed Curiosities

3. The Cabin of 3D Printed Curiosities, 2018

The project, located in Oakland, California, fits into a process of rethinking the housing problem of the Bay area. New opportunities given by the Oakland City Council, brought to the proposal of innovative architectural solutions for living at a micro scale. The design is considered relevant since not only the façade is manufactured with the use of 3D printing techniques but an experimental approach over the method is being applied.

The virtue and the strength of the design, stands in the balance integration and usage of 3D printed elements in the whole project but especially in the envelope of the building.²¹

Not solely the additive manufacturing technique is utilised in the design as a fabrication method but the design of the clay tiles, that are building up the exterior of the cottage, are thought and designed to be 3D printed. In the front elevation, we can see how the printing of the ceramic tiles, have been implemented with the presence of succulents.

While using the hexagonal modular pattern for easy assembly reasons, customisation of each tile is still applied. Differentiation given by materials, shape and colours allows the front elevation to be unique.

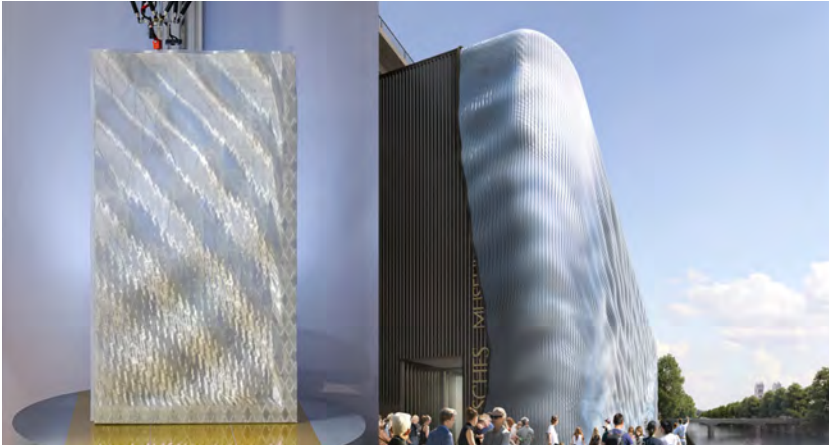


Figure 8 & 9: Fluid Morphology research project

4. Fluid Morphology, Research project, 2020

The last project analysed is a research project conducted by Moritz Mungenast and the University of Munich for the façade renovation of the Deutsches Museum in Munich. The project is able to develop complicated geometries while adding functional and physical additional properties that derive from the fabrication technique. The façade will be divided in polycarbonate panels that will be easily assembled and, when the complete element will be formed, the 1:1 prototype of the façade will be integrated with the building.²²

The innovative design brings unity between the design and the printing process: not only the new façade will be fabricated with an additive method, but the design exploits the positive aspects of the printing method and incorporates them into the design.

The functional integrated and translucent façade element is able to integrate function adaptability, sun-shading, acoustic deflection, ventilation and structural optimisation. Additionally, the final 1:1 prototype model will be exposed to the natural conditions in order to test the performance properties and challenges that the material will go through during its life cycle. The testing spot will be located in one of the TUM buildings and will collect data from insulation, UV-radiation, and critical weather tests in order to further investigate advantages and disadvantages of the polycarbonate material.²²

This project is what I consider to be the most well integrated design out of the four examples because I reckon it shows a complete symbiosis between design process and opportunities given by the industry. The product is designed and studied in relationship with its materiality and its production. Some advantages of the production process are being integrated and utilised proactively within the design while disadvantages (such as size limitation given by the printing machine) are being used to improve modularity and adaptability.

5. Final Reflections:

Undoubtedly, the limitation of this research needs to be addressed: the few examples I chose to analyse, even if they strive to be representative of methodologies of use of this type of product fabrication, they certainly are not an exhaustive explanation of the topic.

Describing and explaining in much detail every aspect of the four design was never the ambition of the paper since the topic is too large to be

investigated in such short time and has been already vastly addressed.

Regardless, on a general connotation, the few examples brought in consideration can be still considered helpful and relevant to comprehend how different types of application of the 3D printing methods in relation to circular concepts in the field of the built environment.

I started with concrete housing that strives at the complete replacement of the traditional way of manufacturing with an additive one, went through possibilities of printing a traditional architectural element and first tries of design improvement thanks to capitalising on the fabrication and, lastly, I arrived at a precise fabrication of elements that gain qualities due to their fabrication.

Summing up all the considerations made through the examples, a brief summary of what can be considered circular within the circular economy follows. Printing techniques and circularity, when used in combination, strive when at least one of more of these possibilities are fulfilled:

- Repairment and restoration on site
- Easy assembly, but more importantly, easy disassembly
- Shredding and re-printing of the material used
- Recyclability of the material used
- Durability and value maintenance across time

However, even if these points can be achieved and fulfilled by the design, the most relevant reflection I wanted to contribute to, is the importance of having a back-and-forth design process. The fabrication of the element or product we are designing has to be taken in consideration if we desire to minimise our environmental impact. Choosing a manufacturing process and taking real advantage of that needs to convey a new and innovative design process. A symbiotic simultaneousness of the two is something that still need to be grasped and still need to be researched within the architectural community.

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READING THE DIRTY, THICK, & OPEN

Two Theoretical Understandings of Digital Maps & Our Position as Reader

Kevin S.F. LAI

5491142

"... in the Empire, the Cartographer's act achieved such a degree of perfection that the Map of a single Province occupied an entire city, and the Map of the Empire, an entire Province. In time, these vast Maps were no longer sufficient. The Guild of Cartographers created a Map of the Empire, which perfectly coincided with the Empire itself. But Succeeding Generations, with diminished interest in the Study of Cartography, believed that this immense Map was of no use, and not Impiously, they abandoned it to the inclemency of the Sun and of numerous winters. In the Deserts of the West ruined Fragments of the Map survive, inhabited by Animals and Beggars; in all the Country there is no other Relic of the Geographical Disciplines."

from *Viajes de Varones Prudentes*, Suárez Miranda, book IV, chap. XIV, Lérida, 1658. Quoted by Jorge Luis Borges, *Historia universal de la infamia "Etcetera,"* Buenos Aires, 1935

Introduction

While there is no Guild of Cartographers who masterfully created the map of the size of the Empire, the vastness described and promised in this short story still captivates succeeding readers. Notably, Umberto Eco discussed the possibility, or rather, the impossibility of the 1:1 map if it were to be created.¹ Imagining the feasibility of such an immense map might be an exhilarating exercise, but perhaps the more captivating, or productive, discussion is on the brief, yet arguably the most important transition, when the immense map was believed to be "of no use" and subsequently left abandoned. To what goal the immense map is of no use? If the Vastness is the reason for failure of a map, how do we explain the contemporary obsession with the "Big-" everything? It seems obvious here the analogy of Vastness is exhausting, for the Vastness in the Map of the Empire is one of "space", whereas that in the contemporary digital maps is one of "information". Before we come quick to discard this analogy, we could return to this image in our head, an experience most, if not all, our contemporaries share— our first encounter with the Google Earth.

On the computer display, the programme opens, and materializing in front of our eyes is an image of the entire Earth, seen from a vantage point somewhere in the outer-space, a perspective once only available to the astronauts. Then, as we move our cursors across the dashboard, the Earth follows. Still overwhelmed by the excitement and desperately trying to locate ourselves on the map, we click onto a specific coordinate, and the map zooms in: oceans, continents, cities, districts, street, building. It is the same excitement in the Power of Ten, when we first realized the different

1 Umberto Eco (translated by William Weaver), 1982, "On the Impossibility of Drawing a Map of the Empire on a Scale of 1 to 1" *How to Travel with a Salmon & Other Essays*, (1994 edition, first published 1992), Houghton Mifflin

2 In *HyperCities, Thick Mapping in the Digital Humanities*, it is argued that "Zoomability" is considered a way of investigating space on maps, that is further enabled by digital mapping tools. There is no longer any particular scale to be privileged, but the ability to operate across scales. Found in Todd Presner, 2014, "The Humanities in the Digital Humanities", p.54-55. *HyperCities, Thick Mapping in the Digital Humanities*, Harvard University Press

3 Denis Wood, 2010, *Rethinking The Power of Maps*, The Guilford Press

4 J.A. Steers, 1965, *An Introduction to the Study of Map Projections*, 14th Edition,, London University of London Press

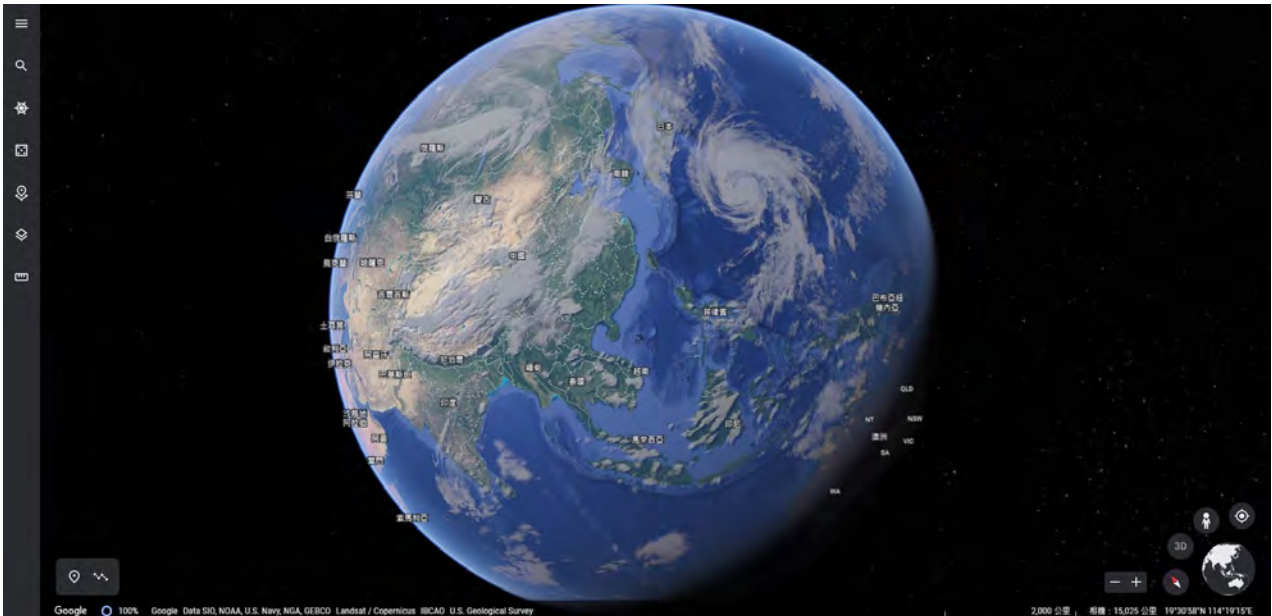


image 1

Screen-capture of Google Earth by the author, extracted on 14th April, 2022

scales of viewing our world, only now we are in control of where to look, or to “zoom”.²

If we return to the fictional imagery of the 1:1 Map, do we not feel the same excitement of encountering the Vastness? And one replies: We have already made the Map of the Empire! We have already made the 1:1 Map! If there is any pride or positivism in this proclamation, there is also a sense of uneasiness and alarm in this rhetoric. Digital mapping is not without problems, same as any maps in the pre-computer history. Therefore, contrary to the generic image of the digital being Clean, Precise, Orderly, it is the goal of this paper to advocate a reading of digital maps as Dirty, Thick, and Open.

Maps are never innocent. As the age-old reminder goes, mapping as a science has been revisited, reviewed, redirected in the brief history of our civilization. As the cartographic science developed, the previously believed truthfulness of maps as representation of our reality came under scrutiny, and theorists such as Denis Wood have collectively reviewed the maps not as a neutral representation, but a product of the author’s subjectiveness.³ Maps are the cultural product reflecting the power at play, e.g. a documentation of indigenous land by the colonial power offers legitimacy to the “colonizing” to claim the land. Other than this Power Problem, there is also the Accuracy Problem inherent in the maps being a graphic projection of the world, “as it is impossible to make a sheet of paper rest smoothly on a sphere, so it is impossible to make a correct map on a sheet of paper.”⁴ It was in response to this questioning, that the Surrealists in the Modernist time decided to problematize our relationship with maps as an accepted truth. They drew up a world map where the sizes of continents and nations are reallocated in relation to their significance to the Surrealist Project. This intended confusion again proves that mapping is not immediate representation of reality, but “a wild proliferation of alternative ones, of possible worlds each one as faulty and fantastic as the next...” More than a projection of lines and nodes on a two-dimensional space, that begins to figure into meaningful forms and allow interpretations, the mapping hands should never be out of the picture. The gesturing of the mapping hands leaves invisible traces on

the maps, which if we look closely, we will see the maps are in fact "dirty". The dirty marks, left behind by the different power and material agency in the map-making, are meaningful to discern and read into, as the many theorists before did. It is only by taking into account the Dirty, we are able to see maps as problematic constituents, that are possible to be taken apart and examined in terms of relations. Now, a field of problems about mapping is established, but they are all concerned with the mimetic reading of maps. As Latour reminded us, "... because of the advent of digital navigation (Cartwright and Hunter, 1999; Fabrikant, 2000), a very different interpretation of the mapping enterprise can be introduced that allows a mimetic use of maps to be distinguished from a navigational one." There is an alternative way of "navigational" reading of maps, which is no longer concerned with the maps as a representation of a "virtual image" of reality, but concerned with the maps as a dashboard for the reader to navigate between data sets. Also, following the same Latourian perspective on technology, there is no longer a distinction of "digital Vs analogue", or "digital Vs paper". Rather, they are distinguished as BC (before computers) & AC (after computers) along the same chain of effects. The digital mapping discussed in this paper therefore is concerned with the AC maps, which can be meaningfully described in terms of its Vastness, that is conceptually broken down into Thickness and Openness, borrowing theoretical resources from the Anthropologists' "thick description" and the art historians' "open work". It is the ambition of this paper to understand what digital mapping is, beyond the convenient dichotomy of "digital" to "analogue" or "paper". With this refreshed understanding, we would then be able to position ourselves, for the masse, as Readers, and for the architectural discipline, as Authors, of digital mapping.

5 Tom McCarthy, 2014, "Introduction", Mapping It Out – An Alternative Atlas of Contemporary Cartographies, edited by Hans Ulrich Obrist, Thames & Hudson Ltd

6 Bruno Latour, Valérie November, Eduardo Camacho-Hübner, 2009, "Entering a risky territory: space in the age of digital navigation", Environment and Planning D: Society and Space 2010, volume 28, p 581-599



image 2

Surrealist Map of the World, 1929. From a special issue on Variétés, entitled "Le Surréalisme en 1929"

"You think you own whatever land you land on

The Earth is just a dead thing you can claim

But I know every rock and tree and creature

Has a life, has a spirit, has a name

You think the only people who are people

Are the people who look and think like you

But if you walk the footsteps of a stranger

You'll learn things you never knew, you never knew"

— "Colors of the Wind" ⁷

On Thickness

In any scenario, for the observers to observe, there is a power relationship established between the "observer" and the "observed": The asymmetrical power relationship is particularly salient in the discipline of Anthropology in its colonial origin, when, in hindsight, the observers would often have made non-informed observations, and even attempted to offer premature explanations. The concept of "thick description" was first coined by philosopher Gilbert Ryle, then re-popularized by anthropologist Clifford Geertz. It requires the observer to identify the context in which the observed event situates, and subsequently proceeds with an analytical approach in relation to the material, the cultural, the structural etc. that goes beyond the superficial observations. The subject, or the event, is therefore "thickly" described. Whilst the reception of Geertz's interpretive method of ethnography remains controversial, especially concerning his allegedly "distractive" style of writing, the term "thick description" stuck around and got adopted by different disciplines subsequently.⁸ In the case of digital mapping, the notion of Thickness was adopted in the HyperCities project as a method of capturing the complexity of urban reality, which is made possible by the very computation power of digital maps, to work around the framework of digital humanities. Here, Thickness is three-dimensional, more than the vertical superimposition of information (which is a second notion of "thickness" to be discussed later), but a "web-like" interwoven complexity of contexts. When a map is constructed with this "thickness", it allows one to read every rock, and tree, and creature, in correspondence to the life, spirit and name of them.

For us to see this "thickness" as fundamental to digital mapping, we need to first enter the specificity of it as a new experience: not as a map, but a navigation dashboard.

Following Latour's proposal of a navigational reading of maps, digital maps (AC) should first be understood differently from paper maps (BC). In our contemporary use of digital maps, they are usually mediated through a computer display, and printing out is optional. If we decide to make a printout, it is only a "frozen image" that is taken out from a tiny fraction

of a “computerized databank”.⁹ Our experience of engaging with the digital maps are no longer limited to a physical copy bounded within the paper space, but we are logging into a databank that can be updated in real-time. The complexities across the temporal scale can then be easily represented (think different time-stamped images on Google Map) and the delay between the actual world and the mapping representation can be significantly reduced to almost negligible. This is the affordance of the digital technology for Thickness to be captured.

In terms of the nature of data, digital mapping affords the map reader to zoom in and out across images of different resolution (as in the previous example of Google Earth) and switch between cartography to photography, 2D to 3D, in simply a click. As long as the data is compatible with the mapping format, however heterogeneous it might be, the digital maps can display such a Thickness of information simultaneously, while a BC map could only represent in separate printed layers. There have been attempts to represent this heterogeneous Thickness in BC maps in our architectural history. Aldo Rossi's Analogous City was one effort in the 60s in exploring new descriptive methods of city that offer a critical comment on the excessive reductionism of zoning-based urban-planning.¹⁰ Collapsed onto one paper space, Rossi's map has the more prominent effect of rhetoric and metaphors, than displaying a more “neutral” set of information.

The “Layers” in this regard offers the second notion of Thickness, that is a vertical accumulation of different information that is distilled from the complexity of an urban environment. Despite the critical views in the 60s from Italian scholars such as Aldo Rossi, Franco Manucuso, Giancarlo De Carlo and Bernardo Secchi alike, the practice of mapping urban

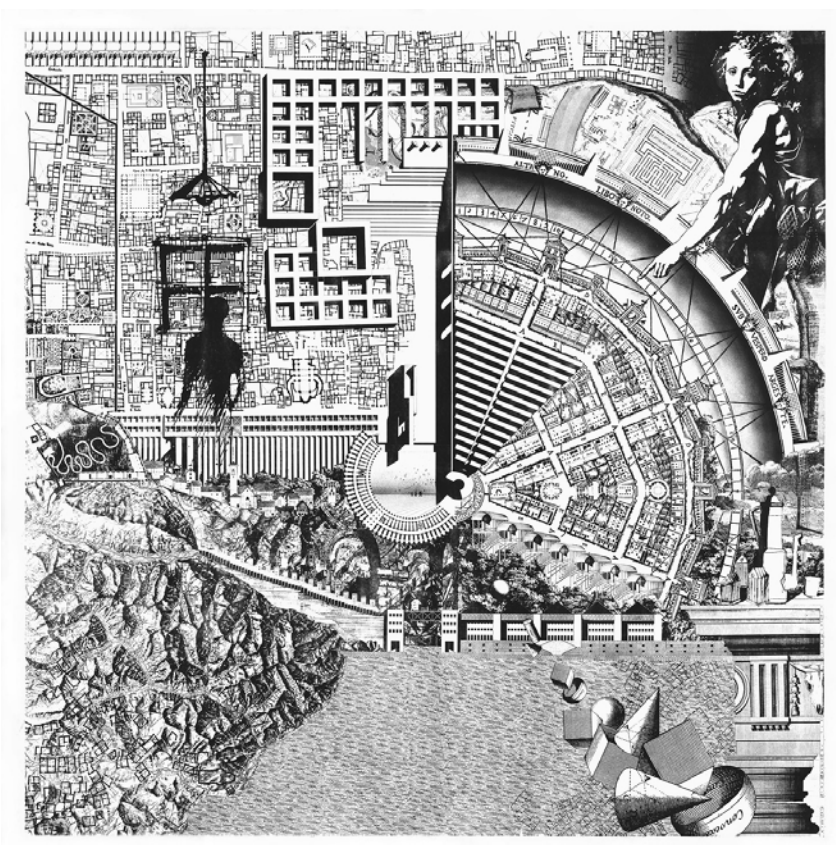


Image 3

Analogous City, Aldo Rossi, Eraldo Consolascio, Bruno Reichlin, and Fabio Reinhart for the Venice Biennale of Architecture in 1976.

complexities in layers has been popularized, notably with the OMA's New Seoul International Airport design and Colin Rowe's "collage city". How this second notion of Thickness differs in digital mapping is the magnitude of such Thickness and the computational power in digital technologies. In the example of the GIS system, shape files of spatial data in the API format can be easily exported and imported through the digital interface. The spatial data would not be contaminated at each transaction, and theoretically, infinite copies are possible. With built-in computational tools, the digital map is its own interpreter and author. One can easily measure and count on the same interface without the aid of auxiliary tools such as rulers or compass for BC maps. Therefore, it is precisely the computation power embedded in digital mapping that affords to make meaning out of the immense magnitude of layers of information.

With digital mapping, the experience of "looking at a map" is transformed into "logging onto some navigational platform".¹¹ We no longer work with a fixed, finished piece of physical map, but with a dynamic, unfinished bank of data. Here, we might be able to draw an analogy to Brecht's epic theatre, where social/ spatial processes are staged in a particular fashion and mediated by artistic/ theatrical methods, with the intention to set audience into motion. Everyone is therefore "productively disposed", and asked to navigate proactively in a turbulent sea of contradictions.¹² If digital mapping is a dashboard for one to connect to the dynamic world of data, is it not also a theatre too? The metaphor might sound tiring here, but if we look further into the conception of Brecht's epic theatre, in relation to the notion of "Open Work" proposed by Umberto Eco, we can see another productive attribute of digital maps- the Openness of it.

9 Bruno Latour, Valérie November, Eduardo Camacho-Hübner, 2009, "Entering a risky territory: space in the age of digital navigation", *Environment and Planning D: Society and Space* 2010, volume 28, p 581-599

10 Marialessandra Secchi, Marco Voltini, 2020, "They Do It with Layers – How Design by Layers is Killing Urban Complexity", *OASE* 107, *The Drawing in Landscape Design and Urbanism*, OASE foundation

11 Bruno Latour, Valérie November, Eduardo Camacho-Hübner, 2009, "Entering a risky territory: space in the age of digital navigation", *Environment and Planning D: Society and Space* 2010, volume 28, p 581-599

12 Bertolt Brecht, 1949, "Kleines Organon für das Theater (A Short Organum for the Theatre)", translated by John Willett, *Brecht on Theatre- The Development of An Aesthetic*, Hill & Wang, New York



image 4

Scenography of "The Exception and the Rule" written by Bertolt Brecht, a production by Alice Theatre Laboratory on 19-21 June, 2020, HongKong

"Our revels now are ended. These our actors,
As I foretold you, were all spirits and
Are melted into air, into thin air:
And, like the baseless fabric of this vision,
The cloud-capp'd towers, the gorgeous palaces,
The solemn temples, the great globe itself,
Yea, all which it inherit, shall dissolve
And, like this insubstantial pageant faded,
Leave not a rack behind. We are such stuff
As dreams are made on, and our little life
Is rounded with a sleep."

—"The Tempest," William Shakespeare ¹³

On Openness

In "The Role of the Reader," Umberto Eco famously advocated an understanding of a work of art as an "Open Text."¹⁴ He drew upon examples of experimental music-making by his contemporaries to illustrate a new definition of an open work of art, that no longer stresses on the readers' multiple open interpretations afforded by the authors' closed and finished work, but an open work should promise the interpreters, the performers, and the addressee in their own reading to collaborate on the work itself with the authors, and that the work is unfinished. This dialectic is equally true in the mapping activity, particularly digital mapping. The emergence and success of Wikipedia, a collaborative knowledge community that allows public members to edit and supplement information on the virtual encyclopedia, also then inspired a mapping counterpart, the OpenStreetMap, which relies on on-the-ground input from public members to collaborate. When the promise for a democratic and decentralization society by the Internet seems to have failed (with the emergence of data monopoly from information giants such as Google and Facebook), the OpenStreetMap project seems to have safeguarded the promise of open data.

Yet, the Openness from Eco's proposal is different from that of the OpenStreetMap. The Openness here lies not in the open access of the mapping data to public audience; the Openness is enshrined in the very nature of the digital map as never finished, that it is always in the making. If we can regard the hyperlink domain as the being of the digital map itself, as long as the domain is unchanged, the digital map (A) is still (A), but not (B),(C), or (D). When the spatial information is updated on digital map (A), at most, we can recognize that (A) has become (A'). The digital map is in versions, constantly replacing the old with the new input. Inherently, a digital map is always a "work in movement," because it does not contain the same materiality of paper maps that have an immediate physical presence, but exists and is contained in a series of 0s and 1s which are accessible and mutable if one allows. ¹⁵ As Eco quoting the music-writer

Pousseur, it is "the field of possibilities" that a work of art, or in this case, digital map, is.¹⁶ The mutability, or "updatability" of digital mapping therefore, offers invitation to the readers to make the work together with the authors. This constitutes the first notion of Openness.

Latour would have warned against the art historian perspective of reading maps, which often regards maps as representation of a specific territory. However, the concept of Openness devised by Umberto Eco remains productive in destabilizing the reading activity of a digital map. Open reading of a work of art (digital map) is encouraged, but only made possible if the author has proposed possibilities with specific directions. It is not determined nor limited by the author, however, as one can resort to "Ambiguity" as a method to maintain an open reading in directed possibilities. By keeping Ambiguity in the work, which Eco used the literature work of Kafka to illustrate, interpretations become inexhaustible, and the reader could be able to constantly challenge values and dogmas embedded in, or surrounding the work. In order to achieve this effect of "ambiguity", one can resort to "rhetoric", as it is evident in Bertolt Brecht's plays, that "appear to elicit free and arbitrary response on the part of the audience. Yet they are also rhetorically constructed in such a way as to elicit a reaction oriented toward, and ultimately anticipating, a Marxist dialectic logic as the basis for the whole field of possible responses."¹⁷

In Brecht's theatre, actors are not embodying their character by being them, but by acting them. Gest, as Brecht coined this self-awareness of acting, is coupled by the non-realistic scenography, which creates the Alienating Effect on the audience who can then engage in the social problems acted out on stage.¹⁸ Drawing this parallel of digital mapping to the "epic theatre" conceived by Brecht with an emphasis to alienate audience, we begin to see the possibility of digital mapping empowering the masse by confusing them, or in Brecht's words, to leave them "productively disposed".¹⁹ Indeed, if one has watched one of Brecht's plays, one would find the theatrical work more as a constant internal questioning than a simple entertainment (although Brecht would argue that pleasure remains the goal of the "epic theatre"). The work of art is open in the same sense that a debate is open. Solution is anticipated, but would be originating from the collective mind of the audience.²⁰ Here, Openness speaks of an optimism for democratic participation in the work. Having acknowledged that maps are inherently dirty, for a digital map to be open, it is to discover the political agency embedded in the work, that it promises negotiation and collaboration.

If one finds the concept too foreign, the set of explorative mapping produced by James Corner would be a proof of concept. In his reflection on the agency of mapping, Corner argues that mapping is a creative activity and therefore should be more than tracing the reality.²¹ In practice, the maps on American landscapes operate in graphically unconventional ways: that satellite image is superimposed on the empirical USGS map, with photographic figures collaged in. The map contains a fever-dream quality in it, but it is with this open mapping that readers can participate in the intellectual activity of a map. One may argue, that such a notion of Openness is in fact not a potential form for digital map to become, but an attribute inherently anticipated in digital mapping. In Senseable City Lab @MIT, urban scenarios are mapped as point-cloud, vectors, animated figures. Mediated through the browser interface, a curious reader enjoys the freedom to switch between urban realities, pan around the three-dimensional space of the map, click onto the project info, or play a video explaining the background of the digital mapping. The digital map can contain infinitely multiple references via the hyperlink, a device also evident in BC maps through footnotes or legends, but never before as immense as it is in digital maps. The experience is one of logging into a dynamic flux of vectors, which is also visibly reproduced in the digital maps in animation. The capacity to animate objects in digital mapping affords the curious

reader to interpret the map in multiple forms, and promises a rhetorical device to make Ambiguity apparent, a quality BC maps such as Corner's have been endeavouring to emulate.

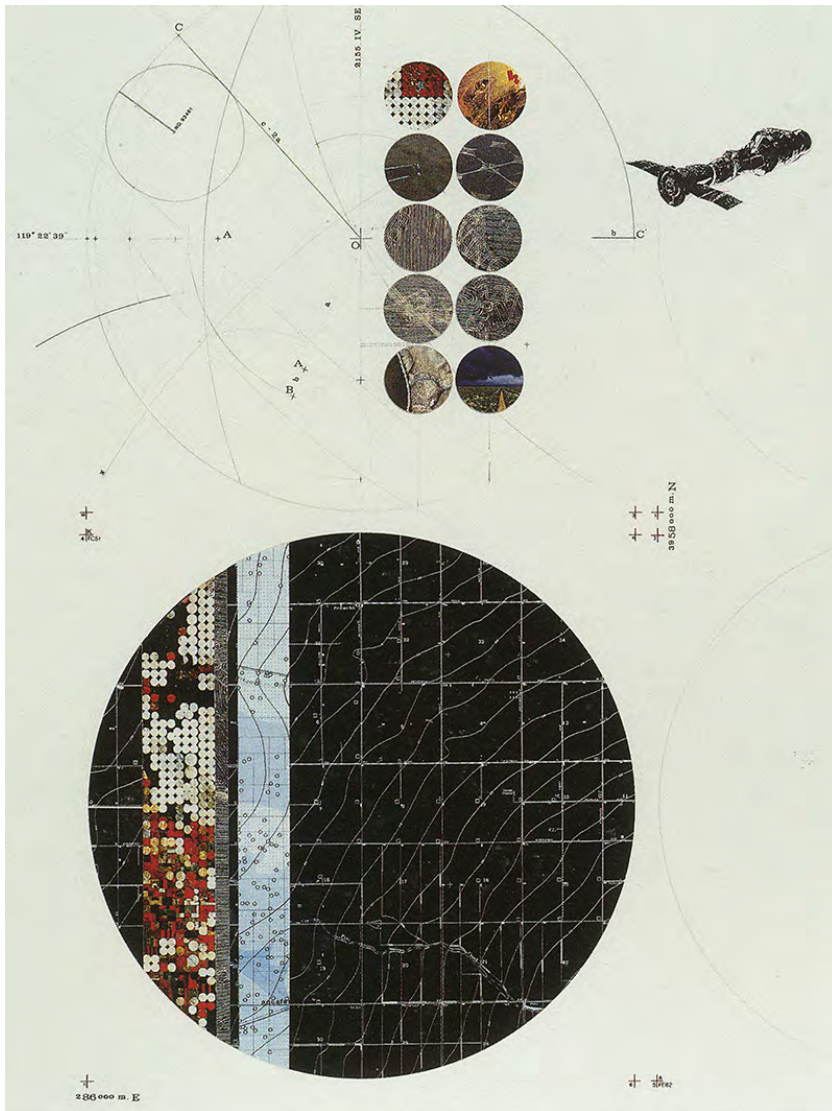


image 5

"Taking Measures Across the American Landscape", by James Corner and aerial photos by Alex McLean



image 6

Screen-capture by Author of Wanderlust Project, Senseable City Lab @MIT

Conclusion

After wandering around the digital maps, our previous curious reader is left disposed, at best troubled, at worst transfixed, lost, and tempted to relapse into inaction. The enthusiasm surrounding data in the architecture discipline and adjacent fields of design has met equal optimism and hesitance. Advocate for SmartCities has entered the realm of public policy and business, promoted a better informed evidence-based decision-making, but not without concerns as being excessively reductionist in planning our urban environment, and as new problems of surveillance and control. Our curious reader accepts all the above realities, but is left with a sense of powerlessness to engage with them. If the revealing of digital mapping as Thick and Open in the foregoing chapters has been productive, our curious reader would have come to the conclusion that a closer familiarity with the digital tools would be instrumental to engage with the digital maps after being disposed, that we need to achieve a common "digital literacy" in order to invent and operate the digital machines around us.²² It is to say that, our curious reader would have to acknowledge themselves as a proactive reader, who is aware of the different positions around a digital map. Following Eco's conceptual delineation of positions around a work of art²³: the "author", the "interpreter", the "performer", the "reader", for our curious reader to reclaim their agency in digital mapping, they would have to, first, be aware of the existence of these positions, and then shift between them and engage differently with the maps. They would be required to constitute their own centre of reference in the field, and acknowledge that there is no privileged point of view, but all are equally meaningful. This is true for the masse to be literate reader of digital maps, and even more true for an architecture person, who has more frequent encounters with the mapping activity. To be able to read is to claim our interpretive power, and find our bearings in the flood of data.

22 Stavros Kousoulas, Dulmini Perera, 2021, "Five Points Towards an Architectural In-Formation", *All Is In Formation: Architecture, Cybernetics, Ecology, FOOTPRINT* (Delft Architecture Theory Journal, Vol. 15, No. 1

23 Umberto Eco, 1979, "The Poetics of the Open Work", *The Role of the Reader – Explorations in the Semiotics of Texts*, Indiana University Press

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COMMUNICATION IS PARTICIPATION

Maria Oplatak

5623472

It is the early 20th-century, many countries all over the world are struggling with the housing shortage. The governing proposes various policies that incorporate user participation. Most of those policies are based on documents from municipalities, city councils, NGOs, etc. They are essentially a set of rules on "how to build": Ersatzbauweisen, which is the first of those policies, emerges in Germany in 1926. Ernst May takes on vernacular methods in incremental housing however, omits the participatory approach (Susan R. Henderson, 1999). Then in the years from 1927 to 1990 policy run by the City of Stockholm, shows that almost any family could erect a decent dwelling, but then there's approach lacks flexibility as operating on municipally owned land relies on prefabrication. From 1942 to 1975, Canadian *Build Your Own Home* program offers financial, legal, and technical assistance to amateur builders. The scheme enables families to build different types of dwellings, in different ways, on privately owned sites which unfortunately encourages scattered development (Tricia Schulist & Richard L. Harris, 2002). Finally, in the recent incremental housing projects in Chile, various programs propose customization guidelines provided by architects however, those fall short of addressing the capability and motivation of residents to build. Consequently, the responsibility was transferred to constructors instead of the dwellers resulting in missing the point of participation. As the upper cases show the main problem of bottom-up participatory planning and incremental self-build housing implementation is the lack of persistent, efficient, technical, and legal support. The support must be then provided by a tool that activates long - term supervision such as a toolkit that encourages communication between user and architect, enabling remote help with essential advice that guides each step of the incremental process long after the architect is gone from the building site.

Why bother with a toolkit?

Power dynamics in participatory design

"Between friend and enemy, as well as friend and friend, there is the potential for a conflictual consensus, one that produces the fertile ground for conflictual participation to emerge" (Markus Miessen, 2011, p.102).

That is to say, any form of participation is already a form of conflict. Is participation always moral then? The conflict allows ground for a productive difference in the politics of participation, once we go beyond "moralist consensus of doing good by giving" we can stimulate change on the notion of conflict. On the other hand, participation minus consensus equals manipulation. This way, Markus Miessen problematizes the concept of participation in almost a political discourse navigating from the Left to the Right by demasking the lack of democracy in the participatory process. He does it by underlining that participation has become a symbolic gesture used by offices when they cannot afford expensive commissions (Markus Miessen, 2011). Consequently, it is important to note that not only in the

participation power imbalance occurs but also in the entire process of carrying out the project. The role of a user is shifting in every phase of the incremental process. For instance, it is often that construction is carried out by contractors, not the users themselves. However, ever before it, in the design phase, the user consults the project and does not design due to a lack of opportunity for it, necessary knowledge, or will. Furthermore, even if there is a mutual need for dialogue, the project manager can decrease the opportunity for it so fragmentation of the deciding voice occurs. This exemplifies that participation may not always be participatory, after all the majority of incremental projects the role of a user swifts away from impactful decisions to the interior décor. So I shall ask: is it possible to achieve a truly participatory process?

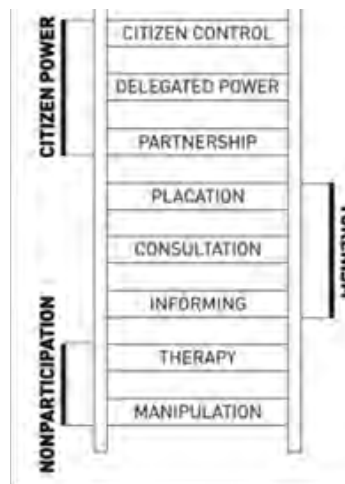


Figure 1

Ladder of citizen participation. Sherry R. Arnstein

In the context of urban planning, Sherry R. Arnstein illustrates well the fading or lack of citizen power over the spectrum of participation by defining 8 degrees of it subdivided into 3 groups: Citizen Power, Tokenism, and Nonparticipation [Fig. 1.]. If one was to study the unheard voices then it is helpful to redraw this diagram by distributing participatory methods on the spectrum of power and communication to deduct which methods increase and prolong direct dialogue between users and architect [Fig. 2.]. As follows, to understand where the failure of participation emerges, we need to come back to the beginning of the process – collecting user feedback. Participatory methods such as questionnaires, games, workshops, or interviews often do not encourage persistent dialogue between users and architects, hence the power imbalance occurs. This is because a powerless participant is one who has little say in how their story is written in the end, which indeed is often the case as participatory research can be often manipulated. For example, the interviewer can use a report building techniques to tell user's story that may omit nuances moreover, it is the researcher who decides on the quantity and quality of information about the research project to be provided to the participants to enlist their cooperation. Publications based on such methods may also damage the interests of individual participants or the groups to which they belong. Dynamics brought forth by the power and the powerlessness add to complex relations between the researcher and the participant which results in a design detached from users' needs" (Yanru Guo & Dion Goh Hoe-Lian, 2014, p.2). To avoid it one has to use a form of communication that meticulously includes user feedback. It is the user particle, whose economical status, culture, and plans for the future have the deciding voice in the success of incremental development⁵ and therefore, the feedback must be included in the toolkit as a direct guideline that explains how and why "this" or "that" is going to achieve user's goal and ultimately their greater good.



Figure 2
Chart establishing which participatory methods include user power and direct communication.

The problem

The moment that architect decides to exert participatory feedback as a driving force for the design, they become the narrators of the user's story. The issue of power relations in communication is a focal point of the insufficient dialogue in participatory design. In *We Want To Hear Your Voice* the authors say that dialogue is layered and even though the power between interviewee and interviewer shifts, still the interviewer has the last saying. This has similarities with Rachel Luck's work which recognizes that semi-structured interviews decrease the possibility of manipulating user feedback as they allow the user to express themselves freely. She proposes that the interviewee should come from various groups and they should not be asked preprepared questions instead, the interviewer should have a checklist of headings, such as aide memoire to steer the discussion by asking questions "But what about 'heading'?" The concept of aide memoire explains how to harvest user feedback however, it does not tell how to incorporate the feedback at every step of project development. Luck does not recognize that toolkits maintain the possibility for interaction at every stage of the incremental process however, she does note the very need for interaction between user and architect as a tool for remote control. Her idea is that the second step of project briefing⁷ should be documenting interviews so that user's opinion could be reviewed and revisited at a later stage, this way "the briefing procedures reflected an iterative decision-making process (as occurred in reality) rather than a post-hoc, smooth, sequential process" (Rachel Luck, 2003, Vol 24 No. 6, p.526). It is important to note, that the tool for documenting responses of the interviewee was done by recording and typing them down in a thematic order. Luck's method of compiling user responses into a document that the designer can relate to design is close enough to the idea of bringing to bear user feedback in formulating a toolkit however, it does not yet explain how to merge the feedback with the toolkit's primary parts, such as drawings or guidelines.

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who decides on who ultimately participates, how do researchers shed their own perspectives if power is shifted, and how to represent participants and their work that approximate the idea of straightforward dialogue. Still, they seem to omit the fact that the feedback must be included in a continuous form of supervision with helpful advice so that the user has a reason to employ the toolkit at all. Otherwise, the advice will be useless which misses the point of incrementality as users' won't be able to develop the project themselves. Moreover, participatory methods are the proper foundation for involving user feedback, but they often shut down the unheard voices which only adds to the lack of true participation and direct dialogue. The question that remains is how toolkits can incorporate user feedback even more intensively. Thus, the focus of this paper is to look at how communication models contribute to formulating toolkits that enable participation through direct dialogue over the span of every stage of a project so that, the users can be supervised whenever in need

Toolkit definition

"Toolkit" seems to be an umbrella term therefore, it has to be deconstructed. Many scholars refer to various things by the word "toolkit" - construction kit, action kit, structural kit, map, manual, or DIY handbook. Regardless, of the name, all those toolkits would be books with a description of spatial entities of the design and guidelines on how to achieve what one desires in their home. The names would depend on the personal preferences of the author, content, and nature of the guidelines, which varied from purely structural to décor - for instance, the ones concerning the support and infill approach of Habraken would be called structural kits, while those concerning user personalization would be called handbooks. What we need the most to formulate a toolkit, which is this paper's goal, is indeed understanding the thinking behind guidelines therefore, all the toolkit names become a secondary matter and will be reduced to a single word "handbook". Toolkit - a set of two tools: written handbook and physical spatial entity. Those are equal and complete each other. The handbook is a book of dozen or several dozens of pages with a specific order of verbal guidelines followed by drawings that vary from "flat" plans to isometries of a single screw. On the other hand, the spatial entity is a design feature such as unit layout, construction grid, perhaps designed for the incremental growth, interior decor, assembly of structural elements, and furniture. The use or way of modification of that spatial entities is described in the handbook and often interpreted or reinterpreted by users.

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toolkit = handbook + spatial entity

written book that includes text and drawings such as:

masterplan

plan building framework

axometry of wall assembly

axometry of best fitted furniture

conceptual plan toilet configuration

quantitative diagrams of number of people per interior

feature that increases-readability of the design such as:

wall placement

cultural codes embedded in architecture

hierarchy of interior size

foundation walls outline

modularity

features designed by users

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Communication in participatory design

Communication in participatory design is a crucial particle of the information flow that exists in different forms but in every step of the incremental process. Henry Sanoff says in his book *Community Participation Methods in Designing and Planning* that "the purposes of participation have been more modestly defined to include information exchange, resolving conflicts, and to supplement design and planning". Moreover, he continues by quoting Becker:

"Participation reduces the feeling of anonymity and communicates to the user a greater degree of concern on the part of the management of administration. (With) it, residents are actively involved in the development process, there will be a better maintained physical environment, greater public spirit, more user satisfaction, and significant financial changes."

In this context, it is reasonable to analyze how visual and verbal communications contribute to the values that Sanoff and Becker mention. Starting with Bull's Eye, communication model is a concept developed by Claude Shannon at the beginning of the past century, it impacts the way the message is delivered and inevitably the architecture. For instance, such a model could be found in a magazine that is built differently than a comic book – both have different communication models. As follows, magazines are collages of different photos and articles which are thematically connected, but only with adverts encouraging us to buy products that the articles are about. Comics, on the other hand, consist of panels, each includes a series of drawings described by balloons with character's lines that often tell abstract stories giving the reader a release from the reality. In either case, there is a different visual and verbal structure that influences our thinking however, for an image to work it has to stimulate both the thinking and the feeling part of our brain, that is for example why comics are an easily digestible medium, its drawing activates the feeling, while words induce thinking (Marcel Danesi, 2019), the case is the same for architectural handbooks like DIY magazines, or handbooks with drawings followed by guidelines which are way more helpful than just the text or just the image.

Communication models for participatory design

There are many ways to have a conversation and inevitably architecture is one of them. Not only on daily basis, but also in the participatory methods, we fail to communicate. Within the first meeting architect and user

establish a dialogue, broadly speaking – a form of communication., which is specifically crucial for incremental housing projects when at some point the user takes over the role of an architect. To make the analysis more clear, participatory design methods were drawn over a timeline of the incremental process that consists of 5 phases. Participatory methods take a place at one (or more) of 5 phases of the incremental process and sometimes they overlay [Fig. 3].

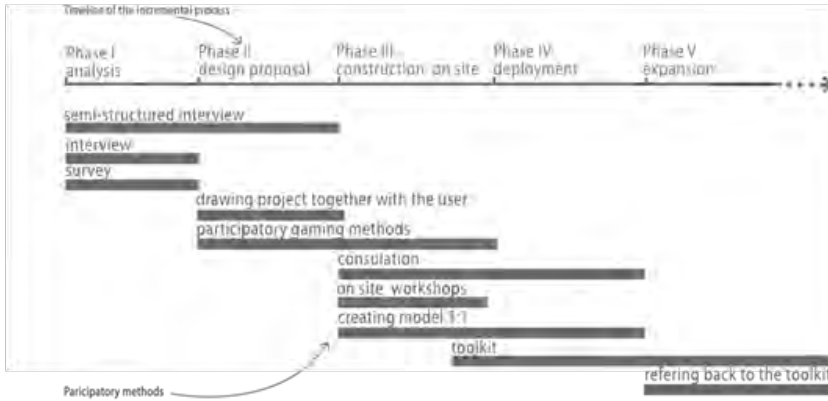


Figure 3

Duration of participatory methods over the incremental process

The communication model developed by Claude Shannon is called the Bull's Eye model which consists of source, message, medium, noise, receiver, and feedback. If we were to apply the communication model to a conversation with a user it would look like this: the notion between an architect (source), and a user (receiver) switches so it is important to predict a proper way of passing the power; in other words a proper toolkit. Moreover, it is crucial to understand what tools (medium) are used for it- participatory games, drawings, words - and how they deliver the guideline (message) [Fig. 4].

Semiotics, drawings, and words

Before we dissect the contents of toolkits, there must be drawn a distinction between three - dimensional and two - dimensional communications. First, there is a user - space relation: people give narrative to the space by engaging with it, but also the space defines behaviors of users by its design. Second, is a relation between the drawing and the word: a more literal form of communication in which symbiosis of both plays a crucial role in conveying the content. The three - dimensional communication is well described by Patrik Schumacher in *Communication is Design* claims that all social interaction is framed by muted systems of connections based on spatial position and ornamental marking that are artefacts of the space. Every talented designer navigates this system intuitively. However, as society and its institutional complexity increase it might become necessary to support the designer's semiological competency by means of theoretical and methodological reflection (Patrik Schumacher, 2011). In other words, spatial and artifactual frames allow participants to find and anticipate communicative situations that might be expected with respect to specific settings however, to make those settings readable, architects must relate them to certain rules of semiotics that explain ways in which we communicate visually and verbally.

On the other hand, Forty takes on two - dimensional communication. In the book *Words and Buildings*, he continuously highlights that drawing and word can't exist without one another in the process of conveying the

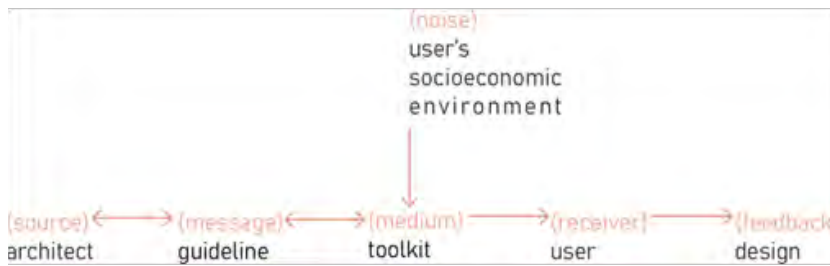


Figure 4

Communication model in participatory design

concept from the mind to the outer world. He shows approval of Rowe who perceived communication in architecture in two ways of “seeing”, visual and mental one. In the very texts of his, the visual and mental descriptions were not to be used as an illusory and deceptive equivalent for optical sensations instead, he would talk about architecture in a manner to create visual expressions of a building (Adrian Forty, 2000).

When applying it to the incremental process, people make something from a “toolkit” and discuss it. It is often done since the principle is that through the use of guidelines and procedures, genuinely participatory design places the control of knowledge in the hands of the community¹⁸ and allows different voices to be heard, understood, and heeded.⁵ These “make” tools need to be abstract concepts addressed with words to provide people means to think and express themselves in more conceptual ways. The role of the architect expands to facilitate this expression into a tangible design that communicates with users.

Methodology for toolkit analysis

A qualitative type of research was chosen and the research method is qualitative comparative analysis by difference.

In this area of semiotical analysis, too, we remind the reader that the research efforts are guided toward defining communication models therefore, the methodology consists of 3 main stages, each deconstructs toolkit contents by identifying the basic signifying properties of handbooks and spatial entities as various signifiers are what communication is based on. The first stage is the most elaborate, it focuses on identifying how delivering the message to a user works. Then to be able to utilize the knowledge, we need to document it and explain how the handbook impacts understanding of the space and the other way around. Lastly, to understand the communication of toolkits, we need to summarize the findings in a form of communication models, which gives a quick comparison of all the toolkits so that they can be easily used for creating a toolkit in the future.

Methodology steps to deconstruct a toolkit:

1. Toolkit analysis
 - 1.1 Identifying chronological order of handbook’s content
 - 1.2 Identifying the handbook content
 - 1.3 Identifying the basic signifying features of drawings and spatial entities
 - 1.4 Identifying inclusion of participatory data

2. Documenting and explaining the effects of handbook guidelines on spatial entities of the design
3. Utilizing the findings of techniques applicable to the situation at hand into a communication model



Figure 5

Case study selection

The case study

In this chapter, our trip through the communicative entities of participation takes us through the domain of the incremental development. This is the home of Homo Faber, the maker. On this leg of our journey, we will stop to look at a case study where users followed handbook guidelines to build housing extensions. We will discuss, among other things, the function of drawings as special kind of words and to what extent spatial entities are properly interpreted by users. We will deconstruct a toolkit by analyzing handbook's content, reflection of guidelines in the space and the relation with participatory process involved. Due to the broad scope of case studies, only one will be analyzed in this paper to try out the methodology for defining a communication model. The chosen case study is: Skjetten Housing [Fig.5.].

1 Identifying chronological order of handbook's content

- 1.1 Explanation of planning system
- 1.2 Description of structural system
- 1.3 Infrastructure and equipment such as sanitary or electric installations
- 1.4 Furnishing, materials, and maintenance
- 1.5 Climate of the house
6. Finishes and extensions
- 1.7 Parcellation of plots, and aggregation
- 1.8 Outdoor facilities
- 1.9 Gardening
- 1.10 Planning the garden
- 1.11 Use of balcony

2 Identifying the handbook content

2.1 Explanation of planning system

Lund highlights here the basic information about plot. He writes that there are two types of housing, north or south - oriented, the entrance is always on either side of the house however, the handbook does not say why those two directions were chosen (p. 6.). Then he uses modularity to explain plot and single housing unit division (p. 9). This section includes variations of module extensions (p. 10.) to then describe possible usage of the space (p. 12.).

2.2 Description of structural system

A technical description of the foundation appears first in this section. It is detailed and includes the thickness of floor layers and material tags. Then it is followed by information on what mustn't be removed (p. 17.).

"This insulation must not be removed. A row of concrete slabs lies along the foundation and then to keep insulation and the right terrain level in place.

This concrete slab row must not be removed immediately. Along the outside of the edge carrier is a drainage charge."

Then a description of railing, windows, and door joinery follow (p. 24. – p. 32.) Hereby, Lund advises on continuing insulation on the edge of the door in case of extending the foundation and existing construction. Lastly, this part is finished with a short list of advantages of the foundation and elevation drawing of wall structure that are used for.

2.3 Infrastructure and equipment such as sanitary or electric installations

In this section, the proposals for different configuration go to point of reinstalling washing basins in bathroom and laundry room (p. 40.). Then there is a description of electric installation, in which there is information about purpose of every cable (p. 41.). Lastly, there is brief information on how to arrange kitchen furniture, including both the cupboards as well as sink that shall be in close proximity to the water installation (p. 42. - p. 43.).

In this section, the proposals for different configuration go to point of reinstalling washing basins in bathroom and laundry room (p. 40.). Then there is a description of electric installation, in which there is information about purpose of every cable (p. 41.). Lastly, there is brief information on how to arrange kitchen furniture, including both the cupboards as well as sink that shall be in close proximity to the water installation (p. 42. - p. 43.).

2.4 Furnishing, materials, and maintenance

This chapter starts off with instructions on how to change and move interior walls. The author recalls the "most realistic" way to do it (p. 55.).

"Should you just make the opening, e.g. to a door, remove as much plaster as necessary on both sides, change the construction as desired and join and load."

An explanation how to replace window or mandrel in outer wall follows and the chapter ends with short diagrammatic description of, for now, just the volumes of variations of extensions that could be done on the second

floor (p. 57. - p. 59.). Those are followed by axonometric drawings with fewer detail however, picturing more advanced extensions – now there are two row of 3x3m modules instead of just one on the second floor that is supposed to create space for the balcony (p. 60.).

2.5 Gardening, planning the garden, and use of balcony

This section starts with cross sections of plants and profile drawings of stones to inform the user about nearby greenery that could be planted in their gardens. Every part of the handbook advocates for individuality of users by proposing options that are various in the greatest detail. Even in the aspect of gardening, this rule remains – there are propositions for possible floor patterns in the terrace (p. 85), different flowerpots configurations as well as a selection of best suited plants (p. 86.). There is also advice on where the greenhouse orientation and which greenhouse type is best suited for specific location of the plot (p. 95).

Identifying inclusion of participatory data

Even though architects took into consideration the culture and socioeconomic backgrounds of the inhabitants to formulate the design, participation occurred mostly after the project was finished. After studying the handbook, several dwellers came up with propositions for 2 other modules configurations than the ones proposed by architects. The project advocated for user personalization and while the initial design did not communicate it with appearance, you cannot see there a similar house now, which is mostly indeed due to dwellers' initiative. The architect's motto was initially „Variation – Order – Community – Privacy“. The architects of Skjettenbyen's aim was to build a truly „social“ living area, which meant cheap dwellings with direct contact to the ground, a diverse group of inhabitants, and enough educational institutions, green areas, and parking spaces and shops. The inhabitants should experience a sense of „belonging“. In conclusion, the handbook encouraged users to participate.

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Conclusion

The approach described in this paper has been developed to address the need for a toolkit as a direct communication methods in participatory design for incremental development as mentioned in the literature review. Currently developing participatory methods do contribute positively to toolkit formulation process however, they should become a long - term practice. How user information is gathered and decisions are made within the handbooks have a significant influence on whether and how users'

views are represented, which conclude in "successful" or "unsuccessful design". For this reason, this methodology has been proposed. It was intended to be a prototype with the potential for further development, as knowledge and experience are gained. This is not an attempt to design the most efficient toolkit recipe or to rediscover participatory architecture. The validation of this approach will be through user satisfaction and evaluation of incremental development made by users. The consultative approach is an exploration of the future, taking a deliberately 'unreasonable' position, which through discussion is the only reasonable gameplan to arrive at a common understanding between stakeholders. The paper began with a quote by Green and Rojas and will end with several accusations to this quote. The authors would like to stress that these accusations are not merely witty. They are genuine questions that should be pondered on with seriousness in future research. Green and Rojas say that "participation is a public concern that benefits the community". Here are some accusations: (1) How does it always benefit?; (2) Is dialogue even always necessary? Meaning to say, does participation always improve the design?; and (3) Is incorporating a toolkit always possible? Formulating a toolkit is basically making double project documentation. It is time-consuming and expensive, but these are also constraints that many projects are faced with time and money. These questions are still unresolved, but resolved or not, participation and toolkit design are worth researching, because one day we may find answers to those questions.

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HARMFUL OVERSIGHT

Nona Storm Dalman

4696255

Lokah Samastah Sukhino Bhavantu

May all beings everywhere be happy and free, and may the thoughts, words, and actions of my own life contribute in some way to that happiness and to that freedom for all.

1. Introduction

Most people perceive the world through perfectly functioning eyes. Sadly, a percentage of people have impaired sight due to congenital or acquired eye diseases or other complications. Visual impairment ranges from total blindness to sight that is slightly less than the 100% sight that most people have. In the Netherlands there are around 233.000 people that are partially sighted and approximately 50.000 people that are blind. For these numbers, blindness is defined as having sight of less than 5% and a field of view of less than 10 degrees.¹ Despite this large amount of visually impaired people, the built environment is usually not designed to serve or benefit them. In fact, the spaces around us often harm visually impaired people, as they encounter stressful and unpredictable situations. I became aware of this issue, because my father is partially sighted. Hence, the topic of this essay is very personal to me. The problem goes unnoticed by many designers of space, which is why it is important to create awareness. With this essay I will aim to provide people, and in particular designers of spaces, with a peek into the struggles and experiences of visually impaired people. I have conducted two interviews, one with my partially sighted father Martijn Slettenhaar and one with fully blind Jan Meerpoel. With the information from these interviews, I will attempt to answer the question: How can architectural design contribute to the experience of visually impaired people in buildings? To answer this question, I will firstly describe why it is important to design with visually impaired people in mind. Secondly, visual impairment will be described through the eyes of Martijn and Jan, after which I will write about the way visually impaired people navigate through inside and outside space. Concludingly, I will answer the main questions by specifying a new approach for architects and formulating a set of rules, that can be implemented in buildings to create a comfortable space for visually impaired people.

2. Hope for opened eyes

The physical world that we live in, is one of exclusion. Even though all people are living in and using the built environment, spaces are rarely designed for everyone. Architects, or designers in general, tend to design from their own experience of the world. This is quite logical, if you consider the fact that it is impossible to take something into account that you have

¹ "Partially Sighted or Blind," Visual impairment, partially sighted or blind - Koninklijke Visio (Visio), accessed April 3, 2022, <https://www.visio.org/en-gb/partially-sighted-or-blind>.

² Jos Boys, "Crippling Spaces? On Dis/Abling Phenomenology: In Architecture," *Log*, no. 42 (2018): 55–66, <http://www.jstor.org/stable/44840728>, 55-56

never experienced. However, architects can become more acquainted with the experience of people that are not "normal", if the willingness is there. Jos Boys criticises the limited portrayal of the user in architectural phenomenology. It so happens that the experience of "normal" people is intensively analysed in phenomenology, neglecting the perspective of all others, that do not fit the mobile, independent standard.² During my education at the faculty of Architecture at TU Delft I have noticed the same incomplete view of the user that we are taught to design for. I hope that more architects will be designing more inclusive spaces for everyone, despite this predominant oversight in architecture. In my experience, people require an eye-opener to become aware of other people's perception of the world. While I am aware of the paradox of the term in this context, I would like to describe my eye-opener regarding visual impairment. Even though my father has been partially sighted his entire life, I only became fully aware of his struggles when I was twelve years old. He wanted to attend some event in another city but was not able to get there. As he explained to me how anxious he was to take the train by himself, because he could not read any signs in the train stations, I started to realise how a lot of spaces were limiting his actions. This perspective has stayed with me ever since. It is a perspective with a persistent, lingering nature, like a false rumour that is somehow never completely forgotten.

When I asked Martijn: "And by talking about experiencing it yourself, you are referring to that confrontation. What kind of feeling would you define? Which emotions?" Martijn responded: "Well, fear, scared, sadness, alone, eh, tension, insecurity. Do you have enough? And helpless, you're helpless."

I believe we need to try to prevent as much discomfort and create as much happiness as possible. Architects receive the wonderful opportunity of creation in our society and in my opinion this opportunity comes with the responsibility to serve all the people of that society. This essay focuses on one group of people that is often forgotten by or even invisible for designers of spaces. As a result, the created spaces are a source of stress and discomfort for this group. My motivation to write this essay comes from a place of emotion, as I experience that someone very close to me feels this stress and discomfort on a daily basis. Therefore, I have decided to create an emotional piece of writing mainly based on the conducted interviews. So hopefully, the weight of the issue gets across.

Martijn stated: "That is not possible at all, you cannot take a blind person into account, I get that." Contrarily, I honestly believe that we can. As a matter of fact, I have proof that it is possible. Architect Chris Downey from the United States of America is completely blind. He has a more extensive perspective than other architects because of his visual impairment. And therefore, his designs automatically take blind people into account. So instead of questioning whether it is possible to design and build inclusive of anyone, we should find solutions for the problematic non-inclusive built environment of today. As soon as designers broaden their perspective, the spaces around us can become comfortable for everyone. Hopefully this essay can be the eye-opener that will evoke the needed growth of perspective.

3. Visual impairment

This section will primarily describe what visual impairment means to Martijn and Jan. I consciously focused on the personal side of visual impairment instead of the medical.

Nonetheless, knowledge of and research on eye diseases that cause visual impairment are extremely important to find treatments in the future.

Currently, there are many visually impaired people though and I want to provide a peek into their experiences. Martijn and Jan are just two people, so their stories will not give a complete picture of visually impaired people. Their emotions regarding their impairment are specific to them and besides, there are many other forms of visual impairment.

According to opticians, Martijn's sight is around 15-20% of a person without a visual impairment. He was born with this impairment, that does not concern his retina but rather affects the signals from the nerves to the brain. Consequently, distant as well as near objects appear blurred. His impairment worsened with time. He explained that he experiences his visual impairment as being "seeing blind." When I asked which actions and activities from daily life were restricted by his impaired sight, he answered confidently that everything in his life is restricted. Partially sightedness can entail much more than the limitation of sight. Martijn explained that he has a better memory and is more conscious of the visual characteristics of things than people without a visual impairment. Martijn went to art school when he was younger. He is living life with quite a visual focus, as he is still making art today.

Jan is totally blind due to the disease retinitis pigmentosa (RP).³ The type of RP that Jan has is recessive, which means that a person must carry two copies of the recessive, mutated genes in order for the disease to be present. RP causes a degeneration of the light-sensitive rods and cones of the retina, that translate light into impulses which are sent to the brain. Subsequently, the brain converts these impulses into an image. Around the age of 25, Jan's rods and cones start to be destroyed. The transition of full vision to total blindness was a slow process that was completed when Jan was approximately 60 years old. The degeneration of the retina starts at the edge and moves inwards, which means that the field of view gets smaller and smaller with time. Jan has worked as an architect when he was younger. He has designed several houses for bulb farmers in the west of the Netherlands. These designs were hand drawn at home by himself, when his vision was already in decline. He also had a job at a company, checking if building designs met certain requirements. Unfortunately, he had to quit this job as soon as he was not able to read the drawings from the architects anymore.

4. Navigation of space by visually impaired people

Based on the two conducted interviews, I have made a summary of the ways that Martijn and Jan navigate through inside and outside space. This summary is subdivided into several topics. This section of the essay has a broad nature including inside and outside space, whereas the next section will mainly focus on the design of buildings.

Sound

Jan leaves his apartment building to walk to the closest bus stop. He places his feet on the edge of the sidewalk, because that is where he can feel the height difference between the sidewalk and the bike path. As a big truck passes with an overwhelming amount of noise, Jan stops walking. The sound of the truck disturbs the observation of all other sounds for Jan, and hence his orientation. As soon as the truck is no longer within hearing distance, Jan is able to continue his route to the bus stop.

This anecdote describes the use of sound for navigation outside, but Jan also uses his ears to navigate through buildings. He can hear, for example,

³ Jan Meerpoel, interview by author, Leiden, March 18, 2022.

; Jill Sardegna et al., *The Encyclopedia of Blindness and Vision Impairment*, 2nd ed. (New York, NY: Facts on File, 2002), 202-203

⁴ Chris Downey, accessed March 1, 2022, <https://www.youtube.com/watch?v=8CTjsYQYfq0>.

when he is in a lobby. Lobbies are usually high spaces with hard materials, which creates resonance. Hallways, on the other hand, are usually narrow, so the ticking of Jan's long cane is reflected by the walls. Architect Chris Downey also talks about sonic guidance in architecture. He describes that it is useful for a blind person to be able to navigate through the middle of a space and not get to the side and get lost.⁴

So conclusively, sound can be used to recognize materials, to locate oneself, as well as to determine the dimensions and organisation of a space.

Touch

Martijn mentions encounters with stairs multiple times. As his sight limits his sense of depth, he always slowly slides his foot towards the end of the step while applying pressure to determine where the stairs start. He identifies the act of feeling physical elements and testing resistance as being tactile. "I'm always touching everything."

Visually impaired people often use a long cane to detect objects in their path in order to navigate. The long cane ideally reaches from the floor to the user's sternum and is rolled or tapped from side to side to identify the ground and possible obstacles.

The sense of touch is critical for Jan. He uses a long cane to examine the space in front of him and to avoid obstacles. The material of the floor can be identified by Jan via his cane and via the way the floor feels under his feet.

Moreover, he uses his hands a lot to locate and identify objects. For instance, during the interview I noticed that he carefully moved his hands across the table to find his cup of tea. The sense of touch through hands is relevant for the navigation through buildings as well. Visually impaired people could use their hands to detect a door handle, a light switch or a railing. Furthermore, the whole skin can serve as a tool to orientate in some situations. With the skin you can feel draught coming through a door that is ajar or the sunlight warming your face, which might give you a clue of where you are.

Another form of communication that visually impaired people use is the braille alphabet. This is an international, three-dimensional alphabet that can be used for writing and reading. This alphabet has been successfully applied in public spaces,

on lift buttons for instance. Unfortunately, not all visually impaired people are familiar with braille, like the two people I interviewed. Jan did mention reading floor or city plans with the fingers, using so-called swell paper. This paper swells along specified lines when it is treated with a certain heating process. Reading floor or city plans like this could help a visually impaired people with navigating through a building.

Smell

The sense of smell can be helpful for orientation outside and inside of buildings. Jan told me he surprised his wife when he told her that they were walking past a shoe store once. The smell of "that delicious fresh leather of those new shoes" is what revealed their location to him. I can imagine scents could also help with the orientation within a building. A coffee corner gives off a recognizable smell, as well as a recently cleaned bathroom.

Logic and predictability

Visually impaired people prefer logic and simplicity in the built environment. Both Jan and Martijn refer to things that usually go unnoticed by sighted people, but are reassuringly familiar for visually impaired people, like a counter right behind the entrance in a public building or a toilet in the back of a restaurant.

Most train stations in the Netherlands have gates that need to be opened with a ticket to enter or leave the station. In the consecutive row of gates, some gates can be merely opened from the station side and others from the outside. The pattern of accessible and closed gates is random, and the status of the gate is indicated with a green arrow or a red x. These symbols are hard to distinguish for a partially sighted person, let alone a blind person. Martijn once made the mistake of trying to pass through a gate that was closed from his side. After this incident he always observes others passing the gates and logically follows the flow of people.

An example of a generally unpredictable element in public buildings are lift buttons. The organisation of the buttons is different for every brand, which makes it hard for visually impaired people to operate. Martijn specifically expressed that he never even tries to push the button in a lift, because it is too hard to identify which one he needs.

So generally, visually impaired people rely on a certain predictability of architectural elements. Therefore, it creates insecurity and frustration when a specific element is inconsistent in different locations.

Memory

My first encounter with Jan made me acutely aware of the significance of memory for blind people. The first time I talked to Jan was on the phone, when I called him to discuss the technicalities of our interview. We decided on a date, and I agreed to meet at his home for the interview (after he attentively offered to meet me in Delft if I could clearly describe to him where he had to go.) Before hanging up Jan promised to send me an email with details of the public transport for the journey from Leiden Centraal to his house. I thanked him and awaited his email, expecting a summary of our conversation including the agreed upon time, his address and the bus stop nearest to his house. Contrarily, I received an extremely elaborate email which included the walking route from the train platform to the bus station, the organisation of the bus station, the bus numbers including the right direction and a comprehensive description of the walk from the bus stop to the front door of his apartment. His explanation of the bus station included elements that are not of assistance to him, like the sign with bus departure times. This occurrence perfectly illustrates the immense amount of information that is stored in Jan's mind and offers a glimpse of his experience and awareness of space.

Martijn repeatedly mentioned the essential role of memory in his life. Out of necessity, he has used his brain to remember things he is told, routes through cities and buildings, the number of steps of a flight of stairs etc.

Martijn has a trained visual memory due to his partially sightedness. He explains how he remembers every paving stone of places that he is familiar with, for instance his hometown Gouda. Therefore, adjustments in the built environment hinder the navigation of visually impaired people. And it is exactly why visiting unknown places essentially is an unpredictable, anxious experience.

⁵ Susan Lingsom, "Invisible Impairments: Dilemmas of Concealment and Disclosure," *Scandinavian Journal of Disability Research* 10, no. 1 (2008): pp. 2-16, <https://doi.org/10.1080/15017410701391567>, 2.

⁶ Michelle R. Nario-Redmond, *Ableism: The Causes and Consequences of Disability Prejudice*, 1st ed. (Hoboken, NJ: Wiley Blackwell, 2020), 1-3.

Unknown places

Unknown places demand a lot of energy from visually impaired people. Help from others is necessary in situations like this, because signage is partly or completely worthless to visually impaired people. To reduce confrontation and uncertainty for visually impaired people designers could try to organise space plausible as possible.

If the plan of a public building has unpredictably placed elements, such as the cash desks of a supermarket located far away from the entrance, blind and partially sighted people require more time than people without a visual impairment to navigate through the building.

Assistance from others

Additionally, communicating with people nearby can help a lot when one is feeling lost or insecure about their surroundings. It is evident that a person has a visual impairment when they use a white cane or a guide dog. However, there are visually impaired people that do not use aforesaid aids. If the visual impairment is not apparent, nearby people will not offer unprompted help. And if a person without recognizable visual impairment decides to ask someone for help, the approached person might not understand the nature of their question and might therefore give an insufficient answer. Certainly, this problem would be solved if visually impaired people would just bring a white cane with them, but I believe the issue is more complex. Impairments can be subdivided into two categories: visible and invisible impairments. Visible impairments are essentially visually apparent, whereas invisible impairments are indiscernible to uninformed people. The term passing is used to describe the concealment of invisible impairments.⁵ Susan Lingsom explains how the predominant role of the visual field nowadays has resulted in minimal recognition of invisible impairments in comparison to visible ones. This could create concern for people with invisible impairments of not being taken seriously if they disclose their impairment. The fear of possibly being discredited in our society drenched with ableism⁶ is another reason for passing, which is mentioned in Lingsom's article. Meanwhile, passing could be an act of rejecting the concept of the able-bodied normality of today. Additionally, the act of passing might be the result of the understanding of one's impairment as personal information, an attempt to protect others from embarrassment and concern or not willing to be reminded of one's impairment.⁷ In conclusion, there could be many different reasons for someone to silence invisible impairments and it is important to recognize that the struggle of an impairment includes the dilemma over concealment or disclosure for some people.

5. How can architectural design contribute to the experience of visually impaired people in buildings?

This concluding section of the essay will firstly describe Jan's and Martijn's vision on how architects could improve spaces for them. Secondly, I have assembled a set of rules based on the interviews, that architects can apply in order to create a more comfortable space for visually impaired people. The essay will be concluded with my belief that the content of this piece can and will reach further than just benefiting visually impaired people.

In order to be able to contribute to the experience in buildings of visually impaired people, an architect needs to develop a certain insight into the

⁷ Lingsom, "Invisible Impairments," 4-5.

⁸ "Advice about Accessibility of Buildings," Toegankelijkheid en verlichting van openbare gebouwen - Koninklijke Visio (Visio), accessed April 12, 2022, <https://www.visio.org/en-gb/professional/toegankelijkheid/toegankelijkheidsadvies>.

⁹ Martijn Slettenhaar, interview by author, Gouda, March 23, 2022.

¹⁰ Bob Uttl, Nobuo Ohta, and Amy L. Siegenthaler, *Memory and Emotion: Interdisciplinary Perspectives*, 1st ed. (Malden, MA: Blackwell Publishing, 2006).

perception of visually impaired people. Once the problems encountered in public buildings by visually impaired people are determined, an architect can begin to design and implement architectural solutions. Firsthand stories and experiences from visually impaired people would be the most accurate source of information. The results of interview-based research that I carried out for this essay included such firsthand information. The firsthand information from the interviews that I conducted for this essay was very fruitful, as it combined personal experiences with practical solutions. Fortunately, both interviewees had a spatial way of thinking. As a former architect, Jan was familiar with architecture jargon and currently works as an advisor for the design of nursing homes. I would suggest any architect to gather similar information from an approachable and experienced source, like Visio. Visio is a Dutch centre of expertise for partially sighted and blind people and offers advice about accessibility in buildings.⁸ When I asked Jan what the role of the architect should be in improving the spatial experience of visually impaired people, he likewise advised to contact a specialty association for visually impaired people. Surely, it is important to aim to design accessible and comfortable spaces for anyone, so a similar approach would be appropriate in regard to other impairments.

Furthermore, architects could endeavour to more thoroughly comprehend the experience of a visually impaired person by simulating the visual perception.

Martijn believes an architect has to experience visual impairment in order to be able to adjust their designs in favor of visually impaired people:

"If you want to do something for blind people, partially sighted people, then you need to confront and you have to be alone, you will find out in no-time. If I keep telling you, you're talking about my problem. But you will find out what the problem is so terribly quickly, if you go sit in the train or walk into a building."⁹

Wearing glasses covered with butter, is what Martijn proposed to make a sighted person experience partially sightedness. He added confidently that one should do this for a longer period of time, like a day or two. Subsequently, one would be confronted with difficult situations without an obvious solution. Once the person wearing the buttered glasses really commits to the limitations of sight, can one get a glimpse of the emotions that partially sighted people experience. The emotion of fear for instance, that you could feel when you do not have a good sense of depth while standing at the top of the stairs. I believe that having an emotional experience will remain in memory forever, just like the eye-opener I mentioned before. In addition, several researchers have demonstrated that emotionally arousing events are better remembered than events that carry less or no emotion.¹⁰ This finding could be related to Martijn's claim that, if you want to change an architect's perspective, it is more effective to personally experience a visual impairment than to hear about someone else's experiences and struggles. However, it is important to note that buttered glasses or any other means can never exactly reproduce the perception of a certain impairment, nor should a simulation like this be used as a replacement for dialogue with a visually impaired person.

Practical architectural solutions

The following rules for designing buildings are based on the interviews with Jan and Martijn. So the solutions will mainly benefit visually impaired people. And even though I wish architects will implement these rules, I also want to advise on a more general inclusive design approach:

1. Assess the audience of the building you are designing. What kind of bodies will be using the spaces?
2. Assess how the different elements of your building will be used. Which elements need to be altered, so that they can serve everyone?
3. Design an inclusive building based on a broader perspective than solely your own.

A change of approach towards architectural design is definitely necessary, when you consider Martijn's perspective on buildings: *"The problem with navigating in buildings is that I have a different way than the one that invented it. So I'm very disoriented, if I'm alone."*

Logic and predictability in architectural plans

I am aware that requesting architects to design a logical and predictable floor plan is quite undefined and vague. Nonetheless I want to put emphasis on this rule, because both Jan en Martijn mentioned this quality of buildings multiple times. They associate reassuring and comfortable emotions with a straightforward organisation of a building. So, while you are designing a building that might be used by visually impaired people, evaluate if the layout would be logical to a person that enters for the first time.

Recognizable entrance

One of the first problems a visually impaired person encounters when visiting a new building is to locate the entrance. Blind and partially sighted people require different solutions to this problem. To help blind people find the entrance, an architect could apply spatial design choices, like adding an awning or offsetting the entrance from the façade. For partially sighted people a visual design decision might be sufficient. In this case, the entrance could be emphasised with contrasting colours, an awning or a big sign. Or the architect could also accentuate the entrance by reserving a large part of the façade for it.

Recognizable counter

The second important element that visually impaired people search for is the counter. Because there is someone who can help them navigate behind this counter. Therefore, it is important to place this counter close to the entrance and make it distinguishable and easy to find. For blind people this can be achieved by creating a path from the entrance to the counter with a floor material or a carpet. Visual solutions like giving the counter a contrasting colour, or highlighting the counter with spotlights, can be very helpful for partially sighted people.

Obvious signage

Signage through text or symbols is a common means to navigate people through buildings or public space. Unfortunately, this method of communication rules out blind people, and when applied too small partially sighted people as well. Martijn illustrates the struggle of signage with the example of toilets. When the words 'ladies' and 'gents,' 'heren' and 'dames,' 'boys' and 'girls' etc. are applied in small print, it is impossible for him to determine which of the two toilets he, as a man, should use. This causes a feeling of discomfort for him over and over. So as long as the need is felt to categorise toilets based on the gender binary¹¹ discomfort can be prevented by using very big signage. Signage can be made easier to read by creating strong contrasts with use of black and white for example. Martijn mentioned that it is easier for him to read light letters

¹¹ Kevin L. Nadal, *The Sage Encyclopedia of Psychology and Gender*, 1st ed. (Los Angeles, CA: SAGE reference, 2017), 401.

¹² Jill Sardegna et al., *The Encyclopedia of Blindness and Vision Impairment*, 2nd ed. (New York, NY: Facts on File, 2002), 49.

¹³ Sardegna et al., *The Encyclopedia of Blindness and Vision Impairment*, 44.

¹⁴ "Advice about Accessibility of Buildings."

¹⁵ "Accessibility.nl," Accessibility (Bartiméus, 2022), <https://www.accessibility.nl/>.

with a dark background than the other way around. Complementary colours can be used together to enhance contrast and readability. To this end blues can be combined with oranges, yellows with violets and greens with reds.¹² When applying contrast to improve readability, it is important to take colourblind people into account, some of whom can not distinguish between reds, oranges and greens.¹³ Fortunately, there is a lot of information available about designing signage that is readable to partially sighted people. Architects could consult associations like Visio¹⁴ and Bartiméus¹⁵ for professional advice.

Signs with relief

Architects could design letters, numbers or symbols with relief in order to make these understandable for blind people.

Emphasis by contrast

Besides increasing readability of signage, contrast can help partially sighted people to interpret space. Spaces that have similarly coloured walls, floor and furniture are difficult to use for people with limited sight. Contrast could be used to emphasise where the floor ends and the wall starts or to make important objects, like toilets, doors, or the counter, distinguishable.

Varied use of floor materials

Variation in floor materials can be used to indicate routes or certain functions of spaces. One can use a strip of wood in between a natural stone floor for example to guide someone to a certain place. And using specific floor materials for specific functions can contribute to the logic of a building. Bathrooms are usually tiled, for instance, and meeting rooms are often carpeted.

Safe stairs

Stairs are another architectural feature that can cause uncertainty and danger for visually impaired people, on the grounds that the beginning and end of a staircase need to be identified and in case of a misstep, the result could be a painful fall. Fortunately, the Dutch determination of regulations concerning buildings (Bouwbesluit) states that it is obligatory to place bannisters at the side of stairs or a slope with a height between 0,8 and 1 metres. Bannisters are very convenient for visually impaired people, yet the visibility of the bannisters could be improved for the sake of partially sighted people. Emphasising the bannisters with the use of earlier mentioned visual contrast creates a more reassuring, less doubtful environment for visually impaired people. To prevent distressed experiences, the steps of a staircase are preferably handled with a similar approach. The beginning and end of a staircase, as well as the position of the independent steps can be accentuated by applying a line or other shapes, in a contrasting colour to the step. Additionally, it can be frightening to be standing at the top of very steep, deep stairs. An architect could prevent this fear by dividing stairs into smaller segments and discarding steep steps.

Minimise amount of height differences

Height differences are essentially problematic for visually impaired people, considering these can create dangerous falls if they go unnoticed. So for architects it is important to minimise the amount of height differences, like a single step in the middle of a space. In a multistory building it is impossible to avoid height differences. In the case of stairs an architect can aim to design those in a predictable way. Moreover, the architect can

create a safer space by clearly marking the steps with a contrasting colour. A safer alternative design solution for steps is a ramp.

Notable functional elements

In general, all spatial elements that are designed to be physically used, should be notable to anyone. Architects could contribute to this goal if they considered the perspective of partially sighted people, while designing, rather than relying on later adjustments.

Awning above the entrance

Adding awnings above the entrance can be a versatile helpful tool. Firstly, the awning can provide sonic guidance for blind people, as it is noticeable because of sound reflection. Secondly, it could be a notable architectural element in a façade, clearly indicating the location of the entrance. And lastly, the space underneath the awning can become useful and comfortable for all building users, as one is protected from sun and rain.

Sonic guidance

Walking straight when you are blind is, as Jan confirms, quite hard, especially if it is a long distance. So guiding features, like floor materials or elements that give sonic feedback, could be very helpful to help blind people easily walk straight through a space.

Tactile paving

Tactile paving is a method that uses tile with a pattern of relief. When a person moves a long cane across these tiles, a specific sound and feeling can be observed. These tiles are usually used outside, but they could be appropriately used in a public building that combines inside and outside space, like a train station.

Tactile floor plan

An architect could consider including a three-dimensional floor plan to their building to be read with the fingers. Because a lot of buildings do not contain a plan like this, owners of public buildings could provide floor plans on swell paper or in a more permanent form.

Lift announcement system

For a person with impaired or no vision it is hard to operate a lift and to navigate after leaving the lift. A voice announcement system that indicates to which level the lift is going and how that level is organised, is a resolution to this problem and is easily added to any lift an architect wishes to implement.

Emphasis with light

Light can be a helpful tool for partially sighted people to navigate through a building. Architects can creatively emphasise routes or destinations with spotlights or skylights.

Soft transition of light

Jan explained that he used to have a hard time adjusting to light, when he was still partially sighted. If there was a severe transition of light, it would be hard for him to see anything for a few minutes. Architects should aim to create a soft transition of light from outside to inside, if there is a possibility within the design.

No rough surfaces

One can get easily injured by rough materials in a building. So if you are considering

implementing an exposed brick wall, evaluate if it is a surface that a visually impaired person is likely to touch or fall into.

No see-through surfaces

See-through surfaces like glass or mesh can be hard to read or even scary for a partially sighted person. It can be stressful, for instance, to walk on a floor or stairs with openings. Not being able to determine whether there is a passage or glass can be stressful too. An architect could try to avoid using these kind of materials.

Indicate moving objects

It can be startling to unexpectedly come across a moving object in a building, like an escalator or an electric revolving door. A voice announcement system can be added to the object to warn people, such as the moving walkways in some airports, where a voice announces: "mind your step."

Wall guidance

A horizontal element can be attached to a wall so visually impaired people can use it as a guide through the building. These elements can be implemented on different heights, dependent on the target group, and should have a small distance from the wall, so one can place a hand on it.

Prevent painful bumping

Injuries because of bumping into objects can be partly prevented by the architect. Sharp corners can be replaced by rounded corners and protruding elements, like cupboard doors or armatures should be designed so that someone accidentally bump into those.

Broader perspective

After the murder of George Floyd on May 25th 2020 worldwide protests erupted, mostly in the name of the "Black Lives Matter" Movement¹⁶. Besides the crowds of people demonstrating for black lives to matter, there were signs and sounds of different nature. These opponents were criticising the perspective of "Black Lives Matter" with the words "All Lives Matter". The underlying question of these words is: What about all lives? This attempt to shift the topic of discussion can be described as an act of whataboutism. By asking a different, but related question to the topic, the person executing whataboutism insinuates that the other is exclusively concerned with the mentioned topic. But saying that black lives matter is not the same as saying that other lives do not matter. And exactly like this, by saying that it is important to consider visually impaired people while designing buildings, I am not saying that we should forget about all other people. As a matter of fact, I would like to stress the importance of taking everyone into account. The first step of creating an inclusive and accessible environment for everyone is assessing what kinds of people could use the space you will be designing. Instead of taking "normal" (non-disabled) people as a standard for design or adding things to the design afterwards to include disabled people, an architect could "start from difference" as Zoe Partington and Jos Boys from the DisOrdinary

¹⁶ Home - Black Lives Matter," Black Lives Matter, accessed April 12, 2022, <https://blacklivesmatter.com/>.

¹⁷ fem_arc, "starting from difference with Zoe Partington & Jos Boys [en]" F_ PODCAST intersectional spaces in practice (podcast), March 18, 2020, accessed March 17, 2022, <https://open.spotify.com/episode/36c9JAAMKwyoYZv8E44AHm?si=9cabcaa759914b>

Architecture Project beautifully explain in the F_PODCAST:¹⁷ During this podcast, the women talked about people who question the decision to design buildings for a group of people with a specific impairment, because this group is usually a small percentage of the population, let's say 6%. Zoe and Jos respond to this question by saying that the purpose is to include as many people as possible and that it is actually hard to exclude the remaining 94%. Likewise, the practical solutions given in this section do not exclude others. In the worst case they slightly limit the options for the architect. The architectural solutions might in fact create a more comfortable space for people without a visual impairment. We could take the representation of routes in hospitals as an example to demonstrate how designing for visually impaired people can be of advantage to everyone. During his interview, Martijn illustrated the situation of a person in a hospital, who is there to undergo a surgery. This person is experiencing a lot of stress and has to waste a lot of energy on the unclear route to navigate to the right location in the building. If the signage regarding the navigation through the building had been more straightforward, it would have prevented unnecessary stress. This could be accomplished through simple, predictable floor plans and signs with big letters and contrast. These solutions would be implemented to benefit partially sighted people but could ultimately be helpful to any other person. It implies that starting from difference and getting rid of oversight will hardly exclude anyone, while possibly being beneficial to more people than initially intended or maybe everyone.

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THE ARCHITECTURE OF DISNEY

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Preface

The cinematic world enables the creation of spaces and environments which presents an architecture existing between dreaming and reality. It draws upon fantasies, imagination, utopian aspirations, and dystopian fears, where the dreamscapes of these creations offer an intriguing insight into a movement of cinema design and its translation into real-world environments. Films have offered and continuously offer a means of spatial interpretation of interest to designers and architects. They permit the creation of tangible spaces that we occupy in our imagination, influencing architectural designs in the past and present. These imaginary places are constructed based off hybrid elements, welded together from elements of reality, constructed realities, found realities and various locations, romanticized, and idealized, whilst cemented together by means of technology.

Film permits for free experimentation in an architecture that could be designed, without the use of normal architectural conventions. The absence of concrete physical limitations, such as gravity and functionality, allows cinema to go even further than architecture in terms of spatial experiments, where these realistic false environments do not need to make sense or follow natural logic. Through this, it provides an opportunity to fully question all that has come to be accepted in terms of the language of architecture and the cultural and historical conventions that come with it. Technical innovation has given professionals unlimited potential and possibilities for choice, in representations of spatial environments, as well as architects' ideas and concepts that can be translated into real life projects. The translation of such cinematic architecture into real world urban contexts, does however, evoke questions and concerns. What happens when these dreamscape worlds, experienced on a screen, are translated into real world environments?

Introduction

Within film, architecture contributes to the overarching story, by setting the scene, playing a background role, or performing as one of the main actors. It is part of the bigger story, reinforcing the narrative being told. Disneyland is an example of how films and screens, have begun to close the gap between two-dimensional representation and a three- or four-dimensional experience. One of Disney's greatest talents, is this ability to construct convincing architectural worlds, juxtaposed to, as well as within the real world we inhabit. They ultimately become a new tool to foster critical thinking about our surrounding context. The following thesis is an exploration of cinematic architecture in the real world and the effects it has on public spaces and the design of cities. It will understand the reciprocity of the modern real world and the filmic worlds of human imagination and design, thus shedding light on the ideology of utopian public spaces and architecture in real world environments. The concepts of 'globalization', 'gentrification', and 'gatekeeping' will be analyzed regarding cities' aim to utilize the value with such flagship projects that are Disney theme parks.

The Creation of Disneyland

In 1955, the first Disneyland was opened. The design of the park drew upon the themes of various Disney films, which were translated into a series of "lands." These lands capture the look and feel of various themes of movies. Frontierland captures "the look and feel of an imagined past, [...] which evokes the Old West, and Main Street, U.S.A." (Archer, 2018). Others offered visions of the future, like Tomorrowland, whilst some, like Adventureland, provide thrill and captured the exotic and cultural aspects of certain regions around the world. In an interview with Walt Disney, he described the park as being, "unlike any other place on this earth: a fair, an amusement park, an exhibition, a city from Arabian nights, a metropolis from the future" (Archer, 2018). He had the vision of making "films into 3D worlds that people could visit" (Hudson, 2017). These fantastical worlds are aimed "to create enduring and appealing spaces" (Hudson, 2017), whilst simultaneously becoming invisible backdrops for the visitor's experience. In essence the architecture needed to play a seamless and transformative role, whilst implementing the most utopian elements of spaces from Disney films, for the experience to be successful. Disneyland was "the first theme park that combined the physical experience of visiting an attraction with the immersive experience of being taken on a journey, as a film or television show would do" (Archer, 2018). Individuals experience the change of the 'cinemascape,' where they are "no longer separated from the screen by a thin film of glass, [instead] viewers are consumed by a spectacle that knows no bounds" (Taylor, 1998, p. 202), where the virtual becomes the real and the real becomes the virtual.

Disney's unrealistic realistic environments are being created, as a system that enables visitors to feel that technology "can give us more reality than nature can" (Eco, 1986, p. 44). This so-called 'hyper reality' fulfills the dreams and visions of 'a fantastic past' in real life. When visitors observe the rules correctly, they can enjoy 'the real thing' and experience an urban environment that is not available to them outside of Disneyland's doors. It has created an entire world, that has become popular and successful just because it recreates all the chances to partake in a false reality by allowing play-acting (both to be watched and to be participated in) in a public sphere. Because of this, Disney presents opportunities in both films, and through its theme parks to lay the groundwork of what viewers may observe as idealized environments, influencing how one might perceive and design the world.

The Architecture of Disney in the Real World

The model of Disney raises questions and speculation into the current design of cities. The architecture of Disney is subversive, where the usual rules do not apply. Many of the buildings found within the park do not need to be designed to codes, bylaws, and functional standards. The guidelines put out for the designs are intended to "(1) strive for historic authenticity and recreate historic buildings; (2) take a whimsical approach and exaggerate storybook images; (3) create subtle, abstract images; or (4) do all of these things" (Craven, 2019). There is more of an emphasis on "the idea of transporting visitors, both physically and narratively, into another world, as though a teacup ride might actually sweep one down the rabbit hole and into Wonderland" (Archer, 2018). Additionally Walt Disney "had no architects or amusement-park designers on his staff [...] so he put together a design team himself, composed mostly of art directors from the Disney studios..." (Goldberger, 1972), to adjust the design of American cities, due to his dissatisfaction of their utterly chaotic environment. The infrastructure and layout of the American city urban fabric had no sense of visual coherence, lacked safety and reassurance, as well as contained

unplanned suburbs. Because of this lack thereof, Walt wanted the buildings in Disneyland to address such principles, thus in effect create cinematic and visual images of an ideal type of city. The Disney city entails a design strategy that adheres to these points, whilst implementing symbolic architecture, which communicates a message of "associations interpreted freely rather than copied literally. A superficial effect is captured for the facade, while modern construction methods and materials may hide underneath. They seem at once too big and too far away, too unreal to have enough bearing on the problems of real cities" (Goldberger, 1972). Walt Disney's interest in the ideas of theming, especially regarding the past of American cities, that he grew up knowing, was the driving role in the creation of Disneyland and spiraled into the effects of modern urban design of cities.

Disney, with its many films, business ventures and merchandising, has become an iconic and universal household name. "Mickey Mouse may well be the most commonly recognized cultural figure on earth" (Goldberger, 1972), and the castle is the most symbolic element of the Disney theme park, becoming the trademark for the company. Its identity has become strong to the point of imprisoning viewers and users, where its "sculptural forms or pictorial silhouettes, their positions in space, their inflected shapes, and their graphic meanings, that identify and unify the mega texture [...] make verbal and symbolic connections through space, communicating in a few seconds and from great distance – a complexity of meanings through hundreds of associations" (Taylor, 1998, p. 195). The symbolism held within each element within the films and its parks dominates the space, where its theme becomes more important than the architecture itself. This is because the architecture is not enough, since "the spatial relationships are made by symbols more than by forms, architecture in this landscape becomes symbol in space rather than form in space" (p. 196). Such notions are encouraged by the increasing mass of tourists, whose quest for "character", displaces successful identities and architecture into meaningless elements.

A Disney that Globalizes

Disneyland, being one of the largest entertainment companies, has become an international brand, that has implemented theme parks in multiple locations globally. It started from being one corporation and on theme park in Anaheim, California, to over time, becoming a global powerhouse with Disneyland locations on various continents. Walt Disney Company has established, "Disneyland, Walt Disney World, Tokyo Disneyland, Disneyland Paris, and Hong Kong Disneyland" (Schmidt et al., 2007) and contains "numerous TV networks, additional theme park openings, a cruise line, merchandising in US malls and airports, publishing houses, real estate, hotel resorts, and so forth (Clandinin, 2006). Disney has created a successful business model that pulls at the heart strings of every generation alike creating a strong identity, credibility, and sense of "nostalgia" to a place that has never physically existed. The global company now has "parks, experiences, and consumer products [that] bring Disney's stories, characters, and franchises to life through Parks and Resorts, toys, apps, apparel, books, and stores" (Wang, 2018). A study has shown that "800 million people have read a Disney book or magazine and 240 million have seen a Disney movie" (Wang, 2018), thus a large quantity of the world population knows about the company. With this type of exposure, individuals will naturally want to visit the theme parks, buy Disney merchandise, ultimately growing the company and enticing even more customers, consumers, and money. Such exposure shows the large emphasis on material and symbolic values as well as an importance of the experience of consumption itself (Lu and Qian, 2020). But also the creation

of such places has become very popular, and turned into a design chain, becoming similar to those of identical motels and fast-food joints, that pop up in the design and spatial planning of many cities. Disney having an affluent and successful market in the United States, lead to its expansion, as a necessary next step to achieve optimal market growth. With this, it imposes its blueprint of a city as a theme park into local cultures around the world, dominating many sectors of both American society and the world alike.

By imposing its products and practices globally, it generates a culture of Disneyfication, which "is the idea of bigger, faster, and better entertainment with an overarching sense of uniformity worldwide (Campbell et al., 2005). By implementing parks globally, it allows for their following to have access to the America as a spectacle rather than as an object of citizenship (Blazer, 2005). Through this, Disney becomes super-invasive to local cultures, by "removing the actual characteristics of a real place or event and rendering it 'sanitised'. Anything that looks negative is removed and the facts are buried. The goal is to make the subject more pleasant and easily understood" (Bryman, 2004). Thus, it enforces a monolithic culture and appearance everywhere, not fostering any intercultural understanding, but "to bolster and champion American attitudes and ethics" (Goldberger, 1972). The United States sees their theme parks "as national shrines and living museums of American history" (Weinstein, 1992, p. 154), whilst the rest consider it as "synonymous with America" (Mills, 2012). The term "Grobalisation" is a conjunction between growth and globalization. It refers to "the imperialistic goals, desires, and needs of large corporations or even entire nations to enter diverse markets worldwide so that their supremacy, impact, and profits can grow" (Matusitz & Palermo, 2014, p. 91). With regards to the Walt Disney Company, their primary motivation for creating a thematized park is economic. A former CEO of the Walt Disney Company, Michael Eisner, stated in an interview that "success tends to make you forget what made you successful . . . We have no obligation to make art. We have no obligation to make a statement. To make money is our only objective" (Wasko, 2001). Thus, they want to expand and prosper globally, imposing themselves on the local scale. By doing so, it demonstrates how capitalism reigns and coerces local environments to embrace the norms and practices, generating a monolithic, generic city across the globe, seeking to overpower and eliminate the local.

With such a wide global presence, Disneyland amongst other theme parks, has been a major component in the planning of many major cities in the past few decades. American cities, along with many global cities are being remade in the image of Disney's theme parks. These cities are redeveloping themselves to meet modern day prospects and requirements with the use of technologies for the advancement and globalization of the city (Kostopoulou 2013). Cities that are presented to be most successful offer a beautiful image of a rich and lavish form of living, which is filled with social and cultural compositions on top of production, and heritage. Being in a "highly competitive world where entrepreneurs, skilled workers and innovative companies gravitate to cities that offer the best quality of life" (Laidley 2007, 268), cities are developing an improved local urban fabric to suit these needs and requirements that attract global economic and labour markets. The solutions currently put forth target global and international attraction, as well as, exclusive high-income individuals, lacking the consideration of the context and building for the immediate urban fabric already present.

When examined closely, cities such as Hong Kong and Las Vegas, amongst other cities around the world, are being remade in the image of Walt Disney's famous fantasy theme parks. Las Vegas, when approached from this perspective "becomes symptomatic of the radical transformations wrought by global postindustrial consumer society" (Taylor, 1998, p. 195).

One of its hotels, the MGM Grand Hotel, which is the largest hotel in the world, replicates Disney World within its enclosure, "literalizing" the thematization of their business model. The implementation of Disneyland in Hong Kong has also caused an issue with the residents and population of China, specifically in regard to its setting. The design of the Hong Kong Disney intended to retain American decor and setting without the consideration of its immediate surrounding of Chinese culture (Hills & Welford, 2006). The Chinese rely on "feng shui, an ancient Chinese discipline of arrangement, yet the Walt Disney Company initially refused to incorporate feng shui principles into the park" (Holson, 2005). This resulted in the Chinese viewing Hong Kong Disneyland as a "'plastic' symbol of culture" (Palmer et al., 2007), where its identity has been stripped, becoming a visualization of a Generic city typology. The globalizing of a city will only succeed when it is "adapted specifically to each local culture in which it is marketed" (Matusitz & Palermo, 2014). Ultimately, creating this similarity within a region that differs entirely from its origin, tends to make the differences blurry — "both within and between local cultures" (Andrews & Ritzer, 2007). Disney's infiltration of its local cultures on various continents establishes a course of transformation which can lead to global cultural standardisation (Quelch & Jocz, 2008) cultural convergence (Booth, 2008), and homo-genisation (Hurrell, 2008).

Traditionally, the expression of design and its visual value has been a way "to signify our shared cultural and social values, by revealing the ontological nature of the public institution and the civic realm as a whole" (Mitrasinovic, 2002). It enabled the physical relations between individuals, displayed its culture and history. The paradox of today is that architecture and cities are designed and geared toward a specific population, which is looking for elements and visual cues of recognizability. These designs are composed of "mostly fictional narratives created by the world of media, information-age architecture has become much more about either showing memories of events that took place elsewhere, visualizing the immaterial world of media, or just transmitting information" (Mitrasinovic, 2002). The relevance of such architectural theory has been "clear in arguing that the electronic media have replaced architecture as the mode of representation that defines the dimensions of human experience in the information age" (Mitrasinovic, 2002). Disney is an example of how this architecture establishes spectacles of authority, which highlight the global supremacy of American culture and technology. These Western sources of imagery presuppose a monothetic environment, that is hyper-invasive to other cultures. It justifies its actions on the ideas that these other cultures are less capable of "introducing or exploiting new ideas, or even creating themselves and their worlds because these cultures are being inundated with the products and cultures of Disney" (Matusitz & Palermo, 2014). From this vantage point, Disney implements this typology of a generic city that is based on a process of cultural and economic imperialism, which is routed in propagating capitalism across the globe. Such contemporary models, "where the distribution of goods, people, and financial wealth recognizes no difference in cultural detail amusement installations and city centers" (Mitrasinovic, 2002) are just intersections of varying levels of both people and wealth.

A Disney that Gentrifies

The term 'Disneyfication' can be defined as the transformation of something into a carefully controlled and 'safe' environment (Matusitz & Palermo, 2014) and is often referred to as the byword for gentrification (Wallwork, 2017). The design model of the Disney theme park city along with its various urban spaces is very appealing to urban planners, as it attempts to reduce the complexities and messiness of contemporary

cities. Over the years, there has been attempts from contemporary critics to identify the Disney theme park as a "'trope for future urban planning,' and the transposition of the planning strategies of theme parks as beneficial for the revival of the dying form of industrial metropolis" (Mitrasinovic, 2002). However, its strong control over the spatial and social aspects of the theme park can be seen as dangerous and threatening. In Disneyland, there "are no dangerous ghettos" (Wallwork, 2017). It is an illustration of "an extreme phase in the development of the image in modern times" (Baudrillard, 1988, p. 167). Within Disneyland, there are no raw edges that spoil its image; everything is as perfect as films have provided for our viewing pleasure. It leaves no room for the 'other'; no room "for the threatening, for rundown buildings and streets, for homeless people and junkies or anything else that scares off residents, tourists or consumers" (Sorkin, 1992). Instead everything is immaculate and pristine reinforcing this idea of the perfect dreamscape world. Everything takes place within an idealized simulation. The likeness can no longer be distinguished from reality. Reality is completely replaced by these perfect scenes and acts surrounding the premises. The 'Disney City' as one imagines it, "soft city of illusion, myth, aspiration, and nightmare, is a real, maybe even more real than the hard city one can locate on maps, in statistics, in monographs on urban sociology and demography and architecture" (Koeck, 2013). Thus, the complexity and reality of the urban fabric and the difficulties of individuals being able to grasp the "image of the city", can be more easily understood or escaped through second-hand sources such as films. Cinema architecture translated into the real world can provide the perceptual equipment to escape the 'hard side' of the city, creating a simulated utopia.

The transformation and removal of any rundown areas to new uses and emerging landscapes of consumption, are the dominant complexes installed to create such dreamscape cities as well as make them global and competitive. The increase of service economy and the perception that tourism expansion would support in the renewal of urban cores, has driven cities such as Anaheim to progressively gentrify the area, incorporate social public realms and incorporate economic opportunities into essential redevelopment projects (Kostopoulou 2013). The primary reason, that facilitated the construction of vast, concentrated themed park developments, was that American cities would be assimilated into global property and international networks. The development of these 'worlds' was a way to reposition the city on the global scale, where it benefits certain groups and interests, while displacing other parties, their social practices, as well as many forms of nature. As themed parks are becoming increasingly popular and developed in many major cities, the implementation of new proposals raises issues in design choices and priorities. Intents of creating everyone's childhood dream and an escape from the messy reality of daily life are deemed to be a key factor in these developments, however, ultimately falling short of their outlined goals and swaying towards privileging market imperatives and economic growth.

Disneyland and everything it entails, is the main budget contributor of any city that houses a Disneyland. Because of this it causes a problem, where you "have a gigantic company in a poor town, and you can buy the politicians" (Buntin, 2018). Being that Disney has a lot of money and power, it has done just that. The creation of such parks enables the movement of tourism and affluent populations into areas, with low to mid income. Thus, allowing these cities to stay competitive in the global spectrum contributing to the prioritization of economic profit and benefit to the city capital (Skaburskis and Nelson 2014). The objective of this notion was to improve cost efficiency, through attracting tourists and higher-class individuals to immigrate into cities and create socially mixed areas to contribute to the economy, making it grow and strengthen (Skaburskis and Nelson 2014). These individuals are desired by urban regions, due to

their disposable incomes along with their entrepreneurial essence, thereby "creating new economic opportunities, spin-off economic benefits such as new jobs, more tax dollars and, through the 'virtuous cycle,' more municipal services" (Lehrer and Laidley 2008, 794). The low-income communities are being displaced to the outskirts of cities solely based on their revenue. This creates a conflict for their lifestyle. The possession of "'asset and object of speculative investment,' [is what is] assessed exclusively in terms of its potential yield" (August and Walks 2018, 125). This demonstrates why low-class districts are socially mixed and redeveloped, while high-income neighborhoods are left untouched, and why these parks are being situated in areas that can provide 'economic potential,' as they currently do not.

The creation of Disneyland's, alter the urban fabric of a city. It gentrifies such areas and removes the idea of having a "sense of place" for all. Cities have turned into areas that strive for commercial benefits, which exploit maximum financial gain, and ultimately bring rewards such as economic growth as well as value creation. Cities become "a testament to human ingenuity, feats of complex coordination, and our greatest and most reliable source of productivity and progress, economically and otherwise" (Siva, 2020). Especially, given the large part they "play in spurring progress and innovation, cities — and the study of how they rise, decline, and evolve over time — are underrated" (Siva, 2020). With this, cities should echo and provide for the entirety that makes up its being. However, it reflects on options that follow the rules of capitalism, guided by profit maximization, as well as the quest for urban status, rather than the pursuit of urban inclusion. Although these revenues create great benefits to the city, it also creates inequality. Restricting "notions of [a] class solely to economic criteria is too limiting, that concepts of capital in class definition ought to be extended to include cultural, social, and human capital, as well as economic capital, and that therefore class should be regarded as more than an economic concept" (Redfern 2003, 2356). Gentrification in turn seeks the obligation of profitability and flow of capital. By prioritizing superior socio-economic consumers, the shifts towards supply and demand are created towards the populations they favor, creating readily available environments geared towards this group (Lehrer and Laidley 2008). The city lacks to include and invest in the low-income neighborhoods, causing them to filter down into these low economic status areas, and produces the capital flight that is occurring amongst them.

A Disney that Gatekeeps

The planning of Disney is geared towards the in-migration of higher income persons. The implementation of such parks into cities are to promote itself as one planned for the good of the public. However, with the execution of their current model, it prioritizes a certain population of socioeconomic individuals who can contribute and participate in the dynamics of the area, while others remain inconsequential, based on the premises that they cannot help in maintaining the financial capital (Laidley 2007). The Disney city tends "to 'sort' the population [where] 'money buys choice'" (Skaburskis and Nelson 2014, 897), thus having money grants privilege to reside and enter such amenities and services that these parks provide. It modifies the previous social fabric by endorsing segregation and forming a barrier, through "repositioning [of] buildings and transforming their tenant base, sometimes with a goal to flip for short-term capital gains" (August and Walks 2018, 132). It can be argued that Disney "removes all obvious class differences from the public sphere" (Matusitz & Palermo, 2014) as its films are geared toward every generation and every age group, however, the realistic translation into a theme park, has created a design for a fantasyland,

"An imaginary world of universal experience where poverty didn't exist, where slavery had never happened, and where no work was ever really done. Like the postwar suburbs, which generally excluded blacks and other minorities, Disneyland was designed not for all families, but for those—mostly white and middle-class—that could afford the admission charge and desired the isolating experience that the park provided. And in the shops on Main Street, park patrons lined Walt Disney's pockets and did what in the fifties seemed very much an act of benevolence: They consumed" (Lipsitz, 1993).

This does not demonstrate accessibility to all individuals, thus declining the neighborhood engagement aspect in social mix communities aspired for cities. Disney is privatizing public spaces, geared toward a specific group of socioeconomic entities. Studies have shown that "seventy-five percent of adult visitors to the Disney theme parks are professionals, technical personnel, or managers, with only two percent representing laborers" (Wasko, 2001). They are ensuring the "right sort" of people are entering their theme parks through spatial control, achieved by charging high entrance fees, monetizing everything within the park and creating large transportation expenses. They are enforcing barriers and implementing high-rise luxury hotel developments, retail uses and an overall lavish style of living. They invited affluent sectors to take over and slowly push away low-income persons, privileging private profit and taking over public interest (Laidley 2007, 262).

By showing the fantasy as more realistic than reality itself, 'Disneyland draws visitors into the world of escapism and happiness achieved through simulation' (Wang, 2018), thus making the hardships of the real world less relatable. Disneyland having total control of its public spaces, questions the existing proposals in many cities today, as this 'desirable urbanity'. The materialization of such image "has an aggressive agenda of its own, an agenda based in middle class, suburban values. Its agenda is, strictly speaking, political in nature" (Mitrassinovic, 2002, p. 25). By creating these barriered lands, they are taking away existing realities. Disneyland's segregation is not a projection of what designers and planners should take or learn from cinema. Whilst Disney tries to exclude those dissonant components, such as the homeless or other "unwanted" elements, trying not to spoil the fantastical image that they sell, these elements ultimately do not disappear from reality. Planners of real cities must deal with them in all their diversity.

Through film, Disney has explored its markets into projecting morals, displaying cultural differences, and educating anyone at any age about important lessons. Instead of taking these objectives and applying them into their architectural design of real-world environments, they have altered the underlying beauty of their films into an economic scheme to replicate this utopian idea, that only functions in a fictional world, isolated from real-world issues. Walt Disney designed his parks to show America and the world a better version of itself, but it does so through consumerism and entertainment, careless about the big political and social issues of our age, and specifically to a certain targeted audience. The "sentimentality of Disney's architecture — the "architecture of reassurance" — is specifically designed to comfort rather than confront" (Wallwork, 2017). Through this, it cleans up the image of the city, removing the blighted urban areas, visible in realistic surroundings. The removal of "undesirable" elements from the boundaries of the city, is aimed to show relief from the world we live in, yet it ultimately brings awareness of how far away and how ill rooted the design of such themed cities are.

Conclusion

This paper is an exploration of cinematic architecture in the real world and the effects it has on public spaces and the architectural design of cities. It examines the way film influences and shapes the spaces we live in and interact with, exploring it through the typology of 'Disneyland,' being that it is a literal extended perspective of cinematic architecture. Disneyland holds dynamic activity based on the innovative design and programming located within its parks. The design of such places is created in a particular way that accommodates the demands and aspirations of the Disney corporation, which in essence stands for economic growth, through thematizing, 'globalizing,' gentrifying, and gatekeeping. This presents issues for the designs and architecture of current and new cities as they aim to produce a location that is abundant in social, cultural, historical, and economical traits, however, falls short of creating this successful urban fabric, based on its primary focus of capital income. The integration of these factors in an interrelated and constitutive manner is crucial to produce a quality of life and economic development that can be sustained. To understand how Disney has influenced and affected the design of cities and spatial restructuring, this paper aims to highlight the ways Disneyland exhibits the utopian vision permitted by capitalism and technology and how such activities were embedded within Disney's theme park planning. It demonstrates how these plans affect the processes and results of urban change, begging the question of should such places be designed?

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DESIGNING FOR ELDERLY HEALTH CONDITIONS

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4781589

Introduction

In the Netherlands, nursing homes are under pressure because of the ageing population and the decreasing mortality rates, which leads to waiting lists for the nursing homes up to 17,000 elderly waiting for their access in September 2021. (Herderscheê, 2021). Nowadays, the size of the waiting lists is definitely not reduced and will increase significantly in the near future. (CBS, 2020).

In 2030, at least 30 million elderly persons are expected to be living alone, compared with 8,4 million in 1984 (S.R. Zedlewski, R.O. Barnes & M.R. Burt, 1990). If mortality rates follow the more optimistic path, however, there will be 3,8 times as many elderly persons living alone and these numbers will continue to increase after 2030. This means that the pressure on the nursing homes will also increase significantly. Elderly people prefer to age in their familiar environments (Demirbilek & Demirkan, 2004), so it is important to invest in elderly housing to make sure the elderly people can live longer in their familiar environment and nursing homes will not experience too much pressure.

Architecture is more than developing new buildings. It can change people's feelings, behaviour and health conditions. The focus in this thesis will be on how to design architecture in the form of dwellings that will improve the health conditions of independent elderly. This will either reduce the morbidity or improve physical and physiological health to make sure that most of the elderly people are able to age in their own house and environment. The results of this research can be used in design processes for new housing and renovation projects. Most of the results may also be used in nursing home design projects, but this can lead to an extended life of the elderly people that already live there, which means that the amount of new available places on a yearly basis will decrease. This should always be taken into account.

In this research, elderly refer to retirees (65+ years) in the Netherlands to make sure the thesis will not become too broad. Thereby the focus in this research will be on the three biggest causes why elderly are forced to move to nursing homes, because these three causes reach most of the elderly in the Netherlands.

The main question of this thesis is; 'How can architectural and environmental design contribute to the improvement of elderly health conditions?'

To help answering this question, multiple sub questions will be treated. These sub questions are the following:

1. What is the current situation of Dutch elderly, their needs and their problems?
2. What complaints do elderly experience when suffering from diseases?

Grijze druk

Aantal 65-plussers t.o.v. aantal 20- tot 65-jarigen

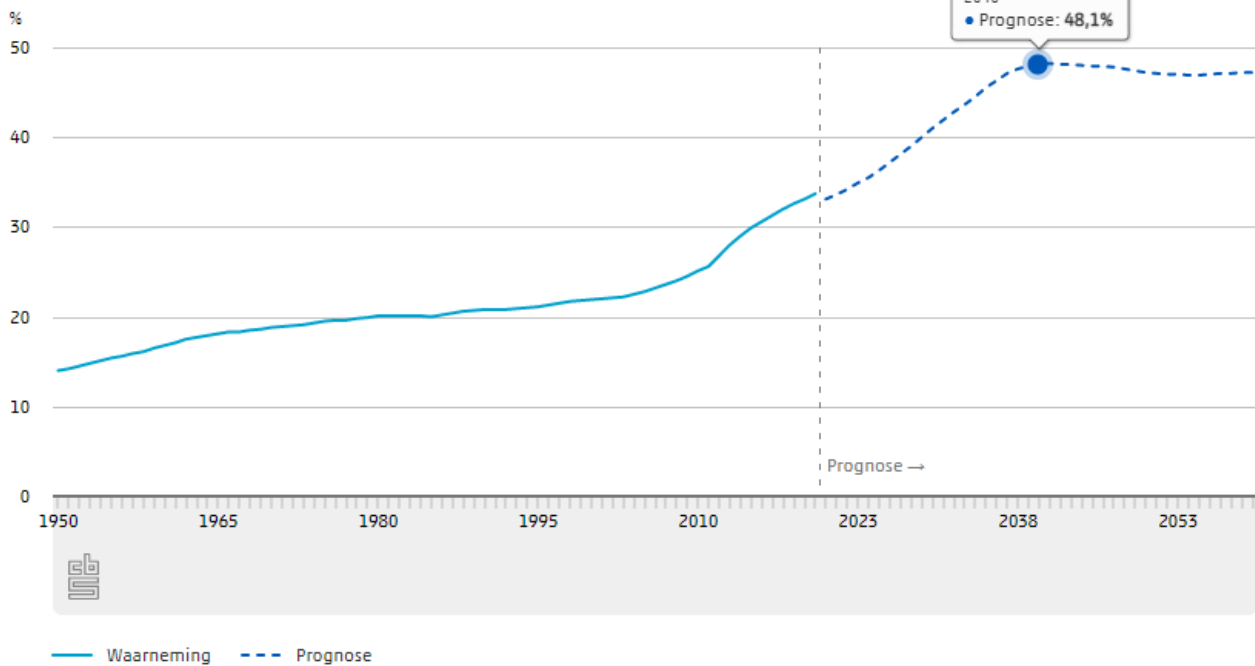


Figure 1. Prognose of 65+ elderly relative to 20-65 years. (CBS, 2021)

3. What evidence based design solutions can help reducing or preventing these complaints?

This thesis will be formed by literature studies. Combining the problems and needs of elderly with architectural design solutions will help improving the health of elderly in the near future. In this research, the solutions are mainly based on 'Evidence based design' to make sure the given solutions will have an impact on the health conditions of elderly. The purpose of this thesis is to set up architectural guidelines for designing elderly homes which will improve their health conditions in the near future.

The first part of the research will establish the mental and physical problems that elderly experience in their life and investigate the needs of elderly to improve their health. Hereby the main causes that elderly have to move to nursing homes is being investigated. After establishing the problems and needs of the elderly, there will be divided into evidence based design solutions to make clear in what way the design of houses for elderly can improve their health circumstances.

Physical and psychological problems

On 1 January 2020, the Netherlands counted 3.457.535 elderly (65+), which is 19,8% of the total population. (CBS, 2020). 838.661 of them are 80+ years old. In general, women become older, so in the group of 65+ years, women are overrepresented. In 2020, the Netherlands counted 93.943 women and 37.786 men of 90+ years. In figure 1, you can see the prognose of the amount of 65+ elderly relative to the group 20-65 years. Remarkable is that around 2040, the amount of elderly will be nearly 50% of the society.

Nursing homes will experience even more pressure in the near future. Of course, more nursing homes will be build, but in the Netherlands, we still

need to build around 1 million homes before 2030 (Rijksoverheid, 2021). A plan that is already lagging behind, because the building process is simply too slow at the moment. This means that there will not be enough space for all the elderly to move to nursing homes and they have to live longer independently. Renovating their living environment to improve the health conditions or prevent elderly from getting diseases will become an important step in the healthcare- and building environment.

According to the Dutch government, most of the 65+ elderly die due to Dementia (COVID-19 ignored because of the temporary peak of a few years). (Rijksoverheid, n.d.). Thereby, most of the elderly people are forced to move to a nursing home due to physical problems, depression and also dementia. These three causes together account for nearly 80% of all the cases. This chapter will dive into these three causes, because the biggest part of all cases will then be discussed.

Physical problems

In general you can state: the older people get, the more physical problems arise. (CBS, 2008). According to CBS (Central Bureau for Statistics, a Dutch company that delivers statistics for the government) women in general experience more physical complaints than men. One of the biggest reasons for that is the fact that women simply live longer than men. A quarter of all elderly women experience some physical issues, while 16% of all elderly men does have the same problems. The amount of complaints increase the older people get.

The most common physical problems that elderly suffer from are heart disease, generalized weakness, chronic pulmonary disease, diabetes mellitus and hypertension. (Qui et al., 2010). But elderly also experience difficulties in mobility (14%), limitations in seeing (7%) and in hearing (5%). (CBS, 2008). There's a big variation in the complaints above, so it is difficult to make conclusions out of it. What can be stated is that elderly are more vulnerable for mental problems, like depression and dementia when having physical problems. (Qui et al., 2010).

Some physical problems can be solved or decreased with medication or physical solutions (for example glasses, scoot mobiles and hearing aid). Evidence based design will in some cases prevent getting physical problems or decrease the amount of complaints. Mobility problems can be partly solved by designing houses in a way that is it accessible for scoot mobiles and rollators. Further research on this topic will be done in chapter III – homebound elderly design.

Dementia

In 2020, 14.717 elderly (65+) died due to dementia. (Rijksoverheid, n.d.). Alzheimer Nederland (2021), a Dutch company specialized in analysing dementia, states that in the Netherlands around 290.000 people have dementia. (Alzheimer Nederland, 2021). 275.000 of them are 65+ years old. Recognition of dementia takes a long time. Around 100.000 of the 290.000 people mentioned does not have a diagnosis yet. This is because it takes more than 1 year to determine if someone suffer from dementia. The amount of people suffering from dementia will increase significantly to more than half a million in 2040 due to the ageing population. The expectation of Alzheimer Nederland is that this number will even increase to 620.000 in 2050.

Dementia is a disease in which mental capacities are severely reduced. (Alzheimer Nederland, 2021). As a result, a person can perform daily actions that were previously effortless, less well or no longer. It involves actions such as dressing, preparing food, paying bills or taking medication correctly. According to Steffie Bunk, a Dutch doctor working at the UMCG (Groningen hospital), many elderly that suffer from dementia experience pain (Alzheimer Centrum Groningen, 2021). In an early stage of dementia most of the elderly feel pain, but when the brain is affected more in a later stadium, the elderly will have more difficulty expressing the pain. Thereby, elderly experience more stress and anxiety during the early stages of dementia.

The chance that someone will get dementia is 1 to 5 in the Netherlands. (Alzheimer Nederland, 2021). Women are more likely to get the disease than men, because they generally live longer. The main modifiable risk factors of dementia are smoking, doing little physical activities, depression, high blood pressure, diabetes and being overweight.

People suffer generally 6,5 years from dementia. During this process, the amount and seriousness of complaints will increase. (Alzheimer Nederland, 2021). Healing of dementia is not possible, a patient will in the end always die due to the causes of dementia. There are medications available to slow down the process.

Depression

In the Netherlands, 1 to every 5 persons will have to deal with depression. (Castagna, 2022). Women are more likely to suffer from depression, based on multiple researches. Of all elderly (65+ years), 7% does show depressive complaints every year in the Netherlands. (CBS, 2013). According to Van't Veer-Tazelaar et al. (2008) depressive symptoms are highly prevalent in the elderly population and increase with age. This increase is attributable to age-related changes in risk factors rather than to ageing itself. The research states that attention should be paid to functional disability, loneliness and apprehensiveness for falling since these risk indicators are the main causes of depression in elderly people.

Depression is a mood disorder characterized by a loss of zest for life or heavy dejection. (CBS, 2013). While having depression, you feel, think and act in a negative way. It causes feelings of sadness and/or loss of interest in activities you ones enjoyed. Thereby it can decrease the ability to function at work or at home. In the Netherlands this is a serious issue. According to CBS, depression will be in the top 3 of diseases worldwide in 2030.

The duration and course of a depression vary from person to person. (Castagna, 2022). About half of the population recover after 6 months. The risk of relapse in depression is quite high.

One way to treat depression is by medication, called antidepressants. This medication will help relieve symptoms of depression and anxiety disorders. (Nordqvist, 2018). They aim to correct imbalances of neurotransmitters in the brain that are believed to be responsible for changes in mood and behaviour. The problem with medication is that it will always have side effects. The side effects of antidepressants can be low blood sugar, weight loss, sweating, headache, dizziness and anxiety. Medication is not the best solution, preventing someone of getting depression is way better.

Homebound elderly

Elderly people that are homebound are more susceptible of getting physical or mental problems than non-homebound elderly. (Qui et al., 2010). According to Williams & Butters (1992) a person is homebound when you are unable to get out of the house more than 2 days per week because of a physical or medical limitation. "A significant association was also observed between poor mobility and being home-bound. Of patients capable of traveling by bus, none were homebound. Of patients capable of walking 5 m, 20.3% were homebound. Of patients unable to walk, 75% were homebound."

Some examples of diseases that will increase when being homebound according to the research of Qui et al. (2010) are dementia (31,4% homebound versus 0,3% non-homebound), depression (30,0% homebound versus 9,4% non-homebound) and cardiovascular disease (42,5% homebound versus 23,6% non-homebound). An important question is how to design in a way that homebound elderly become less homebound. This can preserve or delay to be forced to move to a nursing home.

According to the research above there can be stated that preventing elderly from getting physical problems and depression is better than curing. However, dementia cannot be prevented, because the only cause of having dementia is getting older. Depression in many situations can be prevented by solving physical problems, loneliness, and anxiety, but solving these problems is also very hard to accomplish. In general there can be stated that elderly experience more pain, stress, anxiety, loneliness and mobility problems when getting older.

Evidence based design solutions

In this chapter, evidence based design solutions based on architectural and environmental design that can have influence on the health conditions of elderly will be discussed. Evidence based design is the process of designing a building or physical environment based on scientific research to achieve the best solutions. Within this chapter, three evidence based design solutions will be discussed to prevent or decrease the problems stated in chapter II; biophilic design, designing with daylight and designing for activities.

Biophilic design

Humans always have had an innate connection with the natural world and exposure to the natural world is therefore important for human wellbeing. (Gillis & Gatersleben, 2015). Due to societal trends such as urbanization and the huge amount of new buildings, human interaction with nature is often lacking. Biophilic design combines the nature with the design of new buildings. It encourages the use of natural elements and processes as design inspiration in the built environment, which should have a positive influence on human health and wellbeing.

Ulrich et. al did a lot of research about the connection between nature, biophilic design, and ill people. A research about the connection between nature and stress recovery of Ulrich et al. states: "Findings from the physiological and verbal measures converged to indicate that recovery was faster and more complete when subjects were exposed to natural rather than urban environments." (Ulrich et al., 1991). Malenbaum (2008)

also states that a connection between health and nature could be useful in healthcare facility design, and could have implications for the reduction of pain.

Bringslimark et al. (2009) concluded that plants have a beneficial effect on stress reduction and pain tolerance. The air quality will be improved and also the brain will connect the visible plants to positive effects. The research indicates that small, green, lightly scented plants were most optimal for health and wellbeing. This has to do with the brain, which will not be explored further in this research.

Also indirect experience of nature can have positive influences on human health conditions. For example the sound of nature, like wind and bird sounds, also helps with controlling pain, due to a research of Diette et al. (2003). Patients who were exposed to nature views and sounds reported significantly higher levels of perceived control over pain. According to Kweon et al. (2007) images of nature placed in an office produced significant decrease in anger and stress, especially in male office workers. Female workers were less sensitive to these images. From this can be concluded that not only direct natural experience will have influence on human health conditions, like the smell of nature and the increased condition of the air quality, but also indirect experiences which is fully based on perceptions in the brain. Manipulating the brain can have the same influence on human health conditions as the direct experience of nature.

What needs to be taken into account is that individuals may respond differently to Biophilic elements. Van den Berg & ter Heijne (2005) found that male individuals and people that are higher sensation seeker respond more positively to biophilic design than females and people that are lower sensation seeker.

Until nowadays, there is no evidence that nature will influence the health of people in a negative way. Pneumonia can be caused by exposure to cold weather, but when the transition from inside to outside can be controlled, this will not be a problem.

Designing with daylight and view

Daylight is often associated with biophilic design, but can also be seen separately. Daylight is needed in every building, not just in buildings that are designed in a biophilic way. Daylight and the view from a window can have a huge influence on the mental health of people.

A view of greenery from a window has been shown in several researches as having beneficial effects on the wellbeing of building occupants. (Gillis & Gatersleben, 2015). According to Ulrich et al. (1991) the type of view does matter. People that have a view on trees recovered faster from surgery than people that have a view on a brick wall and these people required also less pain medication. This is in line with the eye perceptions of biophilic design solutions.

Restorative potential increases when people experience sunnier weather rather than cloudy or rainy weather conditions. (Beute et al., 2013). "This lends support to the psychological restoration potential of the type daylight, depending on the levels of sunshine. Translating this to the built environment further supports the psychological benefits of natural light, while at the same time considering the quality of natural light that people are exposed to while indoors."

But not only the view can have influence on the health conditions, also the natural light itself brings positive changes. "Light influences people in the building and available evidence suggests that exposure to light has implications for pain experiences." (Malenbaum, et al., 2008). Thereby natural light also lower the medication intake, which lead to fewer side effects and lower costs.

Exposure to daylight will lead to elevated mood, increased alertness, vigilance and cognitive function, and from a psychological perspective, the availability of windows and daylight results in respite and mental restoration (Kaplan, 1993) and has been shown to have stress-reducing effects (Zadeh et al., 2014). According to Zadeh et al. the best source of lighting for human health is daylight. Past studies have shown that, under similar conditions, daylight may have significantly greater effects than incandescent and fluorescent light on human health conditions.

Designing for activities

According to James F. Fries (2008), physical activity is perhaps the variable which reduces the most overall lifetime morbidity. Reducing the morbidity will lead to less need of health care. Within this article, studies show that running (with participants at least 50 years old) leads to lower smoking rates, lower body weight, lower cholesterol levels, higher HDL cholesterol levels, lower pulse an blood pressure and many positive physiologic effects (measured after 8 years).

Not every elderly person is able run anymore because of mobility- and other physical problems as discussed in chapter II, but also going for a walk on daily basis will decrease the chance of getting a disease or more physical problems. (Fries, 2008).

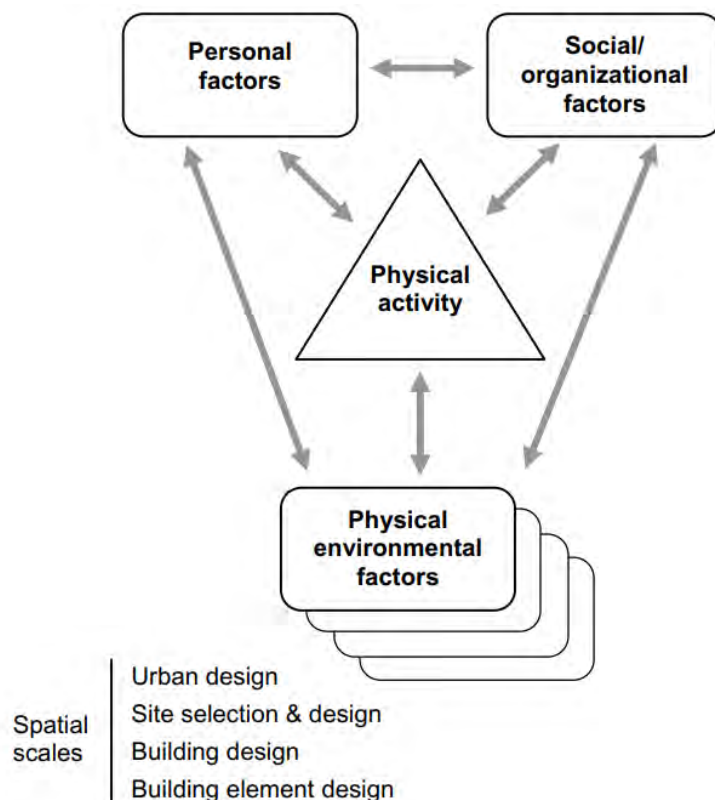


Figure 2. Social ecologic model of influences on physical activity. (Zimring et al., 2005)

Da Silva et al. (2018) did a study about the effects of physical activity on quality of life, anxiety and depression in the elderly population. They used 200 elderly people that were divided into two groups; 100 people engaged in physical activities in a social centre for the elderly, and 100 people that were not engaged in physical activities. The active group showed higher scores of activity and quality of life. The other group showed higher scores in level of anxiety and depression. It shows a strong correlation between activities and mental health ($r=0,77$). There can be stated that physical activity is a protective factor against anxiety and depression in the elderly.

Research of Benedetti et al. (2008) also conclude that activities will improve the health of elderly. "It is inferred that the physical activity was able to reduce and/or delay the risks of dementia, although it cannot be stated that dementia is avoided through physical activity."

Concluded can be that activities will lead to a reduction of overall morbidity, physical complaints and prevention/delay of anxiety, depression and dementia. The next question is; how to design dwellings that will stimulate physical activities to accomplish the above conclusions? According to Zimring et al. (2005), people that use buildings on a daily basis are affected by the built-in physical aspects of the building and site, such as the availability of spaces, relationships among spaces, aesthetics and symbolism. Zimring et al. state: "Environment influences behavior". The physical activity of people is influenced by three factors; personal factors, social/organizational factors and physical environmental factors (figure 2). In architectural designing, the focus is mainly based on the physical environmental factors. This part can be divided into four scales; urban design (1), site selection & design (2), building design (3) and building element design (4). In the case of new construction, these scales are also the order of designing. In building renovation, this order can be different. (Zimring et al., 2005). Based on these scales, design choices can be made to stimulate the physical activities. Scale 2-4 are the most used scales for architectural design:

2. Site selection & site design:

For the site design of stimulating physical activities it is important to think about the orientation of features as well as the layout of the path system. People will walk more if they have destinations such as transit, shopping, eating or places for leisure within 0,4 to 0,8km from their home. (Zimring et al., 2005). Locational parking away from the houses may also increase physical activity. The amount of elderly driving a car in the Netherlands is significantly lower than the adult population, especially when they already

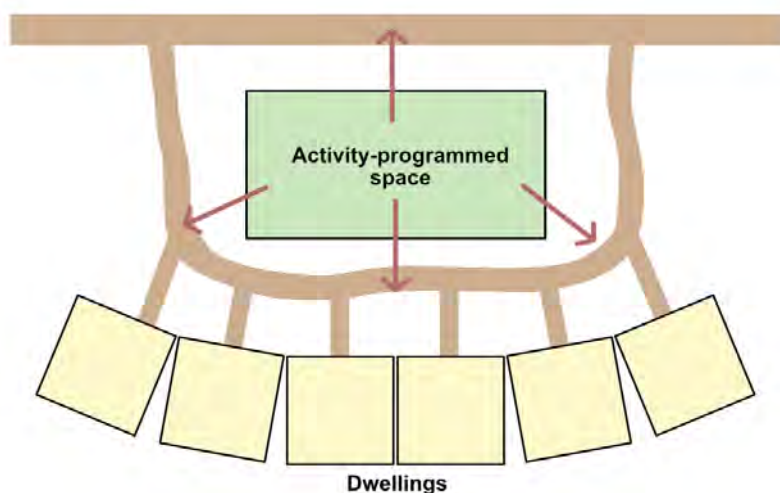


Figure 3. Activity programmed space for elderly. (Own work, 2022)

experience physical complaints. (CBS, 2020). Elderly are more willing to walk to near public transit.

3. Building design:

To stimulate the physical activities in the building, the right programming is of great importance. (Zimring et al., 2005). The level of activities will be based on the design of activity-programmed spaces and the design of the building's circulation system. When designing activity-programmed spaces (for example exercise rooms), it is important to create views of people, activity and nature from exercise areas as well as views into these spaces from the paths of travel, because that will increase the use of these spaces. For the design of elderly housing, it is a strong idea to design an activity-programmed space for multiple dwellings that is visible from the dwellings itself and from the public paths (figure 3). The space between the activity-programmed space and the dwellings can also be a corridor.

It has also been suggested that the central location of exercise and activity areas, and the presence of wide, unobstructed circulation corridors with seating at regular intervals supports walking behavior within the elderly population. (Parker & Joseph, 2003). The right design of circulation systems (corridors, stairs, elevators) within elderly housing will also increase the amount of physical activities. (Zimring et al., 2005). These systems connect the programmed spaces and provides opportunities for walking. In case of elderly housing design, it is strongly recommended to create corridors and use stairs (when they are still capable of walking on stairs) to improve the daily amount of exercise.

4. Building elements:

"The design of individual building elements such as stairs, exercise rooms, shower rooms, or plazas can either promote or deter activities by features of their individual design that affect availability, convenience, desirability, safety, and comfort." (Zimring et al., 2005). Things like benches and protection from adverse climate can support physical activity. Thereby, stairs have a huge influence in physical health of people. However, some elderly that suffer of poor mobility cannot climb stairs anymore. This always needs to be taken into account. Stairs, and also ramps and thresholds can have a bad influence in the accessibility of buildings.

Homebound elderly design

In chapter II the disadvantages of being homebound is discussed. Most of these homebound elderly are unable to walk. In the Netherlands, elderly that are unable to walk normally end up in a scoot mobile. This means, people will have difficulties with entering and leaving buildings, moving through buildings and are not capable of climbing stairs. For new constructions this is something to take into account, for renovated buildings it is difficult to set up design points because every building is different. To make buildings and spaces more accessible, the designer must take into account several factors to make sure elderly in wheelchairs or scoot mobiles can easily reach all spaces in a building. Also for the design of outdoor spaces these factors can be important for reaching the buildings. Norris-Baker & Stephens (1987) did research to wheelchair-accessible design and concluded the following factors:

- Minimize slopes of ramps and curb ramps.
- Provide handrails on all ramps and inclined walks (especially for wheelchair users).
- Protect ramps and doors from prevailing winds, rain and drifting snow.

- Provide landings at the bottom of ramps that are large enough for stopping and turning, even if users cannot control the speed of their chairs well.
- Minimize the force required to open doors and use power-assisted doors whenever feasible. For independent elderly this is difficult, because the outside door needs to be locked. In this case make sure the doors are wide and minimize the force to open the door.
- Design one floor dwellings or make sure there is an easily accessible elevator in the building.

Conclusion

Within this thesis, research is done on how architectural and environmental design can have influence on the health conditions of elderly people in the Netherlands. This is an important topic based on the fact that the nursing homes are under pressure and the waiting lists will become even bigger in the near future. Around 2040, the amount of elderly will be nearly 50% of the society.

Most of the elderly people are forced to move to a nursing home due to physical problems, dementia and depression. These three causes together account for nearly 80% of all cases.

The most common physical problems that elderly suffer from are heart disease, generalized weakness, chronic pulmonary disease, diabetes mellitus and hypertension. But elderly also experience difficulties in mobility (14%), limitations in seeing (7%) and in hearing (5%). Elderly suffering on physical problems experience more pain, stress or anxiety.

In the Netherlands, around 275.000 elderly suffer from dementia, a disease in which mental capacities are severely reduced. In an early stage, people experience pain, which is more difficult to express in later stadiums. Thereby, elderly experience more stress and anxiety while having dementia. The main modifiable risk factors of dementia are smoking, doing little physical activities, depression, high blood pressure, diabetes and being overweight. Healing of dementia is not possible, a patient will in the end always die due to the causes of dementia. There are medications available to slow down the process. The third disease that does have a big impact on the pressure on the nursing homes is depression, a mood disorder characterized by a loss of zest for life or heavy dejection. Depressive symptoms are highly prevalent in the elderly population and increase with age. Risk indicators are functional disability, loneliness and apprehensiveness for falling. One way to treat depression is by medication, called antidepressants. But side effects can be low blood sugar, weight loss, sweating, headache, dizziness and anxiety. Prevention someone from getting depression is the best option.

Elderly people that are homebound are more susceptible of getting physical or mental problems than non-homebound elderly. Some examples of diseases that will increase when being homebound are dementia (31,4% homebound versus 0,3% non-homebound), depression (30,0% homebound versus 9,4% non-homebound) and cardiovascular disease (42,5% homebound versus 23,6% non-homebound).

To decrease the amount of diseases and complaints above or to prevent of getting them, several evidence based design solutions can be applied. Three solutions that will have a great impact are biophilic design, designing with daylight and designing for physical activities.

Biophilic design combines the nature with the design of new buildings. It encourages the use of natural elements and processes as design inspiration in the built environment, which should have a positive

influence on human health and wellbeing. Several researches indicate that biophilic design will lead to a faster and more complete recovery, a reduction and more control over pain and stress and a decrease in anger.

Daylight and views also affect the health conditions of elderly. Based on researches, people that have a view on trees recovered faster from surgery than people that have a view on a brick wall and these people required also less pain medication. Exposure to daylight will lead to elevated mood, increased alertness, vigilance and cognitive function, and from a psychological perspective, the availability of windows and daylight results in respite and mental restoration and has been shown to have stress-reducing effects. It will also lower the medication intake and lead to less pain experiences.

Physical activity is the variable which reduces the most overall lifetime morbidity. Running will lead to many physiologic effects which is protective against anxiety and depression in the elderly population. Physical activities will also reduce and/or delay the risks of dementia. To stimulate the physical activities by architectural design, the designer needs to think about the path system. People will walk more if they have destinations within 0,4 to 0,8km from their home. To stimulate the physical activities in the building, the right programming is of great importance. When designing activity-programmed spaces, it is important to create views of people, activity and nature from exercise areas as well as views into these spaces from the paths of travel, because that will increase the use of these spaces. The right design of circulation systems (corridors, stairs, elevators) within elderly housing will also increase the amount of physical activities. In case of elderly housing design, it is strongly recommended to create corridors and use stairs (when they are still capable of walking on stairs) to improve the daily amount of exercise.

To make sure less elderly people will become homebound, some design factors should be taken into account to make the houses more accessible. Examples of these factors are; minimize the amount of slopes and ramps, minimize the force required to open doors and design one floor dwellings or make sure there is an easily accessible elevator in the building.

The main question of this thesis is: 'How can architectural and environmental design contribute to the improvement of elderly health conditions?' Based on the results above, there can be concluded that biophilic design, daylight and the stimulation of physical activities are possible design strategies that will have a big impact on the health conditions of elderly. It will reduce the complaints, and in some cases prevent from getting a disease. Overall, these three design solutions will help reducing pain, stress, anxiety and anger and will help preventing or lowering physical condition complaints of the elderly population.

Combining these three solutions within the design process will decrease the biggest reasons why elderly are forced to move to nursing homes and this will lead to a reduction of the pressure on Dutch nursing homes.

Future research should focus on further solutions that will help increasing the elderly health conditions. It is important to investigate about the human brain. What are the interactions between the brain and the mind, the brain and the body, and the brain and behaviour in this population. This will inform enormously not only successful aging in medical research but also cost-effective treatments in public health.

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FEELING OF HOME

in the Built Environment

Sare Genc

5497329

Introduction

'I experience myself in the city, and the city exists through my embodied experience. The city and my body supplement and define each other. I dwell in the city and the city dwells in me' (Pallasmaa, 2012, p. 43).

The relationship between organisms and their living environment is similar to that of mankind and their built environment; they are a group of interacting or interrelated entities that form a unified whole. On the other hand, the relationship between man and space is more complex and dependent on many factors. People are highly sensitive to the spatial properties of the built environment. The flow of data is received through the sense organs and information is collected by the five senses: sight, hearing, touch, taste, and smell. From a phenomenological perspective, the full comprehension of place relies not just on sensation but also on perception.

The physical location and materiality are bounded together with feelings and ideas; they evoke memories, images, and meanings. In that manner, people might have positive or negative feelings about space, and this generates the concept of home. Home is both a physical location and a state of mind. It is a feeling towards our surroundings. Home does not simply exist, but it is made and seen as a process of creating. The feeling of home travels across different times, places, and scales and generates the question: Where, why, and when do we feel at home?

Memories of personal and cultural past experiences play a significant role on creating our perception of a specific place. Therefore, our sensory response to the built environment is directly related to what is familiar, who we are, and where we come from. In this thesis, I would like to explore the feeling of home in the built environment through literature with the guidance of sensory design, sentiment, and memory as critical design factors.

I. Home Concept

'Birds build a nest; rabbits dig a warren, foxes a den. They are not constantly doing this, nor do they remain in the shelter they construct all their lives. The instinct to withdraw to a sheltered abode is directly linked to the organism nature' (Leupen & Mooij, 2018, p. 18).

Similarly, man has the same instinct to be covered. Humans are vulnerable and very less equipped than animals to face the dangers of their instant environment. The additional shelter is fundamental for humans to survive. A seek for this shelter comes on different scales: firstly, by covering the bodies with fabric, and secondly in a larger envelope protecting one from the outside world. Therefore, man has three different skins to cover himself: his own, his clothing, and his dwelling. Dwellings initially offer physical protection, a setting in which people feel secure by creating a division

between a controllable world inside and an unpredictable world outside. It started with digging holes in the ground and caves in a fundamental way the relationship of humanity to nature, as animals did. However, with technological developments, humans moved on to structures in which they were sheltered, whether that be a tent, caravan, house, or any other closed space over their head on a particular site. Humans always sought the same instinct as they entered an indoor space from an outdoor space, that came from their nature: security. Going back to the very first memory they have as a fetus in their mom's belly; when they feel insecure, they position themselves in the smallest possible way they can be. Perhaps, it is another instinct explaining why we feel safer in smaller interiors than the bigger ones. Independent from the dimensions, as people spend more time in their houses, the inner world they create becomes bigger. All in all, they attach greater importance to it; the house becomes not just a shelter but a home. Thus, another critical question to ask is, what does it take to turn a space, a tent, or a house into a home?

Ethnography can emphasize the multi-dimensionality and dynamism of ideas of home and home-making practices (Blunt & Dowling, 2006). Home is a complicated term, and the feeling of home cannot be reduced to universal values. Different lives with different cultural backgrounds have resulted in different typologies in housing. These distinctive housing environments were built at different times, regarding the different needs and daily habits of dwellers in the city and sometimes without any specifications at all. If an Eskimo and a tribe in Peru were asked to define what a home is, they would both use similar terms and yet describe very different structures. Aldo Rossi states: *'The type developed according to both needs and aspirations to beauty; a particular type was associated with a form and a way of life, although its specific shape varied widely from society to society'* (Malnar & Vodvarka, 2004, p. 12). Cultural motifs and manifestations play a significant role in the spatial configuration of dwellings and create the archetypes of the collective experiences within societies. The type could be seen as collective memory given structural form.

'The dwellings in Morocco's kasbahs cannot be considered separately from the dwellings that surround them, from the proximity of the souk and the mosque with which they form a unit. Among the Dogon in Mali, loam houses form a configuration of places and small volumes that bear symbolic parallels to the human body. And in Western countries, a 'drive-in' dwelling offers its occupants optimal privacy' (Leupen & Mooij, 2018, p. 15).

The relationship between house design and social context is evident. The materials used and the layout of dwellings are reflective of social and cultural norms, and they give unique characteristics to dwelling typologies. This is where our familiarity with our surroundings in our homeland comes from. The term 'diaspora' refers to the dispersion or spread of any people from their original homeland. As people leave or flee one home for another, such 'foreignness' could lead to unfamiliarity, which results in an unhomey feeling. These international journeys are also stages of establishing a new home, in which a sense of identity and belonging move over space and are re-created. Besides, there are some ways to recall the familiar features from different cultures. As an example, to create a sense of belonging in abroad, people mimic Western design motifs or name the roads and buildings with famous foreign names that are familiar to the Chinese (Blunt & Dowling, 2006).

On the other hand, our idea of home is defined by our individual frame of reference, as well as our cultural background. It reflects our private world. It is a self-made habitat whose inhabitants can shape their own lives without an agreed standard of taste. Therefore, homes have strong emotional meanings to those who live in them, and they express our

identities. We create a bond with the interior space which strengthens the feeling of belonging, apart from the social and cultural context.

'The private individual, who in the office has to deal with realities, needs the domestic interior to sustain him in his illusions . . . In the interior, he brings together remote locales and memories of the past. His living room is a box in the theatre of the world . . . The interior is not just the universe of the private individual; it is also his étui' (Leupen & Mooij, 2018, p. 25).

The dwelling shelters the daydreamer. The home is thus interpreted as a medium of memory, reflecting the thoughts, imaginations, and dreams of its occupants. In that manner, homes are not just dwellings but are untold stories of lives. Letters, diaries, and other personal writings which tell life stories are valuable sources for studying personal memories and lived experiences of a familiar place. *'A familiarity with places and spaces increases their mnemonic potency, so that time becomes compressed into memorable spatial images, "generating an architecture of spatial consciousness'* (Malnar & Vodvarka, 2004, p. 18). A Turkish photographer Murathan Ozbek covers the theme of memories in his photograph exhibition called "Moment". He uses a different method of illustration in which there are no human bodies but their 'skins' and he emphasizes the atmosphere of the space (Fig. 1, 2 & 3). Those spatial images illustrate how we are caught up with specific moments and remember them as solid images of atmospheres which we carry wherever we travel to.

Home is a fundamental part of our lives. Since we are born, it's where we build up ourselves. Although we move into at least one dwelling after our parent's, we can still call new places home. As follows, home is a spatial imaginary, a set of feelings and ideas which are related to our past experiences. As our sense of home is closely shaped by our memories



Figure 1. 'Moment' photography by Murathan Ozbek



Figure 2. 'Moment' photography by Murathan Ozbek



Figure 3. 'Moment' photography by Murathan Ozbek

of childhood, it travels across different times and connects places. *'Being at home'* refers to the place where one lives within familiar territories. Therefore, as Ken Gelder and Jane Jacobs explain, an "uncanny" experience may occur in unfamiliar atmospheres (Blunt & Dowling, 2006).

'Bachelard is concerned with the imaginative resonance of intimate spaces and their material form, as they are created, illuminated, and experienced through memories, dreams, and emotions' (Blunt & Dowling, 2006, p. 12). Since our inside world shapes our sense of home, it is possible that one can live in a house but not feel 'at home.' On the other hand, although home is undeniably associated with a built form such as a house, home is not always a house. Simply, home is a series of connections and feelings, and home is not only experienced in a house. One can feel at home in any built environment that allows one to immerse himself in his inner world.

II. Sensation and Perception

The built environment is a location of experiences. The human body is sensitive to spatial features of the surroundings and responds to the data collected by the senses. The architecture enables multi-sensory experiences, and our sensation of space depends on sensory stimuli. Steven Holl supports this idea when he says: *'Architecture, more fully than other art forms, engages the immediacy of our sensory perceptions'* (Malnar & Vodvarka, 2004). On the other hand, there are technical requirements necessary for human well-being. International standards which define comfort

in a built environment are based on achieving the optimal conditions. Architecture is seen as a highly specialized system with a set of goals rather than a field responsive to sentiments. Therefore, the senses are not considered reliable design parameters by the architectural community, and human sensory response is highly neglected. However, this vision may cause the emergence of standardized buildings with dull interiors. The critical question for spatial design may thus be, *'What would our built environment be like if sensory response, sentiment, and memory were critical design factors, more vital even than structure and program?'* (Malnar & Vodvarka, 2004, p. ix). Besides concentrating on fixed building codes and universal guidelines, taking sensory design as a reference would contribute to achieving a pleasant spatial design.

The physical constructs that humans find meaningful are called spatial-sensory constructs and they create the atmosphere of a space. As Pallasmaa (2012) says *'I confront the city with my body; my legs measure the length of the arcade and the width of the square'*, we should sense the space with our bodies and design through atmospheres. Atmosphere describes the emotional tone of a space which can trigger a wide range of feelings. Malcolm Quantrill describes the sensory aspects of our environment as the *genius loci* or spirit of place, and it is directly related to how one perceives a space (Malnar & Vodvarka, 2004). As mentioned before, the perception is strongly influenced by prior experience, cultural and ethnic patterns, as well as personal experience and it relies on sensory data filtered through memory. Thus, the full comprehension of a place relies not just on the immediate sensual experience received through sight, sound, smell, touch, and taste but also on how



Figure 4. Perception painting by me

we interpret it with the memories of personal past experiences. Therefore, our perception is a result of the combination of all stimulated senses and the recall of our memories. Moreover, senses do not appear one by one, but they work simultaneously and support each other to generate an overall perception of a place. Steven Holl points out the significance of experiencing space with senses while comparing it to a cathedral in a movie scene. He also emphasizes how those senses create all together with a harmonious whole. On the other hand, each sense has its own unique way of recalling your memories and gives you familiarity and the feeling of home in interior spaces.

'Only the actual building allows the eye to roam freely among inventive details; only the architecture itself offers the tactile sensations of textured stone surfaces and polished wooden pews, the experience of light changing with movement, the smell and resonant sounds of space, the bodily relations of scale...' (Malnar & Vodvarka, 2004, p. 25).

Sight

'Colors, the raw material of the painter colors in their own individual life, weeping and laughing, dream and happiness, hot and holy, like love songs and lovemaking, like tunes and like magnificent' (Malnar & Vodvarka, 2004, p. 216).

By this phrase, Emil Nolde exclaims that color has an incredible emotional power that includes a wide range of sensory-emotional references. The physiological and psychological effects of color are evident and considerable in spatial design. Anders Hard believes that there should be a color language that will communicate our experiences, findings, and thoughts (Malnar & Vodvarka, 2004). There are some universal assumptions on color and its effects on human psychology dependent on gender, age, and other differences. Considering the interaction between color temperature and gender, Knez found that cool room light has a more positive impact on males whereas warm room light accounted for the same effect in females. Perhaps, the effect of colors on these two genders can be acknowledged when creating a comfortable gender-specific environment. Similarly, a study showed that, in individuals between the ages of six and seventeen, females prefer warm colors and males the cool ones (Malnar & Vodvarka, 2004). On the other hand, the same color may have the same effects on two genders as well. For instance, red light is also known to increase extreme emotion and physical activity. Some of the gyms such as Barry's and 1Rebel in London use red lights in the interior for specific purposes. When the red light is applied during exercise, it can improve the athlete's performance and endurance. Basically, the red color is absorbed through the skin, and it increases the production of ATP which shuttles energy to everywhere in the body. Moreover,

sometimes two different senses interact and are in close relation with each other. Temperature perception studies show that a blue room is perceived to be three or four degrees cooler than a red one (Malnar & Vodvarka, 2004). This is one of the examples of how different senses work together and create a perception.

'Light does not illuminate, it tells a story; Light gives meanings, draws metaphors...' (Malnar & Vodvarka, 2004, p. 207).

Besides color, light and brightness have physiological and psychological effects on humans. There is a significant finding that women are more sensitive to brightness and saturation than men, as seen in more extreme emotional reactions to varying brightness and saturation levels (Malnar & Vodvarka, 2004). But in general, low-level lighting obtained from fire (candle, and coal oil) has the effect of adjusting our cognitive timekeeping mechanism to a slower mode. The atmospheres created with low-level lighting give a feeling of comfort and complacency as it can be associated with the feeling of home. Perhaps, the positive reaction to this can date back to the human condition prior to the early twentieth century when there was no electricity. Memories and mental sets that come from past experiences affect how people react to a sensory stimulus. As we come from outside darkness, the light and warm color of the domestic space seen by distance suggest a safe and comfortable haven that is maintained by the familiar.

Even though there are common facts about visual perception, there are cases that raise questions about whether these preferences are learned or innate. P. Guilford states: *'This commonality of color preferences probably depends on biological factors, since it is hard to see how cultural factors could produce by conditioning the continuity and system that undoubtedly exist'* (Malnar & Vodvarka, 2004, p. 223). However, the recent studies indicate that visual perception may be shaped by culture and the design applications involving color should be paused.

Touch

The thermal sense is undervalued as a sub-category of the sense of touch. However, a feeling of pleasure and comfort comes along with the thermal sensation as well. As in the previous domestic space example, the feeling of comfort introduced by the light comes with the memory of the warm interior atmosphere. The warmth of the interior space welcomes you after being exposed to a cold outdoor environment. The positive transition from one extreme condition to the other gives comfort to the user as well as the power to control it. In that manner, the feeling of home is initially experienced when the state of comfort is achieved through the warmth of the interiors.

Pallasmaa describes the touch: *'The skin reads the texture, weight, density, and temperature of matter. The warmth of the fireplace, he says, forms a space 'of ultimate intimacy and comfort'* (Malnar & Vodvarka, 2004, p. 145).

Tactile experiences tell us about the character of the space. It is essential to examine the material's sensory qualities. Differences between coarse and fine, soft, and hard, wet, and dry are dynamics of the material which directly respond to our senses as well as their color and pattern. For instance, plastic has a smooth material with a poor detailing whereas concrete has crude surfaces and is damp, giving a cold and dull feeling. Steel is hard, strong, and cold which contradicts the feeling of home. However, wood is warm, odorous, and texturally varied. Variation enables sensation, thus more sense of connection and attachment. Perhaps, it is the reason why wooden interiors make people feel cozier and more comfortable as of my personal experience. Moreover, softness and hardness are used as welcoming and unwelcoming elements in interiors. Soft surfaces are used on sitting elements in cafes and restaurants to make the users feel more homely and comfortable whereas hard surfaces are preferred on sitting elements in some libraries and offices to avoid undesired relaxation.

Odor

Pallasmaa tributes the sense of scent when he says: *'The strongest memory of space is often its odor. A particular smell may make us secretly re-enter a space that has been completely erased from the retinal memory'* (Malnar & Vodvarka, 2004, p. 135).

Humans have tendency to be ocular-centric however, odors produce a much more perceptual experience than other senses, even sight. Therefore, odor memory is far stronger than recognition memory for pictures. Odors in interiors give character to places, making them distinctive, and easier to identify and remember. Unfamiliar odors are likely disquieting while those that are familiar tend to be reassuring. For instance, some chain shops and hotels use specific unique fragrances in each different location to achieve an identity and give the clients a pleasant feeling of familiarity when they enter.

As in other senses, perception of odor is closely related to our personal experiences as well. A questionnaire was done, and the people were asked the question *"What odor causes you to become nostalgic?"* It is quite interesting that the answers from different generations contradicted whereas people born in the same era gave similar answers. The people born between 1920 and 1950 included odors such as pine, roses, hot chocolate, violets, baking bread, cut grass, ocean air, cinnamon, hay, fresh air, manure, and burning leaves. The second group who were born between 1960 and 1980 listed different odors such as Play-Doh, chlorine, marijuana, smoke, airplane fuel, disinfectant, urine, garbage, plastic, dog waste, exhaust, factories, scented magic markers, and burning tires (Malnar & Vodvarka, 2004). Therefore, a specific odor cannot be nostalgic for all. Similarly, the odor of the roses can take one back to that person's memory of Grandmother's garden and evoke emotional dimensions such as belonging and safety, and cultural identity whereas it may not mean anything to the others. Nevertheless, it is common for everyone that pleasant fragrances have salutary effects on mood.

Sound

'A large dining room acoustically adapted for table music, a salon with

silk- or damask-paneled walls which absorbed sound and shortened reverberations, and wooden dadoes which gave the right resonance for chamber music' (Malnar & Vodvarka, 2004, p. 144).

An interior is an orchestra. Each material in the interior has its own acoustic behavior which creates a harmonious whole or an unpleasant noise. For example, echoing interiors give a sense of a large and mysterious environment which makes one feel unfamiliar and unsafe. Therefore, sound has important emotional consequences. It plays an essential role in the anticipation, experience, and remembering of places. It could be either the sound of the place itself or a melody that one listens to at that specific location, the sound will always be associated with that location and recalled again when it's heard. These familiar sounds bring the feeling of home wherever we are. Moreover, without sound, visual perception is different: less attention-demanding, and less informative. In his artificial intelligence exhibitions, Refik Anadol uses sound as a supporting element to create the atmosphere he envisions, because an environment without sound is lifeless and unreal. Moreover, sometimes it is also frightening. For instance, in small interiors like elevators, a melody is constantly played to create a more pleasant feeling.

III. Objects of Our Lives

'Furniture supplies the immediate physical environment in which our bodies act and react; for us, urban animals, furniture is thus our primary territory. Architecture, object, geography— furniture is that image where forms are fused together' (Grosz, 2008, p. 15)

Territorialization is a common behavior of animals in nature. As birds use a group of twigs to build up their nests and define a territory, humans use furniture and smaller objects to create their own interior world. Witold Rybczynski claims that domestic well-being is too personal to be left to the experts; it is the business of the individual who must discover their own taste of comfort (Blunt & Dowling, 2006, p. 102). A domestic interior can be seen as a space for the definition of identity through the distribution of objects, where one can extend their personal boundaries from the body into the space itself. In the novels of Charles Dickens, for example, descriptions of interiors are used to depict the nature of the fictional characters in which the inhabited place is presented as a self-extension of the inhabitant. Therefore, in real life, every inhabited interior tells a different story of its unique character.

The sense of belonging and identity is in close relation to having control over the space and being able to change it. Moreover, home can be an imprisoning and isolating space as people face a loss of independence and personal control within the space. In that manner, people with disabilities can likely go through such experiences of unhomeliness. As an example, Rietveld Schroder House gives references to both cases. The interior design gives control to the inhabitants through its flexible features such as sliding doors and adjustable furniture where one can feel independent and feel more connected. However, it also limits the user with its fixed furniture at specific locations and lacks personalization since it had a strict furniture concept back then.

Dwellings become homes as they are personalized through objects of our lives. Interior design, furnishings, and other objects create intersections of home, identity, and belonging. Homes are sites of memory that are filled with objects. Some objects, whether simple or extraordinary, small or big in size, become particularly powerful in terms of recalling pleasant memories of people, places, or lived experiences. Those objects are

called mementos. Especially, family photographs create a material environment that feels familiar and homely. Therefore, the mementos help the individual to cope with environmental change; help one to carry one's symbolic and emotional features of experience. In the movie *Amelie*, for example, there is a scene in which Bretodeau finds a box filled with his childhood mementos. When he opens the box, he travels back in time to those feelings of home, safety, identity, and belonging. 'In a flash, it all came back...!' Werner Muensterberger sees the habit of collecting as an emotional state in which one seeks to surround oneself with magically potent objects (Malnar & Vodvarka, 2004).

'Objects serve as the set and props on the theatrical stage of our lives. They situate an individual's character or personality in a context. We use markers as objects to remind ourselves of who we are. In this sense, we derive our self-concept from objects' (Malnar & Vodvarka, 2004, p. 181).

The collection of certain objects or pieces of furniture adds a spirit to a space besides livability. Without those, one's life will be cold. Since the early twentieth century, in some cases, modernity causes the loss of identity and a sense of homelessness. It encourages simplicity in interiors, and threatens to destroy everything we

have; thus, everything we are. The massive empty indoor environments and industrial-looking materials led the interiors away from the feeling of home.

Pallasmaa (2012) claims: *'Modernist design has housed the intellect and the eye, but it has left the body and the other senses, as well as our memories and dreams, homeless.'*

Humans, as complex animals, prefer interaction in their everyday environments. Although they seek optimum input, they still prefer overload to privation. In that manner, sensations caused by objects allow people to have deeper connections with the space. Therefore, to create intimacy and a feeling of home within public interiors, home interiors are taken as a reference. As Sharon Marcus describes: *'Because café, restaurant and shop interiors used the same decorating principles and materials as domestic ones, commercial spaces often resembled apartments'* (Blunt & Dowling, 2006, p. 109). As an example, a café in Delft named Kek is quite popular with its vibrant interior design and heavy use of objects. According to the user experience, people like to find objects which evoke memories, feelings, sentiments, meanings, or to make connections with. Therefore, they feel more pleasant and homely in such an atmosphere.



Figure 5. House vs. Home illustration by me

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THE DYSTOPIA IN CINEMATIC SPACE

How do Bong Joon-Ho's films teach us to view our society comprehensively?

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5287146

Abstract

"Architecture is not simply about space and form, but also about event, action, and what happens in space." Bernard Tschumi mentioned in his publication in 1981. He emphasised the equal importance of the measurable and immeasurable parts of Architecture.

The tangible and intangible in architecture are not limited to space and form but are also spatial and temporal. Therefore, we need to be aware of the connection between architectural space and its surroundings and the events that take space. Our society comprises visible and hidden hierarchies of highly complex and subtle layers. With a single perspective, it is almost impossible to grasp fully our surroundings and incidents that have already happened or are about to occur. Behind the unanticipated events, there is always a long chain of cause and effect that results in the conclusion we cannot quickly know; the power of the medium of film allows us to trace the subtle levels of these conclusions in a short period, and that is the power of cinema.

Cinematic space and architecture are two closely linked domains as they share common ground, such as time and space. Cinema can break through some limitations of reality, as the environment within the film is not limited by the reality side of the built environment. Scene-setting is like creating its universe inside a movie for conveying the artist's statement in architectural terminology.

"As Korean cinema has produced some of the most exciting filmmaking of the century, director Bong Joon-Ho has been at the forefront, taking wild swings with outlandish stories." (Sims, 2019) His movie [Parasite] is a thrillingly restrained work, going through the topics of Korean public culture to social issues such as gentrification, the increasing wealth gap and the unemployment rate, also deep-rooted class consciousness and humanity. The design of the scenes of this film is enriched with a tremendous amount of information, depicting the lives of families belonging to different classes, both explicitly and metaphorically. His movies always raise public awareness of neglected social issues and emphasise the injustice in today's society.

[Parasite] tells the story of a poverty-stricken family's struggle. The Kims, a family of cunningly clever people, conspire to serve the Parks, an obscenely wealthy household unknowingly sheltering a stranger in their basement for a long time. Basement dwellers and Kims could be considered parasites, as they leech on the Parks for income, food, and shelter and enter their house deceptively, competing with each other. We

¹ Tschumi, B. "The Manhattan Transcripts." Bernard Tschumi Architects, 1981, <http://www.tschumi.com/projects/18/>.

² Sims, D. How Bong Joon Ho Invented the Weird World of Parasite. The Atlantic, 2019, Retrieved from <http://web.archive.org/web/20220331185815/https://www.theatlantic.com/entertainment/archive/2019/10/bong-joon-ho-parasite-interview/600007>

³ Sohn, Heidi. (2022). TU Delft theory thesis lecture.

see how the working class faces conflicts for scraps throughout the film, while families like the Parks enjoy a comfortable life fueled by the hard work of others.

In the movie, Kim's family returns home from the wealthy neighbourhood. They run from the mansion on the hill through the residential area and eventually reach their semi-basement dwell in the lowest part of the city. In this sequence, 70 different authentic clips were stitched together by editing techniques. The row corresponds to other social classes in Korea, from rich to poor, with vertical camera techniques and the deliberate use of wide screens to emphasise the verticality of geographical space in the relationship between classes.

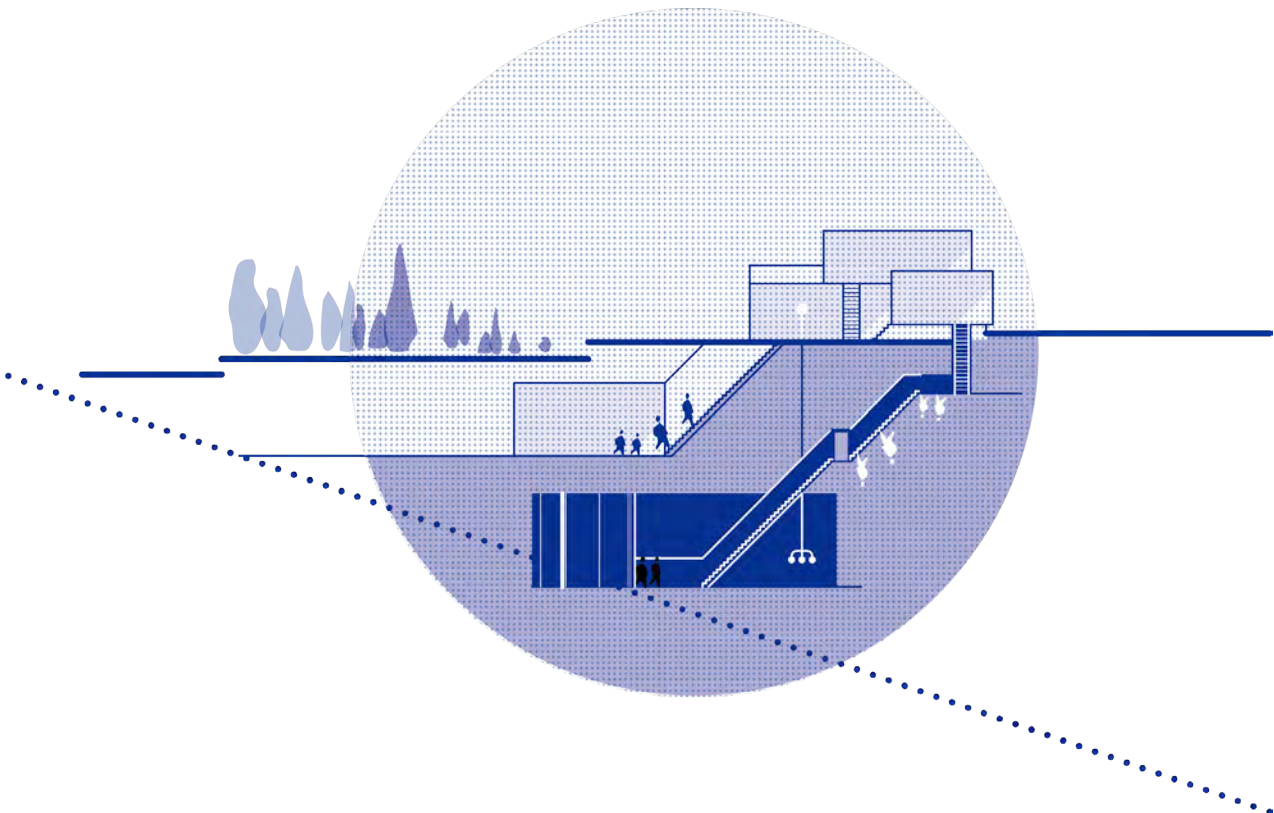
In director Boon's films, the common shooting technique is that every scenery component conveys some message. Every element matters, whether it is a staircase, a wall or a glass window. He leads the audience's mind in a daze. That is the starting point of thinking; where is the direction of our Anthropocene era? How do we provide a more inclusive environment for all in this complex and inexplicable world?

"It matters what matters we use to think other matters with; it matters what story we tell other stories with; it matters what knots knot knots, what thoughts think thoughts, what ties tie ties."(Sohn, 2022)³

The scenes setting and the built environment in the real world have conceptually opposite design processes.

Former is to create the space without knowing precisely the upcoming events. The other follows the dynamic of the written storyline and creates a dramatic tension that can present the characters' actions and the specific set of scenes. It is a two-way process that can help each other develop a more comprehensive view.

This essay will examine director Boon Joon-Ho's works from architectural and sociological perspectives. Considerations of the director's previous screen work also show his interest in class conflict. His earlier works as the dystopian fantasy [Snowpiercer] train, which is one big metaphor for capitalism, [Okja], a fiction movie about corporate responsibility, the ethics of meat consumption, the acceptable threshold of animal cruelty, etc. Much of these stories are not literal but described in the use of space and the character's movement. This research aims to relevance the meaning behind what constitutes a movie scene, the substantive and abstract elements of films taken from the real world, and how we can then take the film as a filter to see the existing world from a new perspective. To answer the following research questions: How can we learn from film and take a broader view of our environment, thus seeking opportunities to make our society more inclusive? How do Boon Joon-Ho films teach us to view our community more comprehensively? How can we extract the architectural elements in movies and thus generate a novel understanding of the different living spaces between people of other social classes?



Picture_01. Concept section of the scene-setting in the movie [Parasite].Huang, S. (2022).

1. Introduction

This chapter will discuss how can we look at the commonalities between cinematic spaces and architecture. To see what the cinematic spaces and the social issues embedded in them can inspire us as spatial designers. The South Korean director Bong Joon-Ho's works and the scene-setting projects of production designer Lee Ha-jun who works closely with director Bong will be the primary research topic of this theory thesis. Because the solid spatial terminology and the complex and sophisticated descriptions of people, spaces, and events embedded in their works often raise the awareness of neglected issues and are often provoking, which helps us understand our current environment from a diverse and comprehensive perspective.

1.1 Cinematic space related to the built environment

Cinematic space and architecture are very similar; they are closely interconnected with time and space. The development of modern Korean cinema is a remarkable instance. The trials and difficulties of modern Korean history, such as Japanese colonialism, military dictatorship, and democratisation progress, have given a sense of urgency to Bong Joon-ho's generation of filmmakers. In this era and under this societal scenario, their works are prescient. Therefore, instead of saying that the film reflects society, it is more likely that the film has driven the movement of contemporary times.

1.2 Biography of Boon Joon-Ho

The South Korean director, producer and writer, Bong Joon-Ho, known for *Snowpiercer* (2013), *Okja* (2017) and the Oscar-winning film *Parasite* (2019), was born on September 14, 1969, in Daegu, South Korea. As a middle school student, he expressed his desire to become a movie director. Having been raised in a highly intellectual environment by his grandparents, a graphic designer father, and a literature professor brother. Though he was interested in cinema, his parents disapproved of studying theatre. So instead, he majored in sociology while spending most of his time in film clubs and has been a social movement fanatic since his college years. He believes that actual sociology is what happens around us.

From 1980 to 1994, there were tremendous changes in Korean society. Mass awareness of democracy was on the rise, nationwide student movements. One of these is the Gwangju Uprising, which took place in 1980 as a peaceful, pro-democratic protest and resulted in the death of 2,000 people after martial law was enforced

2. Deconstruct film

2.1 Storyline and scene-setting in [Parasite]

The film [Parasite] revolves around the lives of three families from different classes; The Park family from the upper class, the Kim family from the working class, and the hidden tenants who are not accepted by society and therefore have to live like vermin in the hidden underground bunker. The narration tells the story of two families of the lower class who try to leech on the upper-class like parasites with various scams, coveting their rich resources and high-quality living space. In contrast, the upper class

⁴ Lee, D., Yang, Z. & Huang, W. (2021). Bong Joonho 上層與下層的背影. 漫遊者文化.

parasitise their labour and services. With the upper class holding most of the resources and the power of domination, the two lower-class families are driven to compete against each other for the limited resources and by fair means or foul, which eventually leads to irreparable tragedy.

Throughout the movie, the characters' activities focus on the two families' homes, the route connecting them, and the cellar space hidden beneath the wealthy family revealed in the film's second half. All of the clips were filmed either on studio sets or in Seoul streetscape. The central concept of the scene-setting is to portray the life trajectory of the characters in the plot to achieve a realistic representation and the contrast between the poor and rich in the South Korean daily life.

2.2 Mansion on the hill

The Park family's mansion is not an actual building but a set created to create the kind of house that a greedy, elitist owner would show off. Mr Park, as the head of the household, is the founder of an IT company, a successful entrepreneur who spends most of his time away from home, leaving it in the hands of their housekeeper, wife and two kids. The fictional starchitect named Namgoong designed their home; he is also the previous owner. In addition, the mansion has a hidden bunker initially built in response to the North Korean raid, even though the current owner does not know it exists.

In South Korea, where wealthy people live, the houses all look very posh, but the yard did not fit the standard as it was not as big as the production crew envisioned. Therefore, they decided to create the building by setting up the sets. They made the architecture from scraps- an elevated villa with large windows, vast indoor spaces, and an open layout. The mansion was designed with a minimalist approach and located in a superior residential area with a high-security standard. The residence has a large courtyard, extensive shrubbery and a concrete wall that is higher than eye level that the passerby cannot even see any of the interior spaces of the mansion. For some essential sequences in the movie, furniture was designed and tailor-made by Bahk Jong-sun, the furniture designer. For instance, the extraordinary enormous coffee table with high and low levels in the middle of the living room where the Kim family hid. (Pic.2)

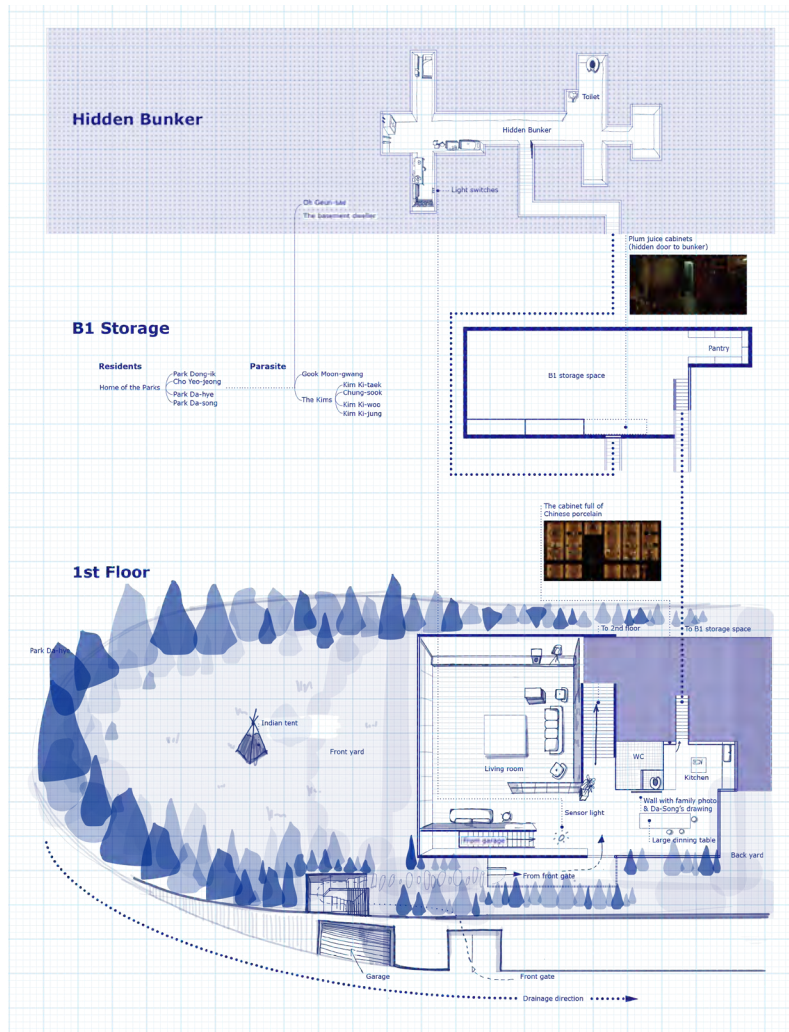
The set was built on an outdoor lot in Jeonjo. The production crew built up the yard and the entire first floor, entryway, the interior of rooms on the second floor, storage room and all of the staircases connecting those spaces. At the same time, other scenes were made by computer visualisation. Even though the building was not built in its entirety but rather a patchwork of sets, and finished through CG post-production, most of the audience did not notice that it was fiction. The residence was described very precisely in the screenplay. Sometimes, we can see point X from point A but not point B. With the actors overlapping trajectories, there had to be blind spots where certain things were not visible.

The sensor light is a symbolic link and the only hint of the hidden bunker in the movie's first half. Whenever Mr Park walks up the stairs from the garage, the sensor light above the stairs continuously blinks. While everyone thinks it is just a bad contact with the wires, the Park family's youngest son, Da-song, notices the flickering seems to have a regular pattern. The pattern of someone sending a Morse code through the switch to make a feeble plea for help. Later, Ki-taek, who was hiding in the hidden bunker because he had to flee after murdering Mr Park, also tried to use it to send a message to his son. Still, unfortunately, such a message was full of uncertainty, difficult to attract attention, and easily ignored.

2.3 Hidden bunker

When descending from the kitchen, characters arrive in a space full of jars and plum extract. Behind the storage cabinet is the staircase connecting to the hidden bunker; as Moon-gwang, the former housekeeper who left after being replaced by the Kim family, pushes the cabinet, a secret door is revealed. (Pic.4) However, none of them in the production crew was familiar with such a space; they could not accurately create the room described in the script. Therefore director Bong came up with the reference of Josef Fritzl's basement (Pic.3); the building was the site of the horrific criminal case of the Austrian morally degenerate father who imprisoned his daughter in the secret basement space under his house for 21 years. The production team used this basement as a prototype to create the space where Geun-sae, the baement dweller, hides beneath the Park's mansion.

The common feature of both cellars is that no windows face the outside, which means the tenants have no access to sunlight and no contact with the outside world. Also, their only exits are controlled by the main dominators of the space. The interior facilities are only meant to maintain the physiological needs of the occupants, which is at the lowest level according to Maslow's pyramid, the hierarchy of needs. The seemingly endless descent to reach the underground bunker is a critical narrative expression showing that it was the lowest space. The basement floor was not flat but curved, like a sewer beneath a maintenance hole, to have the atmosphere of constantly being damp, dingy and always leaking. To emphasise the sense of being underground for the people at the very bottom of society.



Picture_02

Park family's mansion. Huang, S. (2022).
Movie stills captured from movie Parasite. (2019).

2.4 Banjiha

'Banjiha', a type of semi-basement apartment, which is half belowground and half aboveground, the scene of the home of Kims' family, was constructed in a 165 feet long and 16 feet height water tank in Ilsan to be filled with water and interpret the flooding scene.

To accurately portray the story's atmosphere, the production director and set decorator crew modelled the street where the Kim family lived regarding the downtown Seoul streetscape. They visited demolished and abandoned buildings, took photos, collected objects, and even reproduced bricks from the ruins in silicone. The art team not only brought in the garbage and smelly food waste to make the environment more realistic but even planned the backstory for every store and resident on the street (which was only an aid to filming and the environment, not in the movie) so that the actors could feel like they were there.

The condo reflects sophisticated and authentic architectural elements. The space has high windows facing the road that is occasionally disturbed by pedestrians. People can peer into their home through windows, sometimes smoke outside their flat, or pee on the ground. The biggest flaw is that terrain below the road level makes their homes invulnerable to flooding. The scene setting gives the audience an insight into the particular regional dwelling type where thousands of people habitat in Seoul and other big cities in South Korea.

These tiny and bizarre spaces are not just a quirk of Korean architecture but a product of history, which can trace their roots back decades. The tension between North Korea and South Korea intensified in 1968. As a result, in 1970, the South Korean government renewed its housing policy, requiring all newly built low-rise condos to have basements for bunker use in case of a national emergency.

At first, sub rent out 'Banjiha' spaces were illegal, but in the 1980s, the housing shortage crisis compelled the government to legalise these basement spaces to solve the situation. As a result, semi-basement apartments have become an affordable response to rapidly-growing housing prices. To accommodate unreasonable housing prices, tenants must sacrifice their quality of life. The UN noted in 2018 that for people under 35 years old, the rent-to-income ratio has remained at around 50 per cent during the last decade. In crowded Seoul, space is premium, and rents are high. The lack of affordable housing was a substantial barrier, particularly for the lower-income working class and young people just starting to work.

However, such an outcome creates hidden worries, with its semi-underground damp and uncirculated air and nearly sunless space, living in Banjiha is hazardous to physical and mental health. Worse, the concept that the place a person live represents who they are is

deeply ingrained in the mindset of most Korean that Banjiha tenants can not get rid of the social stigma of being of a lower status than people who live on the ground level.

In the Kim family's Banjiha, the bathroom locates in the middle of the dwelling unit. Moreover, the toilet is at the highest position in the entire space, unlikely under normal circumstances. The reason why the semi-basement toilet is on the higher level is to deal with the drainage. Installing the toilet more elevated than the external septic tank allows drainage without an extra sewage pump. However, this is only a temporary solution in the minimal space; when heavy rainfall exceeds the drainage system's capacity, the sewage distributed throughout the city's sewerage system will discharge through these pipes. The residents living inside Banjiha are undoubtedly the most prominent victims.

2.5 Space and hierarchy

The film uses many contrasting architectural elements and symmetries to emphasise the connection between wealth disparity and space-wise cultural differences.

The staircases

Stairs are the essential visual elements throughout the film; they showcase the gradual change of the class difference between elevated and low-rising areas. For example, in the Park's house, the bright and spacious staircase in the centre serves the owners; the stairs to the basement are relatively minor, with fewer light sources; the one connected to the hidden bunker is narrow and steep without any natural light source. When comparing the Park's mansion and the Kim's Banjiha, it shows the same; the wealthy household members always walk through the path and stairs, which are wide and flat, while the lower class always passes through those steep and irregular stairs; if they miss a step, they might fall.

Access to light & view

Both homes have a 2.35:1 L/W front-facing window, matching the 2.35:1 camera aspect ratio and aesthetic consideration. Furthermore, both windows essentially mirrored the windows of the other but with significant differences in sizes. A large, expansive window was created to honour their pretty garden and adequate daylight for the wealthy family. However, the windows of Banjiha face the street; there is no garden as a buffer, so they are often disturbed by pedestrians and the surrounding; pedestrians can grasp the interior of the house from the outside, while the inhabitants' view is lower than the horizon and always gaze up with an obstructed view.

Use of colours

Colours are removed from the rich house; wealthy people will tend to live with nice furniture in pleasant surroundings. This explains why the Parks mansion was set in a warm grey tone, with fair-faced concrete walls and furniture made with dark wood; all items are of high quality and minimalist approach with a uniform colour palette. On the other hand, Kim's family residence has a variety of colours; the production crew collected a vast colour range of plastics products and packed them densely together; this is the most authentic atmosphere of Kim's community they wanted to create.

Topography

In Seoul, most of the terrain is on hillsides, so most buildings are on the slope. Wealth is measured by how high a person lives, said Kim Nam-Sik, a real estate agent in Seoul's quiet Seongbuk district, home to dozens of foreign ambassadors' residences and where the wealthy Kims family of [Parasite] lives.

The rich may even have to climb higher, away from the crowded civilian areas, to get a better view, fresh air and cleaner water. However, the majority could not afford such luxury space, while Banjihhas exist as homes for almost 364,000 families in the country, accounting for 1.9 per cent of the nation. For these people who live half underground, the place they live is undoubtedly

a symbol of their status. "It is clearly a basement, but people living there want to believe they belong to the above-the-ground world; they live with a constant fear that if things get any worse, they will be completely swallowed underground."

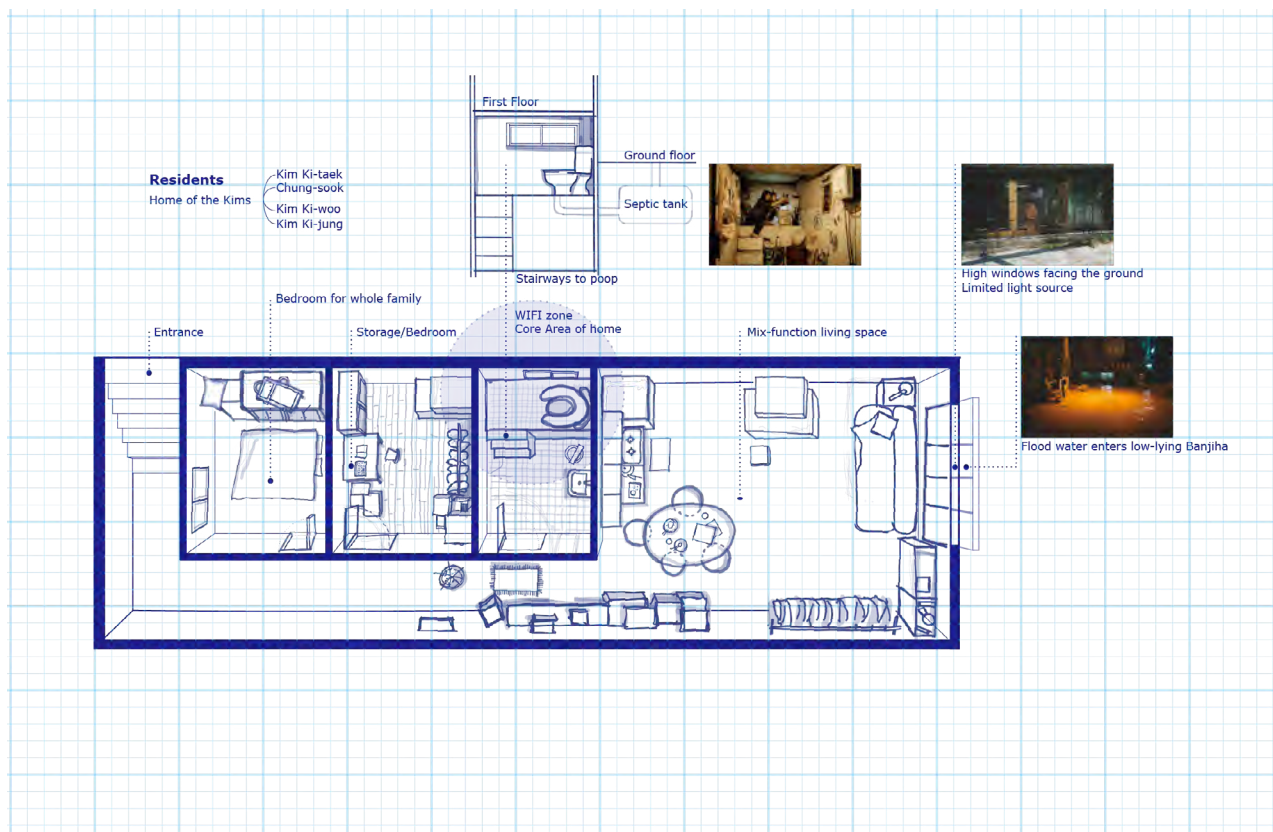
The spatiality differs significantly among the architectural elements in [Parasite], echoing the class difference. They show that the working class is fundamentally disadvantaged in society, limited by space and intangible hierarchical boundaries and stigma, dominated by the upper classes, while their voices can hardly hear.

3. Narrative

In the built environment, we have to consider efficiency but the essential thing for a cinematic space designer is the actors' movements throughout the film. All of the scenes are trajectory oriented to illustrate a vibrant story.

3.1 The way home for the Kims

In one of [Parasite] most pivotal scenes, after accidentally uncovering the Park family's secret inhabitants and a series of accidents, the Kim family is



Picture_05

Kim family's Banjiha plan. Huang, S. (2022). Movie stills captured from [Parasite]. (2019).

forced to make a problematic escape on a rainy night. They set off from the Park family's mansion on the hill, descending a long staircase into Seoul's Jahamun Tunnel. Director Bong uses this place to imagine the class differences between the rich and the poor. This scene also shows the importance of the terrain to the space. When rainwater poured into the groundwater system from drainage ditches on the hillside, homes in low-lying areas faced catastrophic flooding.

The 2.35:1 aspect ratio used in [parasite], known as the anamorphic widescreen format, is the widest aspect ratio standard modern cinema. An aspect ratio uses two numbers to indicate the width and height of a screen or image. [Parasite] was filmed with a 2.35:1 aspect ratio so that the scenes and information that appear in every frame are minimal at the same time. When the camera moves vertically, the viewer is passively taken to an unexpected angle of view, thus emphasising the verticality of space and indicating the existence of other worlds beyond the frame. In addition, the camera brings the audience to break through the living area they would not usually expose to; in that sense, seemingly unrelated matters link together.

3.2 The reveal of the hidden bunker

The film production team deliberately created a story about two families in all the official trailers, leaving the audience no clue about a third family in the storyline. However, the previous housekeeper's sudden visit on a rainy night drives the plot to a completely unexpected place and brings dramatic tension to the movie. Moon-Gwang accurately rings the Park's mansion doorbell in the middle of the 132 minutes movie runtime, revealing the parallel hidden storyline. We realise that the real struggle is not between the rich and the poor, but underneath what we think of as the lower class, there is an even lower class struggling for survival. While the upper class has most of the resources and lives a comfortable life, the lower class has to compete for the uneven distribution of limited resources and slaughter each other to climb up the hierarchical ladder. In such a classification environment, communication is often unidirectional; the upper-class people can freely give orders to the lower class. They are the ones who dominate the operation of the system, while the lower class people are passive receivers. Over time, the hidden conflicts and contradictions have become like an abscess, spreading the consequences.

As with many incidents, stereotypes constrain our perspective. Indeed, what people call knowledge is only prejudice accumulated since we are born; these established notions make it impossible for us to think outside the box.

4. Conclusion

As human beings, we are limited in that we perceive things with bias and not be able to look at things with complete neutrality. We tend to be restricted to our echo chambers and selectively receive information from people with the same viewpoint as our own or get in touch with people who share a common philosophy. Over time, we might think that most people share a similar mindset to ours.

From the films directed by director Bong we learnt that the reality we perceive is only the tip of the iceberg; In contrast, the film sheds light on basement dwellers; people are astounded that there is a massive group of persons who have been neglected for a long time and have become the trigger of many tragedies in our society. Therefore, we desperately need other tools to help us to view our surroundings comprehensively so that our community can have the opportunity to provide a more inclusive environment for all.



Picture_06

The entire set of the Kims' street was built in the water tank to be filled with water for the flood scene. CJ Entertainment, Barunson E&A. (2019).



Picture_07

Windows of Park's and Kim's home. Parasite movie. (2019).



Picture_08

The staircase outside Jahamun Tunnel, the stairs symbolise social mobility, or the lack thereof. Lam Yik Fei. (2020).



Picture_09

The way home for the Kims. Huang, S. (2022).

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AESTHETICS OF APPROPRIATION

The Distinct Spatial Qualities of Squats

Tolga Kologlu

4573153

*'Capitalism in [Weber's] view — and in employing his famous architectural metaphor of the "iron cage" — has fundamentally altered the cultural conditions of Europe by enslaving the individual within a social structure predicated on rationality, centralization, and ever-expanding bureaucracy. (...) Weber concludes that industrial conglomerates and the mechanization of all aspects of life were producing a citizenry of "specialists without spirit, sensualists without heart." This overwhelming force of "reason" in every facet of life was at the same time creating an emotionally debilitating "disenchantment of the world" — a sense of the individual's spiritual disorientation and disempowerment, resulting from the loss of the irrational, the sensuous, and the mysterious aspects of life. Capitalism had also undermined the moral foundation of the agrarian society by substituting for it a set of impersonal values lacking any ethical conviction. [...] While conceding that one cannot reverse the trend toward an industrial economy, Weber goes on to argue that we should at least address this imbalance in our social relations, and thus the question posed to the new field of cultural theory was how to repair modernity's damage to the human spirit.'*¹

Introduction

The practice of squatting, or the unauthorized occupation of property, has been a constituent part of the urban fabric of cities for as long as they have existed, throughout the world. Neuwirth² traces squatting back to ancient Greece, 800 years BCE, where squatting various vacant properties was a common way of access to housing for the poor, and to Rome, between 130 and 30 BCE, when people built for themselves as a response to the lack of affordable housing and the rapidly growing population. In Europe, squatting is often a response to housing shortages and a lack of accessibility to the city for many, and in several cases, a way of resisting the highly consumerist and individualistic capitalist way of life, making space for forms of social life and support structures hardly possible within the neoliberalist system/economy.³

In the Netherlands, the phenomenon of squatting has most likely been happening throughout its history, but documentation prior to the second World War is missing. Catalyzed by the extreme post-war housing shortages, squatting in the Netherlands gained popularity in the 1970's and grew into an important (social) movement⁴. Changing politics in the 2000's and conflicts with right-wing political parties ultimately resulted in the criminalization of squatting in 2010's. Squatting still occurs since then but to a smaller extent, and certain important squats established in the 1970's and 1980's continue to operate today, often in a legalized form.⁵

Conventional modes of production and consumption, social structures, political hierarchies, individual and collective forms of dwelling, the making and use of space are aspects which may be challenged all at once through the practice of squatting⁶. The very notion of ownership is questioned

1 Mallgrave, Harry Francis. *From object to experience: The new culture of architectural design*. Bloomsbury Publishing, 2018.

2 Neuwirth, Robert. *Shadow cities: a billion squatters, a new urban world*. Routledge, 2016.

3 *Architecture of Appropriation: On Squatting As Spatial Practice*. Edited by Boer René, Marina Otero Verzier, and Truijten Katia. Rotterdam: Het Nieuwe Instituut, 2019.; Dockx, Nico, and Pascal Gielen, eds. *Commonism: a new aesthetics of the real*. Amsterdam: Valiz, 2018.; Awan, Nishat, Tatjana Schneider, and Jeremy Till. *Spatial agency: other ways of doing architecture*. Routledge, 2013.

4 *Architecture of Appropriation: On Squatting As Spatial Practice*. Edited by Boer René, Marina Otero Verzier, and Truijten Katia. Rotterdam: Het Nieuwe Instituut, 2019.

5 Ibid.

6 Ibid.

7 Ibid.

8 Ibid.

9 Carr-Smith, David. *Silo: An Architecture of Psycho-Physical Effects*. (Unpublished paper); *Architecture of Appropriation: On Squatting As Spatial Practice*. Edited by Boer René, Marina Otero Verzier, and Truijten Katia. Rotterdam: Het Nieuwe Instituut, 2019.

10 Ibid.

11 *Architecture of Appropriation: On Squatting As Spatial Practice*. Edited by Boer René, Marina Otero Verzier, and Truijten Katia. Rotterdam: Het Nieuwe Instituut, 2019.

12 Mallgrave, Harry Francis. *From object to experience: The new culture of architectural design*. Bloomsbury Publishing, 2018.

through the act of appropriation. The development of Dutch cities has since been considerably affected by the movement and its own distinct *spatial practice*⁷. Squats can greatly differ from one another in terms of size, initial and future function(s), users, situation (within the country or the city). This essay focuses specifically on buildings and complexes which were occupied by large groups and transformed into multi-functional buildings, operating as social and cultural centers in addition to providing residential spaces. Despite their differences, such squats share important similarities in their spatial qualities, distinct from those of conventional forms of architecture – they share a particular aesthetic⁸. These qualities are well manifested in squats and legalized squats such as The Grain Silo (squatted from 1989-1998) and Tetterode (squatted from 1981) in Amsterdam, Poortgebouw (squatted from 1980) in Rotterdam, and Landbouwbelaag (squatted from 2002) in Maastricht⁹. Poortgebouw was first designed as an office building for port authorities, while the other three were designed as various industrial complexes. Each of them was built between the late 19th and early 20th century¹⁰. These four different buildings each offer a variety of rich, multisensory spatial experiences, a strong bodily and sensual engagement. These concerns lead me to the following questions: *How does a particular aesthetic emerge through squatting? How is it characterized? How are this aesthetic and its affects particular?*

There is a great number of factors, in and around the practice of squatting, that play a crucial role in its resulting spatial qualities. It is often an interplay of various needs, desire, ideology, ethical, social, political, economic, and juridical aspects, to name a few¹¹. In many ways, they are inseparable from one another, if one was to answer these questions 'fully'. However, covering this broad spectrum exceeds the scope of this research. Instead, I intend to provide an overview of a variety of these distinct factors which are (more or less) directly related to the spatial practices of squatters and how they lead to a certain architecture with its own spatial qualities and affects. This essay consists of three sections: Transformation, Spatial Organization and Objects, from the scale of the entire building to that of objects and smaller details. There are overlaps between the different parts due to their strong interrelation and the somewhat 'improvisational' way I chose to approach the writing. This essay can thus be read as an ongoing discussion, aimed at understanding some of the aesthetics of appropriation, and at raising several questions, both implicitly and explicitly, about how we may produce, use and inhabit space, and the role of the architect and the user, for instance.

*'... design is not only the practice of culture but also the making of culture. Again, I do not mean culture in the superficial or academic sense of the word. When we design the world around us, we are at the same time designing who we are – biologically, intellectually, morally, and aesthetically. Architecture, when viewed from this perspective, is the shaping of the environmental medium in which the human organism dwells.'*¹²

'If the squatters manage to stay, they have the freedom to use and repurpose it according to planned or spontaneous intervention. As the selected buildings are often neglected and in poor shape or constructed for other purposes, this often requires intensive work. Therefore a typical kind of architecture starts to emerge which is the result of a combination of the immediate need and desire to transform the space, the ideology of collaboratively shaping and living in shared spaces, the lack of budget to make actual investments, the ease of adapting to the found typology, and the uncertainty of being evicted. Hence, this specific 'architecture of appropriation' can be seen as the immediate result of the collaborative application of the spatial practice of squatting. The self-made, often unplanned, low-budget, and spontaneous character of the architecture, often built using recycled materials (found

on the street or donated by other squats), make it easily recognizable and give it many qualities not often found in normative architecture, such as a certain authenticity, material diversity, and a raw and immediate expression of creativity.¹³

Transformation

When a building is squatted successfully, one of the first steps is to identify the necessary repairs and renovation to make it habitable. This initial work can be intensive since vacant buildings are often in poor condition¹⁴. In many cases, including the examples that are used in this essay, the initial function of the building is (fundamentally) different. The Grain Silo in Amsterdam is an example of a building that was not only built for non-residential purposes; it was not even primarily built for humans, but for machinery and the processing of raw materials (the only spaces tailored to humans being some offices and labs, and the central stair connecting them)¹⁵. In his account of the squat, David Carr-Smith¹⁶ describes the Grain Silo as an 'object half-way between say "crane" and "factory"', formed as an *embodiment* of the purposes it served. He compared it to Tetterode which, despite sharing this industrial nature, was built to *house* the purposes of machine-assisted manufacture in the form of a relatively more human environment — it consists of a group of buildings divided into conventional floors. Adapting the complex to human occupation was less of a matter of radical transformation than in the case of the Grain Silo, where the peculiar form and spatial organization of the latter often required more challenging interventions to accommodate human activity and dwelling — while certain spaces were easily habitable, others offered little to no potential for domestication¹⁷. Much of the unconventional architecture and distinct spatial qualities of these squats, ones that extend from the scale of the entire building down to its individual rooms, emerge from this act of (often radical) *transformation* of spaces.

The Grain Silo was a (rather extreme) example of how the elements of *danger* and *vitality* can affect one's occupation of space. Carr-Smith explains that the Silo was full of potentially deadly traps (but that luckily no fatal accident ever happened). One could be confronted with, for example, a hole in the floor leading to a 20-meter-deep void. This meant that one had to be rather careful when moving through the building, and that this threat 'makes one attend to one's body, its movements and surroundings, adding a dimension of awareness unusual in habitual living — a state of enhanced sensations and vitality of being.'¹⁸ Of course, this level of danger is almost impossible in habitual living, codes and regulations simply do not allow it (not to say that they should of course). However, what is truly interesting about this is one's high level of constant awareness of one's environment, own body, and own being — a strong presence.¹⁹ Carr-Smith specifies that this is at least the case until one is fully familiar with the

13 *Architecture of Appropriation: On Squatting As Spatial Practice*. Edited by Boer René, Marina Otero Verzier, and Truijen Katia. Rotterdam: Het Nieuwe Instituut, 2019.

14. Ibid.

15. Carr-Smith, David. *Silo: An Architecture of Psycho-Physical Effects*. (Unpublished paper).

16. Ibid.

17. Ibid.

18. Ibid.

19. The much more common opposite this situation would be an entirely safe, static, flat, maybe even blank environment to which one could become accommodated quickly, which itself would not necessarily trigger such awareness, sensory stimulation, engagement, and presence. One could argue that such an environment is not more desirable than the Grain Silo's dangerous one. The latter can be considered as way of thinking and questioning how architecture may affect one's being.

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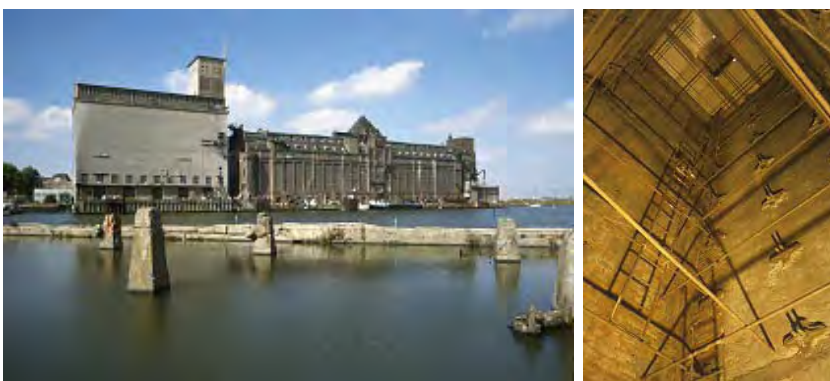


Fig. 1, 2 Carr-Smith, The Grain Silo



Fig. 3, 4 Carr-Smith, The Grain Silo

building, but that he personally never reached this state, even after more than three months of residency, considering that the building was always changing in some ways and its overall complexity²⁰. Jane Rende values this, using the (much less extreme) example of her former home where she intentionally played with notions of safety and comfort. She describes that life as 'a challenge, a challenge to the way we occupy space and to the social relationships we take for granted. It was a rejection of comfort and laziness. There was no room for complacency. You felt your own body in every moment of occupation.'²¹

I believe that in such places this difference between the existing and the needed and/or desired future, together with the complexity of both, form several unique constraints and a varied set of potentialities which require and encourage the squatters to seek creative solutions and deeply engage with their environment in the process of adapting it. The considerable degree of preservation of the existing in the process of transformation, and the resulting intertwining of the new uses with elements from the past, establish new connections between different temporalities which coexist in a present where the former meets a form of modern urban vernacular. The transformation of such squats is done through the reuse and recycling of materials and objects, improvisation, self-building, or a form of bricolage, driven by strong desires and needs. Jane Rende notes that 'although economics determines much of the recycling of waste, so too does a desire to subvert the system of consumption and to transgress the logics of economics.'²²

The use of second-hand materials is key, as they carry with them their past, signs of use and aging, which further contributes to the variety of temporalities. In 'The Eyes of the Skin', Pallasmaa stresses that 'we have a mental need to grasp that we are rooted in the continuity of time' and that it is the task of architecture to domesticate time as much as space.²³ According to him, a weakened experience of time (which results, for instance, from the use of artificial materials and elements that do not express their age in modern architecture) leads to *devastating mental effects*. Pallasmaa finds that the 'over- emphasis on the intellectual and conceptual dimensions of architecture contributes to the disappearance of its physical, sensual and embodied essence.'²⁴ Could squats, through the absence of such dimensions, offer ways to explore this '*physical, sensual and embodied essence of architecture*'?

In the book 'Woonwerkpand Tetterode: Zeggenschap zonder bezit', Marianne Theunissen, an inhabitant of the squat, explains that 'the outcomes were certainly imaginative, but not really pretty, and they were

a curious replacement for what once was; the large, deserted spaces with their mysterious machines had given way to personal, pragmatic residential abodes.' As a result of this building process and their immediate needs, these spaces included various imperfections and contradictions, such as colors that did not match. They often conceived round shapes that were 'formed organically around what was already there.' She mentions that the resulting aesthetic is one that is characteristic to many squats. Theunissen explains that, initially, the abandoned factory building offered many possibilities of *use* but was impossible to *live* in. According to her, it is through the incremental process of transformation that, as they started building, it appeared that the building began to 'allow them to think of and realize, time after time, a new home.' Incrementality was thus a key factor. After the initial transformation to make the building habitable, Theunissen mentions that they kept building and rebuilding to alter the spaces, seeking to satisfy their needs and desires, seeking their preferred aesthetic.²⁵

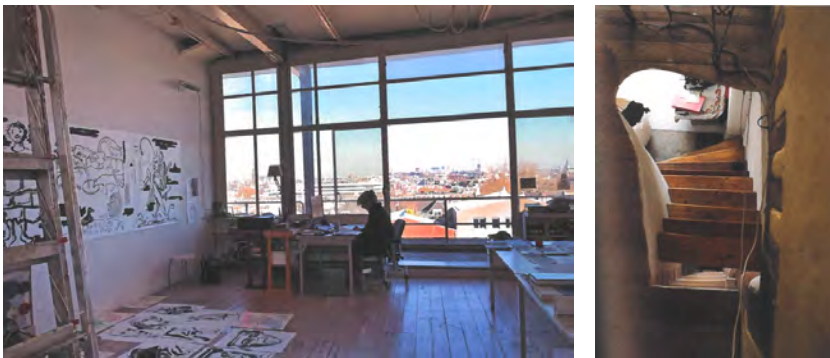


Fig. 5, 6 Vereniging Ruimschoots van Woonwerkpand Tetterode

Spatial Organization & Division

*'Living space is usually divided up according to a number of social conventions about domestic life, where sleeping is divided from playing, playing from living, living from eating, eating from cooking, cooking from shitting, shitting from sleeping, and so on. Every activity has its compartment, mapping and defining social relations very precisely in space.'*²⁶

Squats are a prime example of places where such social conventions are questioned and transgressed. This is partly due to a desire to live differently, and partly made possible through the appropriation of a place and the lack of constraints of building codes and regulations. Self-organization and other ways of living, such as commoning, play crucial roles in this process.²⁷ This section focuses on some of the spatial, physical properties of these varied forms of dwelling and their affects. A variety of new functions and uses may be found in squats. In addition to varied home typologies, the Grain Silo, for instance, included workshops, a public bar/restaurant and venues for public art performances and parties.²⁸ Tetterode includes more than one hundred unique homes, various studios and workshops, spaces for families and kids, a variety of communal areas and a public venue for parties.²⁹ Landbouwbelaang offers a great variety of functions such as a large public kitchen, café, bar, studios, offices, private and communal living spaces, flexible workspaces, a stage, and a large, polyvalent hall which serves as a venue for circus, exhibitions, dance,

25. Vereniging Ruimschoots van Woonwerkpand Tetterode (Amsterdam). *Woonwerkpand Tetterode : Zeggenschap Zonder Bezit*. Edited by Marianne Theunissen. Amsterdam: Vereniging Ruimschoots van Woonwerkpand Tetterode, 2020.

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31. Moore, Alan, and Alan Smart, eds. *Making room: Cultural production in occupied spaces*. Other Forms, 2015.

32. Ibid.

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34. Rende, Jane. *doing it, (un)doing it, (over)doing it yourself: Rhetorics of Architectural Abuse*. In *Occupying architecture: between the architect and the user*. Edited by Hill Jonathan. London: Routledge, 1999.

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37. Ibid.

38. Carr-Smith, David. *Silo: An Architecture of Psycho-Physical Effects*. (Unpublished paper); *Architecture of Appropriation: On Squatting As Spatial Practice*. Edited by Boer René, Marina Otero Verzier, and Truijen Katia. Rotterdam: Het Nieuwe Instituut, 2019.

theater, opera, performance, and production.³⁰

The combination of these various uses in a single building or complex is uncommon, to say the least. These squats operate not only as residential buildings but combine living with working, with social and cultural functions. In doing so, these squats challenge conventional ways of occupying space, not only by implementing new uses but also by merging otherwise separate (and maybe even inexistent) ones³¹. Alan Moore insists that squats are vital for the production of culture as they provide a necessary support to certain art forms and create new uses that could not exist otherwise. The various spaces that squatters create, and offer, are crucial for this purpose.³² Preconceived modes of spatial and functional organization, boundaries, notions of domesticity and levels of privacy and intimacy are questioned. Different spaces and activities are brought together into unusual combinations, and their boundaries, sometimes blurred, may differ from one another and from 'conventional' ones³³. Jane Rende believes that such spatial practices can 'intensify the occupation of space by overlaying one kind of living over another — the way the place should have been used, with its (un) doing. We might call this a new mapping of domestic space, a questioning of the boundaries of bodies and places.'³⁴

Tetterode includes examples of this overlaying of different functions, such as certain artist homes where living and working functions are merged as the studio and the kitchen are part of 'one space' where the boundary between the two activities is blurred.³⁵ Mark Minkjan describes Landbouwbelang as an 'experimental space where living, creating, and cultural activities are interwoven.' The various functions, from private to collective, are distributed throughout the entire building, 'spreading the community throughout the entire complex'³⁶. While some spaces were defined

by strict boundaries (such as walls) and cut off from the rest of the building, potentially offering higher levels of intimacy, other spaces, such as the artistic zones, are sub-divided into smaller sections but with *invisible borders*.³⁷ New relationships emerge between various activities, subjects, and their environment.

As mentioned earlier, the spatial organization of the building results from an incremental process of transformation, and it is continuous. Squats are usually not 'finished' but continuously adapted or changed according to varying users, needs, desires, or external factors.³⁸ It may be that the spatial practices of squatting, a form of 'adaptive reuse,' play a crucial role in creating this potential for change. Wilson explains that 'The affirmation and preservation of 'trace,' past and present, supports the conception of architecture as unfinished ('non-fini') and open to further adaptation.'³⁹ This suggests an important link between time, as expressed through materiality, and the perception of a potential for change. It is an architecture that is deeply rooted in time and continuously evolves with it — a level of freedom and adaptability rare in normative architecture. While this is partly due to a freedom that is claimed or taken by the occupants through the appropriation of an abandoned building, the open-endedness, improvisational and incremental nature of the construction could be considered another key factor.

In addition to these, other more external factors may strongly affect spatial organization in squats. In Poortgebouw, the construction of mezzanines throughout the building was not only motivated by, for instance, a need for additional space, but was also a *spatio-political strategy*; 'in the case where a deal would be made with the current owner to move the community to a new building, the community could claim more square meters as an appropriate substitute.'⁴⁰



Fig. 7 Kreukniet Kraakpand Landbouwbelang in Maastricht

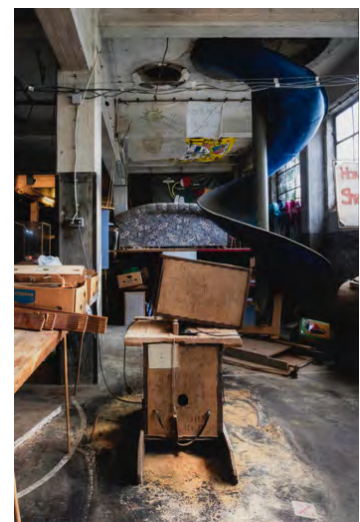


Fig. 8 Architecture of Appropriation. Landbouwbelang

Objects

[...] everyone can create his personal environment out of impersonal subsystems, whether they are new or old, modern or antique. By realizing his immediate needs, by combining ad hoc parts, the individual creates, sustains and transcends himself. Shaping the local environment towards desired ends is a key to mental health; the present environment, blank and unresponsive, is a key to idiocy and brainwashing.⁴¹

The influence of improvisation extends down to the scale of the objects, or things, that fill the spaces of squats such as the Grain Silo and Landbouwbelang. These objects are made or found in the vicinity and reused, recycled, or repurposed to fit specific needs.⁴² Carr-Smith refers to them as 'first-time objects' which he describes as 'the experiential hyper-activity of inventions and wit.' He explains that what distinguishes such objects is that they convey 'the present-moment of the act' of their creation, through improvisation and immediacy, attention and action. They are not built by highly skilled specialists, they are devoid of a particular style or finish, they are vulnerable to external factors and express a degree of craftsmanship unique to hand-made objects.⁴³

'Falling in their curve of gravity, warping with the visible grain, showing the impact of the hammer; but untrussed by taste and tidiness their forms are more complex unpredictable and various, more efficient projection-screens for potential fantasies.⁴⁴

The resulting objects are highly personal even if they consist of impersonal components, they are purposeful with a high level of functionality, despite the potential redundancy of some of their parts. This redundancy may add meaning and expressiveness to the object, and suggest more potential uses, triggering one's imagination.⁴⁵ Due to these unique and rather unusual properties, the experience of these objects is highly stimulating, especially to someone perceiving them for the first time. Carr-Smith even mentions that 'continual confrontation with such active objects is exhausting.⁴⁶

'Placing things and bodies in unusual combinations, positions us in new uncharted territory. Lost in space, our cognitive mapping devices destabilised, we imagine a new poetics of space and time. We understand anew the world we occupy, the relations between dreams and realities, between mental life and social relations, between objects and subjects.⁴⁷

Jane Rende explains that 'placing found objects in new contexts encourages us to make connections we would not normally make' and that it brings life to everyday objects while new relationships are established between them, emphasizing the importance not just of the isolated objects, but of their unusual combinations. According to Rende, it is through our imagination that we create these 'fluid relationships' while 'rejecting the constraints imposed by rules of domestic order where 'everything has its place.' Conceptions of messiness and tidiness, and of the distinction between the two, are questioned.⁴⁸

The act of collecting and combining used, leftover products or waste materials can be compared to the notion of *gleaning*.⁴⁹ H  l  ne Frichot explains that to glean is to 'select, extract, gather, pull out of context, recombine and often we have to be prepared to pick up the leftovers because, no doubt, someone has been there before us.' Value is found in unwanted or forgotten objects, which are collected and combined in

39. Wilson, Robin. *Not Doing/Overdoing: 'Omission' and 'Excess': Lacaton & Vassal's Place L  on Aucoc, Bordeaux, and Construire's Le Channel, Sc  ne Nationale de Calais, Calais. Architectural Design* 83, no. 6 (2013): 44-51.

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49. Frichot, H  l  ne. *Creative ecologies: Theorizing the practice of architecture*. Bloomsbury Publishing, 2018.

50. Ibid.

51. Ibid.

search of meaning. Gleaning is a way of making do, and an alternative to capitalistic modes of consumption.⁵⁰

*'We attend to the places where spaces are threatened with exhaustion, and we challenge the status quo, the dominant Image of Thought that tells us how to collectively think. Gleaning is an art of stooping down to pore over what has been forgotten, to pick at the earth, to pluck at the pavement in the dishevelled aftermath of an event. It is an art of survival. It is an art of creative resistance in response to a fast-paced consumptive lifestyle.'*⁵¹

Conclusion

Continuous transformation through self-organization and improvisation, gleaning and bricolage, the immediacy of the occupants' needs and desires, appear to be some of the first key driving forces behind the aesthetics of these squats. Creativity and craftsmanship are expressed through the hand-made, unusual structures, spaces, and objects. Strong links between temporalities emerge from the merging of the existing buildings with various second-hand materials and objects, each of which carry and convey traces of their past, traces of use and bodily interaction. This expression of time also contributes to the further adaptability of the environment. The newly established relationships between previously disparate elements enriches one's experience of space and time, as pre-established notions are continuously being questioned. The complexity and unfamiliarity of these buildings or complexes can lead to a deep awareness of one's environment, body and being, resulting in a state of strong presence. The examples in the essay show that incrementality was necessary in the process of appropriately domesticating the spaces. In addition to economic constraints, the desire or need to live in non-normative ways, to challenge predominant modes of consumption are important motivations to reuse, repurpose or recycle.

The same principles apply to the objects that populate these places. Their past, unusual and sometimes contradictory combinations, or their hand-made nature makes them expressive, active, and lively. They force us to make new connections, convey new meanings and value. In some case they require one active engagement to make sense of them. Their unique and sometimes peculiar character, at least in their combinations, enrich the complexity of the space and one's experience thereof.

A certain *aesthetic of appropriation* emerges from the combination of a multitude of factors, such as radical transformation and reuse of spaces, materials and objects, self-organization, strong, immediate, and non-normative needs and desires, gleaning, bricolage, improvisation, experimentation, collective and individual expression. Unique spaces emerge from the combination of previously disparate activities and objects. Such an approach enables the users' full engagement and the freedom to shape their environment in unconventional ways that fit their specific needs and desires. Preconceived ways of spatial organization are challenged through placing various activities in unusual combinations, questioning their borders, their relationships, levels of privacy and intimacy and continuously making way for new forms of occupation, social relations, inhabitation, and dwelling. Once again, this results in increased awareness and sensory engagement as new connections are formed through the making and the experience of the space. This may even result in imaginative power and a reinterpretation of the world. Additionally, notions of comfort, of messiness and tidiness may be redefined through these other ways of spatial production and occupation.

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Fig. 7 Kreukniet, John. *Kraakpand Landbouwbelang in Maastricht*. <https://www.werkaandemuur.nl/nl/werk/Kraakpand-Landbouwbelang-in-Maastricht/161730/93>

Fig. 8 *Architecture of Appropriation: On Squatting As Spatial Practice*. Edited by Boer René, Marina Otero Verzier, and Truijten Katía. Rotterdam: Het Nieuwe Instituut, 2019.

ARCH AS EXTENSION OF LIFE

What can we learn from Ai Weiwei's conceptual art as architects?

Youp van der Weijde

4664604

Today we live in a world where every day thousands of people are being displaced, families are being destroyed and for millions of people freedom does not seem to exist anymore. Ai Weiwei understands the necessity to act and brings awareness to these human rights issues. He uses his art as a medium and finds it his obligation to join the political dialogue and calls the people to act. Ai Weiwei says in his book *Ai Weiwei* (2016): "Today the world is still struggling for freedom. In such a situation, only art can reveal the deep inner voice of every individual with no concern for political borders, nationality, race, or religion."

Ai Weiwei is a master contrarian. He uses, among other things, conceptual art to play with arguments. The artist deconstructs the arguments, turns them, and polishes them with irony and sarcasm (Holzwarth et al., 2016). No matter what theme he can discourse them all brilliantly. It is no wonder that he is seen as one of the biggest contemporary artists of his time. He made the world his studio where he teaches, exhibits, and argues for humanity (Holzwarth et al., 2016).

This theory thesis will research the approach of Ai Weiwei's mindset and lifestyle through which he creates art that changes humanity. This approach might also have a powerful impact on the future of architecture. Architecture needs to be the extension of what is happening in the world and Ai Weiwei is already doing this with his art. The research question is, therefore: "What can architects learn from Ai Weiwei's approach to art to make architecture an extension of what is happening in the world?"

The theory thesis consists of six chapters. In chapter one to three the life, perspective and perception of Ai Weiwei will be analyzed. The outcomes will be compared with social science studies to back up his artistic being. In chapters four and five the conceptual art and influence on humanity will be researched. There will be explored how Ai Weiwei's life and perception influences his conceptual art and how his art is capable to make viewers act for humanity. Finally, in chapter six, there will be researched how imagination influences architecture and the way the user behaves. In the conclusion Ai Weiwei and his conceptual art will be discussed in relation to the field of architecture. In this chapter, the main question will be answered.

In the academic context, there is a lot written about the lifestyle and mindset of the artist, conceptual art, and the influence of art on the viewer. However, not many studies have combined these studies and based them upon a single artist. The aim of this research is therefore to create more practical-based research focused on clear examples and lessons that could be used by architects to create the future of architecture.

Ai Weiwei

Part of Ai Weiwei's influence can be led back to his past. In this chapter, a summary will be given from the artist his monograph Ai Weiwei (2016). The story of Ai Weiwei starts in 1950. The writings of his father, a famous poet, caused the Weiwei family to be banished from China. They were forced to live in the inhospitable northwest of China as refugees. In 1976 the family is allowed to return to Beijing. Ai Weiwei started to study at a film academy which he quit soon because of the extremely idealistic ideals at the academy. Weiwei saw painting as the only way to escape into empathy, emotion, and passion in China. After a few years, in 1981, he travelled to the United States, because he wanted to escape the Chinese communism.

Until 1982 Weiwei stayed at the Parsons School of design (Holzwarth et al., 2016). The school exposed the artist to the artistic concepts of Duchamp and Warhol which made him think about: "Why should one express himself?" His fellow students completely forgot about the why and just wildly painted so Weiwei left. He stayed for eleven more years in New York where he visited every exhibition of Warhol and Duchamp. He discovered the ideas of Duchamp about the artist's existence as a mindset and lifestyle. Weiwei started to turn away from painting and began to create three-dimensional art. In 1993 he returned to China because of his father's illness.

After Weiwei came back he published three books and until 1999 made nothing he regarded as art (Holzwarth et al., 2016). In 1999 Weiwei got nominated by Harald Szeemann to exhibit at the Venice Biennale. This was the moment that he started to produce art again. In the upcoming years, Weiwei started to make more art and gained more fame all over the world. Most of his art was seen through western eyes which showed the strength of his Chinese background. In western minds a thing as often one meaning, however, in Chinese minds, a thing can have multiple meanings. So, his strength to fuse contradictions into a single object became more and more clear.

In 2005 Weiwei started his blog and with his argumentative brilliancy, this earned him the most attention in China (Holzwarth et al., 2016). He reached millions of Chinese people which he showed the weaknesses of the systems in China. After 4 years his blog was shut down by the Chinese government and the artist started a so-called "microblog" on Chinese Twitter. Then in 2011, he had crossed a red line. Weiwei got arrested and the Chinese government took his passport. This moment was the last step in his transformation into the person he is today. From an artist in New York to an artist-activist in China where he realized that his art must take an ethical-moral stand, to an activist-artist with as starting point his blog.

After four years the Chinese authorities gave Weiwei

back his passport and immediately after he flew to the Greek Island Lesbos (Holzwarth et al., 2016). He gradually became involved in the refugee crisis and visited refugee camps in Germany, Greece, France, and Italy. Eventually he traveled with his team to twenty nations and dozens of refugee camps while filming the documentary Human Flow (Yang, 2018). In a published interview by Ehrlich (2017) Weiwei says the following:

"I had to be there or else I would be speechless I would not be entitled to talk about the situation because I wouldn't know it. I had to meet the refugees. I had to look at them face-to-face ask them questions make jokes with them: it's the only way to understand the situation. Otherwise, I would be scared or mad or threatened for the rest of my life."

Perspective taking

"Being there in the refugee camps" is what shaped Ai Weiwei his works (Yang, 2018). He knows what it is like, he knows how it feels and he knows what happens when you are a refugee. In the social sciences, this understanding is also referred to as perspective-taking. However, in the fields of anthropology, ethnography, and sociology and the philosophical areas that reflect on these disciplines the question is raised about what the epistemic value of perspective-taking is and if it is necessary to immerse oneself in a community, society, or culture to understand it properly (Grimm, 2021).

According to the philosophe Winch (1964) understanding culture, society or community can only be done when you understand the persons perspective, with an interest in which rules and concepts guide the persons perspective. James Spradley, an ethnographer, goes one step further and claims that the only way you can understand these perspectives is by participating which is called immersion. He writes:

"Immersion is the time-honored strategy used by most ethnographers. By cutting oneself off from other interests and concerns, listening to informants for hours on end, participating in the cultural scene, and allowing one's mental life to be taken over by the new culture, themes often emerge ... This type of immersion will often reveal new relationships among domains and bring to light cultural themes you cannot discover any other way." (Spradley 1980, p145)

A different view on perspective-taking is that immersion could be helpful, however, it is not a requirement. What is a requirement is understanding the priorities of the community's perspective and using these priorities to characterize the activities that need to be understood (McCarthy, 1973). For example, if you want to understand praying in another culture, you need to understand and identify with what is praying for them. This will maybe be relatively close to our definition of praying, however still different. Understanding these differences will take misinterpretations and understandings out of the way

and makes you understand better what is happening in another culture or community.

Another argument against immersion as the only necessary action is that, according to Peter Winch (1958), it is impossible to adopt to another culture focusing on a particular bit. Without understanding the culture as a whole, it is impossible to understand certain pieces of it. For example, praying is not just based on the concept of praying, but also the concept of God and honor. Macintyre (2016) calls this development of a "second first language" which means that you are starting to understand the relationship between different cultural concepts and so the usage of the concepts together start to increase.

When comparing the three different methods of perspective-taking with Weiwei his perspective-taking, there can be concluded that he has used all three methods of perspective-taking. Firstly, Ai Weiwei traveled to 23 refugee camps all over the world to look at the refugees face-to-face, ask them questions and make jokes with them (Ehrlich, 2017). When these actions are compared with the definition of immersion like Spradly (1980) described it is clear that the artist immersed with the refugees on a high level. Secondly, characterizing the activities has everything to do with how a person understand cultures and how people are different. Weiwei learned through his years in China, New York and in the refugee camps, to see with an open mind. He learned to see the differences, but more important he learned to see the similarities between all humans. Instead of characterizing the activities to understand the differences Weiwei searches for what we as humanity all have in common. Lastly, MacIntyre (2016) and Winch (1958) argued that a second-first language needs to be developed to understand the relationships between different concepts in communities. This second-first language for the artist can almost not be stronger because Ai Weiwei is a former refugee himself. There even can be argued that his first language is as a refugee and his second-first language is a non-refugee.

Perception

"Perception is not something that happens to us, or in us, it is something we do" (Noë 2004). Alva Noë argues in his book "Action in Perception" (2004) how the level of perception depends on your capacity for action and thought. He also writes about perceptual consciousness and that perceiving is determined by what we do. To understand this concept of acting Noë gives an example of photography:

"It is not pictures as an object of perception, that can teach us about perceiving, it is making pictures – that is, the skillful construction of pictures – that can illuminate experience, or rather the making or enacting of experience. Picture making, like the experience itself,

is an activity. It is at once an activity of careful looking at the world and an activity of reflection on what you see (Noë 2004, p. 179)

Ai Weiwei practices three commonly used methods of perspective-taking, however he distinguishes himself by the way he perceives the world. Like Noë describes, perception is not something that happens to Weiwei: it is something he does. To understand the way Weiwei perceives his environment we need to go back to the artists' time in New York City. Because the time Ai Weiwei spend in New York seemed to have shaped the way the artist perceives the world around him (Holzwarth et al., 2016). The artist explains in the book Ai Weiwei (2016, p. 56):

"Taking photos is like drawing with a different method. It's an exercise in what you see and how you record it, in trying not to use your hand but rather your vision and mind. Taking photos is like breathing. It becomes part of you"

The way Ai Weiwei explains how he takes photos is completely in line with how Noë argued to perceive the world. Ai Weiwei never lets this approach of taking photos go and even his documentary Human Flow (2017) is based upon this same way of perceiving the world. He has learned himself to see what other do not see, to see the details, and discovers the unknown.

Besides perceiving the world through photography, the artist also created a new perceptual relationship with the world through the "readymade" (Holzwarth et al., 2016). In New York, he discovered the works of Duchamp and Andy Warhol and their use of the readymade. Both used mass-produced and commercial object in their art to question what art should be and how art should be made (MoMA | Marcel Duchamp and the Readymade, n.d.). Weiwei started to look at what is available or as Duchamp called it the "readymade". This was the beginning of something that he would never let go of. Even today Ai Weiwei uses the readymade in his art. For example, in his artwork where he covered the Berlin Konzerthaus with 14.000 discarded life vests found at the coast from



Berlin Konzerthaus covered with 14.000 life vests (Said-Moorhouse, 2017)

Lesbos (Said-Moorhouse, 2017)

Lastly the Chinese culture Ai Weiwei grew up in made him perceive the world different than we are used to in the Western world. Like explained in the first chapter in western minds a thing is either this or that, however, in the Chinese mind, a thing can be both, this and that at the same time. Seeing these contradictions in ordinary objects around you creates a new dimension in the world you live in. In relation to the "readymade" this creates a powerful conceptual tool.

4. Interpretation of conceptual art

The way Weiwei perceives the world and creates art are closely related to each other. By exploring what conceptual art is and how he thinks about conceptual art an understanding can be created between his way of exploring and perceiving the world and his conceptual art.

Davies (2003) argues that conceptual art can only be understood by looking at the creative process. The artworks can primarily be identified by the intentional act through which it is created rather than the end product of that process. It is better understood as a kind of performance than as a static object. In this performance, the artist has the task to formulate a meaning in the artwork, which is why he is also called a meaning-maker (Schellekens, 2022). When looking back at Weiwei this idea of meaning maker makes clear sense. For example, with the lifejacket vests, he used in Berlin. He makes the viewer feel an association with the catastrophic event through the use of the readymade. He gives the lifejackets meaning. Becoming aware of this relationship between the meaning and the readymade reveals the thin line between art and non-art in conceptual art (Holzwarth et al., 2016).

Davies (2003) argues further about the crucial difference between the physical medium and vehicular medium and how this is a key difference between conceptual art and other art forms. A physical medium is a painting or a sculpture, but a vehicular medium goes a step further and is not only about the physical object but also about the actions and events behind the artwork. The conceptual art is more about conveying meaning through a vehicular medium than about furnishing its audiences with experiences of beauty. So, from the viewers' perspective, conceptual art is rather of the mind than the senses. Because in a conceptual artwork the creative process is given more weight than the physical material. As Lippard (1997) states: "the actual artworks is de-materialized".

However, this raises the question does conceptual art needs to be aesthetic? In Binkley's (1977) opinion, conceptual artists do not have to think about aesthetic value. Still, lots of artists have chosen to tell their meaning through aesthetics however this is not a priority. Ai Weiwei says about aesthetics that "Art must not exhaust itself in aestheticism if it is to be

substantial. Truly significant art takes an ethical-moral stand" (Holzwarth et al., 2016).

To conclude Goldie and Schellekens (2009) say that conceptual art is an art of the mind rather than the experience, which means that it is not so much about the aesthetic properties but more about the imaginative engagement with the idea central to artwork. This shows the core of Ai Weiwei his works. All his being among refugees and perceiving these catastrophic events are translated into the idea of artworks.

Conceptual art aims to have cognitive value rather than aesthetic value. Cognitive value means the value the art has in increasing our understanding of a certain topic or event Interesting is that it seems that conceptual art argues that aesthetic value excludes the cognitive value of the artwork, so both cannot work together (Schellekens & Goldie, 2007) Cognitive value is the reason why art feels rewarding because the cognitive value of artwork gives some kind of understanding. People not only go to galleries for their pleasure but also because it makes them richer human beings who can make more sense of the world around them (Schellekens, 2022).

This creation of understanding consists of two kinds of pieces of knowledge. The first is the knowledge about the artwork itself. Which is not only the technique used or material but also the history of the work, the traditions of the work, and the meaning and thought the art expresses. This first knowledge can be concerned with the artwork itself or the reality beyond the artwork. The second knowledge is propositional or acquaintance knowledge. This knowledge is not about the reality of the artwork or the work itself, but about the potential to enable a person to imagine. To imagine what it would be like in a particular situation, to empathize with an event, or to come very close to experiencing a certain experience of first-hand source (Schellekens, 2022). The second knowledge about imagination is exactly what Ai Weiwei is striving for. It is all about the interpretation of his artworks through imagination. The artist shows a shocking experience, like the refugees that sailed to the coast of Lesbos to escape war, due to an essential straightforward realization. Here is an awful fragment of reality, thousands of lifejackets on a wall in Berlin. In the book Ai Weiwei (2016) a quote shows that the interpretation of an artwork of Ai Weiwei is through our own imagination:

"The realization of this (the lifejackets which were found at the coast in Lesbos) does not question the observer's perceptiveness but requires him to activate his powers of imagination because the subject matter of this work cannot be captured aesthetically."

Imagination & moral persuasion

The conceptual artwork does not stop after the imagination occurs in the mind. Through imagination an individual is going to look at his or her interior perspective. The artworks of Ai Weiwei are all about including the observer and his or her emotional resources and asking yourself questions like "How does this affect me and do we really want to continue this way or not?" (Holzwarth et al., 2016). Ai Weiwei's aim is to change people's mind like he said in this interview: "I believe in involvement. Almost every art piece I've made was shown in places where there are human right violations. Only by being directly involved in these situations can one change people's minds." (Weiwei, 2018, p. 72)

Studies have shown that indeed imagination linked to artworks can have an influence on our moral persuasion (Liao & Gendler, 2019). For ages philosophers have argued that arts can affect moral persuasion (Liao & Gendler, 2019). However, an ongoing question is how imaginative representations can change moral perspectives that can be used in the real world.

Noël Carroll (2000) answered this question with three different approaches:

1. The first approach is called the knowledge approach which argues that engagement with an artwork can give the viewer propositional knowledge of moral truths. This knowledge is taken from the art and does not give you any familiarity or knowledge of how to do something.
2. The second approach is called acquaintance approach. This approach argues that engagement with the arts can give a person experience of something with shows new perspectives and circumstances that could change their moral understandings.
3. The last approach is called the cultivation approach. This approach claims, unlike the other two, that the viewer does not get any new knowledge from the artwork. However, the artwork creates an opportunity to refine and practice existing moral perspectives.

Comparing these approaches with the artworks of Ai Weiwei shows that the artist uses both approach two and three. In the book of Ai Weiwei (2016) these two approaches are in detail described and work seamless together (see text below). The text shows that there is a constant interaction between approach two and three. The viewer interacts between the new experience and their existing interior perspective with their existing emotional resources. So, in the end you refine, and practice existing morals as well change your morals based upon the new perspectives.

"A sense of connection with the world (world of catastrophe) develops during the process of observation,

where the artwork does not remain a purely external event one reacts to with sympathy or outrage. Much more, the catastrophe takes on an emotional dimension and is pushed into the interior perspective, provoking the question "how does this affect me? Rather than "What does it have to do with me?" In Chinese this accessing of emotional recourses is described as "nurturing life", but presumably everybody knows the feeling. No one really had to tell the disaster tourists from Kassel what the collapsed Template had to do with him (and if he had not known the answer, he would not have traveled there for its own accord)... Nevertheless, Template did accommodate the observer to the extent that the deformed sculpture had bridged any perceptual distance almost of its own violation and demanded no aesthetic preparatory work. But regardless of the respective form or fate of this and other works, the entity that Ai's artistic conception is addressing becomes apparent: it is the self of the observer, including his or her emotional resources. ... (The Observer) is forced to reflect on himself. "(Holzwarth et al., 2016, p. 192).

This change and refinement of morals eventually will lead to change in our actions states Prinz (2015). Acting as individuals is what Ai Weiwei strives for and he makes this clear during an interview (Rhein-Neckar-Zeitung, 2017):

"How many times do people shrug their shoulders and say: What can we do? A society is always composed of groups of individuals. You can influence other people and make your voice heard. It would be a shame of we had to confess to our children that we did nothing. That we pretended that we knew nothing. Or that we had no power come one! We have great power"

Acting based upon our moral motivation has everything to do with sentimentalism argues Prinz (2015). To prove this he substantiate his statement with three premises:

1. Moral judgments consist of emotional attitudes.
2. Emotional attitudes are motivating.
3. Therefore, moral judgments are motivating.

The first premise shows Prinz' statement of sentimentalism. In his thesis he first refers to different neuroimaging studies on moral cognition which showed that when people make moral judgement people enter an emotional state (Prinz, 2015). Secondly, he argues that multiple studies show that different emotions have different impact on moral judgements (Prinz, 2015). Finally, he explains that studies prove that people with different recurrent behavior, both cognitive and affective show different moral judgments (Prinz, 2015). These findings, together with decades of research that show the links between emotion and behavior that proofs premise two, support the claim of Prinz that our actions are based upon moral motivation. Which gives hope to the call of Ai Weiwei for action.

Architecture

As architects we design mostly based on functional and aesthetic criteria. It is no surprise that contemporary architecture is often accused of emotional coldness, limited aesthetics, and a distance from the world we live in (Pallasmaa et al., 2015). The minimalistic and uniform style of the last decades made architects drift away from the events of life (Pallasmaa et al., 2015). Samir Bantal describes this in an interview (Koelewijn, 2022) as follows:

"In the plant kingdom, uniformity is the path to extinction. Scientists say: if all conditions are perfect, no heat, no cold, no wind, always enough light, then plants become weaker. It is very interesting to make this link with the world in which we are increasingly striving for uniformity, because it is more efficient, cheaper, more turnover, and more profit."

So, architects have a constant curiosity for aesthetics and function, but do we have the same curiosity for life? Joseph Brodsky, a poet, says: "The city of memory is empty because for our imagination it is easier to conjure architecture than human beings" (Pallasmaa et al., 2015). What he means is that the weakened sense of life in current buildings is not only the result of intentional emotive distance and rejection of life. It is because for an architect it is easier to imagine geometric configurations than to imagine the formless moving events of life told a created by architecture. So, it is no wonder that architecture education as well as practice has focused primary on form and aesthetic criteria rather than the interaction between object and life. However, because it is harder does not mean architects do not need to try.

Pallasmaa (2015) argues that as an architect "The talent of imagining human situations is more important for an architect than the gift of fantasizing spaces." The connections between the mind and physical setting are much more fundamental than we have believed (Pallasmaa et al., 2015). The physical spaces that are designed are linked to our behavior and mental tuning. So, the architects design not only the space we occupy but also our emotions and mental state. This changes our brains and so our behavior. This statement from Pallasmaa is in line with the ideas of conceptual art and moral persuasion discussed earlier. So, the influence architecture can have on humanity could be the same as the influence the conceptual art of Ai Weiwei is having now.

Architecture is the product of imagination Pallasmaa (2015) says. Before a design is sketched on paper of built on a model the design already was a mental image. He says that architects have two different levels of imagination. The first one creates formal and geometric images and the second one creates sensory, emotive, and mental images. The first one creates an imagination of an isolated image based

upon materials. The second one present this image as a lived and experience object in reality created by our emphatic imagination that is evoked by emotive experiences and moods.

Further Pallasmaa states that the quality of an architect lies not in the formal or the geometric or even aesthetic. The quality of an architect lies in his poetic, embodied and emotive experience, because artistic images, just like conceptual art, are not just formal configurations. Artistic images are embedded in human historicity, memory and imagination.

The conclusion can be drawn that architecture has the capability to tell a narrative and change humanity in the same way conceptual art does. However, although architecture is capable of doing this, architects often are not. As an architect imagining the built form with humanity, life and the emotive response from the user is not easy and that is why it is almost never done.

Conclusion

This theory research sought an answer to the question: "What can architects learn from Ai Weiwei's approach to art to make architecture an extension of what is happening in the world?" For this, a study was conducted into Ai Weiwei and the social sciences behind his perception of the world, methods and conceptual artworks.

The results of the research show that when Weiwei started to make art about the refugee crisis he spent most of his time in refugee camps among refugees. He used immersion to understand what was happening in the lives of the refugees. And because of his background as refugee himself he has created a so called second-first language. Although WeiWei practices the three methods of perspective-taking he distinguishes himself by the way he perceives the world. He perceives the refugee camps by doing. He learned himself how to perceive the world and notice the details that matter.

These perceptions are used to create meanings. That is why a conceptual artist is also called a meaning-maker. Conceptual art aims to be an art of the mind and to have cognitive value, rather than aesthetic value. The knowledge you get from the artwork, that is based upon this cognitive value is imagination. You interpret the artwork through your own imagination which creates emphasize for an event or makes you come very close to an experience. This imagination has an effect and influences you of moral believes which could change your actions.

Lastly, if compare Weiwei and conceptual art with architects and architecture there is shown that architecture is mostly based upon function and

aesthetics. Pallasmaa (2015) states that the physical space has, just like conceptual art, the capability to link our behavior and mind to form. However, as architects we make no use of this because it is easier for an architect to imagine form than to imagine life. Architecture is the product of imagination so if we are not able to imagine the extension of life in buildings, we will never create architecture that is.

This theory thesis has shown architects need to focus less on aesthetics and more on imagination. Just like Weiwei stated that the aesthetic kills the imaginative and emotive response of the art. Architects have to make architecture an artform again and not just capital with aesthetics and function. In this way architecture can become just like conceptual art an artform of the mind. However, architects need to become capable of this skill of imagination. Just like Weiwei learned from

Duchamp and Warhol architects can learn from Weiwei. Architects need to immerse themselves in the cultures and communities they are building for. They need to understand the characteristics and create a second-language. However, before they do this they need to learn to perceive the world. Architects need to learn to perceive the world through humanity not through aesthetics and function. This perception will create imagination that eventually will make architecture an artform that is an extension of the world.

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Architecture Philosophy and Theory Group

AR2AT031

COLLECTIVE THESES ISSUE: SPECULATIONS

2021/2022 - semester II - spring 2022 - Q3

Architecture Theory Thesis

**Writing seminar:
Thinking/Reading/Writing**

Stavros Kousoulas Group

Speculations

As philosopher Henri Bergson underlines, for each new problem there should be a new intuitive effort to approach it. Bergson adds that intuition is capable of being precise because it is obscure. In a line of thought influenced by Leibniz, Bergson proposes that when an idea is said to be 'clear', it is often because it merely draws on elements and propositions that are already known. That is, clear ideas do nothing more than re-arrange already established notions. On the contrary, there lies a much more profound clarity in the 'radically new and absolutely simple idea, which catches as it were an intuition.' (Bergson, *The Creative Mind*, 23) Obscure, complex and incomprehensible as they may appear, genuinely novel ideas that do not rely on simply re-arranging the established have as an effect a clearing out of obscurities, a resolution of problematic tensions. They are clear, therefore, because of their effects, not their initial composition; they become understandable only because they manage to re-determine how we understand what we understand.

Consequently, since it needs to constantly begin anew whenever it encounters a novel problem, for Bergson intuition becomes almost synonymous with invention – a peculiar invention, however, since it relies on an absolute origin and not on anything given in advance. As he claims,

*a speculative problem is solved as soon as it is properly stated. By that I mean that its solution exists then, although it may remain hidden and, so to speak, covered up: the only thing left to do is to uncover it. But stating the problem is not simply uncovering, it is inventing. Discovery, or uncovering, had to do with what already exists actually or virtually; it was therefore certain to happen sooner or later. Invention gives being to what did not exist; it might never have happened. (Bergson, *The Creative Mind*, 36-37)*

For Bergson, to state a problem is to invent it. However, how can one be sure that the invented problem has a truly transformative potential? How can one be sure that out of obscure intuitions an effect of clarification will emerge? How can one be sure that what is being invented is a true problem?

Contrary to the common belief that architecture is a problem-solving enterprise – understood as focused on solely providing solutions to specific problems – it instead occupies itself with a constant problematization. Within architectural practices, of course, a substantial amount of effort is devoted to the actualization of solutions regarding problems of different levels and of different scales. Nevertheless, the ability of architecture to problematize is what differentiates it from other disciplines, especially those classified as engineering. Following architectural theorist Jeffrey Kipnis, it may be argued that while engineering has a subjugating effect, the effect of architecture is liberating. It is crucial to be exact as to what the one discipline subjugates and what the other liberates: what is at stake here is difference. Engineering subjugates differences precisely to respond to the problems it faces, while architecture liberates difference in order to problematize the field of a constant production of subjectivity. Engineering, aiming to respond in a seriality of 'if ... then' deductions, aims to deliver the greatest good for most people, and to do so, it needs to eliminate differences, both in the initial formulation of its problems and in its potential responses – assuming that those responses also need to be wide enough to address the discipline's broad audience. By contrast, architecture offers emancipatory potentials by amplifying the problematic field and eventually creating new existential niches via the creation of a myriad 'what ... ifs.'

In this sense, architectural problems need to be assigned a double meaning: on the one hand, that of a difficulty that needs a response and on the other, as an 'impersonal field of singularities out of which thought draws its localized solutions, the latent structure that elicits the dynamisms of conceptualization.' (Toscano, *The Theatre of Production*, 2) Here, architectural theories and practices, architectural thinking itself, need to transform. Only problems of the greatest significance demand a transformation, since for all the rest one can simply rely on the countless textbooks that pretend to provide a safe guide. After all, as philosopher Gilles Deleuze puts it, 'to what are we dedicated if not those problems which demand the very transformation of our body and language?' (Deleuze, *Difference and Repetition*, 241)

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Aleksandra Jodłowska

People went from being butchers for themselves, through modernised slaughterhouses in the industrial era to the emergence of factory farming. People's attitudes towards animals in the city changed, meat became a commodity and with that went the changes in the physical space of slaughterhouse. An argument is made that crafty use of different modes of inclusion and exclusion, visibility, and concealment operate in such space. This is done by analysing the varied approaches towards animals in the cities in Europe from XVIII until XXI and trying to describe the spatial characteristics of the institution of the slaughterhouse.

40 Mythos U

Varoutsos Panagiotis

The relationship between architecture and territory is explored through two seemingly opposite approaches. The first surfaces from Bernard's Cache's 'Earth Moves' where he translates the physical elements of space into mathematical vectors while the second has to do with the inherent identity of space which is allegorically represented through the myth of Persephone. This thesis explores how contradictory or complementary those theories are and how they contribute to the discourse of architectural integration.

11 super_ordinary

Angelina Torbica

Within our contemporary globalized context, man's quality of spatial perception is placid and detached from his physical bounds. The physical environment has become a hodgepodge of placelessness; undefined, to further purpose beyond utilitarian function. In an attempt to find meaning within this context, we look to how sense of place can play a role as a way to assign spatial value and identity. The architectural rhetoric towards contextuality, through the writings of Kenneth Frampton, Denise Scott-Brown, and Miroslav Sik, are taken into consideration in an effort to examine architectural thought to retort the placeless consequences of a consumerist culture—with varying levels of intimacy—towards place.

49 A Way Out of Everyday Life

Ronnie Tao

Capitalism is intensifying the alienation of everyday life. This paper attempts to discuss the possibility of solving the anti-alienation of everyday life from the perspective of architects, using the method of literature reading and rethinking reality. Through the interpretation of the particularity of the role of architects, it is found that they are able to adjust the control of power or capital over space inversely. Finally, the poetic property of everyday life is found in the three paradigms during vernacular construction, which pays attention to body and feeling.

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Marwa Al Kaabi

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55 A Home as a Sanctuary

Tobine Rasmussen

This paper addresses the home and its meaning through a spiritual and architectural approach. It approaches the matter through the psychological and spiritual lens for the purpose of designing for activation of the natural healing power within human bodies. The question, therefore, led to why homes neglect the sole purpose of creating atmospheres that triggers mindfulness, presence, and mental and physical healing. Can architects fabricate architecture centring body, mind, and soul? Can a home be the temple of meditation and grounding? The thesis investigates the matter of spirituality and physicality through examining ancestral methodologies and meditational spaces.

26 Chasing Agency

Michał Romaniuk

Short abstract; The thesis proposes how the concept of commons can be used to reconsider architecture's agency. The work focuses on how architects can democratize the design process, as well as presenting the symbolic meaning of the architectural object as a salient part in building more inclusive and collective narratives upon the commons. The concept of commons is here seen as a crucial factor in a turn for a more collective political entity, which can be formed on tatters of the neoliberal political system.

69 Spaces of conflict

Virginia Lazarou

The essay aims to examine the impact of conflict in the production of space, as well as its potential for innovative spatial solutions. Starting from the definition of conflict, the essay continues with an analysis of the concept of territory and how it plays a role in defining physical aspects of conflict spaces. Case studies analyzed are the Zaatari Refugee Camp and the Berlin Wall as a means of investigation for division walls. More importantly the essay tries to address the question: How can a settlement like a division wall be thought of as a means of transition between the two sides?

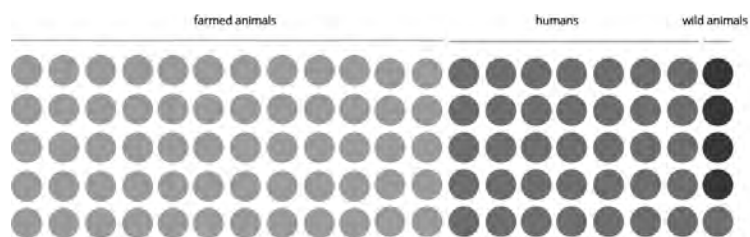
MEAT AS AN URBAN QUESTION

Aleksandra Jodłowska

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chapter 1. The history of animals in European cities.

It is estimated that about 60% of the total biomass of all mammals living on the Earth are animals bred for human needs. Farmed birds, mostly chickens, account for 70% of all bird biomass¹. Humanity occupies a very small part on Earth in a spatial dimension, yet it is completely dominant in the grand scheme of life. Why do we share the planet with all the animals, yet hardly ever are aware of them, not to mention being able to literally see them on an everyday basis? What mechanisms are operating to make it impossible to see the animals that used to be a significant part of urban life until the XX century, where they are now in the space of our cities?



Biomass distribution of land mammals on Earth (Source: author's, based on Bar-On Y, Phillips R, Milo R. The biomass distribution on Earth. Proceedings of the National Academy of Sciences. 2018)

This thesis aims to explore this topic further and try to identify factors that influenced this change, not just the human impact, following upon the statement proposed by urban environmental historian Dorothee Brantz: "What makes the history of slaughterhouses particularly interesting [...] is that they shed light on the continuous interdependence of human and animal bodies even as livestock was increasingly removed from the streets of cities."² In order to make it simpler, I will use the term animal instead of non-human animal. By the word animal I will be referring to the biological definition of "any of the kingdom (Animalia) and any such living other than a human being"³ unless stated otherwise. I am aware of the difficulty of expressing concepts regarding non-human animals in human language, which is spoken and shaped by humans according to their needs.

1.1. Urban animal geography

In the studies of urban history and urbanisation up until the beginning of the XXI century, animals are rarely mentioned, and if, usually as a curiosity, hardly ever as a significant factor that has influenced the formation and layout of contemporary European cities. Animals are not often visible in the general histories that humans have collected, as often things that are happening beyond our visual perception are deemed as not worth mapping and are left invisible to our sight. They were excluded firstly from the discussion about urban history, which was an underlying step to start to exclude them from the space of cities they occupied. The so-called third

wave of animal geography and expanding interest in human-animal relations broadened the field of urban animal geography.⁴

Jennifer R. Wolch is one of the first scientists who saw the value of including animals in cities as a central research topic. She provides an argument that focusing on non-human animals is fundamental to understanding any human-environment relations, be it urban or rural conditions, and thus provides a framework for "transspecies urban theory". It was a few years after the advances in the science of animal thinking when the language became less anthropocentric and the clear distinction between animals and humans became less and less defined.⁵ Animal geographer Chris Philo points out the notion of inclusion and exclusion, which I will explore further concerning animals in slaughterhouses in the next chapters. He depicts that the only time when animals were included in urban history, was when they were proved useful to satisfy humans' needs. Having always been utilitarian and marginal, animals were easy subjects of exclusion.⁶ Merely erasing, not talking about a subject is the easiest way to exclude them and diminish their role. The first step is to be recognized as a separate being, to see animals as animals, not only as means to explain humans' concerns and satisfy human needs: of food, of clothing, of labour. Animals in the history of the cities only achieved attention when they fulfilled specific human needs, not only for food but also for pleasure and companionship. Our urban experience of animals comes down mostly to animals to look at, birds in parks, animals in zoos or pets we own.

1.2. Animals to eat and animals to accompany

British cultural historian Ingrid Tague suggests that the idea of companion animals and feeling an emotional attachment to them fills an absence produced by the development of urban industrialised society. In Victorian England, in addition to major reforms in the slaughterhouse and meat supply, the approach to pets has changed. They have become both, the increasingly visible indicators of the growing prosperity of the nation and the pivoting point of the moral debate.⁷ Tague argues that they were an intermediate link, not belonging fully to neither the human nor the natural world. Pets were perceived as an extension of their owners, therefore if the animal falls into a category "of pets or companion animals", depending on a cultural context, it was seen as a distinct individual with its rights, and is automatically excluded from the category "of animals to eat".

1.3. Birth of the modern slaughterhouse

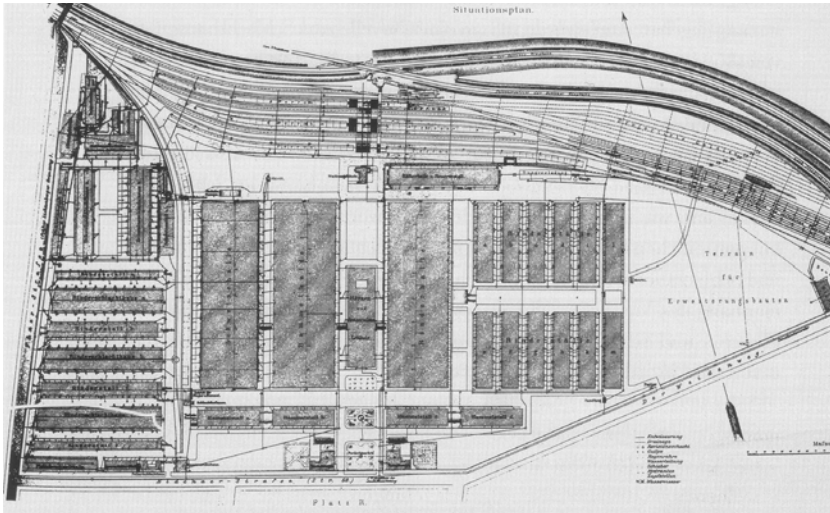
Until the 18th century, the butchery was performed by the same person and took place in the city. In the 19th century, private butchery was banned, while slaughterhouses became institutions.⁸ Slaughterhouse reforms were a continental phenomenon, happening

not only in capital cities. Before the spread of cold storage and electricity, meat could not be processed year-round and transported for long distances, hence slaughterhouses were in most of the larger cities. The argument can be made that meat, like no other food item, did influence the urban space of a city. There is plenty of literature dedicated specifically to the industrialization of meat provision in specific cities: Copenhagen, Berlin, London or Paris, exploring the multi-layered and complex relationship between meat and the nineteenth-century city.

Changing views. Animals in the 19th century rarely had any moral status, they were viewed just as one of the goods, the property of the human owner. If they were just objects, they could not be held accountable for their actions, therefore it seemed obvious that humans were the ones who used them to meet their own needs and exercised power over them, not only when they posed danger. It was also due to a historical era of Enlightenment, where all things classified as nature, including animals, were perceived as part of natural forces, therefore being subjected to being controlled by humans. It was generally agreed that "animals had been created for humanity to use, whether or not any function had been discovered for them."⁹ With the turn from individual butchery to industrialised meat processing, not only the efficiency of meat production was improved so that they were able to meet the rapidly increasing demands for meat, but also it sowed the seeds of questions and ethical dilemmas. The history of slaughterhouses shows that with the industrial revolution, not only human labour but also animal bodies became commodities. If animals' use for the production of goods was limited and their value was determined by the market, they could be treated as a form of capital and also be easily subjected to their exploitation. The space of industrialised slaughter can be then also understood as the place where the transformation from an animal into a good such as meat takes place.

Paris: the prototype. Paris was a precedent development with its first modern public slaughterhouse opened in 1818.¹⁰ A less known part of Haussmann's renovation of Paris was about concentrating all the abattoirs and meat markets on the city's outskirts at La Villette, which later became known as the abattoir district, and still later the area of Parc de la Villette.¹¹ The most well-known abattoir, La Villette, was opened in the 1860s on the instructions of Napoléon III and later it was used as a prototype for the new developments, just like Parisian squares and boulevards were the standardised patterns for European cities too. Adjoining the general hall, a large livestock market was placed, both elements separated by the bridge over the canal, connecting them in order to allow animals to be transported from the first to the latter. Despite being an exemplary building, major changes in mechanisation have not yet been introduced. However, each ox had a separate cabin in which he lived and then was killed – this is the survival of artisan butchering and a step

before the moment when mass slaughter will become commonplace and individual cabins will be replaced by huge open halls. In 1807 by a decree by Napoleon, all slaughterhouses ought to be built outside the city. La Villette had been cleared away and relocated in 1974. As a part of an urban redevelopment plan, the park on the site was laid out in 1986, designed by Bernard Tschumi, Grande Halle de la Villette was preserved and is now used as an exhibition space.



Old slaughterhouse plan with market halls, stables and an unloading station. Design by Hermann Blankenstein. Source: scanned from: Berlin-Central-Viehhof: Eine Stadt in der Stadt, Berlin 1996

Berlin. Many cities such as Berlin had ambitions to become the world city, expanding their influence and social status, therefore the urban environment was supposed to be cleaned up, the proper infrastructure needed to be built, and “dirty” and polluting industries such as meat production facilities required substantial reform.²¹ Berlin had a slightly different history of reforms. In the 18th century, there was one cattle market and the three municipal slaughtering facilities, located directly by the Spree river. The animals were grazed on the pastures in front of the city wall and then driven through the city centre to the slaughterhouse.²² Two of them closed in the 1810s, the remaining one ceased to fulfil a significant function, but it was used until the 1920s and then was abandoned and demolished. After that, butchers returned to work on the premises of their own businesses, in 1873 there were 780 private slaughterhouses, most of them located in close proximity to Viehmarkt AG, a private animal trade facility with a small space for meat production.²³ In 1880, a new central facility, Berlin Zentralviehhof was opened in the district of Prenzlauer Berg. The weekly newspaper National-Zeitung noted that “the Central-Viehhof in every way belongs to the most impressive and amazing buildings in our city.”²⁴ The design by Hermann Blankenstein was based on Rudolf Virchow’s ideas on veterinary hygiene. After the political turnaround, the site was privatised and finally ceased to operate in 1991 and the site was an industrial wasteland for a number of years.²⁵ There was an interesting change from private slaughterhouses to a central one and then back to private. In Berlin’s case, it was because of the introduction of new regulations and mandatory meat inspections that were only within the city limits – therefore many artisan butchers moved their small shops outside the limits. After that, more strict regulations were introduced, and all Berlin’s meat had to come from the central slaughterhouse. This was a move that was starting to hide individual small slaughter from the public eye and moving them outside the city, yet it was dictated by anything else but money.²⁶ [...]

chapter 2. Visible violence.

2.1. Violence.

Violence can be understood as “the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in: injury, death, psychological harm, maldevelopment or deprivation”.²⁹ The broad definition includes not only the use of physical power but power as such, expanding the understanding to include any threat that can be the result of any imbalanced power relationships. The World Health Organization sees any violent act as a complex product and distinguishes four components that may be helpful to understand its causes.³⁰



Ecological model for understanding violence. Source: based on Krug E, Dahlberg L, Mercy J. World report on violence and health. Geneva: World Health Organization; 2002.

Apart from individual personality traits that may increase the probability of being either a cause or a subject of violence, the relationship factors play a crucial role, due to both increased exposure of the subject inflicting violence to the object of it, but also the close proximity of other people executing some kind of power. There is direct, long-term contact in the slaughterhouse both between animals and workers and between workers and workers. Attempting to disrupt this close contact is one method to divert workers' attention from the violence of everyday work and while still being aware of participating in the process, keep their value systems intact.³¹ The third level examines how a community context, such as the conventions and rules in the workplace, can enhance the probability of being a victim or a perpetrator of violence. The broadest context is a societal one, which investigates which factors may create an acceptable overall environment, in the case of animals it could be norms that support abuse, conceptualization of the human-animal bond across cultures or religious beliefs influences on perception of different species.

Models of understanding ethics. In order to understand how the principles leading the design of slaughterhouses, which for centuries was the role of architects and built environment professionals, and also facilities designed specifically to make this space more humane, it may be useful to expand first upon the topics of ethical attitude and differences both between

and within the categories of human and non-human. The starting relationship is inherently unequal on many layers, man is always in the position of power and the entity judging the rightness of any action. However, many men deal with one animal at a time and one animal provides enough meat supply to feed dozens of people. On the other hand, for example in 2020 there were 4.1 times more chickens living at the same time as humans.³² Especially if we approach violence not as a sudden, random act of animal abuse, but as a well-planned event, it may be assumed that our attitude towards animals is founded on what Gilles Deleuze calls “the dogmatic image of thought” and such a way of representation problematically organises thinking around the fundamental identity of the individual being and its self-awareness.³³ This model is rejected by him, as something that is not a way of thinking but precedes thinking itself. Deleuze also drew a distinct line between morality and ethics. He uses the term “morality” in the sense of a certain set of duties in relation to absolute values, and the term “ethics” as a reasonable satisfaction of needs, in relation to relative values and the natural human inclination to seek goodness in own action. He is concerned not only about the problems with implementing ethical behaviour but more importantly what prevents ethics from taking place.³⁴ In relation to the meat provision system, it could be related twofold: what started to constitute a desire to eat meat, but also what stops humans from the sourcing meat on their own whenever they want, and which factors made the public indignation happen after seeing the process by which it was carried out in central slaughterhouses. Seen purely from a biological perspective, organisms that we consider animals can be determined on the basis of specific characteristics and differences among other organisms. However, such a view does not give us grounds to conclude how those animals inhabit time and space. In his analysis, Deleuze focused on the fact that all beings are fundamentally continuous with each other, shaping each other and the neighbourhood they happen to collectively inhabit.³⁵

Models of moral judgement. The entity assessing the morality of a given action is always the man, and most often the main criterion for assessing moral actions is broadly understood to be the good of a human being. The problem can arise, how do anthropocentric ethics somehow include the welfare of animals, especially at times when it collides with human welfare. Anthropocentric ethics is sometimes being replaced with biocentric ethics, a concept that applies to all environmental ethics, which extends the boundary of a status of a moral object from human beings to all other living beings that exist in nature.³⁶ Donna Haraway believes that any violence in the human-animal relationship is not just in the performance of it, but in the initial thought to “make something or someone killable”.³⁷ Instead of setting a hard line, she considers it to be fluid, finding certain forms of suffering acceptable depending on certain factors: who is suffering, where it takes place, and for what purpose. [...]

2.2. Violence embedded in design.

Relationship of architecture and violence. Violence and architecture is often described as having a relationship of concomitance. They simply exist together, violence happens, and the result is visible in architecture, which is the case at the times of war or when the destruction is a result of natural disasters. The design is then focused to reduce risk and destruction in hazard-prone areas. Architecture can also manifest power and the specific political programs can be easily embodied in it. The architecture can be a symbol of power and therefore the one who occupies it, owns the power. During conflict times, often it's about occupying strategic buildings, and the destruction of a particular building comes with repercussions much bigger than just the fact that the building ceased to exist. Architecture can also be linked to violence as being built for the purpose of defence in a conflict, could be a barricade, a tunnel, a bunker. In this case, it is fully predefined and optimised.

Architecture can also be a product of a system, that with its established norms and rules does create an environment meant to manipulate, control, impose new moral attitudes over others, and especially against the will of them, such as in prisons or slaughterhouses. But architecture and violence can have more implicit relations too. In a piece called *Cafe Müller* by German dancer and choreographer Pina Bausch, there is a vivid example of the violence as a result of direct encounter between humans and the architecture. Two dancers with their eyes closed suddenly start throwing each other against the walls, hurting their bodies, one after another, in total nine times, in a dramatisation of this same pointless violence.⁴⁰ Choreography can be in a way similar to architecture also able to organise bodies in space in a particular order or pattern. Bernard Tschumi expands the notion of violence to any interaction between the building and its user, therefore any architecture is always intrinsically violent because it defines itself by any subject-object relations. This violence is therefore defined as "the intensity of a relationship between individuals and their surrounding spaces."⁴¹ Tschumi differentiates between the violence that is rooted inherently in architecture and the violence that the movement of bodies introduces into architecture. The mere fact of bodies moving around the building, juxtaposed with the stillness and stability of the buildings, introduces chaos. People create their own spatial configurations, their movements do not control anything, they disturb the proportions of the interior and change the lighting qualities.



Humans acting on architecture vs architecture acting on humans.
Source: author's

Tschumi does not differentiate between sudden and

designed violence, or extreme and domestic, but focuses on violence that requires a specific architectural design and process to be implemented. He introduces the term programmatic violence which "encompasses those uses, actions, events and programs that, by accident or by design, are specifically evil and destructive."⁴² The relation between architecture and violence by design is often about one or about both: maximising your own movement and controlling the freedom of movement of another person as much as possible.⁴³

Organising bodies in space. The spatial layout can have a profound influence on how we want someone to behave, be it by: prohibiting movement from a certain place to another place (1), including certain bodies in space and restricting the contact with another (2), clearly dividing space for two or more groups of bodies, where they can't interact (3), or forcing movement in a specific direction and forcing behaviour (4). Those categories came after my research and seemed the most valid in the case of slaughterhouses, but the role of architecture as a system imposing certain behaviours is not definitely not limited to them.



Diagram showing how bodies can be organised in space Source: author's

Movement and deciding entity. In many cases, violence embedded in design consists of two necessary elements: movement and a deciding entity. Firstly, movement and how it is organised, either about maximising the wanted movement and restricting someone else's freedom of movement and secondly, about some transcendental entity, be it an architect, designer, a developer, who anticipated how this movement will happen and has own interest on exactly the way this will happen in a certain way.

Extreme and domestic. Violence in relation to architecture can be also divided into two categories: extreme and domestic.⁴⁴ Extreme is the one that completely dominates the subjects, for example, military architecture, and domestic is linked to the ordinariness architecture we encounter on a daily basis and the violences that developed so subtly and slowly that it may be even difficult to see and question them. Architecture can be violent when it makes bodies, be it human or animal, not aware of being subjected to the rules of specific organisation in space.

2.3. Slaughterhouse as a heterotopia.

In 1967, Michel Foucault in his essay "Of Other Spaces" invoked the concept of heterotopias, understood as both physical and mental spaces that act as "other" spaces, alongside existing spaces and offer possibilities

not available in them. In comparison to utopias, heterotopias don't exist only in imagination. They are spaces that operate on the basis of six principles which have to do with their location, form, function and distinct characteristics.⁴⁵

"They were developed in any culture and come from a state of crisis and deviation."

Foucault differentiates between heterotopias of crisis and of deviation. Both represent some state of abnormality and incompatibility within society, and the ones who occupy them can be considered incompatible with social order, as rules that are present in heterotopias would not be possible to be executed outside of this space. When we understand "crisis" as a "turning point", therefore such a point can be the start of the repugnance towards the process of a transition between animal and meat, which after the industrialization started to be excluded from public view and well-managed. Slaughterhouses developed in different cultures, usually in haphazard manners, and in most of them, were also outside the discussion about architectural history. Sigfried Giedion, an architectural historian, outlines the perfect neutrality as the most striking example of the slaughterhouse. The perfectly organised system involves no emotions. He poses a question, "is this perfect neutrality more profound than we dare to think?"

"They have a determined function within a society, and vary among societies."

To illustrate that principle, Foucault describes the changing location of cemeteries in cities, which went from being in the hearts of cities, to being moved to the outskirts, expressing changing attitudes towards death. In the first chapter, I tried to present how a similar process was carried out in the case of slaughterhouses. It can be argued that slaughterhouses in an urban context have a similar role to the sewage system, both are culturally marginalised, hidden, they do not represent social values, and are supposed to be neutral and should remain invisible. Juxtaposed with the house, which represents all social values we want to connect to the fact of being human – slaughterhouse symbolises the opposite – hunger, blood, flesh, killing.⁴⁶ Moreover, in some cultures the process is not managed by law, but by cultural or religious customs and depending on a society, different animal species are excluded from being for human consumption or perceived as unclean.⁴⁷

"They are capable of juxtaposing several spaces in a single real place."

The design of a slaughterhouse floor plan, which eagerly appeared in many architecture books, compared to a individual butchery shop, is a world of its own, with many internal divisions, separate rooms and partitions. Not only it is linked to the organisation of the production process, but also it makes it difficult to conceptualise

the industrial slaughterhouse as a single identity or get a grasp of the totality of the work that is going on. The history of slaughterhouses is a story of reducing costs and increasing efficiency, so it adopts mass production automation as in the car factory. But with cars, it was a means to speed up production, here the fact that each worker did an isolated aspect of work, made the result more anonymous and collective – no one to pick up as the responsible.⁴⁸



Schematic floor plan of industrialised slaughterhouse Source: Deutinger T. Handbook of Tyranny. Zwitserland: Lars Müller; 2018.

"Heterotopia begins to function at full capacity when the people in them come to some sort of absolute break from their traditional time."

Inside the slaughterhouse, the natural cycle of the passage of time is disturbed. For animals, the goal is often to stop the passing of time and make them disappear quickly, for workers it is to make the passing of time more manageable. Paula Lee in her book compares industrialised slaughter to a machine, except that instead of manufacturing complex objects from small parts, the opposite process takes place, and a very complex object is taken as a starting point, then disassembled and reduced to small parts packaged, valued with price tags.⁴⁹ In the same way, employees entering work from the outside must go through the sequence of access control points, spaces, undergo a hygienic ritual and change their clothes.

"Heterotopias always incorporate an opening and closing system that both isolates them and permits people to pass through."

"Other spaces" require a special set of rules guiding the entry and internal flow of bodies. Slaughterhouses, other buildings related to industrialised agriculture, but also data centres, warehouses, distribution centres are places that are not accessible for an average human, yet they clearly define how our lives look like on an everyday basis. Humans are intruding on that space because it was not built for them: it was built for infrastructure, for assembly lines. Entry is either compulsory for animals, or forbidden for unauthorised people. In the slaughterhouse, millions of animal bodies enter this space every day, giving the impression that it is very accessible, but there are special underlying rules that determine not only if, where and when, but also which animal species and in which health condition and age can enter the slaughterhouse.

"They have a function in relation to all the space that remains."

Foucault argues that heterotopias provide either a space of illusion or a space of compensation. Slaughterhouses serve a function to the society they are in, not as implicitly anymore, as nowadays meat or other food items can be transported for long distances. Industrialised slaughterhouses, borrowing the terminology proposed by Foucault, can be understood as a heterotopia of compensation, so one that replaces the complexity, dirt, hardships of everyday life with a very systemic, clean, orderly space with clear, predefined rules. Slaughterhouses have helped to frame the sourcing of meat in order, remove it from the city centre, move it out of bounds, hide it from public view and allow for unlimited expansion as meat demand increases.⁵⁰ Industrialised slaughterhouses became a means of how a person living in an urban context can access animal flesh to eat, as they didn't have to get familiar with rhythms and cycles of natural life anymore to fulfil basic needs.

chapter 3. Distancing

3.1. Scales of distancing

There are some distinct characteristics that can make someone feel unwanted, unwelcome or even unsafe in that place, even if there are no visible elements such as entry restrictions or signs. I want to explore if such means can be also seen in a slaughterhouse design and see both targeted towards both animals and workers of that space. The physical distancing of the institution of slaughterhouses on an urban layout can be seen on multiple scales to distance the institution from the environment for which the function is fulfilled.

The global scale. After the advancements in refrigeration, there was no longer a need to produce meat close to the place of consumption. Nowadays food production is not evenly distributed around the world and although they have five times as many people, so-called developing countries consume less than twice as much meat as developed ones. For instance, almost half of the meat produced in Brazil and shipped to the EU can be traced back to deforestation. Beef production is already one of the main factors influencing deforestation today.⁵¹ People are more and more disconnected from where food production takes place and it's not the part of an urban metabolism anymore.

The city scale. Meat production facilities are considered a burdensome industry, hence they are located on the outskirts of cities and in the countryside. The accumulation of industrial farms in the vicinity of buildings has a negative impact on the quality of life of local residents. It often involves hygienic concerns,

and concealing the clues that may be an unpleasant place or lead to spread of diseases. The smell as the presumption that there is some contact with bodily, organic matter was an important principle why this institution has been removed from the public view. Lattice windows and louvres are used to create maximum air circulation and disperse the air and acoustic louvres in the building facades are often used to mitigate the noise. Moreover, slaughterhouses are often located according to prevailing wind direction to help counter the smell.

The building scale. Like in many industrial buildings, the office part and the production parts are often clearly separated. The socially acceptable view of an industrial slaughterhouse is usually limited to the office, with a reception desk; it is also the only access point for outsiders. The material characteristics reinforce such division: the office part is often glazed, white, clean and transparent, whereas the production space is usually very generic, bunker-like, clad with metal sheets with not much natural light.⁵² As this labour is considered sometimes repulsive, workers when leaving the space of the slaughterhouse can also clearly distance themselves from what they are doing. Usually, a high fence prevents not only visibility but also people from entering the premises.

Industrialised work is sequenced in such a way that it's almost impossible to see the whole process by one person, labour is cut into sequences and each person does one specific task. Therefore not only no worker sees the whole process, but they also don't see the effect of their colleagues' jobs. Therefore the responsibility for any disruption and violation of the rules is also collective. Production is designed often in such a way to minimise the possibility of direct eye contact between humans and animals, as if you give an animal a predatory stare, they will move away from you.⁵³ Sigfred Gideon in "Mechanization Takes Command" dedicated one chapter to the development of an industrialised slaughterhouse, focusing solely on the relationship between mechanisation and death, not looking at the historical, hygienic, food manufacturing, environmental issues or animal rights perspective. He stated that the process is optimised to happen so quickly, that it is barely perceivable when the moment of death takes place, as to make workers feel like they are merely the observers, not the actors. This is to make workers feel more neutral towards the work and to minimise the psychological burden.⁵⁴

Different means are also used to control animal movement in case they start to panic.⁵⁵ Introducing serpentine and very slight slopes can help to make animals change the levels without sudden movement, while still being unaware they are changing the level. A building often consists of a sequence of ramps, pathways and corridors creating very directional movement, very planned, but changing very slowly.⁵

3.2. Mitigating exclusion.

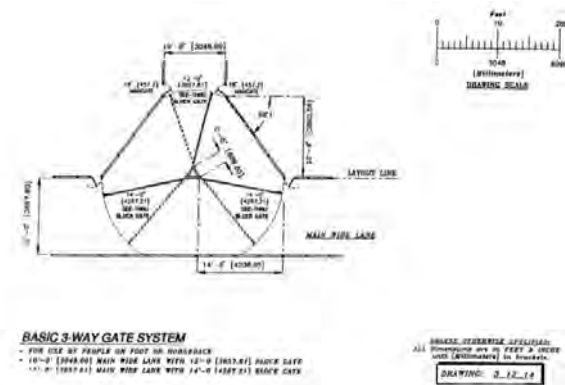
Work of Temple Grandin. Temple Grandin is a Professor of Animal Science at Colorado State University and a designer of animal handling facilities, widely used to reduce the stress of animals during this process.

Her work had a significant influence on the design of slaughterhouses after 1950, especially in the USA. She is also a spokesperson for the "humane" treatment of animals for slaughter.⁵⁷ She is also autistic and that is a framework and primary motivation for her understanding and recognizing spatial experiences of animals and being able to somehow identify with them. However, because of her visibility in the media, there is danger in seeing her experiences as a representative of all autistic people's experiences, as it's not. In contradiction to the conventional beliefs that people on an autism spectrum lack the ability to feel with others (empathy) and for others (sympathy), her work is based on a fundamental, innate understanding of how farmed animals orient themselves in the world, especially focusing on anxieties and fear they may feel.⁵⁸ Therefore the main principle of her work is to mitigate the effects and decrease the fear and anxiety and this is what she understands will make killing of them more humane.

It is understandable that knowing our human thoughts, emotions and feelings, we imagine that alike exist in similarly reacting beings. However, one must be aware that anthropomorphization understood as "describing animals according to human characteristics and assigning them human motives for action"⁵⁹ is considered a fundamental error in the field of ethology. It can be argued that she reduces the animal experience to her own experience and ability to recognize that by empirical anthropomorphization of animals. Her work however, touching mostly the handling of cattle, was certainly influential in the field of improving slaughterhouse amenities design. The human mind tends to think in languages. Animals, Temple argues, don't think in a language, but in sights, sounds, smell, touch, and taste, and by associating these things together into categories, using sensory-based thinking, not language-based thinking.

Many means she proposes are aimed at limiting the rapid movement, either other bodies or elements like doors or gates. Rapid movement scares animals, therefore many means are to slow down the movement and change the pace of it. Grandin was an advocate of introducing curved walls to make animals feel like they are going back to where they came from. Angles need to be specific, as animals must see at least two or three body lengths before the turn.⁶⁰

Humane and civilised. The work of Temple Grandin was focused on making the living conditions of livestock more humane. It is difficult to talk about the humane treatment and the history of a slaughterhouse



Three-way gate system for cattle, eliminating sharp corners where alleys intersect. Temple Grandin's Website [Internet]. grandin.com. 2022 [cited 13 April 2022]. Available from: <http://www.grandin.com/design/cad/cad-11.html>

in an urban location without mentioning the word civilisation. A word that has so many moral connotations and a troubled past, as the very meaning of the word changed several times.⁶¹ Usually, it was used as a means to exclude certain groups of people as having lower levels of social or cultural progress, therefore subjects to be obedient to those who had higher status. The word still is used when talking about animal rights, or treatment of factory-farmed animals – the way in which we treat them, how humane their conditions are, is the indication of how civilised we are as humans, meaning how good we are in doing the ultimate good things. Encountering buildings such as a slaughterhouse threatens our perception of ourselves as empathetic and humane beings, and through different design principles of the spatial layout, it protects humans from directly engaging in animal violence. But "to be civilised" can also be linked to being superficial and dishonest.⁶² Being civilised, therefore being able to hide their innermost impulses, to hide what you feel and what you want to do, is perceived as being part of animal nature. Can it help us understand the gap between meat and animals was made bigger with the development of slaughterhouses? Today we have so deeply internalised the "civilised behavioural standards" that it is difficult for us to feel comfortable around dirt, flesh, blood, and in general lack of waste disposal, which has been an integral part of cities for centuries.

Politics of sight In the book "The Civilizing Process" Norbert Elias poses a question, if it is possible to empirically observe and measure how the process of civilisation works? He argues that yes, the process has its own structure and can help us understand how we started to conceal the fact that every part of the meat was a living being. It seems sensible to structure the process in a way that as little people and for as short time as possible can see the process of disassembling the parts of animals, especially parts like tails, heads, eyes, the less aware they become that the meat was

once a living animal. Those parts are the ones that disappear in the first place. Elias mentions "segregation, removing out of sight, and concealment as the major method of the civilising process." Be it nose-blowing, urinating, showing nudity or killing animals – what was once an integral part of life, what could once have happened openly, without causing moral or physical disgust, has become increasingly segregated, restricted and hidden from public sight as the process takes place.⁶³

Drawing from his ideas, Timothy Pachriat introduces the term politics of sight defined as "organised, concerted attempts to make visible what is hidden and to breach, literally or figuratively, zones of confinement in order to bring about social and political transformation."⁶⁴ In the institution of the industrialised slaughterhouse, Pachriat argues, constant surveillance (hypervisibility) and concealment from sight (complete invisibility) work simultaneously and support each other to make the institution function in time and space. The dynamics created by these two seemingly contradictory characteristics relate in practice. He says that when a job is considered morally and physically repulsive by the vast majority of society, it does not make it eliminated or transformed, but only separated from view.⁶⁵ However, his argument is based on the assumption that the main problem lies in the lack of transparency, which is often a posed dilemma made by animal rights activists stating that if the walls of slaughterhouses were made of glass, then much of what happens behind those walls would simply have to stop. Just as if the vision can change the ethical attitudes, that just more transparency and visibility could change the public attitude towards slaughterhouses, which is a question that could be architecturally addressed.

chapter 4. A question of the future of animals in the cities.

The lives of some animals have disappeared from our everyday field of vision, meaning literal eye contact and the sight of animals, especially in urban spaces. John Berger suggests that this loss left humans confused about our species' relationship with other animals.

Trying to understand how different systems enabled slaughterhouses to work and still do, I have found out that ways of understanding the slaughterhouse from an architectural perspective are often empirical and looking at all animals we encounter during everyday life, there's a schizoid quality to our connection with them. However one needs to be careful about oversimplifying things or prescribing a 'one-size-fits-all' western-centric solution to the challenges of architecture and spatial layout of meat production facilities. If people keep eating meat, there has to be somewhere to offer that possibility and it is not merely the answer to stop building meat plants. Spatial violence in regards to slaughterhouses was approached differently, in pre-industrial butchereries and in industrialised factor farming,

Scholars and facility designers such as Temple Gradin offer us different ways of humanizing the process. It is nevertheless a step to recognize the animals' agency, but largely it's for humans to make them feel better and not to lose profit, not to improve the wellbeing of animals. Is cell meat a solution not only from the perspective of producing meat for consumption, but also from spatial approach? Meat produced in cells is a complete, clear distinction between meat and animal. New cell meat laboratories not only don't need the slaughter industrial process, they also don't need the refined methods of concealments or location outside of cities. Pachriat says, if sites of production would be close to those of consumption in such a situation "every zone of privilege would exist in full contact with the zone of confinement that was its counterpart."⁶⁶

The aim of my essay was not to present one ideology, one vision of the world and architecture that cannot be denied, but more importantly to enlarge the range of different narratives about the shaping of such spaces. There is a choice if we see those mechanisms, what they mean to us, and if we want to be compliant with them and therefore to them, or try to look for another possibility of spatial organisation. The fact that we deny architecture being political and linked with the responsibility of arranging bodies in space is not an act of resistance, it's the acceptance of the status quo. Architects can sometimes be compatible with the system they are working on. Being trained in seeing visual forms and being able to decode them, they can see things that others cannot see and having a certain kind of sensitivity, can read things encoded in space that are violent, wrong or harmful.

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SUPER_ORDINARY

(responding to the banal)

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The term meaningful; according to Britannica it is defined as 'having real importance or value.' As I navigate through my hometown Milwaukee—a rustbelt city in the American Midwest, suffering from decades of urban neglect—I am surrounded by urban dwellings sitting contextually dormant. These non-descript, formulaic buildings are woefully unwilling and incapable of creating a distinguishable fabric, a context different from any other mid-sized urban area across the United States. This further perpetuates the neglect experienced by marginalized groups who reside within them and their bounds. This is not just a local, but rather a global concern: how do we address this lack of place-specificity around the people who inhabit our buildings? How do we exhibit a sense of place and spatial identity through the built environment in a meaningful way? In essence, what does this value—not in the monetary or primitive sense—look like?

Looking back to primordial times, the basic tools to sustain and prolong human life were and still are food, water, air, and shelter. As man evolved, so did his relationship with his environment. Human needs are something far from static and so is also man's quest for growth. Through this quintessential progressive development, Frederick Kiesler states the human environment becomes three-fold: the natural, the human, and the technological" (Kiesler 1939). "...While life comes only from life, it is also dependant on its technological environment. By changing the physical environment, life may be quickened and increased, retarded or destroyed" (Kiesler 1939). As a result of this interrelationship, Kiesler argues functional design or the idea that form follows function is lacking. Instead, "since the building designer deals with forces, not objects, design is therefore, in my definition, not the circumscription of a solid but a deliberate polarization of natural forces towards a specific human purpose" (Kiesler 1939). In other words, Kiesler suggests man has innately developed a skill to influence his life in a desired direction. It is through this correlated desire in which he consciously creates a demand, resulting in a new inherent development towards new possibilities, forms, and functions within an already existing framework.

Shifting to today, in a conventional career timeline, an architect is ushered from education and dropped into real-world practice; faced with a myriad of ideologies and the quest for marketable practical experience. This urgency to produce, coupled with the natural, cultural, technological, and stylized aestheticization; creates a melange of forces and perspectives. This in turn produces a series of discordant, overspecialized, and unevenly apportioned products that we namely refer to as contemporary architecture. Amongst all of these forces, when does one take a step back to pause and introspect on a very fundamental question: what—as an architect and an urbanist—am I trying to achieve given the intricacies and layers of contemporary life?

According to Najafi and Kamal B.M. Shariff, the "main goal of urban design is creating a sense of place... (paying) attention to the quality of places and built environments" (Najafi, Kamal B.M. Shariff 2011, 1054).

The role of design is in so many ways an instrument to answer human needs and expectations as Kiesler also suggested. Najafi and Kamal B.M. Shariff go to define 'place,' as opposed to space, as expressing "a strong affective bond between a person and a particular setting. In other words, place is mixed with human values and principles. As a result, place is a particular space which is covered with meaning and values by the users" (Najafi, Kamal B.M. Shariff 2011, 1054).

However, the populous of urban buildings arrayed across my hometown within south-eastern Wisconsin fall victim to the opposite—to placelessness. Placelessness can be depicted as the physical form of nonplace, which are culturally unidentifiable environments, similar to everywhere and anywhere (Najafi, Kamal B.M. Shariff 2011, 1054). As one drives through a major thoroughfare—South 27th Street of Milwaukee—the sense of time and visual progression cease to exist. The never-ending repetition of strip-mall architecture, bombardment of billboard advertisements, vast stretches of concrete parking lots, and wide boulevards—solely catering to automotive convenience—provide no affective bond towards the city dweller. The banality of South 27th Street provides no space for care and experiential connection. The essence of the urban fabric is transient; existing monofunctionally, a pitstop as a means for consumerist refuelling. At any point throughout the day, these nonplaces are bustling with people and traffic. They meet the fundamental human needs of food and shelter, however, the engagement value beyond these facets is anemic—as refuelling is solely a utilitarian activity. The value they hold is within their condensed array, meeting the city dwellers demand for convenience in a society prioritizing speed and efficiency over slowness and quality. Thus, the lack of distinct personality, of a sense of place, produces an emotional detachment between man and his built landscape.

In Norberg-Schultz's view, without a genuine understanding of place and local identity between man and a particular place, makes for meaningless relationships between the two (van Nes 2008, 118). To deeper comprehend a meaningful value system of place, Najafi and Kamal B.M. Shariff often refer to the writings of Edward Relph. In order to properly prescribe and heal a contusion, we first must have a thorough understanding of it and its significance as "it would be difficult to describe why a certain place is special and impossible to know how to repair existing places in need of mending" (Seamon, Sowers 2008). Relph first did this by honing in on people's identity of and with place. By the identity of a place, Relph "refers to its 'persistent sameness and unity which allows that [place] to be differentiated from others... Relph describes this persistent identity in terms of three components: (1) the place's physical setting; (2) its activities, situations, and events; and (3) the individual and group meanings created through people's experiences and intentions in regard to that

place'" (Seamon, Sowers 2008). However, to Relph, these three components were not enough to capture the full essence of man's relationship with place. He elaborates, "...one needs a language whereby we can identify particular place experiences in terms of the intensity of meaning and intention that a person and place hold for each other" (Seamon, Sowers 2008). He defines this concept as insideness or in other words, the degree of attachment, involvement, and concern an inhabitant or group of inhabitants have for a said place. Similarly, he describes placelessness as a form of outsidership; where inhabitants feel separated or alienated from place. Where Relph deviates from the placelessness mentioned by Najafi and Kamal B.M. Shariff, is in the idea that he believes these nondescript urban areas, such as that of South 27th Street, can be "...as authentic a place as Hellenic Athens or the Gothic cathedrals..." (Seamon, Sowers 2008). He contends that within our modern era a genuine sense of place is gradually overshadowed by a less genuine attitude towards the built landscape. In *The Human Condition* (1954), Hannah Arendt touches on human thoughtlessness, an outstanding characteristic, she observes, of our time. Much as Kiesler drew on man's inherent skill to direct his or her life in a desired direction, Arendt stipulates this act results in a series of events, without serious understanding and consideration for their future implications. Similarly, for Relph, he suggest that placelessness develops from kitsch—an uncritical acceptance of mass values—an overall symptom of mass communication and mass culture, and the ultimate "undermining of place for both individuals and cultures, and the casual replacement of the diverse and significant place of the world with anonymous spaces and exchangeable environments" (Seamon, Sowers 2008).

Within Relph's framework, sense of place can be expanded to be directed towards multi-dimensional milieu of a given society; looking at an inhabitants individual position and circumstance. These unique points of view being in the form of their gender, physical and intellectual abilities, the nuance of one's cultural and social backgrounds, economic endowments, and political and religious affiliations. Sense of place can yet reach further when experienced linearly or non-linearly with time. Yi-Fu Tuan adds to this through topophilia—a love for aspects of place—with the possibility of creating meaning quickly, similar to the concept of love a first sight (Najafi, Kamal B.M. Shariff 2011, 1055). In essence, sense of place has differing levels of intimacy with man. These levels contribute to man's social engagement with place based on man's strength of emotional connection to said place. While this affective value varies from place, it correlates to man's expenditure of quality time, quality of social interaction, and as a result a creation of identity through these aspects. A sense of place can find meaning in its positive perceptual and psychological influence.

In the case of South 27th Street, it can be considered a consequential grey-area of man's

acceptance of his own desires. It's built landscape comprising of do-it-yourself anesthetizations and a copy-paste repetitiveness; more or less, a Venturi and Scott-Brownian shed with differentiating utilizations of symbol and signage. The street is embodied by buildings, however, can they be recognized as architecture? Perhaps within this kitsch, has emerged today's new form of vernacular, one that can be found here, there, and anywhere. Therefore, as man continues to evolve through time, how do architects engage within and ultimately respond to these reverberatory aftershocks of man's growth and this unavoidable state of evolutionary outsidership? What is then the appropriate approach towards contemporary architecture and a creation of a sense of place in our mass-produced and rapidly advancing globalized context?

In his essay, *Towards a Critical Regionalism: Six Points for an Architecture of Resistance*, Kenneth Frampton introduced the dilemma posed by Paul Ricouer in 1961, in which Ricouer states, "It is a fact: every culture cannot sustain and absorb the shock of modern civilization. There is the paradox: how to become modern and to return to sources; how to revive an old, dormant civilization and take part in universal civilization" (Frampton 1983, 16). To Frampton, the rise of universal modernity, and thus the optimization of technology, has led to a limited possibility of creating urban forms of significance, of value. The high-tech approaches, solely prioritizing production and the establishment of "compensatory façades," as means to mask the realities of universal systems, emerges an architectural practice of polarization. He calls on Arendt, "The 'in order to' has become the content of the 'for the sake of;' utility established as meaning generates meaninglessness" (Frampton 1983, 16). With this in mind, Frampton suggest an architecture capable of nurturing a resistance, identity-giving culture while simultaneously responding to mass culture; one he alludes to as an architecture of critical regionalism. It is an architecture which equally distances itself from the idea of progress while also evading the reversion to the nostalgia of an archaic past. It requires the emergence of a new form of relationship between architect and user—much like Kiesler suggested, only with time can man consciously demand what he needs—a mediation between the overarching impacts of mass culture and elements indirectly associated with place. Frampton states, "(Critical regionalism) in the first place, it has to 'deconstruct' the overall spectrum of world culture which it inevitably inherits; in the second place, it has to achieve, through synthetic contradiction, a manifest critique of universal civilization" (Frampton 1983, 21). Through this significant self-consciousness, critical regionalism acts as a cultural strategy or place-conscious poeticism in which inspiration rises from contextual components of topography, light, and tectonics: the building of the site, the playing of light, the poeticism of joinery. The layering of these idiosyncrasies, place can find a language and personality without falling to the romanticism of past

vernaculars, while too, withstanding the onslaught of mass culture. As such, Frampton stresses the importance of tactility in architecture; as it can only be understood through spatial experience and not merely reduced to dimensionless data.

Similarly to Frampton, Denise Scott-Brown also addresses her discord against the same vulgarized attitudes encompassed within the modern built landscape—albeit, in an differing manner. In her essay, *Learning from Pop*, Scott-Brown emphasizes the relance of today's mass culture as a means for contemporary architectural production; as the pop landscape is the context in which we design and build. She states, "Sensitivity to needs is a first reason for going to the existing city. Once there, the first lesson for architects is the pluralism of need. No builder-developer in his right mind would announce: I am building for Man. He is building for a market, for a group of people defined by income range, age, family composition and life style" (Scott-Brown 1971, 1). To her, the city is a *kunstkammer* of artifacts representing a collection of subcultures. Scott-Brown questions, "If high-style architects are not producing what people want or need, who is, and what can we learn from them?" (Scott-Brown 1971,1). It is within this ordinary and banal context, a context often uncompromised by high-brow architectural intervention, in which she draws her rhetoric. Her stance overlaps with that of Kiesler in the sense that form does not and cannot arise from function alone—instead—form contiguously follows function, forces, and form. When forms are carefully analysed within the realm of architecture, they can lead to inform functional needs. Thus, her interest lies within what we can learn from kitsch and the artifacts and relationships it inadvertently produces. This can be seen in her practice of applying new analytical techniques such as film, video, and computers as a means for a collection of typologies constructed from the dynamism of signs and sequences found within our messy and mass-produced landscapes. She adds: "Formal analysis should be comparative, linking the new forms, by comparison, to the rest of the formal tradition of architecture thereby incorporating them into the architectural discipline and helping us to understand our new experience in the light of our formal training" (Scott-Brown 1971, 3). Her work alludes to the incorporation of this ordinary vocabulary within the traditional architectural approach—as to her—without the overall acceptance of mass culture, or pop, within and by the establishment, we cannot begin to learn place-making from it.

Within the writings of Frampton and Scott-Brown, the polarity in what constitutes as architectural contextuality is clear. While Frampton speaks of an idealized context, primarily focusing on external factors of place-making and its local specificity—and shunning of the mainstream mass consumerist culture in the process—Scott-Brown in contrast, is accepting and utilizing these urban complexities and trends within the globalized landscape as her constructive

springboard. However, does Scott-Brown's treatment of kitsch only add to the banality of pop landscapes? Is this fragmented ordinariness—something already unintentionally formed from man's determination for more—only a band-aid or transient place-making approach? Are the ideas of which Scott-Brown speaks of, of the here and now context, meaningful when the context is repeatedly and exponentially mutating? With Frampton's writings, is discounting the relationship between place within mass culture, in its wholly, also appropriate? Of course, architects are not worldly saviours, however, Frampton perhaps overlooks the idea that regions are also capable of processing the affects of mass culture in their own right; much like the local contextual forces he is keen to emphasize within his work. Therefore, within this polarity, is there a third-way to address sensitivity to place? A bridge between Frampton's critical regionalism and Scott-Brown's communicative imagery?

In the works and teachings of Miroslav Sik, a Swiss architect and teacher at ETH Zurich, we can find this cross-pollination of ideals within his Analogous Architecture. In his approach towards context, the old is not reproduced and the new is not reinvented, instead, the old is actively used and manipulated. In this dynamic use of history, he updates what already exists in a way in which its original intention becomes obsolete. Sik's analogue approach hoped to add a new layer of authentic perception within the outsidership and anonymity prescribed by traditionalist ideologies. His approach would focus aspects that can be perceived sensually instead of through analytical processes. As a result, Sik's methodology hones in on man's everyday personal needs; while congruently accessing atmospheric layers of place—that being of its mood and individuality. Sik deviated from the regionalism referred to by Frampton in the sense of its scale; opting for a reduced regionalism, as something much more local. A proponent of personal atmospheres, he argues that one cannot fully design meaningful architecture for a place that one is not intimately familiar with. Sik's old-new approach utilizes contemporary communication imagery with ordinary elements found within everyday life.

All in all, as man evolves through changing facets of time his needs illustrate themselves based on his interaction and relationship with his desired life direction. From the primitive to the contemporary, man's needs are innate for his optimal survival and well-being. As man forms contrasting relationships within his magnitude of environments, his quest for betterment and growth, also, inherently, produces consequences. Globalization, on one hand a testament to man's intelligence and ingenuity, becomes a double-edged sword when defining meaningfulness within the built landscape. The side effects of economy and capitalism spawn a playground for contemporary placelessness, and thus, detachment from an environment man has worked so diligently to conjure. In this contemporary,

architecture has become a tool to bandage and make positive perception possible from the untidiness that is our physical creation as a species. Sik's contextuality, in his rejection of a consistent formalism, prevents his architecture from becoming commodified and easily traded in today's fast-paced trends and consumerist culture. It expresses an architecture of resistance, a framework which is defiant of the deeply rooted repeat, reuse, throwaway values. Innately, his new-old approach allows for regional adaptations without the loss of essence of its place-making articulations. Can Sik's methodology become the ailment as man continues to pursue universalism? However, is this pursuit for value and belonging once again meaningless as man's definition of meaning is also fleeting as time progresses—i.e. what is meaningful right now might not be meaningful later? If we design for resistance, permanence, and timelessness, is this the end—as Kiesler notes—of evolution?

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VIRTUAL BUILDERS

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Abstract

This paper investigates how architecture is constructed in online video games and the Metaverse, to identify how this medium can affect the virtual design process in consideration of the role architects are expected to play in the development of the metaverse.

Keywords: virtual worlds, architecture, video games, metaverse, blockchain

Making Architecture in Video games and the Metaverse

We witnessed remarkable advancements in technology and computer We witnessed remarkable advancements in technology and computer graphics in the past decade, making virtual reality and video games as immersive as ever. With the rise of web 3.0, cryptocurrencies, especially Ethereum, and the boom of NFTs, virtual real-estate, and Facebook's transition to Meta, the value of digital assets has skyrocketed uncontrollably. Due to the Covid-19 pandemic, the world has been forced to occupy cyberspace as the only means of safely connecting with each other, changing how we work, learn, communicate, and live, setting the perfect stage for the rise of the Metaverse.

In Neal Stephenson's 1992 Post cyberpunk Sci-Fi book Snow Crash, he imagines the Metaverse as an internet-turned-virtual reality, a decade after William Gibson's presented his concept of Cyberspace in 1984's Neuromancer. The Metaverse shares many similarities with traditional game spaces, but it is primarily an isolated environment with no real-world influences. The most significant contrast between the metaverse and traditional game spaces is that the former is subservient to the whims and desires of users within a given set of rules. At the same time, the latter is customized and controlled by designers to convey a specific experience to the user. Snow Crash's release was parallel with the widespread use of broadband internet, influencing early virtual reality projects with its vision of densely populated, huge seamless worlds with expansive, lawless territories, like Active worlds, Blaxxun in 1995, and Second Life in 2003. These virtual worlds strived to simulate what made the vision of Snow Crash's Metaverse so powerful, endless possibilities set in an accessible framework based on a reality shared by everyone. (Alphonso, 2007)

Despite the ambition at the time, technology was not nearly advanced enough to allow for the vision of the Metaverse to come true. Looking at technology now, although it has come a long way since the '90s, and we've witnessed incredible progress in the quality of virtual worlds through vast open-world triple-A video games and the many attempts to achieve the vision of the metaverse, our examples of the Metaverse today are still in children's shoes, we are still in the prototyping and experimentation phase. Metaverse platforms like Decentraland, Somnium Space, and The Sandbox, compared to what video games have achieved so far, look like a step back in terms of overall quality. Limitations of technology and the internet's infrastructure make hyper-realistic graphics on a massive

scale impossible without downloading and locally running the client on your computer, which isn't feasible for everyone yet. The reason for this downgrade is the need for the Metaverse to be accessible anywhere and anytime from any device.

In 1999 Andrew Gower, a student at Cambridge University, developed an online game known as Devious MUD (Multi-User Dungeon); which was a major success. The reason behind its success in its time was the sheer fact that users could run it on any computer without having to download the game, and that meant that kids could play it together in their school computer labs, public libraries, anybody could run Devious MUD as long as they had a PC and an internet connection.(Hayes, 2020) The basic graphics of the game didn't take much from the user's experience, considering the success the game had. Devious MUD eventually evolved into RuneScape (Now Known as Old School RuneScape) in 2001. One of the most successful MMORPGs, a game played by millions to this day with a total player base of 34.3 million players and over 1.3 million daily active users. Although RuneScape evolved into a 3D game and required users to download and install it, its graphics were still extremely basic, making it accessible to most PC owners. RuneScape 3 was released in 2020 with significantly better graphics, but people still preferred old-school RuneScape as it still has a higher player base. The story of Devious MUD taught us that accessibility is a key factor to successfully creating an active online environment.

We witness the same approach being adopted today in our low-poly, voxel-based Metaverses. Although accessibility is a priority, on a contradicting note, today's metaverses seem to be focused on cryptocurrency investors, corporate entities, and wealthy individuals more than being spaces that are accessible and useful to everyone. Considering that we are still at the beginning of the Metaverse era, it makes sense to focus on attracting investors that will help accelerate the growth of these platforms. However, for someone to purchase land in one of these metaverse platforms, they can expect to pay a minimum of 20,000 U.S. dollars. It isn't easy to gauge the value digital real-estate will have in the future and whether it will be worth the investment. The tangibility of digital real estate for the average person already creates a classist gap within the virtual population. Although everyone can visit the metaverse, it does not seem like the majority of users are going to be able to afford land of their own, or if people will even develop a need or interest to inhabit these platforms unless the metaverse becomes a place where anyone can earn enough currency to become an investor themselves.

When exploring Metaverses like Decentraland and Somnium space, one begins to recognize that, although buildings in the metaverse are generally designed as a spectacle, a gallery to display and sell NFTs (Non-Fungible Tokens), or a billboard, one is bound to stumble upon the occasional creative plots that offer unique experiences, like experiencing the Apollo 11 moon landing, to shop for NFT wearables on the moon, play a game of stacking sandwiches with a fellow visitor, gamble with cryptocurrency at a casino, or even stop for a meditation session at the Zen gardens. One does not need to be an architect to build in the metaverse; since most platforms have their own simplified building applications. Anyone can build on their own land. However, their options will be limited to using assets created by the platform and seeing how people already invest so much into buying their virtual lands; it just makes sense to push the boundaries of what it can offer through creating fully customized projects. Creating a fully customized experience requires expertise in 3D modeling, coding, UI and UX design, game development, architecture, and concept art; this creates opportunities and a demand for architects to work on metaverse projects.

The possibilities for architecture in the metaverse are endless; it is no

surprise that architects will have to abandon the architectural conventions of the natural world and utilize the freedom that the metaverse will give them. Building code, structural systems, laws of physics, and severe weather are no longer deciding factors in how we design in the virtual world. We will have to redefine how we think about accessibility, program, quality of space, design restrictions, user interaction, and experience. Architects will have to obtain new skills and learn how to collaborate with new disciplines. If the metaverse is the new frontier of the digital age, what can we learn from our existing virtual worlds to design a better metaverse? How will it impact the way we design both in the physical and digital worlds? Can virtual architecture be part of the solution to our urgencies, or is the metaverse going to be a mere distraction from our crumbling world, leading to a dystopian disaster?

A Brief History of Our Virtual Worlds

The story of our online virtual worlds began in 1974 when a multiplayer function was added by locally connecting two computers for the first time to a game called Maze war, creating the first FPS (First Person Shooter), and soon after, it was playable over the Advanced Research Projects Agency Network between 8 players on a server in real-time, laying the foundation for online multiplayer games.(Hayes, 2020) In 1986 Lucas Arts set out to develop the first large scale commercially successful online community called Habitat, a multi-player online collaborative virtual environment; Habitat was an 8-bit side scroll environment set in the modern-day where players could customize their avatars, chat with other players in the world through speech bubbles, trade items and currency with each other, players even had the option to rob and kill other players.(Hayes, 2020) The freedom habitat gave players meant that the community had to create their laws and ethical code within the game alongside the moderators. Habitat proved that a large-scale online world could exist and introduced the pillars of our virtual worlds, avatar creation, communication, trading, and a collaborative environment.

1996's Nexus: Kingdom of the winds, a 16-bit top-down sprite animated environment that introduced factions to MMORPGs, a central storyline making each player the main protagonist of the world in their own story, giving each player a significance within the world, making it the first actual massive multiplayer online role-playing game. Later in the same year, Meridian 59 was released as the first 3D first-person MMORPG that combined all its predecessors' characteristics into one game and introduced multiple identical worlds on different servers to prevent overpopulation and heavy loads on players' computers, allowing for a better gameplay experience. Despite the breakthrough Meridian 59 had to offer, it was not a success because it did not have a clear genre. In 1997 Ultima Online, a sandbox open-world MMORPG, was released, the most successful game in the genre so far, but still was not mainstream due to the rise of PlayStation and console games. Devious MUD in 1999, focusing on the low-end market, showed the world the importance of accessibility with its basic graphics and ease of access. In the same year, a few months later, Ever Quest was released in contrast to Devious Mud; it focused on clients from the higher end of the market. With the boom of home computers in 1999, it pushed the capability of the internet and the computers at the time to their limit. As a successful high-end open-world, MMORPG Ever Quest showed the world what the future could look like and proved that pushing the boundaries of technology and providing a high-quality virtual environment is also a key to success. Adding interconnectivity to games meant that the design of virtual worlds was no longer limited to creating spaces meant to satisfy the narrative and end goal of a game but to create collaborative social spaces that cultivate communities and social



Image 1: Devious MUD's (1999) basic graphic and interface By Andrew Gower

Source: <https://runescape.fandom.com/wiki/DeviousMUD>



Image 2: Roleplaying conversation between two players in LucasArts' Habitat (1986)

Source: <https://www.theverge.com/2016/7/9/12134996/lucasfilm-games-habitat>

networks that extend into the real world.(Borries, Walz, Matthias, 2007)

Philip Rosedale, the creator of Second life, must feel like the kid whose homework got stolen since his non-crypto-based metaverse has been the virtual world to work, learn, earn, and play since 2003. Although Second Life has only been periodically successful, extremely buggy, complicated to use, and is by no means decentralized, it has been a place where players have built careers, businesses, networks, friendships, and even families. Second Life serves as an excellent example for metaverse developers to learn what works and what doesn't; it even proved that a functional metaverse is possible. Virtual worlds have economies, currency, culture, aesthetics, history, and architecture. Although not all virtual worlds are successful, some of them are inhabited by millions of daily players, making their populations larger than several small countries like World of Warcraft (WoW) with a total player base of 89million and FF14 with an entire player base of 27million, creating powerful communities of people who share a sense of belonging to virtual worlds.

The Gamer's Toolbox

Understanding how building in videogames works, clarifies the relationship between architecture and its place within the virtual environment; when players inhabit virtual worlds for hundreds of hours collecting rewards and mining resources, it only makes sense that they get to have a place that they can call home to

show off their trophies and hang out with fellow players. Building in online games is always dependent on the game's infrastructure and the hardware capacity it runs on; most games limit the amount of space and items each user can have; the smaller the maximum player count hosted per game server, the more freedom the player gets. The style of the game and its graphics also influence this capacity. Base building is tackled differently in every game, depending on the needs of the world and the nature of the environment.

For example, in Bethesda's Fallout 76 (24 players per server), an online action role-playing game set in a gruesome post-apocalyptic world based in west-Virginia and its lore, each player is entitled to a campsite anywhere on the map as long as it is far enough from other players' camps, and it doesn't overlap with existing structures and shared spaces. The player places an item called C.A.M.P in the world; this item projects a semi-sphere around it, indicating the area in which the player is free to build. Players can then build things on their camp using plans and materials they've scavenged in the world, or they can buy special items from the game's atomic store to personalize their base. The building interface consists of a library of categories like blueprints. You could save structures you've already built to deploy them anywhere else if you decided to move your camp, tabs for building components, crafting benches, resources, defense systems, and miscellaneous items. Within these menus, the player can find a list of items that they can build, and each of these items will require scavenging for resources and scrapping items to extract raw materials. In 76 context matters, players



Image 3: Bethesda's Fallout 76 (2018) Building interface

Source: <https://www.youtube.com/watch?v=MSyk3YnNwFU&t=895s>

will choose the site based on its proximity to resources and central areas for survival reasons.

Some players decide to prioritize form over function and go for the vista on the cliff of a ghoul-infested mountain to construct their camps. Once the player has built their camp by placing walls and floors that work in a modular manner, they can place decorative and functional items within their camp in addition to non-player characters (NPCs). Players can utilize their camps to generate resources, like food and water by making a small farm and building water purifiers. Players can even set up vending machines to sell items to other players when they pass by your camp. A player's camp will always be open to visits from other players and NPCs; these visits aren't always friendly. Protecting their camp from vandals and invaders is also part of the survival aspect. The game also introduces defense systems to the camp, from barricades and traps to RPG turrets. Considering that the developer designs all the items in the game, the outcome of the player's design will always fit into the world and never look out of place, this keeps the story of the world intact. Adding special items to the store for players to spend real money on is Bethesda's primary way to create a steady income from the game without forcing a monthly subscription fee. These special items can vary from new building modules that change the way people approach building in the game, to simple decorations. Building in 76 is a practice in strategic and defensive design. It is a process that is integrated with the player's development in the game, from gathering resources and plans to scouting for a site and constantly maintaining and repairing their camp from the harsh environment.

Minecraft (24 players per server) is an online multiplayer sandbox action game that allows players the freedom to play the game as they please. Minecraft tackles the building issue differently. All basic inanimate objects in the world are elements that the player can break down and combine with other elements to craft new items. Since Minecraft is also a survival game, creating a base is part of surviving, some players focus on reaching the end game, and some players are there for the creative mode. In Minecraft, building is simple, each voxel can be occupied with any type of element, gravity is not an issue, The architecture is connected with the world, the player is free to create anything they want as long as they have the patience to place thousands of voxels of different materials to create what they want. They are not limited to a certain radius or a specific capacity, the only restrictions are the voxel grid and the existing materials and resources. Players can craft furniture, fences, windows, doors, and torches, and the list becomes endless once you have introduced modding into your game. The best thing about Minecraft is the freedom it gives to players. And with coding introduced, players are even free to program robots within the game to do all the tedious chores for them. Since its release, incredible things have been created on Minecraft, from imaginary cities and real-life

replicas to the uncensored library. Minecraft became more than just a survival sandbox game, but a platform for academic research, a sanctuary for knowledge, and a ground for participatory design.

Final Fantasy XIV (5,000 players per server) is one of the most populated massive multiplayer online role-playing games the world has ever seen. Since its launch, this game has been simulating a housing crisis. There simply isn't enough housing to go around. Despite the developer's constant efforts to find a solution for housing in the game. It is just not feasible to host all of the player's homes within the main world. It would turn into suburb fantasy. One of the solutions the developers came up with to allow more players to experience owning a house, is setting a rule that if you don't enter your house for a week, the land automatically becomes available for other players to claim, despite paying for it with in-game currency. Their attempt to satisfy the crowd was to create apartment buildings with unlimited instances of apartments for users, but this is not enough for most players. Players want to show off the fact that they own a house and they don't mind taking extra measurements to be able to claim land within the world. From spending hours waiting for a slot to open to purchasing land from a black market somewhere in the corners of the internet. It is Ludacris that some people have turned this into a side hustle. Although homes in Final Fantasy don't add much to the gaming experience, aside from being an instance of a room that you can decorate and maybe hang out with your friends. It is still an incredibly desired aspect by players in the game because it allows them to channel their self-expression through digital assets. In the same way, people use decorative items, fashion, and jewelry in real life, which also translates to how people perceive their digital assets in the metaverse. (Miller, 2022)

The Metaverse Architect's Toolbox

Liberland's metaverse recently had a soft opening as the first crypto-urban metaverse project, completely designed and master-planned by Zaha Hadid Architects with ambitions of establishing a physical twin in the real world. Liberland's Metaverse is based on the Mytaverse platform, which is based on Unreal engine 4, breaking the low-poly approach to the metaverse and focusing on the higher-end market with graphics adaptable to the future. Architects will likely encounter similar world-building opportunities that will require designing metaverses on the urban scale. However, the majority of the potential market for architects will be designing buildings on a local scale for digital landowners in open metaverses like Decentraland, The SandBox, and Somnium Space. It is important to understand how the building process works within these platforms to be able to tackle the challenges presented by their complex, ever-changing virtual context.



Image 4: Blockworks' The Uncensored Library server (2020) in Mojang's Minecraft (2009)

Source: <https://www.blockworks.uk/the-uncensored-library?msclkid=55ad996ebc1211ec90e809e5eb24c211>



Image 5: Square Enix's Final Fantasy XIV (2013) A player's decorated house interior

Source: <https://i0.wp.com/twinfinite.net/wp-content/uploads/2018/08/ffxiv-housing.jpg?w=960&ssl=1>

Decentraland is an Ethereum-based blockchain virtual environment where users can sell, buy, and build on virtual lands used to run decentralized applications. Ariel Meilich and Esteban Ordano founded it as a proof of concept for allocating ownership of digital real estate to blockchain users. On an urban scale, it has established districts of different themes for its users, like Decentraland University, which has a VR Academy where students can attend virtual classrooms and display their 3D creations in the world. There is also a fashion district full of fashion stores and shopping malls, where Decentraland's first fashion week recently took place, hosting brands from all over the world.

There are two ways to build in Decentraland: the Builder Tool or the Decentraland SDK. (Decentraland, 2022) The Decentraland builder tool requires no skill to use. It runs on the user's browser and allows them to drag and drop assets from Decentraland's asset library and NFT collectibles from their wallet onto their virtual land. It is difficult to say that this tool is sufficient enough to design architecturally, because its too basic, restricting and redundant. It is technically limited to creating 3D collages. Decentraland's SDK is more suited to creating architectural designs, the only downside architects will face taking this approach is that it requires coding skills to put a scene together and make it functional. Modeling assets can be done through any 3D modeling software that can export in GL Transmission Format. Although this approach gives the architect freedom to design how they usually would, they still must design with a few things in mind like the polygon count limit, creating an interactive experience, focusing on visual and auditory stimulation due to the lack of other sensory inputs into the world, interior design and the quality of space, just like in every other metaverse. To create an interactive functional experience, the architect will be forced to take a multidisciplinary approach and collaborate with

programmers, block-chain experts, sound designers, and artists to meet clients' needs or assume the task to learn these additional skills if they want to work alone.

The Sandbox has a different approach to the metaverse where users can buy land from the main map, but each land exists as a separate instance from the rest of the world as its sandbox world. Landowners can host and monetize games, venues, galleries, and all sorts of spaces. The Sandbox has two builders as well, it is a voxel-based world, so it simplifies the modeling process. Making items in The Sandbox's VoxEdit will require the architect to consider each component they design as a separate entity that can be rigged and animated individually. So, the item design process will revolve around creating component pieces to build an item, or one can make an item and then break it down into smaller components to import it into the world as a functional asset. It is always easier to start with the smaller pieces and assemble them. The Sandbox's Game Maker is the architect's playground; world-building in the Game Maker is similar to Minecraft; it's a process of adding and subtracting voxels to create a structure while assigning different elements to each voxel to distinguish various components of the world. After sculpting the voxel landscape and designing the architecture of the world, the assets created in VoxEdit or owned by the user can be dropped into the world. As the name suggests, Game Maker specializes in creating games for the metaverse, so taking up a design project in The Sandbox will require the architect to learn more about the process of video game design because chances are the client is going to want to base their world around a narrative and a game. It will bring its own set of challenges to architects, mainly if the world follows a particular narrative. Architects will have to adopt the role of the concept artist, game developer, and level designer. The Sandbox's main attraction is its play-to-earn system, allowing both owners and visitors

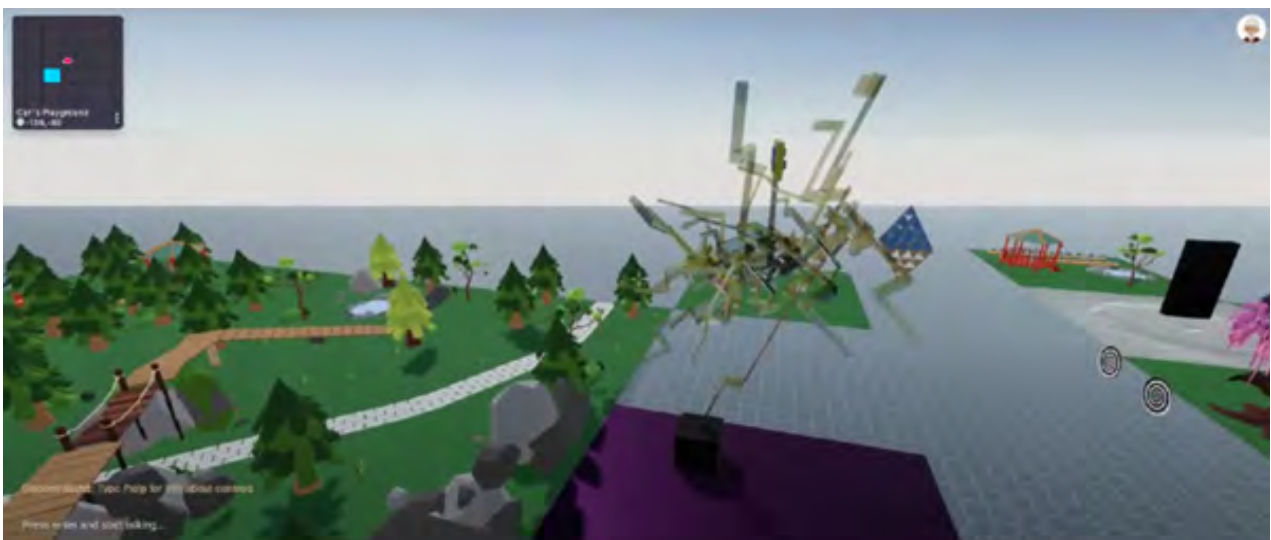


Image 6: Decentraland University's VR Academy Sandbox with a display of students' work published for feedback.

Source: <https://www.youtube.com/watch?v=HaHIAogL-LY&list=PLrON4JHluqpkNeeUCMOnDCdZ53S6o3Ndw&index=10>

to profit from the worlds they create.

Somnium Space also has its own building client, it is more advanced than Decentraland's builder, so it could be a viable option to create architecture within the world. The builder works based on assets as well, but it allows the user to transform the objects three-dimensionally. The architect can combine basic shapes and elements to create other things. However, it is not an ideal way to build and design, it is a decent start compared to Decentraland's builder. Somnium Space's Unity-based SDK is a viable option for the expert user. Coding is required to place 3D assets into the Land, but the architect is free to design the building in their familiar 3D modeling software before importing it into unity. Somnium Space also has a polygon limit on each parcel, acting as the main limitation in the design process. Similarities between how metaverse builds work will allow for interoperability between metaverses, allowing for a client to build the same building in multiple metaverses while hosting the same event at the same time across each platform. If we introduce the concept of digital twins to the equation, these events and buildings can also be parallel to events in the physical world.

The Dawn of the metaverse

Global Architecture firms have already established projects in the Metaverse like Zaha Hadid architects' cyber-urban city Liberland project in Mytaverse and Bjarke Ingles' Viceverse, an office building for Vice in Decentraland. We have even seen the first virtual home sold as a Non-Fungible Token (NFT) for half a million dollars by Krista Kim, and the rise of metaverse architecture firms like Voxel architects and Metaverse architects already have several projects built-in multiple metaverse platforms and have established multidisciplinary practices. Although no formal training is required for one to become an architect of the metaverse, architects are already qualified to design complex projects within the metaverse. There are a few things beyond the scope of our profession, like animating, coding, video game design, UI and UX design. This offers architects an opportunity to collaborate with other design professions and learn new skills that will change the way we think about virtual design.

Conferences, concerts, exhibitions, movie premieres, and even fashion shows moved to the internet during the pandemic, which meant that more people could attend these events without worrying about picking the best seat or missing out on other events happening simultaneously. It just meant more exposure for artists, better networking opportunities, ease of contact, and collaboration between users. In April 2020, the battle-royale game Fortnite hosted American rapper Travis Scott's Astronomical concert, which was attended by millions worldwide on all sorts of

devices, completely redefining the concert experience. This event transformed the way we think about the design and scale of event venues in virtual worlds; it was an experience that immersed the attendees and integrated them as part of the show, and the entire game world became the stage providing everyone an equally brilliant experience of the event.

With advancements towards the concept of digital twins, creating a direct link between the virtual and the physical world presents the opportunity to allow the two realms to coexist in real-time through Augmented, Virtual and Mixed Reality (AR, VR, MR). It can also serve as a ground for testing how future architectural projects will function within their context in the real world. We can set up live interactions between objects in the physical world and the virtual world in real-time through the internet of things (IoT); integrating a fluidity of interaction in workspaces, event venues, entertainment districts, schools, hospitals, and even homes. IoT will even help us analyze and study spaces and how people interact with them to identify problems and improve our spaces through data mining. (Piderit,2022)

"The Metaverse is this digital world that lives alongside our physical one and allows us to live, work and play alongside each other. And digital twins are the foundations that the Metaverse will be built on." - David Craig Weir-McCall.

Although the virtual world can drastically reduce the physical waste we produce in the real world through digital alternatives to spaces, paper, modeling, prototyping, and reducing our need to travel both globally and locally, on the contrary, running the metaverse can cause an influx of greenhouse emissions, as it will rely on data centers that use AI and cloud services, which require large amounts of energy, there has already been an uproar against NFTs and Cryptocurrency mining for their reliance on cheap energy resources, with a large carbon footprint. If we manage to find a solution to power our digital world with clean energy sources, then it can be one of the solutions to saving our planet. There will also be an increase in the production of VR hardware, increasing electronic waste, which can be recycled and reused if strict recycling systems are introduced everywhere. However, seeing how we have been handling things so far, chances are that electronic waste will continue to make its way to landfills across the world.

It is too early to tell whether or not the metaverse in the form of a parallel virtual reality will be the new frontier for technology and how we live our lives in the next era, but the possibilities are endless and architects are at the center of the development of this new era and we have a role to play in how the outcome will turn out to be whether we use it to find a solution to our urgencies or an escape from them, is up to us to decide.

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CHASING AGENCY

An effort to imagine architectural practice that matters.

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The Dawn of the Hegemon

The emergence of the neoliberal doctrine was more than just an effort of the capitalist class to the problem of accumulation. It was first and foremost a political project - a project to respond to the governmentality crises of the late 60s. In the aftermath of the 1968 student protests, the Keynesian economic system ceased to provide an alternative to the global social dissent, and its demise seemed inevitable. Chantal Mouffe characterized it as the 'populist moment'¹ - a moment enabling a hegemonic change in politics. In the 1975 report, for the Trilateral Commission, Samuel Huntington - the former White House Coordinator for Security Planning - stated explicitly that the 60s democratic surge made the society ungovernable and that "the strength of democracy poses a problem for the governability of democracy"². The following ideological regime promised to give citizens more agency by focusing on liberalising the capital flows and economic system, making people free from the control of the state (positioning itself in opposition to the state-dominated eastern bloc). In this sense:

"The crisis of Keynesianism and the reduction in forms of welfare-state intervention therefore lead less to the state losing powers of regulation and control (in the sense of a zero-sum game) and can instead be construed as a re-organisation or restructuring of government techniques, shifting the regulatory competence of the state onto 'responsible' and 'rational' individuals."³

The main effort of the governing class was reconstructing the subject of political life, which was to become the 'entrepreneurial self'. This new subject was supposed to have maximum autonomy in the market, but as the subject's economic freedoms were to be elevated, all the social welfare was to be cut down and the individual would be deemed 'responsible' for his failures in the so-called, 'free' market economy.

It is now over 50 years after the 1968 protests and the ideas of emancipatory neoliberal politics can be easily ridiculed (it is worth remembering that, at the beginning, even prominent leftist intellectuals (e.g., Foucault⁴) were optimistic about the new social order under neoliberalism). The system failed in creating more 'free' societies, only accelerating the coercions of the

1 Mouffe, C. (2019). For a left populism.

2 Crozier, M., Huntington, S. P., Watanuki, J., & Trilateral Commission. (1975). The crisis of democracy: Report on the governability of democracies to the Trilateral Commission. New York: New York University Press. [p.128]

3 Lemke, T. (2001) 'The birth of bio-politics'—Michel Foucault's lecture at the College de France on neo-liberal governmentality, *Economy & Society*, 30(2), pp. 202.

4 Zamora, D. (2019). How Michel Foucault Got Neoliberalism So Wrong. Retrieved 12 April 2022, from <https://jacobinmag.com/2019/09/michel-foucault-neoliberalism-friedrich-hayek-milton-friedman-gary-becker-minoritarian-governments>

supposedly 'free' market. This is best illustrated by examining the hegemon of the global economy, the country at the forefront of neoliberalisation - the United States. The average wages, in the 'biggest economy of the world', are now worth 31% less than back in 1968, the Gini index rose from 0.34 in 1979 to 0.41 in 2019, while (what seems incomprehensible with the advancement of modern medicine) the life expectancy since 2014 is slowly declining⁷. This, coupled with the ridicule of the 2008 financial crisis, when unprecedented sums of money were used to bail out the American banks and the costs were internalized among the US citizens, shook the foundation of the neoliberal myth. Neoliberalism did not end, but it certainly lost its validity. This opened up the path for political parties which utilize the popular energy fueled by the discontent with the contemporary social order. Chantal Mouffe deems this period - the new 'populist moment'⁸ - a moment when I argue that a novel, more collective type of politics, should be constructed, and architecture can be a force that pushes us closer towards such a collective turn.

Towards an Urban Collective Turn

Firstly, new progressive political movements should have a refined language of signs, which would be used to unite diverse political entities. People are not going to come together en-masse and fight in the name of 'the end of neoliberalism.' David Harvey proposes that we should focus on the "profoundly anti-democratic nature of neoliberalism backed by the authoritarianism of the neoconservatives that should surely be the focus of social struggle."⁹ That would entail a struggle in the name of democracy, which, by following the

etymology of the word, would translate to the struggle for common people's power (in Greek Demos stands for 'common people', while Kratos for 'power to'). When one formulates the axis of struggle around democratic principles, a variety of diverse movements can emerge,

all focused upon different spheres of the neoliberal assault on collective rights. Chantal Mouffe comes up with a crucial remark that such struggles "might not even be perceived as being 'anti-capitalist' by people involved in them"¹⁰. This could form a universal alliance going beyond the traditional right-left polarization, being especially important in countries such as my homeland Poland where terms like 'socialism' or even 'leftist' still carry a pejorative load from the period of the 'real socialism'.

The natural place, for such progressive movement to coagulate, is the city. A city is not only what constitutes its urban fabric, but predominantly it is a place formed by a network of human relations. A place constructed by common interests, desires, and needs. Its space is not established top-down by a demiurge architect, but it happens all the time. It is the constant flux of human relations, which perpetually establish and negotiate their position within the city. The commonality of those can easily become a natural point of struggle when threatened. Whether it is Jane Jacobs protesting the new Robert Moses development plans¹¹ or the Dutch demanding safety for their kids on the streets¹², the assault on a particular urban relation became the instigator of revolutionary (or counter-revolutionary) forces, that enabled people to preserve their endangered way of living and form collectives, which can later transcend to topics beyond the cause of their establishment.

The traditionally perceived revolutionary role of the working class also needs readjusting to the contemporary situation. In the age of the fourth industrial revolution what is needed is an alliance of individuals far beyond the people from the working class. More than 70% of people in high-income countries work in the service sector¹³ and the new revolutionary subject should be constructed inclusively around those fragmented groups of people. Cities are giant entities with diverse users, and close relations between them would naturally propel the popular gatherings, protests etc.

5 After the longest period in history without an increase, the federal minimum wage today is worth 17% less than 10 years ago—and 31% less than in 1968. (2019). Retrieved 12 April 2022, from <https://www.epi.org/multimedia/after-the-longest-period-in-history-without-an-increase-the-federal-minimum-wage-today-is-worth-17-less-than-10-years-ago-and-31-less-than-in-1968/>

6 Gini index (World Bank estimate) - United States | Data. (2022). Retrieved 12 April 2022, from <https://data.worldbank.org/indicator/SI.POV.GINI?locations=US>

7 Ortaliza, J., Ramirez, G., Satheeskumar, V., & Amin, K. (2021). How does U.S. life expectancy compare to other countries? - Peterson-KFF Health System Tracker. Retrieved 12 April 2022, from <https://www.healthsystemtracker.org/chart-collection/u-s-life-expectancy-compare-countries/>

8 Mouffe, C. (2016). The populist moment. Retrieved 12 April 2022, from <https://www.opendemocracy.net/en/democraciabierta/populist-moment/>

9 Harvey, D. (2005). A brief history of neoliberalism (p. 205).

10 Mouffe, C. (2019). For a left populism (p. 29).

11 Paletta, A. (2016). Story of cities #32: Jane Jacobs v Robert Moses, battle of New York's urban titans. Retrieved 12 April 2022, from <https://www.theguardian.com/cities/2016/apr/28/story-cities-32-new-york-jane-jacobs-robert-moses>

12 'I think therefore I cycle': 50 years of Dutch anti-car posters - in pictures. (2019). Retrieved 12 April 2022, from <https://www.theguardian.com/cities/gallery/2019/jun/25/kick-car-out-city-amsterdam-cycle-protest-posters-in-pictures>

13 Wirtz, Jochen & Tuzovic, Sven & Ehret, Michael. (2015). Global Business Services: Increasing Specialization and Integration of the World Economy as Drivers of Economic Growth. *Journal of Service Management*. 26. 565-587.

The close coupling of urban bodies produces natural alliances between groups of friends, families, neighbours, and every fraction concentrated around a particular urban common, and all of those can help in diversifying and enlarging potentially revolutionary human collectives. When the city is understood as a field of relations, in a constant state of becoming, it is easy to observe how the struggle for the 'right to the city' can become an all-inclusive alliance of commoners going beyond, but also hand-in-hand with the labour struggles. The universality of this right would produce a group of enormous diversity, what David Harvey points out in his seminal book "Rebel Cities":

"The right to the city is not an exclusive individual right, but a focused collective right. It is inclusive not only of construction workers but also of all those who facilitate the reproduction of daily life: the caregivers and teachers, the sewer and subway repairmen, the plumbers and electricians, the scaffold erectors and crane operators, the hospital workers and the truck, bus, and taxi drivers, the restaurant workers and the entertainers, the bank clerks, and the city administrators. It seeks a unity from within an incredible diversity of fragmented social spaces and locations within innumerable divisions of labor."¹

This peculiar universality of struggle already manifested itself during the Square Movements around the 2010s, when the universal 'we' was opposing the dictate of the economic power. The manifestos from different places signified a unity of the commoners:

"We are ordinary people. We are like you, people who get up every morning to study, to work or find a job, people who have families and friends. People who work hard every day to provide a better future for those around us" (Barcelona). "We are unemployed people, working people, pensioners, students, schoolchildren, farmers, immigrants, outraged with all those who plunder our lives and decide without us" (Heraklion, Greece). "We are working people, jobless people, pensioners and young who come to Syntagma to fight and struggle for our lives and our future" (Athens). "We are nobody" (Syntagma square anonymous placard). "²

All of those portray the universality of the movements, movements which have no boundaries and can be understood as an international 'we' of common people³. This is particularly important for the political struggle, as it is defining the group as a class movement that opposes the right-wing rhetoric of national isolationism in favour of an all-inclusive transnational alliance of commoners. It can be seen as a formation of class identity, where it changes from what Marx described as a 'class in itself' to a 'class for itself', which organizes its efforts in the pursuit of its own interest⁴.

The modern-day globalized flux of information presents a huge opportunity for such social groups. The perpetual flow of information and its universal accessibility can stimulate engagement in those processes, which is clearly illustrated by the viral characters of the #metoo movement or the Black Lives Matter. Although contemporary modes of communication can act as a double-edged sword, as they might be engaging people but only proposing superficial action, one should consider them an unprecedented tool of popular mobilization, which could create new levels of collaboration between hitherto atomized subjects, especially on transnational levels. This might create what Hardt and Negri labelled the Multitude, a

² Harvey, D. (2012). *Rebel Cities* (p. 137). Verso Books.

³ Stavrides, S. (2011). *Communities of Crisis, Squares in Movement*.

⁴ Ibid.

⁵ Borland, E. (2008). "*Class consciousness*". In Parrillo, Vincent N. (ed.). *Encyclopedia of social problems*, Volume 1. SAGE. p. 134. [ISBN 978-1-4129-4165-5](https://doi.org/10.1002/978-1-4129-4165-5).

potentially revolutionary subject consisting of various singularities, which had discovered their commonalities, consequently enabling them to communicate and act together⁵. The philosophers describe the expansion of such movements as:

"Each local struggle functions as a node that communicates with all the other nodes without any hub or center of intelligence. Each struggle remains singular and tied to its local conditions but at the same time is immersed in the common web. (...) The global extension of the common does not negate the singularity of each of those who participates in the network."⁶

Thus, proposing a model of an all-inclusive common people movement with its ever-expanding network of collaboration.

Commoners Movement

Let's consider this movement an alliance of commoners who strive to bypass the dichotomy of the state/market methods of political engagement, proposing an alternative approach based on participatory governance. This would not be a voluntary force, instead, people would be aggregated by a presence of a common threat or objective, which would form the basis of the commons movement. David Bollier describes the commoners as 'focused on reclaiming their "common wealth," in both the material and political sense'⁷. He continues his definition of commons by providing its three constitutive elements, creating a peculiar triad of commons:

'[C]ommons consists not just of a resource, but of a community that manages a resource by devising its own rules, traditions, and values. All three are needed.'⁸

When all three of them are brought together a new political entity is created, which bypasses the state/market dilemma proposing an alternative style of governing over some common resources. Commoners strive to exercise direct control over spheres of life that matter to them instead of engaging in traditional forms of governance. In that way, they democratize the access, but also the control over different spheres of life. Commons-based systems include things as diverse as local food provisioning, open-source software, alternative currencies etc. The rules of conduct rather than being predetermined are established in situ, in the process of negotiation between commoners.

Crisis moments are naturally those in which commoning practices are the likeliest to occur. People disillusioned with the conventional ways of governing seek beyond the market-state dichotomy to form a collective alliance that is proposing an alternative to the existing power structures. Not only does this create affirmative ways of democratic governance but also most importantly it develops 'as an ever-expanding network of equalitarian forms of social organization, an ever-expanding network of alternatives to economocentric reason and to exploitative power relations'⁹. Targeting the economocentric model should be key in any progressive alternative to the current hegemonic late-capitalist position, promoting a new language of signs and values that can be employed for more socially and environmentally centred discourses. Reappropriating the universe of value should become the basis of common struggle, by establishing new identities and desires for the anti-capitalist turn, replacing the signs of the capitalist ideologies with ones that can reflect a more just, democratic, and sensible social order.

Architect's Role

Here one can see a potential field of enquiry for the architectural praxis. Chantal Mouffe underscores the importance of artistic ways of expression as a tool to formulate a new language of signs through the discursive/affective power of art:

"To maintain its hegemony, the neoliberal system needs to constantly mobilize people's desires and shape their identities. The construction of a 'people' apt to build a different hegemony requires cultivating a multiplicity of discursive/affective practices that would erode the common affects that sustain the neoliberal hegemony and create the conditions for a radicalization of democracy. It is essential for a left populist strategy to acknowledge the importance of fostering common affects because, as Spinoza was keen to stress, an affect can only be displaced by an opposed affect, stronger than the one to be repressed."¹⁰

Those new affects ought to be created by artistic practice, which mobilizes people against the neoliberal signs, by producing a new perception of the world, creating an urge for its transformation. Jacques Rancière outlines what such critical art would entail and how it can be conceived as a conjunction of three processes:

"[F]irst, the production of a sensory form of 'strangeness';

6 Hardt, M., Negri, A., & Guilhot, N. (2006). *Multitude*. Paris: 10-18.

7 Hardt, M., & Negri, A. (2011). *Commonwealth* (p. 215). Cambridge, Mass.: Belknap Press of Harvard University Press.

8 Bollier, D., (2020). *Commoning as a transformative Social Paradigm* (p. 2), Routledge.

9 Ibid. (p.6)

10 Stavrides, S., (2016). *Common space*. London: Zed Books, p.54.

10 Mouffe, C. (2019). *For a left populism* (p. 29).

second, the development of an awareness of the reason for that strangeness and third, a mobilization of individuals as a result of that awareness.”¹

Rancière urges us to think of a new aesthetic language where artistic practice could be used to reformulate peoples’ sensibilities. Those sensibilities should oppose the atomization of societies and the primacy of economic value. Architecture as a unique art practice, realised within the public space, therefore accessible to anyone, should be seen as especially important in any such reformulation. The practice considered as a design process involving multiple agents, eventually producing a spatial manifestation of their creative intercourse, has multiple possibilities of creating novel forms of understanding of the environment. As a part of the common material world, it can transcend the left-right division and produce a universal conjoint environment providing the base for emancipatory struggle. Furthermore, the architect’s role can be reconsidered so the mode of praxis becomes a system operating as commons. Both efforts should primarily focus on socially activating people, whether this is through direct engagement in the production of architecture or creating a place to provide a basis for commoning practices.

Governing Architecture

Architectural praxis all around the world provides multiple examples of common creation of our urban environment, which remained under the radar until 1964 and the seminal exhibition of Bernard Rudofsky in the New York Museum of Modern Art. Rudofsky stresses that the hitherto architectural history analysis was dominated by the commemoration of the wealthy few, whereas in his contemporary modernist era, where architecture was obsessed with its social implications, one should devote more attention to the vernacular, which “rarely subordinate the general welfare to the pursuit of profit and progress”². He describes the era as the time of ‘architecture without architects,’ an architecture based on the collective know-how of the residents, who together had formed the images of those forgotten architectural monuments.

This was one of the initial moments of reorientation of the Modern Movement from its utopian top-down premises to ones that would be closer to the users of the buildings. First attempts in the mainstream of the practice to democratize the process of architecture came in the 1970s when Giancarlo De Carlo published his text “Architecture’s Public”³ calling for participatory design in architectural practice. The essay was reactionary to the modern movement’s top-down

design approach and proclaimed that collective participation, where no design result could be foreseen is what should constitute truly modern architecture. He demanded that architects shift from planning for the user to planning with the user, co-producing the future environment. This approach manifested itself especially prominently in the projects of the Team X architects, of which De Carlo was a member. However, until this day, the collaborative model of architectural creation remains on the fringes of the mainstream practice with more and less notable examples of the likes of Lucien Kroll, Raumlabor, Patrick Bouchain, Assemble etc.

The before-mentioned offices establish a way of practicing architecture, where future users of the building reclaim agency over their surroundings. Of course, that is commendable, but their social influence remains relatively closed, with little potential to extend beyond the agents involved in the project. Most of them are focused on creating a premise that a democratic way of producing architecture is possible. People can be involved in the process of architecture creation on different levels of the project, expanding their agency over their environments and consequently creating natural alliances between the involved individuals.



Fig. 1, Kitchen Monument

It can be done in a variety of ways. Before proceeding with the project, the German collective Raumlabor establishes a shared space, which is to become a place of workshops and discussion about the future of the site⁴. An archetypic example of their approach is the Kitchen Monument, an inflatable blob, which travels with them around the world, creating a spatially luring intervention, which is used to invite people to interact with its space and afterwards become a place of the co-design of the project. Another example of involving people in the design, but employed in a more conventional project, is Lucien Kroll’s extraordinary battle to complete his student housing at the Catholic University of Louvain. In a two-year participatory process, together with the students, the architect

1 Ranciere, J. (2010). *Dissensus On politics and Aesthetics* (p.142).

2 Rudofsky, B., (1964). *Architecture without architects*. Garden City, NY: Doubleday.

3 De Carlo, G. (1992). *Architecture’s public*, Oxford: Butterworth.

4 raumlabor » Das Küchenmonument. Retrieved 12 April 2022, from <https://raumlabor.net/kuechenmonument/>

created one of the most unique student housing blocks with tailored student rooms, one of them being the famous 5-meter-high ceiling flat. The process not only developed in direct cooperation with the students but also expanded the collaboration into the neighbourhood, throwing up a party halfway through the construction phase, inviting the nearby residents to bring plants and thus establishing the student-housing garden, as a vital part of the neighbourhood.⁵

This did not come without a cost. In this innovative process the architect was fired, hired again and ultimately his honorary was substantially cut down, after long legal proceedings. Kroll's heroic battle with the university - the client, is perhaps the best depiction of how power struggles determine the ultimate shape of the project. All such practices depend upon the goodwill of the client. No architecture could be conceived without the constraints of capital rhetoric. Those practices provide innovative approaches to co-creation, but they will remain niche unless actions are taken on the legislative level.



Fig. 2, Kroll's Student Housing

Architects can either fight for new legislation or use the legal systems which enable them to bypass the capital domination over architecture production. The former strategy is used by Patrick Bouchain who uses existing legislation as a peculiar base, to later hyperbolize it within his buildings, consequently suggesting how the legal system could be improved. That is the case with the often-ridiculed law demanding 1% of the project budget allocated to art (the Vessel by Heatherwick might be its most (in)famous outcast). Bouchain wants to expand this policy so that it does not limit itself to 1% for art but also includes 'solidarity 1%', 'scientific 1%', 'education 1%' and 'elderly 1%' which he consequently demands in his buildings, which all tackle salient social

aspects and can be conceived as extensions on the prevailing policies.⁶

Using the social policies within the legal systems is also an option, which can democratize architecture creation and propose alternatives to the capital dominated construction sector. There are several commons-based legal subjects, which allow democratic use and management of land. One of such is the Community Land Trusts (CLT), which despite being first implemented in the US in 1969, only now began to gradually build up the number of its proponents. In the UK the CLTs are slowly developing into an important form of ownership with over 500 CLTs in England and Wales alone, comprising 1100 completed homes and 7100 homes "in the pipeline"⁷. Those subjects oppose the base of the capitalist system- founded upon the land enclosures, providing free land to the community as long as it remains permanently affordable.

The most famous CLT is the Turner Prize-winning Granby Four Street project designed with the help of the architectural office Assemble. The project history dates to 1993 residents of Granby in Liverpool established the Granby Residents Association (GRA) to fight against the demolition of the derelict area⁸. Then the GRA, using different commoning practices, started to take control of the streets by clearing the demolished sites, guerilla gardening, etc., to finally establish the CLT in 2011 claiming the legal rights to the land and hiring Assemble. The architects helped to mediate between the council and the CLT to legitimize the unique method of bottom-up revitalization, later constructing a thorough plan with the residents for the derelict area redevelopment. This included the establishment of the workshop, which was to be used in the renovation of houses and later after the revitalization was completed to activate residents economically. The community so far succeeded in a tailored renovation of ten houses and establishing a winter garden in two derelict terraced houses with further plans to develop the area according to residents' needs⁹.

The examples of CLTs in the UK and US, Baugruppen- in Germany and Housing Cooperatives around the world seem the most direct attempt to bypass the market as the main provider of housing and are critical in posing a superior alternative to market-driven development, forming a socially satisfying commoning technique of the urban environment creation. But the truth is, that architect in this instance, albeit essential in the future success of the project, is not an emancipatory agent. All before-mentioned projects succeed because they

5 De Graaf, R. (2017). *Four walls and a roof*. Cambridge, Massachusetts: Harvard University Press.

6 P. Bouchain, #Architectural theories /// Democratic Construction Processes, *The Funambulist*, March 30, 2012, <https://thefunambulist.net/editorials/architectural-theories-democratic-construction-process-by-patrick-bouchain>.

7 What is a Community Land Trust? | Community Land Trust Network. Retrieved 12 April 2022, from <https://www.communitylandtrusts.org.uk/about-clts/what-is-a-community-land-trust-clt/#history>

8 Granby Four Streets. Retrieved 12 April 2022, from <https://assemblestudio.co.uk/projects/granby-four-streets-2>

9 Granby 4 Streets Community Land Trust Granby 4 Streets Community Land Trust. Retrieved 12 April 2022, from <https://www.granby4streetsclt.co.uk/>

can free themselves from the market imperatives. They remain somewhat outside of the hegemonic system, naturally occupying a niche in architectural praxis. All of them substitute the conventional way of creating architecture with more novel ways of structuring the design process to induce agency into the commoners, producing an alternative mode of design. However, can the ultimate materialization of architecture - the spatial intervention, be emancipatory? Can it incline towards collective practices? The object of architecture should undergo fundamental scrutiny, as it is always part of the common. Architecture creation is always part of our common material world, it lasts there for a long time (the lifespan of the buildings often extends much over our short lives), and it is always a space of some sort of collective inhabitation, thus it should be considered a salient agent in our struggle for any movement appealing to collective values.

Common Resources

Let's then revisit the concept of the triad of commons. In this understanding, the commons were constituted by some common-pool resource, a community centred around it, and a group of people governing this resource. Albeit three of them constitute the commons, one seems more important than the other two, preceding any attempt of commoning practice. This is the *res communis* - the common resource. The object around which the commoning practices are focused. Michel Bauwens makes a straightforward categorization of what those could be, dividing the commons into inherited and produced, which could be material and immaterial¹.

The inherited material commons are the natural resources, inherited immaterial are culture and language, while the produced commons are divided into material produced- including the likes of social infrastructure and shared goods and finally the produced immaterial commons manifesting themselves in the digital form.² I argue that the three of them: inherited material commons (IMCs), inherited immaterial commons (IICs) and produced material commons (PMCs) should become the focus of conventional practice, which could create a potentially progressive object of architecture within the dominant mode of architectural production.

My focus on the object is strictly pragmatic, perhaps it can be best explained by quoting Peggy Deamer:

"We get paid by the object (percentage of construction, flat-fee, hourly payment with a percentage of construction cap), we get published by the object, we are motivated by the object, we staff up and organize our offices around the clients' objects. Being paid by the object is not just a conceptual problem (it is piecework), it is a financial one. We are horribly paid. Moreover, the object fixation precludes being rewarded for our ability to translate social readings into the buildings we produce. Being

published by the object allows the public to think that we are motivated only by aesthetics and the fame that comes with formal virtuosity, not the enormous amount of research, analysis, and experience that lies behind our formal choices."³

1 Bauwens, M. (2017). Retrieved 12 April 2022, from <https://commonstransition.org/history-evolution-commons/>

2 Ibid.

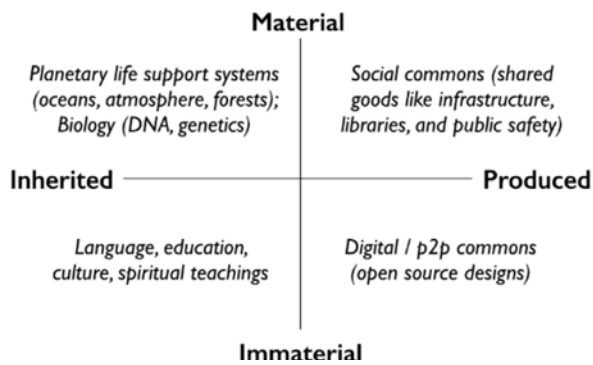
3 Lahiji, N. (2016). *Can architecture be an emancipatory project?*. Winchester: Zero Books.



Fig. 3, Winter Garden in Granby

Right Page:

Fig. 4, Commons Types according to Bauwens



The practice is remarkably object-obsessed, and this could not be altered without profound societal transformation, as it lies outside the agency of the practice. Thus, not only should we focus on imagining different modes of production, which are certainly much more democratic than the one in the typical authoritarian client-architect relationship, often inconsiderate of the building's user, but also, we should try to work within this system, where the architectural creation might guide us closer to a more democratic future. I will thus examine how the object of architecture can help in igniting the struggle over different types of our common resources.

Following this logic, the question arises of how the object of architecture can allude to *res communis*? I will try to answer this by individually targeting the commons identified by Bauwens. To do that, for the sake of clarity, I will focus on one city- my hometown Warsaw in Poland, but the approach could be easily applied for other urban areas, acknowledging its subjectivities, and proposing site-specific interventions. Warsaw, with its complex history of changing regimes and ideologies, its trauma of WWII destruction and at the same time its representant status as the capital city of Poland, is a site of intense transformations and agonistic discursive struggles. Therefore, it presents itself as a good breeding ground for collective movements, which should propose affirmative values forming a base for democratic struggle.

Inherited Material Commons

"An oak tree might be in the commons. Its shade, in summer, is reserved for the shepherd and his flock; its acorns are reserved for the pigs of the neighbouring peasants; its dry branches serve as fuel for the widows of the village; some of its fresh twigs in springtime are cut as ornaments for the church - and at sunset it might be the place for the village assembly."⁴

This romantic description of an Oak Tree by Ivan Illich is perhaps best representing the IMCs. These

types of commons include the planetary life support systems, which can be referred to as what is popularly understood as nature. Those commons are not only used by humans but also other non-human beings, thus their importance should be considered in a grander ecosystemic way, as any assault on those commons might engender a chain reaction destabilising the ecosystem equilibrium. Any alliance around those commons is naturally an alliance that transcends the territorial boundaries of the city, despite such common struggles often stemming from a very local origin. The unique combination of locality and globality produces a truly international subject of commoners, which already manifests itself in the groups such as the Extinction Rebellion and can lay the basis for even greater new political subjects. Bruno Latour suggests that such a subject could oppose the populist rhetoric of modern conservative politics, best illustrated by Trump and his effort to downplay the ecological and humanitarian crisis by further isolation of US from global problems, by the creation of a "Terrestrial" movement, which is to comprise all those individuals concerned with the survival of planet earth.⁵

The local character of those often originates within the urban setting. It is the close coupling of urban bodies that forms a collective resistance to any threats of commons enclosure or degradation. Instigators of such urban movements range from struggles over biodiversity, logging of city trees, access to parks and nature reservoirs, concreting porous surfaces etc. Obviously, the easiest way for an architect to establish some common-pool resource is to focus on the creation of IMC in his work. This means infusing his projects with different kinds of nature, whether this is planting trees or putting beehives on rooftops. However, it is crucial to think of them beyond some peculiar natural ornamentation of the city. Rather one should focus on using nature in such a way that the commoning practices can occur because of the architect's work. This is the case in Warsaw's "Sady Żoliborskie" settlement designed by Halina Skibniewska so that the inhabitants could take advantage of its common orchard's fresh fruits. In Filip Springer's reportage a resident described the informal rules, which governed the usage of the orchard and prevented its excessive exploitation, establishing this very primitive commons around the orchard:

"[The Cherry] grew beside the landlord's place. In fact, it still does. When first people moved in, the fruits began disappearing, even before they have begun to flourish. The kids picked [the cherries] and when the fruits were ripe, they were very few of them left and only on the highest branches. When those kids grew up a bit, an informal pact was established - the cherries were not to be taken until they were sweet.

4 Illich, I. (1983). *Silence is a Commons*. *CoEvolution Quarterly*, 40, 5-9.

5 Latour, B. (2018). *Down to earth: Politics in the new climatic regime*. John Wiley & Sons.

We kept a firm hand on ourselves, who touched the fruits early, was afterwards banned.”¹

What was perhaps a more innovative endeavour of reclaiming the IMCs with the use of architecture was Jakub Szczęsny’s unrealised project “Synchronicity: Island”, which was an effort to activate the Vistula River on the city map by Varsovians’ collective effort. The project envisioned an artificial island on Poland’s biggest river that, with the use of fitness machines, would filtrate the water, transposing humans’ collective energy into a seemingly impossible task of making Vistula water drinkable. Polish Journalist Kuba Mikudra, writing about the project, stressed that: “In terms of feasibility making water in Vistula drinkable resembles changing water into wine”², which most clearly illustrates that back in 2009 the river was treated as a repulsive barrier that dissected the city in half. The collective effort of cleaning the water was to activate the citizens in a collective effort of reclaiming one of the most important alienated city resources, inducing agency into the collective struggle over the right to the commons of the city. Finally, the island could become a metonymical tool, which suggests collective action as a satisfactory alternative to the dreary struggle over legislative measures in reclaiming their commons and lay ground for the commoning movements that would be assembled around Szczęsny’s spatial installation.

Inherited Immaterial Commons

The IICs are the cultural commons binding the society. These include language, education, religion, works of culture etc. They are often what constitute the conflict in political discourse, whereas it is in the form of debate upon the historical narratives, the role of contemporary art or religious disputes. Those commons are frequently used to produce strongly homogeneous groups reproducing its often exclusive and violent narratives upon those immanently subjective commons. This is often taken advantage of by the right-wing politicians with the likes of Trump, Le Pen or Kaczyński, who base their politics on strong nationalist identities and cultural conflicts.

To oppose it one should create groups based on strong singularities of individuals, who embrace their diversity, maintaining a distinct and inclusive character. The open character of the group is crucial, which is repeatedly underscored by Stavros Stravrides: “if commoning is confined within the limits of a specific community or a specific spatially defined area, then commoning will suffocate and end up as its reverse. I think that commoning is necessarily opposed to any kind of enclosure”³.

There is no one method of how architectural objects might target this type of commons. Architecture in this way has infinitely many possibilities of how to affect users, whilst pointing to affirmative political values. It is certainly its symbolic power, which is salient in this case. It can be employed in what Felix Guattari called the refoundation of politics, which “will have to pass through the aesthetic and analytical dimensions implied



Fig. 7 (left), Visualisation of the new Central Square in Warsaw.

Fig. 8 (right), Square as a Superimposition of different historical narratives.

1 Springer, F. (2017). *Żle urodzone: reportaże o architekturze PRL-u.* [translated by me]

2 Mikudra, K., (2013). “Miracle on the Vistula” In .Szczęsny, J., 2009. *Wyspa. Synchronizacja.* Warszawa: Fundacja Bęc Zmiana.

3 Starvides S. in Gruber, S., Miller, V., Verlič, M., Wang, H. K., Wieger, J., Baldauf, A., ... & Krauss, A. (2016). *Spaces of commoning. Artistic research and the utopia of the everyday* (p.51). Sternberg Press.

Fig. 5, Spring in Sady Żoliborskie

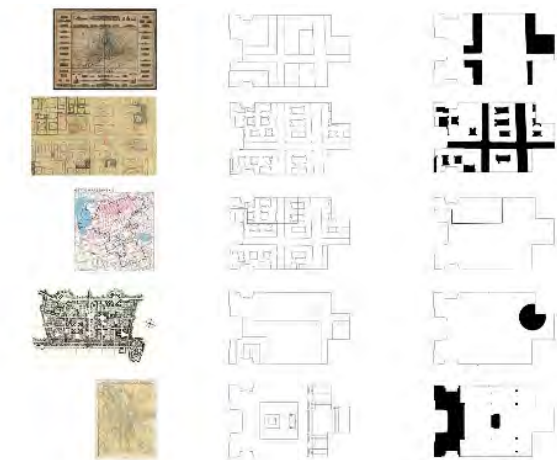
Fig. 6, Szczęsny’s Island on the Vistula

Right Page:

Fig. 7, Square as a Superimposition of different historical narratives.

in the three ecologies—the environment, the socius and the psyche.”⁴ He continues that it cannot be done “without a mutation of mentality, without promoting a new art of living in society. (...) We cannot conceive of a collective recomposition of the socius (...) without a new way of conceiving political and economic democracies that respect cultural differences.”⁵ Architecture should become an important agent of such refoundation, each project establishing itself as a critical tool to comment on the socio-economic characteristics of the space it is to occupy.

In this regard, Warsaw’s past was the perfect topic to set up such a narrative. The World War Two destruction of the city is an ever-present topic of widespread discussion. This, together with the romanticization of pre-war Warsaw and the failures of real socialism development, painted a very vivid image of the formerly great city (the collocation ‘Paris of the North’ to describe Warsaw is widely used in Polish popular mythologies), which became a martyr and later a subject of the injustice of geopolitical arrangements between the West and Soviets. The symbol of soviet influence was the gargantuan Palace of Culture and Science, which only last year was dethroned as the tallest building in Poland. After the collapse of the Soviet bloc, there were prominent voices to demolish the Palace and finally, to paraphrase, “symbolically end the communism in Poland”⁶.



The story of the Palace demonstrates how history can become an axis of agonistic conflict, which is represented in the spatial domain. Architecture can respond to it by proposing inclusive narratives based upon the common creation of urban space. This idea

was explored by the architects from the AA Collective, who designed the Warsaw Central Square (the project is set to be completed in 20237). The design is to create a place, where different historical periods will coexist in space - the greenery is to be organized on the old historical grid of pre-war Warsaw tenements, whilst the square would be a peculiar vestibule to the Museum of Modern Art in Warsaw - representing the exciting future of the city, but most importantly the new design will preserve the socialist tribune, which was part of the monumental Palace of Culture project, appropriating it for the needs of present-day Varsovians. Those three would create a peculiar palimpsest superimposing three distinct eras of Warsaw history in one place, finally accepting its unequivocal past and building a future upon the creative reappropriation of what has been, rather than imposing a new exclusionary narrative, that would deny the city’s complex history.

Collective Memory, in this way, becomes a base upon which commoning practices can emerge. The square gives form to a narrative built around the common past, which then could contribute to the community identity as a group, built upon affirmative inclusive characteristics.

Produced Material Commons

The PMCs are collectively shared goods, like infrastructure, public buildings or even the urban plan of a city. This type of commons most clearly follows Henri Lefebvre’s idea of the right to the city. Struggle around those, manifest itself by opposing citizens’ desire of use-value to the one of the Capital which focuses on exchange-value. In this sense, the struggle to reclaim the PMCs is what Lefebvre calls the “de-alienation” of urban space⁸. He conceives of de-alienation as an effort to appropriate the city and reorient it from the needs of the capital to the needs of society.

This type of commons is particularly unique for architecture as not only are there efforts within the architectural praxis, which can reclaim those commons, but also the PMCs are often directly the product of architecture, as all buildings can be conceived as such. Thus, I will differentiate between the efforts of architects to reclaim such common and establish such common resources from scratch.

4 Guattari, F., (1995) *Chaosmosis: An Ethico-Aesthetic Paradigm*, Sydney, p. 20.

5 Ibid.

6 Sikorski: Pałac Kultury powinien zostać zburzony. (2009). Retrieved 12 April 2022, from <https://www.newsweek.pl/polska/sikorski-palac-kultury-powinien-zostac-zburzony/162hqf9>

7 Rafał Trzaskowski. (2022). Retrieved 12 April 2022, from <https://www.facebook.com/rafal.trzaskowski/posts/421686969313272>

8 Purcell, M. (2014). Possible worlds: Henri Lefebvre and the right to the city. *Journal of urban affairs*, 36(1), 141-154.

In reclaiming the PMCs, most efforts of the architects will transcend beyond the conventional practice of object creation and put them in the shoes of research-architect, activist-architect etc. When it comes to the object of architecture its potential to activate such commons lays in the careful amplification of the latent value of projects, which hitherto were forgotten as commons and alienated from the life of the city. To give an example, one can recall the recent reconsideration of the value of modernist buildings in the Warsaw cityscape. The actions of the group Centrala, who commenced a discussion about the value of post-war modernist buildings through press provocations, were the ones that certainly resonated the most with the public. This lured two entrepreneurs who then asked the office to revitalize the Warsaw PKP Powiśle train pavilion. The small modernist building proved to be a hugely successful revitalization, which not only became an icon of this part of Warsaw but also depicted how this very particular type of architectural heritage can become a valuable part of the city and since then, a series of such modernist buildings' revitalizations have been completed within the city, reestablishing the importance of post-war modernism on the map of the contemporary city.



The creation of buildings and their immanent openness to commoning practices boils down to the problem of the production of space and how architecture affects social relations. Foucault underscored that architecture is "an element of support, to ensure a certain allocation of people in space, a canalization of their circulation, as well as the coding of their reciprocal relations."¹ He stresses that architecture cannot directly construct a certain type of space, rather it can be thought of "as a plunge into a field of social relations in which it brings about some specific effects"². So, despite that the construction of social space is outside of the agency of the architect, architecture still produces specific affects, which contribute to the social space of the city.

Such practices - of how to create architecture that would create better social interaction spaces, were covered extensively in multiple publications (its most famous proponents being Charles Montgomery, Jan Gehl and Jane Jacobs) and expanding on those is beyond the scope and aim of this short paper, but it is important to stress how clever design can activate areas socially and therefore bring people together, which already can be a start of some sort of collective actions.

Optimism of Will

Any attempts to conceive architecture as a sole agent of emancipatory practice have to remain futile. The hegemonic system defines the space in a much greater way than any architect could ever imagine. However, saying that architects have no agency over the socius, would be untrue and overly pessimistic.

We live in an era of social dissent and this dissent makes the political situation unstable. Such a state of affairs should be treated as an opportunity - what was indicated at the beginning of the paper - to reconsider the forms of governmentality and seek socially satisfying alternative ways of governing to those proposed by neoliberalism. Stavros Stavrides stresses two aspects that can effectively challenge the hegemonic system in a time of collective disappointment:

¹ Foucault, M., (1991) "Space Knowledge and Power" In Rabinow, P., (1991). **The Foucault Reader**. London: Puffin.

² **Ibid.**

Fig. 8, Summer Night at the Warsaw PKP Powiśle Station.

"Collective disappointment, either explicitly expressed in riots or implicitly expressed in solitary depression, poses new problems of governability: it seems that two crucial tasks are laid before this necessary 'return to politics' for the governing elites. The first is to ensure that people continue to be defined by social bonds which constitute individuals as economic subjects, as subjects whose behaviour and motives can be analysed, channeled, predicted upon and, ultimately, controlled by the use of economic parameters and measures only. The second task is to ensure that people continue to act and dream without any form of connectedness and coordination with others. Collective actions and aspirations, especially those that produce common spaces, are to be blocked."³

I believe that architecture presents opportunities to both transcend the definition of individuals as economic subjects and can enable us to dream collectively, to create a more satisfactory human society. Commoning, in this way, presents itself as a method to induce agency into the passive individuals of late capitalism. This should be based upon inclusive narratives that can, as Ivan Illich suggested, "enlarge the contribution of autonomous individuals and primary groups to the total effectiveness of a new system of production, designed to satisfy the human needs"⁴. What I argue here is not the primacy of commons governance systems, but rather I treat it as a progressive collective movement, which can be used to reclaim the subjectivity of people in their political lives. One can echo here the call of Hardt and Negri who appeal for a collective revolutionary movement of the people, without distinct class or social characteristics - the all-encompassing Multitude. But in order to do that, "the internal differences of the multitude must discover the common that allows them to communicate and act together. The common we share, in fact, is not so much discovered as it is produced."⁵ If architecture is to have any political premises it ought to focus precisely on this. It has the unique opportunity to reveal our commonalities and 'immortalize' them in a publicly accessible space. Thus, I want to end with the call to action (despite my limited audience) recalling another Gramsci aphorism. Despite that "the old is dying and the new cannot be born"⁶, the new perhaps can be built. It can be cast around our commons, and design that promotes inclusivity and heterogeneity, simultaneously possessing a critical stance on our environment. Maybe such designs can, at least, bring us closer to the New.

3 Stavrides, S., (2016). *Common space*. London: Zed Books, p.160

4 Illich, I., (1973). *Tools for conviviality*, p. 17

5 Hardt, M., & Negri, A. (2011). *Commonwealth* (p. 217). Cambridge, Mass.: Belknap Press of Harvard University Press.

6 Gramsci, A. (2020). *Selections from the prison notebooks*. In *The applied theatre reader*. Routledge.

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MYTHOS U

The architecture of in-between: Where Cache finds Persephone

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The point of this research is to examine the relationship between territory and architecture, namely the already existing and man-made space, through the concept of vectors and their physical as well as conceptual nature developed by Bernard Cache in 'Earth Moves.' The main theme of this theory is that every surface is formed from a combination of hills, valleys and in between points -physical elements- that can be simplified into pure geometrical forms from which a mathematical image of vectors can be drawn. This territorial image that reflects Cache's theory, despite being rich in qualitative context seems to be too engaged with simplification and depersonalization resulting in apparent fallacies when tying architecture with the prevailing character and spirit of a territory. However Cache reveals a crack, a fault in his own theory, one that permits a connection with the fundamental concept of 'genius loci' and its manifestation through the myth of Persephone. By translating Cache's formal vocabulary into the distinctive and symbolic features of the mythological narrative and its philosophical argumentation this research aims to integrate into the physical measures of territories, the ethical and spiritual dimension of architecture. The emerging theory of integration, will be an attempt of uniting the quantitative as well as qualitative extensions of architecture in order to show its constitutive relationship with its birthing territory. This way of reading our surroundings allows for a better understanding of any given spatial scenario and renders us able to recognize and ascribe a 'new' identity in place.

Keywords

Territory, vector, integration, myth, in-between, identity, symbolism.

Introduction

When Gaston Bachelard argued that 'the poetic image is a sudden relief of the soul'¹ he probably did not imagine that this proposition would be the impetus for exploring the emerging field of virtual architecture. Referring to an article by Mark Goulthorpe, this 'poetic image' can draw 'new images of creative possibility, through which substantial goals can be drawn for the birth of new and genuine forms.'² Exploring the synthetic part of architectural design through the computer, Bernard Cache's focus on the 'poetic image' provides an inexhaustible source of possibilities, from which the architectural form will come to life. While Bernard Cache though, supported in this context that through mathematics architecture would regain its lost plasticity from modernity, he did not imagine that his work and his 'borrowed' field of exploration, namely the natural territory of any architectural escapade would be the trigger for developing, perhaps unknowingly a theory of integration.

Through 'mythos (from Ancient Greek μῦθος/mûthos, also myth) we refer to a symbolic, figurative language completely opposite as well as complementary to the analytical language of science, when comprising the vocabulary of architecture. The myth, whether it is visual or poetic, cannot be uprooted from the fundamentality of architectural composition with or without the use of a computer. It is neither less nor more inherent in the

1 Gaston Bachelard, 'The Poetics of Space,' (Presses Universitaires de France, 1958), 5.

2 Mark Goulthorpe, 'The Paramorph Project,' (Gateway to the South Bank, 1999).

traditional concept of architectural design. It is inherent in the anguish of a 'poetic image which is a sudden relief of the soul' and which will possibly develop in its full potential the plasticity of any form. With the symbol 'U' we refer to the mathematical -essential in Cache's reality- operation of the union between a collection of sets in our case theories, architectural approaches and even worldviews, through which different elements can be combined and relate to one another.

In this direction, the hypothesis of the present research is defined at the place where Bernard Cache finds Persephone, and the title reveals a place, an act and two characters. The place of meeting will be determined as the 'in-between,' where the architectural act needs to be founded in a territory and carry within it the tangible and intangible context of that place. Cache, as the architect, the representative of a modern (as in contemporary) concept of architectural thinking and Persephone the mythical virgin goddess will meet there and perhaps through an internal dialogue of reception, interpretation and reconstruction of meanings and ideas they will mark an attempt to establish a new way of perceiving architecture.

Clarification of concepts

First though, what do we mean when we talk about territory? Territory in our modern language is defined as the 'top layer of the earth's crust, the thin layer of material covering the solid surface of the planet and an area used for a particular purpose'³. For architecture, that purpose does not solely serve as the area or the surface on which the building is built upon. Instead, it is a field of action and an essential tool of architectural composition. According to Raoul Bunschoten⁴ the ground, the 'skin of the earth' is the surface on which we live. Architecture is partly indicative of our relationship with this skin and expresses in terms of imitation, figuration, or abstraction our perception of this relationship. The way in which this relationship is formed varies from almost surgical gestures to the complete replacement of the skin. One thing is certain: the ground accepts infinite interpretations as much as the imagination allows. It is the land on which we build. It is the ground on which we deposit architectural objects compositions that we would otherwise rarely imagine as ground.

When we talk about how those architectural objects are fitted in a specific territory, we talk about a way of adapting something new to something already existing. In our everyday language we use the word to describe the adjustment, often through modification, of one object on/in-to another. In biology, adaptation is directly related to the evolution of the species. It generally describes the process by which an organism acquires greater survivability within a given environment through changes in its structure or function. In psychology, it is described as the process

that will allow the individual to respond effectively to the requirements of its environment while in economics, adaptability is the process of change to achieve a balance between supply and demand. In architecture we treat the term of adaptation as a 'desideratum' having as parameters on the one hand the building, the object to be adapted, and on the other hand its environment, that is the field of adaptation. The result, however, is not something to be comprehended one-dimensionally based on form. When we mention that a building is integrated in its environment -the receiving territory- we do not simply mean that it achieves a visual and morphological fit. As architects, in order 'to integrate' one system into another existing system, we have to have understood the processes of the latter and seek to create new ones for the former.

True adaptation or integration should not be sought blindly but ultimately occur as a consequence of the harmonious complicity of man and nature, of our composition with the ground itself. This process however is not something simple, and it's probably one of the most complex problems of architectural discourse that has been approached in many different ways and has opened many dialogues, one of which we're exploring through this research.

3 Georgios Babiniotis, 'Dictionary of Modern Greek', (Lexicology Center, 1998).

4 Raoul Bunschoten, 'Chora', (nai010 Publishers, 2001), 17-19.



Bernard Cache - a possible theory of integration

The concept of integration is not per se one of the pressing issues that Bernard Cache's book 'Earth Moves,' the case study of this research, is trying to tackle. The interpretation of this concept is done more intrinsically not only in the sense of illuminating the author's unapparent thought process, but primarily providing a view and understanding of the arising ideas and the concepts through a personal experience and viewpoint that was effortlessly stimulated after reading his text.

Before we dive into the point of re-evaluating Cache's arguments and adapt to a theory of architectural integration it should be noted that 'Earth Moves' is generally accepted to serve an entirely different purpose from the one that will be presented. Despite the author giving us the freedom to subjectively reconstruct and read into his arguments, the resume of his entire text reflects a westernized model of architectural thinking that relies on mathematical concepts and logical sequences for any developing architectural composition. For Cache, 'Earth Moves' is a foreshadowing of a nonrepresentational architecture where territory and composition are not fitted within one another rather than merging into a non-contextual mesh. Some of the greater influences of 'Earth Moves' along with the developing objectiles⁵ that rose from this theory accentuate computational forms and automatically generated meshes for manufacturing and production purposes -basically nonstandard objects- which remained sheer virtualities for a long time and instilled the 'fluidity' and vectorial variability of territorial space into an architectural identity.

Indirectly it seems that Cache states that if we redefine images into a set of abstract or mathematical instances, we would be able to perceive our surroundings without identity, since for him, identity is a negative notion that prevents potential development. Stripping architecture from any form of identity allows for infinite opportunities and this what his theory tries to achieve. In the end though, this research is not what's its about. Quite the opposite.

The way that Cache approaches for me the notion of (architectural) integration is done firstly, by giving us the definition of the image, and its conceptualization as a vehicle to develop two major depending concepts. The first and possibly the most reputed has to do with architecture as the art of the frame expanding the term beyond the building itself to include cinematic, pictorial, and other framings. The second concept provides a 'new' understanding of the image as nonrepresentational and constructive – a set of images as constituents of a primary, image world, of which subjectivity is the key to unlock it. The aforementioned concept is better explained in Cache's own words:

'a brain is not the seat of a neuronal cinema that reproduces the world rather our perception is ascribed on the surface of things as images amongst them. From this we can understand that a view of our surroundings is a reflection of our interpretation of them, therefore our way of seeing is crucial to our understanding of space, architecture and territories for that matter.'⁶

Cache here, uses the image in a broader sense to describe both the birthing territories and their emerging architectural compositions. Whether architecture is the 'image world' itself or simply pertains to a constituent image of a larger, greater system of images is unclear but also deliberately open to interpretation. Perhaps in order to understand this relationship we can envision the 'image world' as a closed system where interactions can only occur among its components unaffected by the outside environment. In physical terms a chair as part of a living room is a component to such a system which in turn is an element to a larger closed system, that of the

5 Objectiles - developed in The Objectile atelier, a research laboratory in the field of digital design founded in 1996 by Patrick Beaucé and Bernard Cache.

6 Anne Boyman, 'Earth Moves, Preface,' (The MIT Press, 1995), xvi-xvii.

(interior layout of a) building. This is the first layer of integration in Cache's theory, his initial pursuit to encompass the building and the landscape (at least theoretically for now) into a single narrative, that of architecture as a whole.

For the image of the territory, that unmistakably is pre-existing, therefore it comes first, Cache argues that its surface, which is formed from a combination of hills, valleys and in between points, can be interpreted in abstract or mathematical elements or even better as a system composed of such elements⁷. This is the first time where his theory becomes illustrative, and Cache paints a primordial architectural picture -that of the field of action. He supports this theory by stating that all physical elements can be simplified into pure geometric forms from which a vector can be grown⁸. By looking at the city of Lausanne in France for example, Cache demonstrates how this process of interpreting a landscape can be done. To start with, he translates all the variations of the landscape into geometric shapes and further, based on these shapes, he translates an action of a vector that falls into an abstract line of the terrain into a diagram of the topography of Lausanne⁹. The introduction of vectors is the foundation of any form of justification for our architectural intent and exponentially the source where we draw our contextual references from, when we design a building in a given territory.

Here is where the image of the architectural composition comes into play. A composition that is defined as the 'art of framing' and intertwines with the existing image of the territory in modes of separation, selection, and arrangement through the architectural element of the wall, the window and the layout respectively. Now 'everything occurs as if we had found, in the house, the answer to what is happening on the outside'¹⁰. This, we can argue, is the second layer of integration which formulates the 'image world' as a syncretism of territory and composition, physically into one. How this affects the building into the 'image world' of architecture has to do with the topological identity of the territory -which now translates into a vectorial space- that it sits upon, and the additional value or significance ascribed to it by the function and the use of the building itself. For example, a cathedral sitting on top of a hill is a junction between two vectors of the same formal characteristics -one referring to the physical gravity and the raising of the ground and another, referring to the religious or spiritual elevation that the building represents¹¹.

So far, we've established an 'image world' where territory and building, interwoven through different modes of integration formulate architecture as a whole. This 'image world' apart from the grammatical, pictorial, and geometrical corresponding representations, is also translated into a vectorial image, where the vectors insinuate the underlying forces, gravitational and thence contextual that govern architecture.

7 Bernard Cache, 'Earth Moves' (The MIT Press, 1995), 43.

8 Ibid., 10.

9 Ibid., 11.

10 Ibid., 88.

11 Ibid., 12-13.

A theory in spatial terms

In order to understand in spatial terms how the integration can be achieved in the 'image world' of architecture we need to define the field of action and the application point of Cache's vectors. Naturally, every surface is composed of extremas, minimum and maximum, as well as any point in-between which is known as a point of inflection¹². While Cache proceeds to determine the mathematical explanation of inflections he begins to abstract from the logical sequence of his argumentation and describe inflections as a space of openness and receptiveness where a totality of possibilities emerges, and the image of architectural composition finds its place. While on the extremas the vectors have a clear point of orientation and provide a clear qualitative dimension for the emerging composition, inflections are different in that they are defined only in relation to themselves¹³ meaning the vector can go either way. Despite Cache describing inflection points as such indeed, the point here seems to acquire Kandinskian characteristics¹⁴; invisible in position, incorporeal, and despite having a physical substance equal to zero, it comprises the proto element of every material form. Instinctively, I'd say this is the point where Cache realizes he needs to abandon his grip on mathematics and quantifiable notions to fortify and better justify his theory and realizes that a crack must be opened. The blind devotion on mathematics and strict positivism can only lead to great misconceptions. As Wittgenstein mildly admits in his crumbling structurization of logic in *Tractatus* theory; to stop at natural laws as at something unassailable as the ancients did at God and Fate is pretty much the same¹⁵. This crack is what Hannah Arendt and Martin Heidegger have also elaborated much upon and explains how the division of our architectural thinking with history, tradition, culture and their extensions to a deeper spiritual context can only lead to vacuum. A loss of values. A lack of orientation – without which Cache's vectors do not exist.

For Cache, inflections break the continuity of any surface creating the space where architecture takes form but also, they break the sequence of his logic:

'...hills and valleys pass by in silence along the lines of the landscape, bow and basket assign the roles in sexual division, concavity and convexity oppose the object to the subjectile to determine a subject.'¹⁶

To clear the confusion, the bow (geometrically translated as a concave) and the basket (geometrically translated as a convex) that Cache mentions is a reference to the determination of sexual identity in the Guarani tribe¹⁷. The bow for men and the basket for women is thus the figure of an intrinsic polarity, just as the orientation of the vector is subject to a reciprocating motion from the bowels of the earth to the surface of the ground and vice versa. The polarity of sexes, the concave and convex sides of an inflection guided by the vector in effect are also reflected in Chapter 10, 'Body and Soul' where Cache talks about the figure of yin-yang as a symbol used to describe how polar or seemingly contrary forces are interconnected and interdependent in the natural world, and how opposites only exist in relation to each other¹⁸. The crack we're talking about then becomes just enough to let the latent and inherent spirituality escape into the physical world of Cache.

Consequently, the breakage of inflection hides a twofold argument. On one hand it creates the physical space of 'in-between' where architecture happens and also it gives an insinuation of 'how' it happens. Cache elaborates a lot on the simplistic pairing of a 'positively impactful' architecture with an upward gravitational vector that we touched upon earlier (the example with the cathedral) and vice versa for the opposite vectorial direction, but he doesn't provide much insight for the architecture of 'in-between'. The question of 'how' architecture happens 'in-between' is a question that Cache doesn't really answer but hints through the crack where the answer can be found.

As we already mentioned Cache relies on an intrinsic polarity that is more spiritual and less scientific to describe the ungraspable and open twofold direction of a vector in the 'in-between'. Unprovokedly, for me the spiritual duality is found in the myth – a myth that uses the same protagonists; the crack, the earth, the vector, the oscillating movement above and below the surface, all- just in a different symbolic form.

12 Ibid., 16.

13 Ibid., 16-17.

14 Referring to the way Wassily Kandinsky describes point in 'Point and Line to Plane', (Dover Publications, 1979).

15 Ludwig Wittgenstein, 'Tractatus Logico-Philosophicus', (Routledge, 2001), 87.

16 Bernard Cache, 'Earth Moves', (The MIT Press, 1995), 89.

17 Christine Zenyi Lu, *Immanent Terrain: Art after Deleuze 2011-2012*.

18 Bernard Cache, 'Earth Moves', (The MIT Press, 1995), 125.

The introduction of the myth

The Homeric hymn that relates to the purpose of this research reveals a mystery, a spiritual truth that concerns the symbolic oscillating movement of up and down, the principal dipole of death and (re-)birth that Cache touches upon but fails to commit to. Here, the 'vector' that falls to the chthonic bowels of the earth and then shoots up to earthly life is connected with a spirit of the place that Cache so adamantly refutes.¹⁹

Persephone, or even better the meaning behind her symbolism, can be abstractly envisioned as the 'image world' of Cache itself, in the sense that it combines the image of a birthing composition within the existing territory. The virgin Kore of antiquity is a predominantly non-natural person, who meets Cache 'in-between' as an archetypal symbol of a 'spiritual mirror' that preserves within its meaning the genius loci of the place as an unspoken truth. 'Where Cache finds Persephone' is where the spirit of the place emerges as the unconditional truth within an architecture of place.

Despite referencing the myth of Kore, the present work does not aim at any kind of passive narration as it can prove to be pointless, dangerous and highly misleading. The protagonists of the myth should not be approached and interpreted as the natural characters of an idle narrative of the past and some 'long forgotten pagan religion' but as the natural social, cultural, and historical causes which compose a spiritual context tied with the modern history of the place -the abstract space where architecture takes form. After all it's a symbolic truth to replace or supplement Cache's theory where he fails to establish or better yet integrate architecture in the space of 'in-between'.

Persephone as a virgin-daughter represents the feminine and passive stance in a purely organic world, characteristics that we find in a natural territory. As such she is destined to take refuge on the rift of the earth, where the ground splits and her abduction becomes a poetic allegory of life and death. And her abduction is an equivalent to death. She is buried -as a seed- deep within the ground where she becomes a wife and a queen, an active force through her marriage with Hades, the kind of the Underworld. This burial symbolizes a ceremony -her marital ceremony- the archetypal union of the holy male (Hades) and the sacred female (Persephone) within the loins of the fertilizing Mother (earth) where once again, we find Cache's underlying thinking. Without Persephone nothing would exist in the underworld, not even the underworld itself. The fact of her existence 'below' is a precipitating factor of anything within this indefinite amorphous, indefinable underworld and also a promise of any existence on the surface.

This seed of Persephone in architectural terms represents the first idea, or the architectural intent, if we claim that 'architecture' is an ideal, the identity of which is already ascribed to the place long before it gets recognized and revealed by man himself. And this is the view of a harmonious integration; Persephone is buried in the ground allegorically meaning that the idea is planted and celebrated through the ceremony of marriage -it is tied forever with the ascribed place. When Cache talks about the upward and downward movement of vectors on the point where the idea is planted, the myth talks about the movement of the Kore who is going to resurface and express herself in form, symbolically the form of architecture. The spiritual here is combined with the corporeal. The image of architectural composition belongs to the territory and it can only be seen in accordance to the image of territory.

The mystery of the ancient ritual that celebrated the dual nature of the Persephone can be translated through this research in architectural terms. During the initiation ceremony, the participants have the ability to

¹⁹ Ibid., 11, 14.

' It's not because of any genius loci that the cathedral's spire still preserves its meaning; it is rather that the abstract vector of the site...'

'...that the identity of a place is not given, and that if the expression genius loci has a meaning, it

lies in the capacity of this genius to be smart enough to allow for the transformation or transit from one identity to another.

be in an intermediate state, not truly 'dead' but not yet 'alive' just like the 'image world' of architecture that Cache is trying to paint as a process in between time and space, right before it takes form and gets rebirthed into a corporeal reality. And I say 'rebirth', because just like myth, the first birth is already set; in the atemporal space of infinite potentials that lies within the loins of the earth.

We soon realize that the strict abandonment of any 'sense of place' is catastrophic when we're talking about architecture and it's belonging within the surrounding landscape. The myth and any spiritual context for that matter, concretizes the essence of the place in constantly new contexts. This is how we can open a dialogue through architecture, between earth and man, where man is the main constant and not an abstract mathematical concept that acts -in the sense that it almost violates- algorithmically the ground in order to shape it into a place of anonymity as Cache wants to believe.

Our persistence on the myth is quite importance and relevant when we're talking about a theory of integration for architecture. Despite the symbolic references that guided me to the corresponding myth, the myth as a general concept has a strong connection with the way we perceive and respond to architecture -and that is because from the myth arises in full circle the spirit of the place- the concept itself that Cache has initially abandoned but resurfaced through his fault. The spirit of the place that the myth reclaims -Genius Loci- although a Roman concept, has its matrix in ancient Greece. The genius, that is the spirit - guardian of every independent being of Roman beliefs, descended from the "demon" of the Ancient Greeks, that is, from the spirit of every place, in which architecture takes shape, and with which man must maintain a good relationship with. The 'genius' in the process evolved into spirits of fairy tales, while metaphorically identified as the demon that man brings in relation to his energy in the place. The previously defined as good relationship of man with the "demon" (with the spirit) of the place, has to do with the way man in ancient times treated nature, which in the beginning arose as a fear for the unknown and in process, it turned into awe and respect. Genius as well as the myth that it gives rise to, is an element of identification and identity of the place that cannot be unaccounted for when we are talking about architecture.

And this theory, is not all in theory. The myth of Persephone that sits on the rift and her vertical vectorial movement materializes in Greek architecture throughout the years. Throughout history, Greek architecture has been understood as a process that happens in-between and as such is not dogmatic nor imposing rather than transitional and organic. Let's just briefly mention the first thing that comes to mind when speaking about Greek architecture is none other than semi-outdoor spaces that consist of a primary synthetic element when it comes to the image of the composition. The very much 'in -between' spaces that escape the theoretical framework and draft themselves into the physical territory. Throughout time, deliberately or not, the myth is a 'lex non scripta' that harmoniously aims to intertwine architectural compositions with their natural surroundings.



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Figure sources

The images are personal 3d representations and abstract interpretations of the primitive form of architectural integration in the natural territory. The first chapter deals with the corporeal world of science and mathematics, the veiled truth as described by Hadot, while the myth in the second chapter complements the narrative by showing the hidden forces that lie underneath.

A WAY OUT OF EVERYDAY LIFE

Learning from Vernacular Architecture

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Abstract: Modernity and capitalism are intensifying the alienation of everyday life. People lose themselves and lose their expectations for life. This paper attempts to discuss the possibility of solving the anti-alienation of everyday life from the perspective of architects, using the method of literature reading and rethinking reality. Through the interpretation of the particularity of the role of architects, it is found that they are able to adjust the control of power or capital over space inversely. Finally, the poetic property of everyday life and the wisdom of resisting alienation are found in the three phases spiritual paradigm, interpersonal paradigm and technology paradigm during vernacular construction, which pays attention to body and feeling.

Key words: Everyday life, Capitalism, Alienation, Vernacular architecture

1 Introduction

Everyday life is what people experience in their daily life, including behavior, study, work, leisure, social contact, entertainment and so forth. It is the most familiar and easily overlooked realm. Before modern society, productions and festivals were organically integrated with everyday life and did not differentiate from them. At that time, everyday life was contradictory and flexible. When it is regarded to be invariant, some uncertain matters will happen and when it is considered to be repetitive, festivals will make it interesting. Everyday life was not the mainstream topic in philosophy until the 1940s when philosophers started to rethink modernism with capitalism and scientism. Henri Lefebvre pioneered the philosophical criticism method of everyday life. He extended Marxist criticism of capitalism from the economy domain to the life domain and claimed that everyday life had been permeated and alienated by capitalism (Lefebvre, H, 2014). Meanwhile, E. Edmund Husserl pointed out that the European scientific world was in crisis and back to daily life could be an effective strategy for it (Husserl, E, 1970). Modern technical speeding development changed the relationship between humans and the world, as a result of the poverty of experience (Benjamin, W, 1999). This leads most of the citizens living in "concrete forest" to a so-called nature-deficit disorder (Louv, R, 2008). Modernism made everyday life become not only a controlled

and planned object but a and so forth subordinate belonging to the capital market and consumption system. It dulled previous rich everyday life, making it to be repetitive and monotonous. Nowadays, this boring part of everyday life can be defined as a sort of routine. For the rest part of it, referring to something such as rich rituals and interesting activities which can make people feel a sense of stability, content and pleased, can be treated as poetic life (Singh, R, 1997). Facing the gradual loss of the poetic part of everyday life, this paper is trying to find a way out of everyday alienated by capitalism.

2 Alienation in Reality

In the capitalist world, alienation, as a social phenomenon, comes into being together with the class. It is the power that one thing's matters production and spiritual production and their products become dissidents (Lefebvre, H, 2014). Each social form will produce a corresponding spatial form (Lefebvre, H, 1991). On the one hand, space is the product of social production mode, which is produced in the process of the social movement. On the other hand, space is the place where social activities evolve. It can breed new factors to change the social process and shape the appearance of society. Since the industrial revolution, "abstract space" has been formed and developed under the political and economic system of national capitalism, accompanied by homogenization, fragmentation and urbanization. Homogenization is due to the functional rationality advocated by modernism. All urban design takes the pursuit of high efficiency of production as the premise and discards all surplus content (Lefebvre, H, 2014). As Architect Wang Shu said, modernism is killing local culture. Modernism is eroding cultural diversity in a revolutionary way. The rich and interesting living space in cities gradually decreases and becomes monotonous, resulting in the disappearance of style; Fragmentation is caused by the disappearance of style and the rise of symbolic status. In modern society, consumption is no longer purely to meet physiological needs, but more permeated by symbols with social significance. People try to use these symbols to show their social status and consolidate social differences. Symbolic consumption is dominated by advertising and publicity. They make information and culture fragmented with the help of

network means in the information age, which leads to the fragmentation and separation of urban space; Urbanization is produced by industrialization and intensifies with the process of industrialization. Urban development has led to the concentration of social resources, and a large number of indigenous people living in rural and urban borders flow into cities, resulting in the shortage of rural labor force and the tension of urban land. Cities provide gathering space for people from different classes. With the increase in the gap between the rich and the poor, the separation of space between different classes is becoming more and more serious, followed by urban problems such as traffic congestion, climate deterioration, rising crime rate and so forth.

The alienation space under modernity alienates the people living in it. When people enter an orderly built environment, the body will read its internal order and form its practical knowledge of the basic framework of culture through habitation (Bourdieu, P, 2010). In alienation activities, people's initiative is lost and enslaved by alien matter or spiritual forces, so that people's personalities cannot develop in an all-round way, but can only develop unilaterally or even abnormally. In a perfect state, human development should be comprehensive. People's comprehensive development refers to people's labor ability, that is, the comprehensive, harmonious and full development of physical strength, intelligence and morality (Marx, K, 2018). In contrast, in modern society, alienated people gradually weaken their ideas of traditional morality and customs, and instead pursue a value of money supremacy. People become mercenary and regard the relationship between people as a kind of matter exchange. At the same time, they lose themselves in this constant pursuit and feel empty and anxious.

At the same time, people's everyday life is also being alienated, and traditional festivals and rituals are disappearing. Festivals represent an idealized life. People participate in it and feel the reality of existence through human interaction. However, now it is obscured by modernity and complicated by commercialization and consumerism. Complicated work makes people lose their spare time and become a machine of life. Modern people cannot find satisfaction in their work, because work does not belong to them, but belongs to the capitalists of the exploiting class (Marx, K, 2018). Therefore, they will revenge to enjoy life after work and participate in alienated festivals and activities, such as online virtual games. This kind of enjoyment is not relaxing, but an escape from reality, which makes them controlled by the virtual reality in the information age. On the contrary, they have spiritual dependence on the virtual world and a spiritual lack of the real world. Because they can't get real relaxation in the rest when they return to work, they can't face it with sufficient physical strength, so they unknowingly step into a vicious circle.

Alienated people in turn will affect social space,

so social space will reproduce social relations in space. Lefebvre's concept of ternary combination defines spatial practice, representations of space and representational space (Lefebvre, H, 1991). It can be seen as a process of starting from practice, acquiring experience and knowledge, and then returning to practice. With the aggravation of the problem of "differential space" controlled by capital, the production and reproduction of space make society more chaotic and people's everyday life more alienated. At the same time, this kind of production and reproduction will eventually turn the city into a "zero degree" space. "Zero degree" space is mentioned by Roland Barthes in *Writing Degree Zero*, which is a space that has nothing to do with the people living in the city. The ineffectiveness of empirical value and practical value makes the "zero degree" of an object appear, so as to construct a formal space (Barthes, R, 1997). This kind of space can cause the curiosity psychology of outside tourists, but it still deviates from the real urban space, resulting in the lack of authenticity and diversity of urban everyday life.

3 Meaning of Poetic Life

Society continues to develop, and people continue to lose themselves. Therefore, "everyday life" began to become the mainstream topic of philosophy in the 1960s, and more and more people are thinking about the meaning of life. One thing we can be sure of is that human behavior is caused by people's desire to pursue pleasure and avoid suffering, which means that human beings pursue pleasure (Moore, A, 2004). From *Sapiens: A Brief History of Humankind*, we can see that human beings continue to pursue progress from cognitive revolution to a scientific revolution, in order to achieve a better life, so that people can obtain complete liberation. The author Yuval Noah Harari raises an interesting question in his book, that is, what is the essence of happiness. On the one hand, from the perspective of social psychology, no matter what kind of achievements people get, satisfaction is the reason for happiness. On the other hand, from a biological point of view, external stimulation leads to increased dopamine secretion in organisms, which will make people happy (Harari, Y & Sapiens, A, 2014). Here, we focus on the impact of society on people's happiness factors. The progress of society is to pursue the improvement of productivity, so as to liberate mankind from complex labor. However, with the development of society, people have not become happier. In general, scientific progress has led to the reduction of diseases with the extension of life expectancy and the unhappiness suffered by people in social progress, which offset each other. Modern people's feelings are bittersweet. With the overall intensification of capitalism's control over people, the proletariat is not respected and has no opportunity to pursue self-realization. At the same time, in social communication, people's exchange thinking replaces real friendship. People can only stay

in the physiological and security needs of the low stage, so life has become survival (Maslow, A, 1943). At this time, the poetic part of everyday life mentioned above becomes extremely important. It is the only means to resist the repetition of trivial daily work and make people pursue hedonism.

Poetic life not only meets individual happiness needs but also has great significance for the harmonious development of society. No matter whether the world will continue to develop in the direction of Social Darwinism, socialism or some ideology in the future, people are still in the state of capitalism at this stage. While capitalism brings technological progress and efficient development to this society, it will inevitably lead to a global financial crisis, causing the world economy to fall into chaos and difficult to recover itself. Of course, coupled with the influence of nationalism and racism, periodic world wars are constantly staged, and most people in the world will live in pain for a long time (Marx, K, 2018). As Friedrich Engels mentioned that bourgeois society stands at a crossroads, either transitioning to socialism or returning to barbarism. It can be seen that the instability of capitalism, the squeezing of the social labor force and the deprivation of people's everyday life are the biggest obstacles to social stability and social progress. If people's daily needs for happiness are not met, and they live in complicated work and escape from work all day, proletarian resistance and social unrest will continue to appear. Therefore, the poetic part of everyday life is an important means to ensure that people do not lose themselves in social progress and an important way to maintain social stability.

At the same time, poetic life also has the possibility to inspire people to get rid of practical difficulties and move towards a better future. Historically, creative workers can often use their methods to shape people's imagination of the future in a poetic way, so as to control the trend of social development. For example, Renaissance artists first jumped out and awakened people in the dark Middle Ages with their works. In the Reformation movement, the contribution of thinkers also promoted people's liberation. The humanistic spirit in the Enlightenment led the public to transition from feudal society to modern society. It can be seen that in these historical changes, creative workers will create some poetic power, rouse public awareness and incite some revolution. Although these revolutions may lead the world into chaos, they are also an excellent means to abandon the old social system and an effective way to lead the public out of the shackles of power. Therefore, how to revive poetry in everyday life is the direction of people's efforts in the future.

4 Possibility of Architect Intervention

The struggle to determine the future social state and people's way of life can not escape the discussion of

ideology. In *Four Futures*, Peter Prase predicted the four futures after capitalism according to the number of resources and class attributes, namely communism, rentism, socialism and exterminism (Fraser, P, 2016). From the current reality, the further monopoly of social resources and the further widening gap between the rich and the poor make it clear that the world is quietly evolving in the direction of exterminism. But at the same time, the ideological struggle between big countries seems to show people the possibilities of a variety of futures. It can be seen that those in power have great control over the future of mankind. But like the three reform cases mentioned above, the law of history also tells us that the real opportunity may be in the hands of the public.

The public in society is often easy to be controlled by certain forces and live in a state of ignorance. As pointed out in *The Crowd: A Study of the Popular Mind*, when an individual is an isolated individual, he has his distinctive personalized characteristics. When this person integrates into the group, all his personality will be submerged by the group, and his thoughts will be immediately replaced by the thoughts of the group. When a group exists, it has the characteristics of emotional, no objection, low intelligence quotient and so on. People in the group will be endowed with some power, showing the characteristics of blindness, impulse, fanaticism and credulity. The rulers will skillfully use these characteristics of the group to establish and consolidate their own rule (Le Bon, G, 2002). So what is the role of architects in this process? Will their words have significance for the evolution of society?

Architects, as creative workers, have both the sensibility of artists and the rationality of thinkers. They still have the possibility to guide the future more or less. Lefebvre believes that although everyday life has been firmly controlled by the combination of scientific technology and bureaucracy, there are still opportunities for resistance in everyday life. He stressed that the human body retains a certain endowment that can express and perceive the authenticity of human beings, which constitutes the real starting point to resist the materialized and quantitative modern ruling power (Lefebvre, H, 2014). Architects can do a lot to awaken people's body consciousness. In modern society, architects, as a segment in the production of space, are used by powerful classes to shape the space they want. However, architectural education has a particularity, which can make architects have sensitive consciousness, isolation and criticism, so they may not be willing to accept the rule of capital. The architect's work is also opaque. Because architects have mastered a technology to materialize space, which is not completely open to the power and capital and has a kind of opacity. Therefore, architects can use their micro practice to adjust the control of power or capital over them, create a poetic space of everyday life in a Romantic way, meet people's demand for happiness, stabilize the current social state, and rouse the public's

awareness to a better future.

So how should architects make people break away from class control? Phenomenology urges people to pay attention to the body. Science tried to capture the rational order from the chaos of life, but it failed. After all, scientific exploration cannot capture the real feeling of life (Deleuze, G & Guattari, F, 1994). At the same time, situationists emphasize changing society by creating situations. They believe that people can change their original meaning and function by destroying and rewriting the space (Plant, S, 2002). Many sociologists and architects are already on the way to anti-control. Jane Jacobs examines modernism from a bottom-up perspective as a journalist and finds many contradictions in life; Wang Shu believes that China's traditional settlements and cities are "Woven Cities", which contain the philosophy of life in the space of diversity, integrity and difference; Christopher Alexander focuses on 253 model languages in American towns, neighborhoods, houses, gardens and rooms, taken as a Bible of life text. It can be seen that the life practice of paying attention to the body, situation and feeling contains the art and weapons to resist control. Therefore, the answer could be found to resist alienation by returning to the simple everyday life and the original state beyond the control of power.

5 Learning from Vernacular Architecture

Referring to the practice of paying attention to the body and feeling, ancient architecture may give us a direction. As we all know, among ancient buildings, royal, religious and vernacular architecture have reached high aesthetic attainments. From the perspective of physical feeling, they belong to a perfect living environment. Due to the slow social change, royal and religious architecture does not need to meet the needs of rapid and efficient construction. Rulers often beautify the appearance of buildings to make them a symbol, symbolize the status of power, and strengthen the cultural identity of the people at the bottom of power, so as to consolidate their rule. In the building of power, people often feel a kind of authority and a constrained power. On the contrary, vernacular architecture is relatively far away from power. It grows naturally over time. The process of evolution pays attention to people's bodies and feelings. On the contrary to broad narrative and power control, people can feel the appropriate spatial scale and freedom as human beings in the countryside. Therefore, selecting vernacular architecture for research may find a way out for the escape of cumbersome daily life in modern society. British poet Cooper once said that God created the countryside and human beings created the city. Many other writers also praise the countryside. It can be seen that people regard the countryside as a pure land and a beautiful spiritual home. Compared with the generation methods of urban and rural areas, urban planning is from top to bottom. From those in

power, developers to designers, the role of the public is missing, which is often not considered. More emphasis is on functional rationality based on the interests of social development. The rural evolution is from bottom to top, starting from the individual, accumulating the wisdom and strength of the public, and finally forming a harmonious and relatively satisfied intelligence with the gentle evolution of time (Xiaoxing, L, 2007). Although the vernacular architecture does not adapt to the environment of the rapid development of modernization, it still has a lot of possibilities for reference. It contains many missing elements in modern construction, which can be used as a Romantic way to pursue the model of poetic living space. At the same time, with the help of the concept of "Paradigm" in the philosophy of science, the generation process of vernacular architecture is explained from internal to external, from Spiritual Paradigm, Interpersonal Paradigm to Technology Paradigm. This process is full of folk wisdom and culture, and the anti-alienation method of everyday life may be bred.

The Spiritual Paradigm refers to people's spiritual culture and is the core and starting point of local construction. In the traditional world, it is generally the religion, thought, ritual and taboo that control people's understanding of the world, which has not been replaced by the national ideology and the world outlook of capital. Amos Rapoport believes that spiritual factors in local construction are greater than environmental constraints, so local construction is from the perspective of people themselves (Amos, R, 1969). Nature is important in spiritual paradise. Human is born in nature so alienation from nature will lead to a variety of physical and psychological discomfort. Vernacular architecture in both East and West has a sense of conforming to nature. Some of them in the East leave the central position of folk houses and settlements to nature. At the same time, the new construction of houses and the expansion of cities and towns will give maximum consideration to the protection of natural and ecological diversity; Furthermore the human body is considered in construction. Scale and proportion are particularly important in vernacular architecture. They are designed according to people. They are comfortable and can be adjusted at any time. For example, Da Vinci's research on the perfect proportion of Uomo Vitruvian is used for the construction of buildings and makes people comfortable. At the same time, due to the lack of control and naturalness of design, the interaction frequency between the body and the outside world is very high; In addition, the design also values people's psychological feelings. Due to the humanistic factors in the construction process, the design is full of human feelings, which is easy to stimulate people's sense feelings and lead to pleasure. At the same time, the attention to psychological unconsciousness has a positive impact on consciousness. Human consciousness is only a corner of the mental world, while the unconscious occupies most of the mental world and is not easy to detect, but it determines our consciousness and

behavior (Guochuan, F, 2013). Feng Shui culture in the East is similar to that of a psychoanalyst. By adjusting the spatial pattern, it can dialogue with the unconscious and calm the unconscious contradiction and anxiety.

The Interpersonal Paradigm refers to people's social participation and the process and method of local construction. Amos Rapoport divides the construction into three stages: preindustrial, vernacular and high style and modern according to the relationship between the construction participants. In the first stage, everyone knows and participates in the construction. In the second stage, designers, builders and users share a common background and tradition. They can cooperate and complete the construction tacitly according to the custom without drawings. In the third stage, designers, constructors and users are separated from each other and do not necessarily share a common background and tradition. Even users are often excluded from the phase of design and construction (Amos, R, 1969). In the traditional world, the mode of social participation is generally the first and second stages. The bottom-up construction method is relatively slow, and the user's experience and feeling can be considered relatively more. Starting from the user, it has experienced design discussion, returned to the user, and then constantly adjusted and repeated. Although the whole process is cumbersome and complex, it has a high fault tolerance rate, good completion effect, long preservation life, and less damage to the environment; Furthermore, high public participation leads to high satisfaction after completion. The lack of public participation in urban planning leads to the fact that the public has no voice in the built environment and can not express their real needs for life, resulting in low satisfaction; In addition, losing control often has unexpected effects. The whole process of modern urban construction is precisely controlled, each step has future expectations, and the results are also determined. However, there are controlled parts, semi-controlled parts and uncontrolled parts in vernacular construction. Gideon Boie mentioned in *Less Ever People* that the virtual participation for an architect is to lose control, but to keep desire (Boie, G et al, 2018). Indeed, life is the art of losing control. If they do not fully control it during construction, sometimes being out of control can bring uncertainty and good results.

The Technology Paradigm refers to the physical means and vectors used by people in the construction of final expression, usually including materials, tools and techniques. They are often affected by environmental factors, reflecting the local and regional property of vernacular architecture. In the traditional world, materials are largely selected by local residents. Generally, the principle of selecting local materials will be adopted, which saves transportation time and cost. At the same time, the natural materials have a strong affinity. The traces of handcraft and natural properties of materials in the construction process bring warmth to people; Furthermore, the efficiency of tools directly determines the distance between people and the real

world. Since people began to use tools, the boundary between the body and the world has blurred (Clark, A, 1989). The experience of building by hand and by machine is very different for designers. With the rapid development of science and technology, the progress of tools has further estranged people from the world. In the future, the acceleration of artificial intelligence and virtual reality will push the unreal feeling to a peak. The more architect has not experienced the real construction, the more illusory the house will be; In addition, traditional construction techniques are complicated, but the wisdom of life is reflected in them. People usually hide their understanding of life in architectural symbols and pass on this construction technology from generation to generation. At the same time, construction symbols are also the result of people's memory and construction process. The gradual accumulation of symbols will deepen people's confidence and identity in their culture. In turn, it increases the cohesion of the group, strengthens the individual's sense of belonging to the group, promotes social harmony and stability, and increases the possibility of cultural dissemination and continuation.

In conclusion, although the environment of vernacular architecture is very different from the modern environment, the generation wisdom and completion effect of it need to be learned by modern architecture. This is why people are still keen to study vernacular architecture after so many years. The three paradigms, Spiritual Paradigm, Interpersonal Paradigm and Technology Paradigm, are constantly changing with the process of society. Modernization has brought many things. At the same time, modern society is losing "human" space and everyday life under the alienation of capital. Modern Spiritual Paradigm should learn from tradition respect for people's psychological feelings, modern Interpersonal Paradigm should learn from tradition the construction mode of public participation, and modern Technology Paradigm should learn from tradition the local construction wisdom. Taking vernacular architecture as a model of Romanticism and learning from it, architects may find a way out of modern everyday life. They may find a way out of modern everyday life by learning from the "vernacular" way to create a poetic space of everyday life, meet people's needs for happiness, stabilize the current state of society, and awaken public awareness to a better future.

6 Conclusion

This paper is trying to find what architects can do for everyday life alienated by capitalism. Through the analysis of this paper, it is considered that architects have the possibility to lead social change. Similarly, as mentioned before, thinkers and artists as creative workers also have this potential in the historical practice of the Renaissance, Reformation, Enlightenment and so on. Creative workers use their works to touch people

directly or indirectly, pay attention to the profound ideas behind the works, look forward to the future or reflect on the current reality, so as to gather the power of the public to form new possibilities. The method mentioned in this paper is a kind of Romanticism. The urban design imitates the mode of vernacular architecture and creates poetic space. At the same time, Realism, as opposed to Romanticism, may also be used as an operational means. Romanticism focuses on people's inner feelings and yearning for the future, which is just the opposite of Realism. It focuses more on the realistic description of reality and uses the irony of blackening reality to make people aware of the plight of the social environment, so as to produce a revolution. The two methods have the same goal, and both of them have the possibility of producing positive effects.

Of course, the ideas provided in this paper are only used as a theoretical basis. If they are used in actual society,

specific factors such as country, nationality, religion and culture need to be considered. The practical ideas are very various in all kinds of environments. The theory is inspired by a series of historical events. The degree of internationalization of society at that time can not be compared with that at present. Nationalization makes the whole world a whole. At the same time, due to differences and mutual constraints, the possibility and process of change will be more complex. At the same time, in the face of the ongoing changes in the industrialization 4.0 era, artificial intelligence and virtual reality are leading the world to an uncertain and unreal future. Coupled with the complexity of international relations, they have a great impact on the Spiritual Paradigm, Interpersonal Paradigm and Technology Paradigm. The way out of anti-alienation of everyday life has just begun, and the poetic property of everyday life has become more real and significant.

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A HOME AS A SANCTUARY

Tobine Rasmussen

5384753

Preface

2020. What can be commemorated from the year of the 2-0's? Pandemic. Unemployment. Home office. Anxiety. Loneliness. Reflection: Reflection conducted to personal growth; failed reflection leading to tragedies; reflection of the direction of urban society. With the power of an hour-long press conference, the entire world went on a temporary pause. Transportation and exchange of goods decreased significantly and temporary layoffs, limited social interactions, and curfews were implemented. The dining table, desk or coffee table became the office space. Routines were broken. Routines used as self-coping mechanisms to avoid addressing past traumas and challenging times. Precipitously, the individual's living situation was altered distinctively. Your sanctuary became your prison. Your desire for a calmer working environment became your worst nightmare. The cognitive walls that you had spent years constructing, one trauma at a time, were now slowly demolishing. Your demons started crawling closer and closer. Slowly. Their footsteps became more prominent every minute, every hour, every day. No board game, Netflix series or Zoom call could stop them from knocking on your front door, with no other choice than to invite them in.

This is how I experienced it. After searching for jobs for five months, moving to a new city, searching for another month and a half with no income, yet bills to pay, I finally landed a job as an architectural intern. I was lucky enough to be able to go to work a few days a week, however, I entered an empty office building. My colleagues became merely voices altered through the unfavourable internet connection, written words crowded with emojis to sound cordial, and lagging images with colourful virtual backgrounds through the endless zoom calls. They were working from their cabins by the sea and in the mountains to find peace and calmness. I was working from a tiny apartment in the city. They had children constantly screaming in the background. I heard the tram passing by every 15 minutes and the brewing of the fifth coffee in the making. For the next 15 minutes, it was complete silence. Too silent. Until the tram passed again.

Through time, the home has gone from being a shelter to a museum of consumerism. People strive for the "bigger" and "better," yet somehow, the developers push for smaller and worse. Living in a world filled with stress and expectations, the happening of Covid19 brought a greater emphasis on mental health and safety. Quarantines and home offices led to realisations that people's possessions did not cure loneliness, and humans sought refuge in nature for healing. Without realising it, society took a small step back in time to when humans used to live with nature and not in urbanscapes.

Spending so much time in a place I referred to as 'home,' yet feeling so alone, stressed, and unwelcome, led me to pursue the topic of this thesis. From a personal perspective, I believe to have no home. I am not homeless by the definition of not having a heated structure to



Image1

(Vukušić, 2022)

return to. No. I have no feeling of home. Yet, what is the feeling of home? After moving house fourteen times, living in six different cities and three countries, home is yet something I must find. I strongly consider a home not only to be the house that shelters you, but also the physical and spiritual realm that surrounds one for psychological healing and renewal, a place that offers more than to feel safe and relaxed. My definition of a home is a place that becomes you and makes you become a part of the place. A location or structure where your body, mind, and soul become one with the surroundings. Somewhere that awakens your presence. A structure for grounding. The construction of housing is moving in the wrong direction, due to the lack of focus on mindfulness. There are several aspects of the direction of housing development that should be addressed, however, I believe that the biggest concern

for the overall matter is the psychological effect our homes have on the human mind and body. This matter has a spiralling influence on the overall mental and physical health of society. I chose to address the matter through the psychological and spiritual lens for the purpose of designing for activation of the natural healing power within human bodies. The question, therefore, led to why homes neglect the sole purpose of creating atmospheres that triggers mindfulness, presence, and mental and physical healing.

Can architects fabricate architecture centring body, mind, and soul? Can a home be the temple of meditation and grounding? To further investigate the matter of spirituality and physicality, this thesis must examine ancestral methodologies and meditational spaces.

Introduction

Home

What is a home? To refer to the word 'home' as 'being home' can relate to a structure where to leave personal belongings within. Another phrase would be 'from home,' which indicates a geographical location the individual continuously returns to. When entering the location of the home, it often triggers a particular feeling of safeness and happiness. However, these feelings might translate to dispositions of stress and laziness when entering the front door. For, it might be due to humanity now being urban. Striving for lifestyles in large towns or cities with smells and toxins, the workers bring home the sensory experiences surrounding them throughout the day. Sensory experiences might be stimulating or enriching or trigger stress. Homes are supposed to have a renewing function - just like the night of sleep should renew and recharge the individual, homes should activate the same in an awakened state (Day, 2004). The more significant the imbalance and stress level brought home is, the more crucial the performance of healing power becomes within the home. However, the design to activate healing power seems to be lacking the commenced constructions.

Christopher Day wrote in *Places of the Soul* that when the individuals enter their home after a stressful day, the building should intentionally trigger reflection and renewal (Day, 2004). If not provided, stress builds upon stress and leads to physical or psychological collapse. It is easy to blame architectural constructions built by developers pretending to listen to architects for the lack of mental consideration. With profit as the goal, the main factors of the project are scale, units, and construction speed. The overtaking of machinery leads the architect with a greater responsibility to school the tunnel-visioned developers. However, that is if the architect even knows what a home is. The architect knows what a structure is. A house even. But a home? The representation of contemporary architectural homes questions the architect's knowledge on the matter.

Architecture compromises a set of diverse processes that represent the effort of all parts involved through its response to a range of fields and issues that pertain to people's lives and cover the spectrum

from human experiences to actions. That is due to the distinctions within the construction and production of architecture that challenge the reliance on rigid building typologies (Löschke, 2019). Contemporary architecture should not be about buildings but people. However, the last decade has produced architecture subscribed to the modernist trope that believes functionality and technology will enrich and improve the lives of the individual. The extension of the ideology, which should no longer be applicable, is due to the quality of the architectural outcome being determined by design awards. The doctrine is not judged by the user and inhabitants but by architectural professionals who convey these standards. On the contrary, what makes a home truly contemporary is the foregrounding of human experiences, encounters, action, and engagement over objects (Löschke, 2019). Yet, these objects should not be objects of consumerism but objects triggering memories, endorphins, and sensory experiences to improve the quality of people's lives and not as an end itself. So, if the goal is not to create architecture itself but to respond to the continually evolving human condition, why is it that the private properties have a significant lack of psychological enrichment through design?

To fully understand what a home is or could be, there are two ways of addressing the word and its meaning. Allowing the physical structure to intertwine body, mind, and soul, it must address the spiritual-, and architectural interpretation of home. The concerns are reflected upon as separates, however, to create a true home, one cannot be addressed without the other.

The Spiritual and Architectural Meaning of Home

"(Architecture is a) balance of structural science and aesthetic expression of the satisfaction of needs that go far beyond the utilitarian." - Ada Louise Huxtable (Roth, 2018, p.7)

The simply structural meaning of home is a structure that serves as a dwelling for one or more people. Architecture's responsibility is to reflect and construct a reveal of the world and situate the individual within it. Nonetheless, this distinctly makes the quest of creating a home in an inherently unstable world a demanding



Image 2

(Azulik Tulum, 2022)

and challenging task. One tends to connect with a home through a sense of permanence, both in spirit and material. Therefore, the choice of home becomes an unconscious representation of oneself. For instance, the choice of a basement apartment can personify the inner need for something hidden that needs to be explored, or on the contrary, a skylight apartment could reflect a desire to seek out transpersonal realms or spiritual dimensions (Barrie, 2016). However, the mass-produced architecture labelled as 'homes' constructed in current society can be argued to have little to no special providence to help humans explicate the world and facilitate our homecoming. For architecture to be able to articulate the human condition and translate it to a more purposeful and comprehensible body of solid, the task becomes so great that it does so inadequately and problematically. Therefore, our home becomes pursuance of our self-expression, a location of identity establishment and a self-identity communication tool. The creation of the home, for that reason, cannot be separated from human experience and activity. The human experience is the physical, sensory, and psychologically experience a person has during occasional or everyday events (Barrie, 2016) (see image 2). Consequently, to build a home unified with the human experience, the spiritual aspect of the home is to be understood.

"We need to build buildings and places of life-renewing, soul-nurturing, spirit-strengthening qualities. Soul can only be given by souls – not by computer system or industrial might." – Christopher Day, (Day, 2004, p.295).

When addressing the spiritual meaning of a home, the word 'home' will emphasise the psychological and atmospheric meaning of the word. One definition of a spiritual home is a place that creates a feeling of belonging due to personal ideologies or attributes corresponding with the other inhabitants in the area. Moreover, the spiritual meaning of home could be a particular atmosphere within a relational ontology that surrounds the human threshold. Humans exist on a pea, a threshold, centred between life and death, sky and earth, and light and dark. Conceptually, atmospheres are related to the diffuse and relational concepts of a threshold with their vital position to relate binaries across a liminal zone to an original whole (Löschke, 2019). Christopher Day describes structures of the home as the atmosphere meant to serve the soul where the building is intrinsic to

its surroundings (Day, 2004). Architecture cannot assemble as servants for dehumanizing masters, promoting gain and allegiance to consumerism over people and spirit-of-place. In conjunction, the forces of design must align the organising and the life-filled, matter and light, rational and the feeling, and the substantial and the transitory to activate the health-giving demeanour. In other words, home through the meaning of atmosphere is experiential. The fabrication of the atmosphere within the home is dependent on the site-specific quality and generative character that articulate a re-conceptualisation of the co-presence of all participants in the intercultural spatial production. This corresponding state between subjects and objects, constituting the agglomeration of atmospheres, becomes the paradoxical alternative to the Western architectural theory and practice of private property construction.

Tolia-Kelly would address the word 'home' through material and sensory significance that awakened old memories (Bartolini, 2018). Similarly, Walter Benjamin's explanation of aura and Böheme's explanation of atmosphere could interpret Tolia-Kelly's statement. When describing the aura as a strange tissue of space and time emanating from natural objects, and the atmosphere as a spatially diffused quality of feeling encompassing the perceiver and the perceived; once inhaled, the aura intertwines the body and the environment to enable an encounter with the world (Löschke, 2019). This interaction and reaction intertwine the environmental qualities and individual dispositions, subsequently enabling the aura and atmospheres to suggest ways of healing the discrepancies between subject and object (Löschke, 2019). As a result, this amalgamation scars modernity. In summary, the awakened memories rendered by material and sensory significance could reflect the presence of objects that interfere with us and embody us. Despite the objects' permanent presence, they hold abilities to step out of themselves and enter the intermediate threshold of human existence. The emanations of humans, objects, and environments within the location of the home enrich the atmosphere spatially and co-establish them as the primary phenomenon in which people and things are differentiated and through which they remain affiliated.



Image 3

(Azulik Tulum, 2021)

Connecting Spirituality and Physicality

Constructing Meditation

When creating and constructing architecture, the overall goal should be to create compositions that prompt a state of mindfulness in the everyday life. It is only when to cease one can fully encounter life, enforcing a reunion of the body and mind for the experience of its oneness. To stop the busyness of the mind, the space surrounding the body's position needs to be clear of any busyness (Hanh, 2011). For the creation of inner renewal, one tends to seek a spacious and uncluttered space (see image 3). However, for a room to be spacious, it does not need to be large. The factor of light, the layout of the room, shape of space, colour, vegetation, texture, and furnishing can transform a cramped room into a spacious calm one (Day, 2004).

Architecture is the art that influences our movement and behaviour within the built structure. Through manipulation of colour and light, and change in patterns, art through paintings and sculptures can affect the sensory experience of the individual. With the same tools, an architect can create equivalent reactions, but to a greater extent, shaping the way one lives and moves within the creation of the surrounding envelope looked upon as home. The architect can manipulate spaces through the physical space, perceptual space, conceptual space, and behavioural space (Roth, 2018). Corroborating and integrating these spatial values into the design process should be of the highest concern, yet, somehow, they never make it out as a collective whole in contemporary homes.

Firstly, the physical space is the envisioning of the body or air consisting between the walls, floors, and ceiling of a room. This space, measured in cubic meters, could be conceptualised as the realm of the aura. Secondly, the perceptual space is a perceivable and visible space. In a space with glass walls, the perceptual space extends well beyond the boundary of the glass and therefore the calibration of this space may be unattainable (Roth, 2018). Conceptually, the perceptual space could be the location that one calls home, as home also could identify with the surroundings of the house. Therefore, the perceptual space could be conceived as the environment in which one lives. Furthermore, defining conceptual space as the mental map in our minds that navigate the individual through

the home (Roth, 2018), a great conceptual space should be a building with spatial arrangements so easily perceived that the user could move around with inevitability. Designing for intuition would be another way of looking at this spatial strategy. The behavioural spaces are spaces manipulated in ways of unforeseen or contrasting and distinctive design choices that change the moving and acting behaviour of the user (Roth, 2018). These design decisions trigger new behavioural patterns to stimulate certain atmospheric and psychological benefits if done right. Consequently, the behavioural space could be characterised as the atmospheric feature of the home.

When 'constructing' meditation, the four elements of earth, fire, air, and water are tools used for a stronger connection to nature. The peculiarities of these elements can conduct specific messages or goals. Each element has characteristics that can activate different energies within the body.

Earth

The element of earth symbolises humbleness, demureness, and having solid ground beneath us through life changes. With its symbolism of being down-to-earth and solid, contrastingly, the earth also is about being soft, gentle, and full of life. During meditation or mindfulness, the application of the element of earth brings worries and expectations to a solid footing and ends certain projects for the enablement to begin again (Banfalvi, 2014). Creating a space for meditation to enhance the distinctiveness of earth, design strategies like locating the complex in woods with windows and open spaces, allowing views to plantations, can enhance the experience through the design strategy of perceptual space. With close contact with the woods, the physical space withholds scents of earth and moist bark that will further trigger the sensory experience to enhance the grounding process activated by the element. Applying materials like rammed earth walls and wood surfaces could heighten the visitor's sensory experience acoustically, visually, and tactilely (Golenda, N/A). These are all factors found in the spiritual centre of Windhover Contemplative Centre by Aidlin Darling Design in Stanford, California (see image 4). This retreat uses the element of earth to specifically inspire quiet reflection and provide a refuge from the stress caused by everyday ongoings.



Image 4

(Millman, n.d.)

Air

The natural element of air is symbolising the mentality of the individual and freeing one from constraints not yet able to overcome. Just like its invisibility, yet strength, the element of air embodies the complexity of the mind and mental health. When incorporating air in the meditative process, it releases the toxicity of old thoughts and clears the mind to see and reach out for new opportunities. With air comes light, like the spark of lightning carried for miles through the power of the wind. It creates a feeling of lightness and pushes for the next step toward freedom (Banfalvi, 2014). Through the design of perceptual space and conceptual space, the Japanese Garden in Budapest Zoo by PLANT-Atelier Peter Kis used the element of air to create a space for solitude and reflection. With an emphasis on the power of the air, the construction of the pavilions within the Japanese garden are frameless with a curved glass wall that winds between wooden posts (Golenda, N/A). Here, the winds flow freely between the mediative spaces, yet shelter the user from the element of water and earth. As air also travels light, the right amount of light is important when meditating. In the Japanese Tea Houses, the amount of light is a requirement. The Tearoom should not be too light or too dark. For instance, an overly lit room will disturb the mind on its journey to enlightenment. In contrast, a dark room can trigger senses of gloom and



Image 5

(Courtesy of Roth Architecture, 2021)

melancholy. To obtain the perfect medium, the placement of the outer windows and outer shutters are arranged according to the position of the sun with a double layer of white paper (Sadler, 2019).

Water

When struggling to flow with commenced situations, the incorporation of water in the mediative practice will release the tensions and allow for growth. Water is essential to moisten the soil, so the seeds planted within it can grow. Correspondingly, patience and continuation are essential in certain situations for results to show and finalise. Water activates cleansing and encourages stepping back, reflecting, and letting go. Equally, as the body uses water for sustaining and cleansing, the mind and soul use water for the same purpose (Banfalvi, 2014). To integrate the water element in meditation, water features like running water or fountains can be added. The rumbling surf and petrichor of the ocean make the sensory experience even stronger. Placing the structure for meditation near or on top of the water is an influential and stimulating approach to integrating the water element. This technique was implemented by studio Tamassociati for their project Prayer and Meditation Pavilion in Khartoum, Sudan. The pavilion implements the strategy of behavioural space by placing two unaligned white cubes containing one tree inside each cube to sanctify them. This changes the way the user moves in the room. The structure placed upon and surrounded by a water pool creates a physical barrier between the meditative space and the surroundings, enhancing the connection to the element, elevating the emanation of the mindful cleansing, and keeping the space secluded.

Fire

Opposite to earth, fire symbolises passion and burning brightly. The light of the fire brings light to the darkness, and the ashes left behind create opportunities for new beginnings. This element takes one on an emotional journey through the meditative state, which disintegrates the individual for its uprising to become stronger and more enthusiastic (Banfalvi, 2014). For centuries, the application of bonfires combined with spiritual movements has endured spiritual gatherings. A fireplace or bonfire is a powerful way of integrating fire into the meditative experience. However, incorporating fire through candles and incense can also be effective. Saunas used for meditative purposes are also quite common, as the sauna combines the elements of water and fire to create steam. This combination is successful for gaining perspective, breathing, and achieving a tranquil state.

Applying the four elements in the design process, a change within the meditation will actualise and create renewable energy within the user. As these elements make such an immense impact on the spirit, they should all be incorporated into the construction of the home. However, constructing for meditation might still lead to design decisions that will not use the aura and the atmosphere to their full advantage and abandon the factor of healing through overthinking the use of the physical space, perceptual space, conceptual space, and behavioural space. In contrast, could meditation lead to construction and guide the designer to better design decisions? How can meditation not only heal the body but heal the home?

Meditating Construction

The Mexico-based architect Eduardo Neira, founder of Roth Architecture, creates and constructs his architectural structures in a unique way. Neira meditates on the given site to ask permission from mother nature to build. In return, images of architecture appear from within with ancestry construction methods that have proven to connect man, nature, time, and the soul of the universe (Burns, 2020). The designs are unbounded by mathematical geometry following the geometry of nature in the form of accommodation (see image 5). Instead of building for humans, Neira builds structures belonging to the soil and earth bridging where the humans came from and where they are going. The resort of Azulik in Tulum, Mexico is one of the most famous of his creations where also this project seeks to reconnect man to nature and its infinite and ancient wisdom.

"Art is an essential human need to heal, unlocked from the cave. With our spaces, we seek precisely to bring man out of the cave and create places that awaken creativity. Within the way we build is the manual process, and art too requires the wisdom of the hand. We integrate ourselves in the jungle for a while and enduring the humidity and the mosquitoes we enter in connection with what happens there. We always come out comforted, renewed with peace, calm and with a more holistic vision of things because we connect with the origin, with the source, with the sacred. That is also the highest purpose of art and of all religions and native peoples." – Eduardo "Roth" Neira (Ahuja, 2021, para.12)

Just like nature takes shape through growing and integrating with its surroundings, Roth Architecture constructs the spaces of his projects similarly. By adding new spaces to their projects when needed, wrapping around the existing nature, Roth Architecture salutes what was before and build no more than required. This way, they honour the forms of the soil through constructions that are beautiful placed within and tangled between the existing nature, coexisting with the trees. Neira compares the modern man's mind to an enclosed cave that needs opening for the continuation of the evolution of humans and to explore creativity for the healing and uniting of humankind. Furthermore, Roth Architecture acknowledges the responsibility architecture has in society and wants to use the tool to unite people with nature through the dynamic, asymmetrical, irregular, and harmonious shapes that nature creates. By returning people to nature, Neira believes that society will become aware of the part they take in the millenary system with its wisdom (Ahuja, 2021).

With their strong pursuit to reconnect people with nature, Roth also acknowledges a new generation of ways of living, reconnecting, and healing. Consequently, the construction of the projects uses organic materials produced without machinery to

avoid environmental impact. This leads to projects constructed through the wisdom of ancestry, textuality, and tactility. To maintain the ancestral legacy within the spiritual retreats of Azulik, the column-lacking structures are supported through a woven form originating from the ancestral legacy of the native communities of the area (Burns, 2020) (see image 7). With Azulik's constantly changing architecture, Roth Architecture is frequently considered as constructing ephemeral architecture. This is due to their intention to not impose but to coexist with nature and humans, and to adapt to the circumstances, environment, and time. Neira believes the future of society is intricately linked to nomadism with their traits of ever-changing and dynamism in time (Ahuja, 2021). However, with the current direction of society, all decisions are based on concepts and algorithms from the past being articulated into theoretical guidelines without the wisdom of the hand or in contact with the earth and moment.

"Those who have the ability of the textile and the ability of tillage, are the ones whom I believe will be able to free us. They are the skilled ones to make channels, to connect with the wisdom that is latent in nature and that we have lost the ability to be channels of, while they still hold it." – Eduardo Neira (Ahuja, 2021, para.15)

The production and creative process of architecture is not about creating obstacles. Nonetheless, it is about laying fundamentals for the uncertain future. It is about being in the moment, being present, and creating opportunities without haste. The presence is always more important than the plan, just as actions speak louder than words. Society, as a collective, has a responsibility to learn and create from the wisdom of the ancestry. In addition, with a presence in the evolution of society. However, with the architectural progression of today, the construction of homes disregards the purpose of uniting the body and mind to activate the healing process naturally equipped in the human body. Therefore, the mind creates problems rather than solutions. Nature is the source of medicine, mental healing, and mindfulness, and is the one source that can heal the planet earth. Therefore, why remove nature from construction when nature can integrate into manufacturing? Why not meditate to construct the structure of meditation? When plants, animals and human intelligence conjunction, harmonious ideas will emerge and allow for an establishment within the temporality of the environment without destroying what was pre-existing. As a result, the co-creation of spaces will actualise through coexistence and elevation.



Image 6
(Zara, 2019)



Image 7
(Courtesy of Roth Architecture, 2021)



Image 8
(Courtesy of Roth Architecture, 2021)

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SPACES OF CONFLICT

materiality of oppression or ground for innovation?

Virginia Lazarou

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Global-scale problems such as climate change, terrorist attacks, continuous war going on particularly in the Middle-East and Africa, as well as the rising inequality between the wealthy and the poor world-wide, are, to name a few of the factors responsible for the so-called 'spaces of conflict'¹. In many cases, cities in order to be protected from terrorist attacks started militarizing the space, giving way to maximum surveillance and means to control the population, limiting, thus, the freedom of the citizens and making them feel confined or even imprisoned. By building up invisible protective walls the value of any public or semi-public space has been diminished². Installations such as camps have been part of any conflict, as their immediate outcomes, namely displacement and relocation, call for this spatial solution due to their flexibility and ephemeral character³. Therefore, it would be advisable to examine how these establishments, specifically bordering walls and camps occur, and how conflict helps shape them.

Conflict is considered to be an act that disrupts normality, namely the everyday life within an urban setting⁴. It is also a term that goes hand in hand with the nature of society. Meaning the ambivalencies and differences of opinions or the root causes of possible inequalities and injustices that inevitably exist in society or even in a global scale are addressed and perhaps often challenged⁵. While mechanisms for communities to resolve some of the above mentioned conflicts do exist, for example through strikes or elections, when these fail to address the problems, conflict can turn into violence⁶. But how is conflict materialized in such occasions? First of all, an area where conflict takes place needs to be defined.

The Physicality of Conflict: the Example of the Camp and the Wall

In the occasion of conflicts, architecture is thought as the 'material product of politics' achieved by the erection of walls or the destruction of buildings, according to Robert Bevan⁷. Even though conflict can be shaped as division walls, camps, border crossings, blockades, etc, it can also tear down a whole city.

Conflict occurs in space, be it on the ground, air or water. It needs a defined area, a territory to be established in⁸. Or as Stavrides mentions in his book *Towards the City of Thresholds* :

territoriality is supposed to be a natural need arising from the urge to survive while fighting against enemies or rivals. It is true, indeed, that the demarcation of an area seems to be an attempt to ward off a fight but at the same time necessarily constitutes a declaration of war⁹

The division of a territory, namely with its borders, is a means of its control or protection¹⁰.

1-3 Marc Schoonderbeek et al. 2016. "Spaces of Conflict" *Footprint* vol. 10, no.2. Issue 19 (Autumn/Winter) pp. 1-3

4-7 Piquard and Swenarton, "Learning from Architecture and Conflict" *Tandonline*, 2011, accessed April 12 2022, <https://doi.org/10.1080/13602365.2011.557897>

8 Although territory is mostly linked to earth, for the purposes of this essay conflict is seen through the lens of the ground.

9 Stavrides, Stavros. *Towards the City of Thresholds*. Brooklyn: Common Notions, 2019

10 Piquard and Swenarton, "Learning from Architecture and Conflict" *Tandonline*, 2011, accessed April 12 2022, <https://doi.org/10.1080/13602365.2011.557897>

11-15 Birthler et al., *Unbuilding Walls: From Deathstrip to Freespace*. Basel: Birkhauser, 2018

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Once the territory is established, the concepts of confinement or bordering cannot help but emerge, as the territory has to be separated from its surroundings.

Thus, conflict acquires form, be it for the physical presence of these two parameters. A border, for instance, with its materiality can prevent the 'enemy' or the 'other' from intruding, while keeping what is inside 'safe.' Besides, of course, the means of digital or immaterial control of the population with surveillance cameras, drones etc.

The Berlin Wall, erected on August 13 1963, was the most elaborate physical translation of the Cold War and encircled over a length of 168 km¹¹. It was not, however, a straight line of the same width. Instead it looked more like a zig-zagging ribbon with various widths, enclosing an inaccessible void crossing the center of the city¹² (Figure 1). In its 28 year presence progressively grew many more structures in its length such as: military checkpoints, the most famous one being 'Checkpoint C'; precast concrete wall elements, watchtowers, a road for patrol used by guards, floodlighting and another security wall¹³. The materiality of the Berlin Wall, specifically, is mostly described to have been constructed with precast L-shaped concrete wall elements (UL 12.41) and was an immediate product of the Soviet modernism, as well as the reason why the demolition of the wall with a length of 43 kilometers in the inner city areas happened so fast¹⁴ (Figure 2). Thus, reflecting the people's wish for a unified city¹⁵. What helped once shape the Iron Curtain, the concrete slabs, later became its means of dismantling. In this case, the materiality of the wall led to a state of transition from one side to the other. Consequently, one can argue that the concept of 'bordering,' used by Deleuze and Guattari, as a means of 'becoming,' now came to life¹⁶. One side of Berlin, slowly 'becoming' the other.

Moreover, a camp is usually an ephemeral establishment, nowadays mostly a solution for refugees in need of shelter. On the other hand, as Agamben mentions in his reading *The Camp as the Nomos of the Modern*, its physical presence along with its ephemeral character, made it a structure where no rule applies for people who are forced there, a 'state of exception'¹⁷. Or as Diels, the head of the Gestapo indicated: "neither an order nor an instruction exists for the origin of the camps: they were not instituted; one day they were there"¹⁸. Eventually, Nazi camps started as places for political prisoners who were considered threats to the state.

Thus, conflict can shape spaces necessary for people to escape it, but, these spaces can be those who might feed or help conflict grow and take an obscure or even violent turn. Exemplified in both the Berlin Wall with its surveillance points as well as the concentration camps with their absolute separation of the inside and the outside.

Spaces of Exception and Means of Transition: An Interpretation of the Camp and the Border

The camp in its conception, remains a place of contradictions; many of them found in division walls as well. Such contradictions including the concepts of inside-outside, exception-rule, legal-illegal, division-transition are attempted to be compared in both structures. Giorgio Agamben in his reading *The Camp as the Nomos of the Modern*, mentions that the camp is a place where any outside law is not valid inside it anymore, whereas new rules are applied that would not be possible to be applied within the state of law¹⁹. Therefore, anything illegal outside the camp is applicable there: the norm becomes indistinguishable from the exception and the exception becomes the rule²⁰. The camp becomes a place where "everything is possible"²¹. Particularly, concentration camps were founded in March 1933 in Dachau, as places for political prisoners, namely to accept anyone that was potentially a threat for the state, independent of any criminal behavior²².

Therefore, the border between inside and outside becomes a strict separation from reality and normality, an imprisonment for people who enter it.

While in the case of the camp there is a defined space or establishment responsible for the deprivation of people's freedom, in the case of division walls, there is a wider area to be separated and protected from the other side's threat.

Lazzarato in his reading *Societies of Control* describes how disciplinary societies eradicate any form of variation (be it behavior, ideology, predictability of action) in order to establish sovereignty over the ones they want to control²³. Consequently, confining the outside is of utmost importance, since it can be a source of unpredictability²⁴.

One can argue that both sides of a border embody some sort of uniformity in a sense that each one defines the opposite 'other,' translated into a similar ideology, political system, even architectural influences, so altogether into a homogenous state for each side. However it is here that the concept of 'bordering' emerges, according to Deleuze and Guattari, to challenge the term of the border²⁵. This situation can be interpreted as a transition from one side to the other, or rather as a fluid situation aiming for constant transformations on spatial and social systems²⁶. Even the Berlin Wall had checkpoints where people from one side could cross to the other.

This transcendental quality of the border, therefore, is contradicted to the absolute state of the concentration camp, even though they both are structures of division and separation. Ultimately, as Stavrides mentions in his book *Towards the City of Thresholds*, "boundaries are created to be crossed"²⁷.

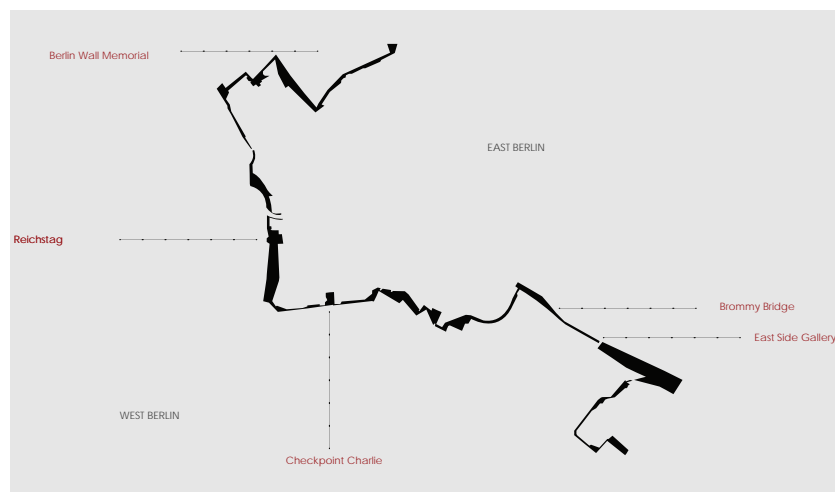
Shaping Identity through conflict: The Berlin Wall and the Zaatari Refugee camp

Even though these spaces were shaped by conflict, at times they can escape it or be used as a means of protection. During times of siege, the deprivation of one's home or city makes it important for people to create a sense of belonging to their surroundings. Thus, shaping an identity for themselves and spaces that enhance the concept of place making, infused, so as to say with their own experiences and interests, can be of great importance. Even temporary structures such as refugee camps, the one studied here being the Zaatari refugee camp, or some areas close to the Berlin Wall, the so-called 'Free Spaces' were part of those people's identity.

The need to define themselves through others was evident, as in the case of Berlin, the deprivation of the other side was a means of confinement and introversion that was not wanted by some citizens, materialized in areas that negated their political rules.

The Berlin Wall, being a small fragment separating the continent of Europe, divided the whole city. However, people on each side strived to find places where they could be free of any political or ideological orders that were thrust upon them. Even though each side had its own means to propagate its population, there were spaces where people living on both sides could briefly escape the current political and ideological means of separation²⁸. The spaces of freedom were artistic hubs for creatives mainly located in the Prenzlauer Berg and Kreuzberg reflecting the spirit of a new generation of people craving independence²⁹. What was the main cause of separation or competition between each side became an opportunity for unification, a deviation from 'normality' as dictated by East and West Berlin, the negation of both sides³⁰. A new Identity shaped through differentiation and cancellation of current political affairs found in both sides.

In the Zaatari refugee camp (Figure 3), the sense of belonging and the creation of community, was just as important a factor to shape their identity, although in a much different way than the case of Berlin. This establishment was set as a temporary settlement to house Syrian refugees after the civil war in 2011. Consequently, the large number of people to be accommodated after the war outbreak led to the construction of this camp settlement meant to shelter more than 80.000 people. Located 12 kilometers outside from the Jordan-Syrian border the camp sets an example for the shape of identity. What is unique about this settlement, according to Nada Maani, is the need of the people to be part of a community³¹. Thus, commercial districts in front of primary streets have been created, to which people refer to as 'Champs Elysees'³².



23-24

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Figure 1.

The former Wall of Berlin, with some points of interest, such as Checkpoint Charlie and the Reichstag. (illustration created by Virginia Lazarou 13 April 2022)



Figure 2.

The L-Shaped concrete slabs that consisted the Wall of Berlin. (source: <https://www.flipschulke.com/collections/berlin/the-berlin-wall-1962-44/>)



Figure 3.

Aerial view of the Zaatari Refugee camp (source: https://en.wikipedia.org/wiki/Zaatari_refugee_camp)

Besides the typical tents as shelter providers, people have been manipulating prefabricated housing units, transforming them into shops and restaurants, now over 600 and 3000 respectively³³. The commercial district, therefore, not only serves as a pastime and source of income for many people, but also gives them a sense of belonging, as it helps them shape their community³⁴. An otherwise temporary settlement is now infused with the needs of everyday life, and being reconsidered as an 'informal city' with distinct neighborhoods and their own economies³⁵. A situation found in many camp installations, exemplified in Domiz Camp, in Northern Iraq as well.

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Stasiowski, Maciej Architecture in Revolt: Lebbeus Woods's Underground Berlin

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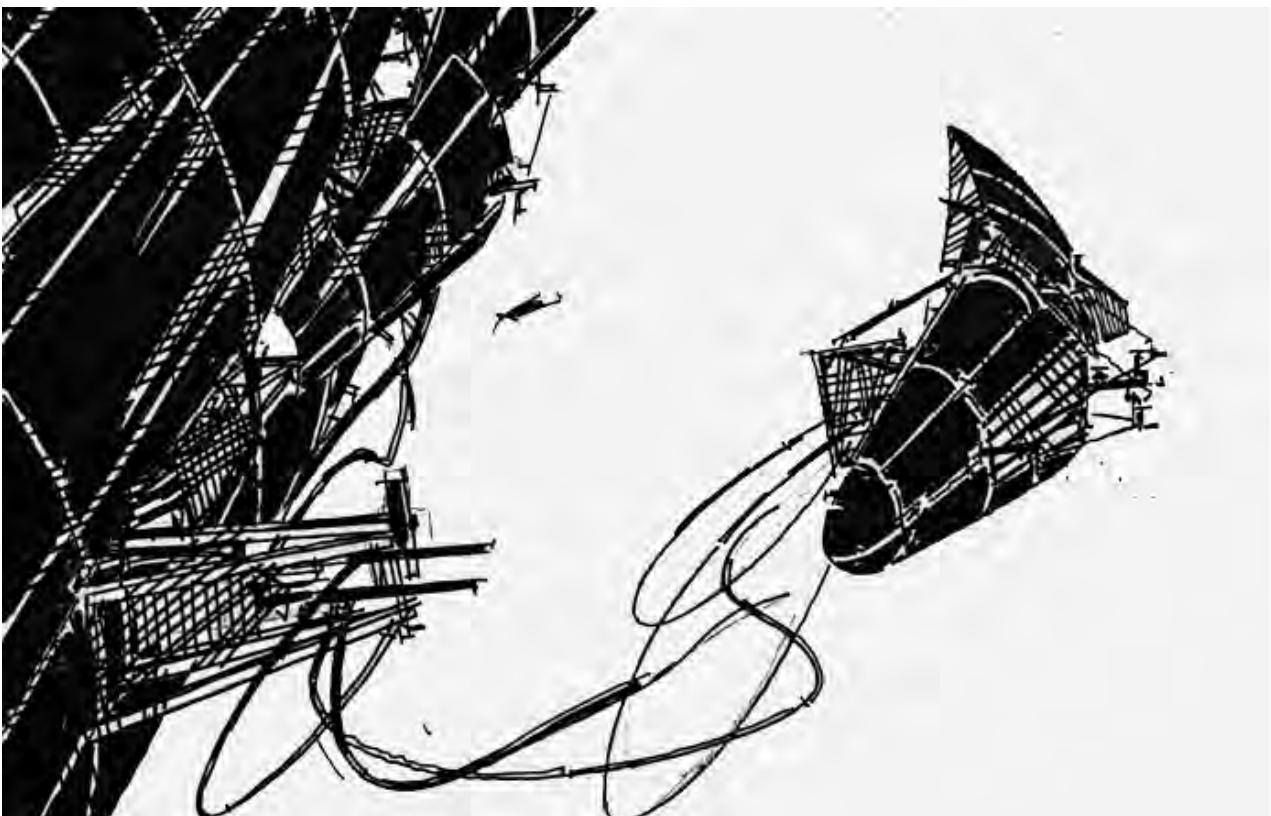


Figure 4.

The aerolabs Woods proposed for the Underground Berlin , source (<https://lebbeuswoods.wordpress.com/2009/09/15/underground-berlin-the-film-treatment/>)

The Wall: past, present, future

Even though separation walls are meant to keep people or whole nations apart with their materiality, the Berlin Wall specifically aimed for the control of freedom and ideas³⁷. Ideological walls were common in Europe of the 20th century, but also across the world, exemplified in the nations of Israel and Palestine, Cuba, or India, with the latter separating the Muslim and Hindu nations³⁸. The political power of division walls is stated by their sovereignty to the people they 'protect' by dictating them laws, which if disobeyed can lead to their punishment³⁹. The Berlin Wall, built on August 13 1961 had many implications in people's lives and the city's infrastructure. Even though the Wall divided the whole continent, Berlin was its 'Ground Zero,' the center of the conflict between the US democracies and the socialist republics of the former Soviet Union⁴⁰.

However, this border, so much hated by Berliners and once viewed as a wound in the urban fabric, later on became part of the population's healing process. Parts of it remain to date for people to commemorate the event, with many of its fragments being exhibited in museums all over the world⁴¹. Nevertheless, the Wall's role as a huge tourist attraction was sometimes overshadowed by other factors, namely the fact that remains of the Wall were found in the cellars of the Gestapo headquarters, where many inmates were tortured during the Third Reich⁴². The so called 'Topography of Terror' signified the presence of two dictatorships, enhancing, thus the Wall's intimidating character⁴³.

After the demolition of the Iron Curtain, many visionary proposals came to light, signifying its presence or absence, in new forms of buildings and spaces. However, traces of the former wall still exist, casting their imaginary shadow to the everyday lives and never letting anyone that lives there forget the 'death strip'⁴⁴. This ambivalence between East and West, separation and connection, prominence or integration, occupied or void, reconstruction or transformation is ever present in this area of Berlin, signifying the past, but also making ground for innovative proposals for the future⁴⁵.

The Duality of the Wall Implemented in the Urban Transformations of Berlin

Even though a divided city, Berlin's view from the air looked surprisingly homogeneous, as Peter Schneider argues⁴⁶. An occasion explained by the equally transforming and progressing character of both sides of the Inner-German border, as a result of their competition with one another, as well as their need for specific types of buildings. This duality was signified by different architectural and aesthetic influences, as both sides wanted to establish their supremacy with higher-

standard buildings by this 'building-counterbuilding' activity⁴⁷. Architecture, therefore, on the occasion of the conflict caused by the division wall was used as propaganda.

An urban intervention, the grand axis of Karl-Marx-Allee was the propaganda stage for the soviet's parades that were regularly broadcasted⁴⁸. The Allee's impressive and large in scale facades had to be a grand expression of their strength, reminding people of a social change promised by a socio-utopian architecture⁴⁹.

The main Western counterpart, the 'Interbau 57' in the Hansa-Viertel district, on the other hand, was built in order to rise above its 'opponent'. Brought together by star architects and a huge budget, a system of high rises aspired to dominate in the West and win the battle of ideologies⁵⁰. As large in scale as the Karl-Marx-Allee, it was meant to impress the population, turning in the end to be a reflection of it. Two types of urban interventions that wanted to negate each other by representing their own political ideologies, turned out to be complementing them instead⁵¹. Almost as if the building and counter-building activity as shown in the case of Berlin was a way to find a balance in a divided city.

Berlin as a utopia: using the Wall as inspiration

The Berlin Wall, its presence, and even after its demolition, served as a ground of inspiration for many innovative and exploratory ideas. Daniel Libeskind for his proposal for the Jewish Museum, for example, designed a jagged line that had the same width and color as the Wall⁵². After the fall of the Death Strip, instead of building the empty strip, many well-known architects suggested leaving it empty as a connection belt for both East and West Berlin⁵³. Among these architects were Zaha Hadid, Norman Foster and Jean Nouvel.

The radical idea entitled Underground Berlin of experimental architect Lebbeus Woods was presented in the exhibition "Berlin: Monument of (Thought) Model" at the German Architecture Museum in 1989⁵⁴. The architect mentions this project as an instrument for social change, with which he presents a unified Berlin below the surface of the earth⁵⁵.

Starting with a disused tunnel (Figure 4) located at the station of Stadtmitte, underneath the U-Bahn and S-Bahn lines of Berlin, Woods proposed an underground network of tunnel spaces occasionally disrupted by massive and peculiarly shaped architectural forms⁵⁶. The importance of these lines is obvious since the U-Bahn is a connection line between Checkpoint C and Friedrichstrasse station, whereas the S-Bahn line connects Potsdamer Platz and Alexander Platz, areas closely located and even outlining the Wall's existence⁵⁷.

Used as laboratories for "politically subversive" scientists and their families to live and work, this complex dates from the Nazi era. Therefore, in order for the surface of Berlin to unite again, these structures should be synchronized with the multiple and opposing earth forces, seismic, magnetic and gravitational⁵⁸.

Woods imagined a way to escape the division caused by the Wall, through a subterranean urbanism of oddly shaped structures that could take advantage of the earth's multiple forces in order to find a way and resolve the atrocities happening on the surface⁵⁹. Almost as a counter balance between the natural forces at the core of the earth and the opposing political ones that created the division of the city with the structure of the Wall.

A way for architecture to 'emerge' and fill the emptiness with parasitic structures that host the possibility of different forms of living and working such as the structure emerging from Alexanderplatz and the aerolabs⁶⁰. Thus, reflecting the need to occupy and use open spaces in the area of Berlin, a strategy even used to this date⁶¹.

Building and Counter-Building : the Walls of Transition

Another speculative set of drawings produced by Lebbeus Woods, were named the 'Wall Games' and were proposed in 2009, a time when the wall between Israel and Palestine was still in the process of being built⁶². A continuation, one can argue, of the building and counter building activity described in Berlin. Only this time happening directly on the structure of the wall in order to create new transitional spaces between the two sides⁶³.

The architect imagines a building game for both sides, only viable through the structure of the Wall. Each side using their own materials, architects and construction methods, as dictated by their own traditions, and knowledge, would build cantilevered structures, ones that they must not touch the ground. An ongoing game that forces both sides to find ways to balance this division structure by working against and ultimately with each other in order to find new ways of creating transcendental spaces from one side to the other.

As Massey Doreen in her book *For Space* argues, in this proposal, space is always under construction, being a product of opposing relations and interactions, a 'sphere of coexisting heterogeneity'⁶⁴. She continues with the imagination of space as a ground for simultaneous stories, diverse in their nature⁶⁵. A space open, ready to be infused with various interconnections and identities⁶⁶. A space, therefore, ready to accept the changes to be brought by the future. Just as the Wall Game suggests, the interconnectedness of each side through the construction activity.

The Wall Game then becomes a way to not only divide, but also cross this border line. A means of 'bordering', which according to Stavrides' opinion on his reading *Towards the City of Thresholds*, could not only be a way of separation from the other, but also a bridge towards it, a form of negotiation⁶⁷. As was the case of Berlin, where the building and counter building activity that started as a competition of each side, ended up being a complementary form of building, resulting in a surprisingly homogenous urban fabric in an otherwise divided city.

Conflict And Opportunity

Throughout this essay, conflict was meant to be translated in different ways. A way to not only destroy, but also create, to separate but also unite. An opportunity, in the end, to imagine new spaces which not only avoid conflict but on the contrary, accept it and incorporate it to the root of their identity and their physical presence. Through the analysis of the camp and division walls, as well as some of their spatial characteristics, the essay went on to investigate the case of the Berlin Wall not only as a symbol of oppression for Berliners, but also as a means for innovation. Utopian proposals by Lebbeus Woods made this structure intriguing, but in the end unique proposals didn't have to remain in the realm of the imaginary in order to have an impact on people's mindsets. Conflict, eventually can be a means of destruction, but as history suggested, its creative response can be just as important.

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A big thank you to all who participated in the Architecture Theory Thesis course and contributed to this collective issue.

Thank you!

Spring 2022