

## BLUE CITY

**Design & Development:**  
BlueCity, Superuse Studios

**Year:**  
2015

**Location:**  
Rotterdam, The Netherlands

**More info:**  
<https://www.bluecity.nl/>

**Scales:**  
Neighbourhood

**Resources:**  
Nutrients, Technical Materials

**Design Approaches:**  
Regenerative Design,

**R-Strategies:**  
Recycle, Refurbish,  
Remanufacture, Repair

**Aspects:**  
Design, Resource Flows



Since 2015, the BlueCity project has developed from a vacant swimming pool, located next to the Maas River, into a circular economy hub for the city of Rotterdam in the Netherlands. In 2023, BlueCity became a model for circular and blue economy initiatives and home to 55 entrepreneurs and startups. The concept involves reusing the 12.000 m2 building Tropicana, a former tropical swimming paradise that lost its original function and is now hosting offices and events. It is a platform for exchanging and creating

new ideas regarding a circular economy and a sustainable future. Moreover, it is a meeting place for pioneers and enterprising minds, where they develop a framework for action, whether to grow their impact, live a zero-waste life, or develop a future-proof material. BlueCity's mission is to accelerate the transition from the linear to the circular economy through entrepreneurship.

### 1. Conceptualization of Circularity

*What is the circular idea, theory and approach behind this project? What is the aim and purpose of it?*

The BlueCity concept is rooted more in the idea of blue economy, rather than in circularity alone. For the founders and initiators of Blue City, defining and including the term 'circular' was not easy to incorporate in their vision. In conversation with Rotterdam Make It Happen, communications manager Van Ewijk explains: *'If you go back to basics, it is an economy in which the sky is no longer the limit, but all available resources are used. It is important for Rotterdam that we make that alternative economy visible; people from all over the world visit us here to see how we are making the circular economy a reality'.*

The blue economy concept was developed by the Belgian economist and entrepreneur Gunter Pauli. The name originated from the image of the earth from space: a blue planet. According to Pauli, our planet is a closed ecosystem in which everything is interconnected; in nature, the excretion of one organism is food for another. Similar to the circular economy, the blue economy provides sustainable alternatives to the current linear economy. Whereas the linear economy generates waste, the circular and blue economy think in terms of potential. Waste becomes a raw material that closes the loop, coming full circle. The main difference between the circular economy and the blue economy is that the former tends to think in terms of one loop, whereas the latter connects several loops with each other. The circular economy focuses on a loop within one single industry, in the blue economy loops are intertwined to optimize residual waste streams. The emphasis is on collaboration, rather than competition. By connecting these production chains, you create loops and eliminate almost all waste and create the city of the future. In a way, the circular economy is just a tiny link in the greater, all-encompassing chain that is the blue economy.

This idea manifests itself in the design of the building renovation as well as in the ecosystem of enterprises hosted in the newly developed hub. In the building itself, through the reuse of building materials

and structures - this was designed by architecture office *Superuse Studios*, who intervened in parts such as the old swimming pool and used their *Oogstkaart* ("harvest map": an urban mining tool) to incorporate building components from soon-to-be-demolished buildings nearby. By doing this they transformed the space from a swimming paradise to an innovation hub for visitors, start-ups and small businesses. Simultaneously, businesses based here have linked their waste streams to come as close as possible to a zero-waste circle – but some of them are also just general businesses working on circular products that use waste from elsewhere.

### 2. The Sectoral Dimension

*On which economic areas is the circularity focusing? What kind of system, supply chain, and flows is the project addressing?*

BlueCity does not focus on a specific sector, but rather encompasses many sectors on which the start-ups and businesses work on. Currently, many of these integrate the food and textile sectors, in which the waste of one sector could become a resource for another. For example, coffee grounds from the bar are used to grow mushrooms by *RotterZwam*. The CO<sub>2</sub> released in this process is used by another company to produce spirulina. The mycelium is used to develop wrapping materials in the BlueCity Lab, and the mushrooms are used for food in the bar. Beeswax from an urban beekeeper is used by furniture maker *OKKEHOUT*. Plastic waste is recycled into new products for the neighborhood (such as bird houses) by a company called *Community Plastics*. There are also several other examples like the start-up *Fruitleather* which produces vegan leather (as the name implies) that could replace animal skins by making leather with (rotten) fruit waste. Another example is *Outlander Materials*, which is researching and creating new materials such as *UnPlastic* from beer brewery waste, using the waste from the beer brewery in Blue City Vet & Lazy, who in turn use the waste of other enterprises to create their flavors.

### 3. Sustainability Framework & Transition Concepts

*What is the context of the project? What*

*is the socio-economic, legal, and political structure established to develop the project?*

The project was started as an innovation hub in 2015 by several entrepreneurs of the start-up *RotterZwam*. They joined forces to develop a sustainable business idea for *Tropicana*. With the help of investors and the Municipality of Rotterdam, they created BlueCity as a bottom-up pilot project for a circular economy, based on the ideas of the book “The Blue Economy” by Gunter Pauli. The project aims to transition towards circularity by developing a sustainable economic ecosystem that could inspire other circular concepts, such as the “circular city”. The BlueCity framework provides a platform and a common space to host circular businesses, and both the premises and the platform push businesses and even the city of Rotterdam to transition to a circular economy. Today (2023) BlueCity functions as a focal point for all the circular initiatives in the city. It forms an axis, operating between small-scale entrepreneurs with inventive ideas, large businesses who are unclear about the way in which they should realize their sustainability objectives and the ambition of the city to become circular by 2050. However, the BlueCity framework provides the fertile ground necessary to establish a healthy climate for circular entrepreneurs. Currently, the City of Rotterdam and BlueCity are looking for more locations to upscale and recreate these principles. This entrepreneurial inspiration is one of BlueCity’s focal points; helping businesses to get started and grow, for example, through the ‘Circular Challenge’. According to Van Ewijk: *‘That is the way in which the Waterweg business came about in 2018. They now produce the water-permeable paving that helps to ensure proper water management within the city using a problematic residual product sludge. This is likely to generate massive employment at a later stage, and to me, it provides a typical example of the power that BlueCity can trigger’*. Today (2023) BlueCity has become a model.

#### 4. The Social Dimension

*Is this project bottom-up or top-down in its approach, and what role do local inhabitants, stakeholders, and circular innovators play? Does it have a flagship / pioneering character for others? Does this project view people as consumers, users, or pro-sumers in the context of a circular*

*economy? Does it have a pioneering role, with impact beyond its region?*

BlueCity is based on the Rotterdam vibe and attitude “MAKE IT HAPPEN.”, the city’s official slogan since 2014. It represents the hands-on mentality and is also visible in the start-up scene with collaborations and sharing of knowledge of various entrepreneurs. The motto embodies the idea of being more inclusive and directly involving Rotterdam inhabitants. In particular, BlueCity shows through small projects and new types of businesses what sustainability and a circular economy could mean for them. An increase in activity is bound to create more jobs, and a new type of more sustainable economy.

Aside from that, BlueCity aims to raise awareness outside of *Tropicana*, by:

- Educational activities: public lectures, organization of workshops for the public/schools/students
- Supporting entrepreneurs with knowledge about circular economy
- Experimenting with circular concepts
- Lastly, collaborating with the Hogeschool Rotterdam is another way BlueCity aims to inform the transition towards circularity by impacting and involving future practitioners. In a learning environment, future practitioners learn how to tackle the challenges of the future labor market. BlueCity is conceived as a physical laboratory. Within BlueCity, students of different subjects connect with entrepreneurs and are inspired to set up a business.

#### 5. The Territorial & Spatial Dimension

*What is the scale of the project? Are urban planning policies design strategies cross scale? If yes, how and which flows are involved? What is the role of space and territory in this circular project?*

BlueCity operates on the neighborhood scale and is reusing the building of the former tropical swimming pool *Tropicana* in Rotterdam. At its core, it is transforming abandoned building structures into a hub of circular economy practices. Although

the project in itself is relatively small, the scale extends beyond the immediate physical footprint to influence broader urban dynamics, contributing to the sustainable development of the city and potentially inspiring circular initiatives at regional and national levels.

Urban planning policies and design strategies associated with BlueCity Rotterdam are indeed cross-scale, demonstrating a holistic approach to sustainability. On a local scale, the project involves micro-level interventions, such as adaptive reuse of buildings, green infrastructure, and localized circular practices. These interventions align with broader urban planning policies prioritizing circularity, sustainable development, and resilience.

The cross-scale approach is also noticeable in several ways:

The circular economy principles within BlueCity involve the efficient use and reutilization of materials. This impacts the primary site and influences larger urban material flows, promoting a more sustainable and responsible use of resources citywide.

BlueCity contributes to the local economy by creating new business opportunities and jobs. The economic impact, though localized, has the potential to influence urban economic structures and strategies on a broader scale.

The project is a knowledge hub, attracting innovators and entrepreneurs. This knowledge flow, generated within the project, can have a cross-scale impact by influencing research agendas, educational programs, and innovation policies in the broader urban and regional context.

Space and territory are pivotal in BlueCity Rotterdam’s circular ambitions. Indeed, repurposing an urban space, like the *Tropicana* involves carefully considering spatial qualities, such as adaptability, accessibility, and integration with the existing urban fabric. The circular practices implemented within this space emphasize the responsible use of a space, minimizing environmental impact and maximizing the efficiency of spatial resources.

Lastly, the interplay between the project’s physical space and its broader urban

context highlights the importance of spatial qualities and territory in successfully implementing circular strategies. This project demonstrates that sustainable urban development is intricately linked to how space is utilized and managed.

#### 6. Assessment & Monitoring

*How are strategies and policies monitored and evaluated? How is the qualitative and quantitative success of a project evaluated?*

Even though the Municipality of Rotterdam has partnered up with BlueCity, a precise sustainable monitoring and assessment activity still needs to be developed. However, from a social perspective, this project seems to be successful based on the following:

RotterZwam was the first company (they were also the founders) in BlueCity in 2016. After five years, BlueCity has grown and already hosted about 55 entrepreneurs and startups forming a circular economy together.

In 2017 the BlueCity Lab opened, a laboratory to research circular materials and design.

BlueCity receives around 1500+ visitors monthly.

#### Colophon

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