

## The COST SUB-URBAN Toolbox:

products and good practices that connect  
subsurface specialists with urban planners  
and decision makers

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Ignace van Campenhout, Mario Bacic, Jan Jelenek

April 24<sup>th</sup> 2018



### THE SUB-URBAN TOOLBOX

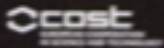
COST SUB-URBAN is a European network of cities, national geological surveys and research institutes from 21 countries to improve understanding and use of the ground beneath our cities.

#### COST SUB-URBAN'S AIMS ARE TO:

- Share geoscientific knowledge across the disciplines within the geosciences community
- Develop geoscientific knowledge across the disciplines within the geosciences community
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The three main COST SUB-URBAN objectives are: To develop a collection of recommended methods and procedures for subsurface investigations and data analysis, to develop and disseminate good practice and to establish a network of experts and practitioners in the field of subsurface investigations and data analysis.

WWW.SUB-URBAN.EU/TOOLBOX



COST is supported by  
the EU Framework Programme  
Horizon 2020



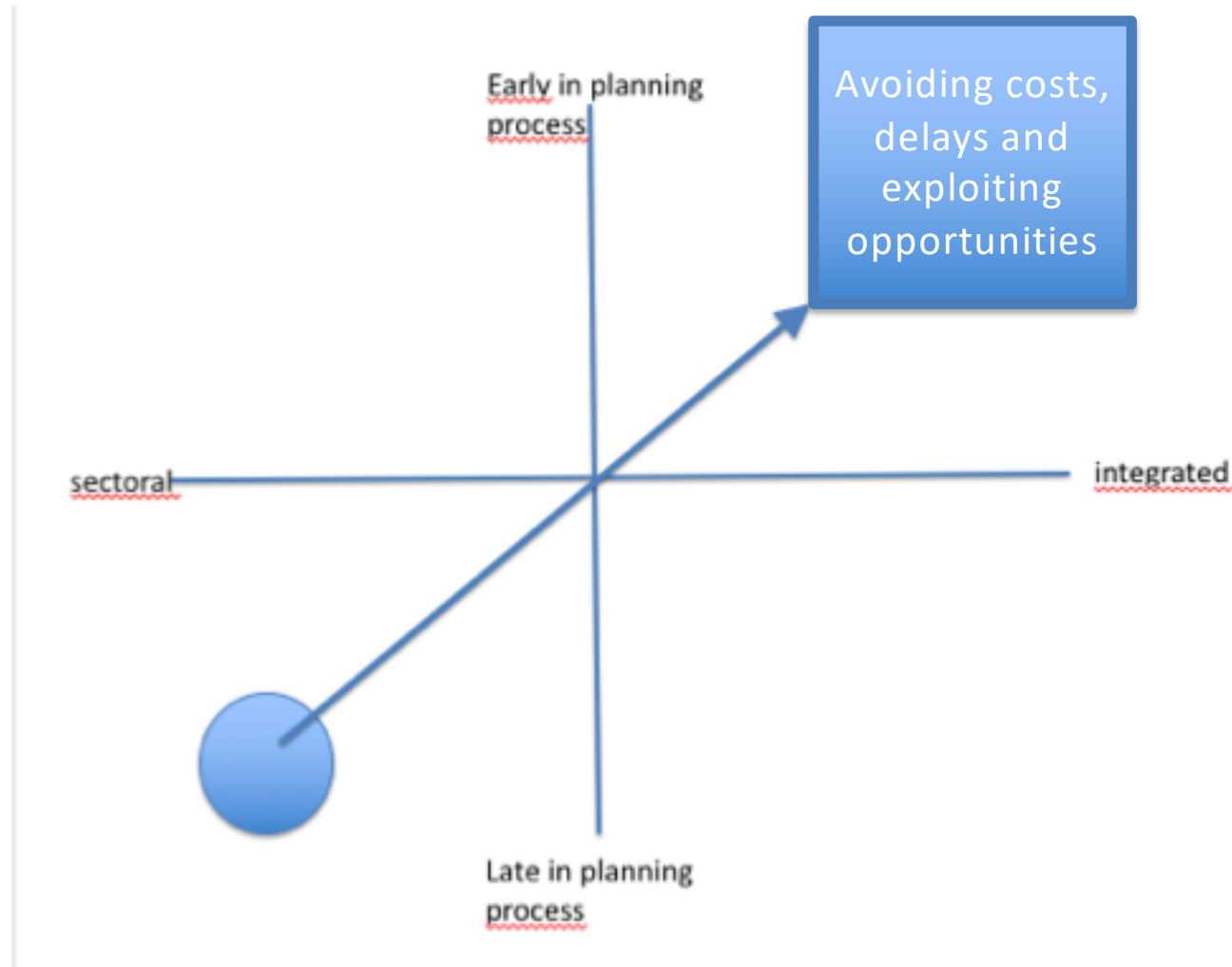
Exploration geophysicist -



Urban geologist -



Gemeente Rotterdam



“Subsurface Broker” selling the subsurface to urban planners and decision makers

# Hoek van Holland

Hoek van Holland Strand Hoek van Holland Haven

## Hoekse Lijn pas eind 2018 klaar en tientallen

doe je

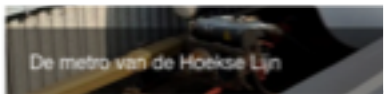
awareness



Standard practice

Ver  
Sch  
loo  
vee

### 2007



De ombouw van de Hoekse Lijn tot met  
Vermoedelijk gaat de metro tussen Schi

### 2018

Dat blijkt uit onderzoek van RTV Rijnmond en de NOS.

Voor het project was een kleine 400 miljoen euro beschikbaar. Wie voor de extra kosten gaat opdraaien, is nog onduidelijk.

De Rotterdamse gemeenteraad wordt woensdagavond vertrouwelijk over het debacle geïnformeerd. Het nieuwe uitstel gaat vele tientallen miljoenen euro extra kosten.

Sinds april wordt er gewerkt aan de ombouw van de spoorlijn tot metroverbinding. Aanvankelijk werd gemeld dat de verbouwing in september dit jaar klaar zou zijn, maar dat bleek al snel veel te optimistisch.

Er waren onder meer problemen met de software voor de spoorwegbeveiliging. Ook werden er op onverwachte plaatsen kabels en leidingen aangetroffen en was er sprake van bodemvervuiling.

De opening werd daarom met vijf maanden uitgesteld tot februari volgend jaar. Maar ook dat tijdschema is onhaalbaar, blijkt nu.

Volgens verschillende bronnen wordt de lijn pas eind volgend jaar in gebruik genomen. Dat betekent dat reizigers langer gebruik moeten blijven maken van bussen.

Partners across  
31 European  
Countries and  
Beyond



*Bringing together  
experts who develop  
Urban Subsurface  
knowledge ...*

*...and those who can  
benefit most from it*

expertise and knowledge  
in the field of integrated  
urban planning has been  
gathered and exchanged.

# COST Sub\_Urban Deliveries 2013- 2017

## City reports

*city setting, planning issues with underground, economic aspects, quality of life, governance, state of infrastructure, the state of urban planning, legal framework*



## Working Group reports on topics

*Subsurface urban planning, Data mngnt., 3D modelling, groundwater, geothermal, geotechnical, geochemistry, cultural heritage*



## STSM reports

*(Short term visits, exchange of skills and methodologies on above topics)*



Good Practice

Best Effort

Gaps

# Deliveries 2013- 2017 cont'd

## Publications



## Workshops



## Contributions to conferences, events, final conference



# Website

“how we produced the information”



SUB-URBAN CITY OVERVIEWS CITY STUDIES  
GOOD PRACTICE / BEST EFFORT KNOWLEDGE EXCHANGE TOOLBOX NEWS  
EVENTS PUBLICATIONS

## SUB-URBAN

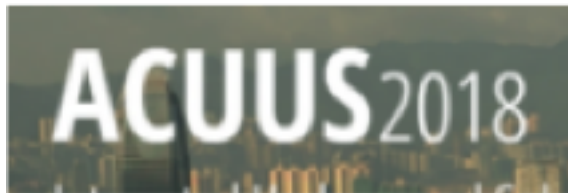
Sub-Urban is a European network of Geological Surveys, Cities and Research Partners working together to improve how we manage the ground beneath our cities.

Background image: Oslo.

AAS-JAKOBSEN



- COST Sub-Urban brought together a lot of **knowledge**
- but equally important: we **brought together the people** with this knowledge, we have established a **community**:
  - with professionals from various disciplines and
  - with various professional organisations





# Sub-Urban Toolbox

- webbased
- users: subsurface specialists, urban planners, decision makers  
-----
- state-of-the-art products: “what”, videos, viewing facilities without need for sophisticated software,
- but also processes: workflows, “how” and “when”  
-----
- community, names, addresses, video introductions,
- networking platform “join us”,  
-----
- is a training tool

“serving as inspiration for your city, helping you with your process in moving upwards”

# Toolbox:

“how users will look for the information”

Entrance via Topics



Geographical entrance

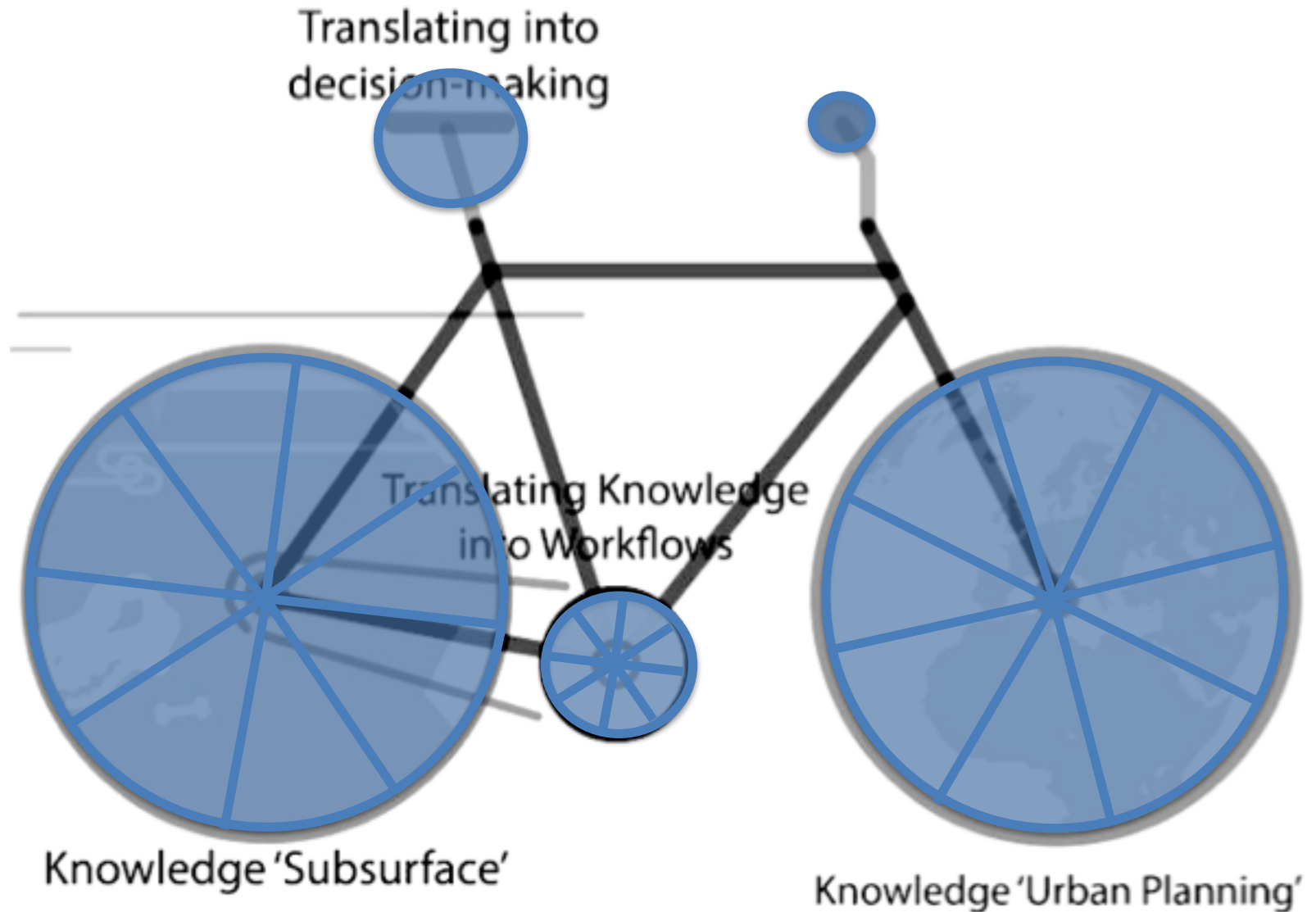


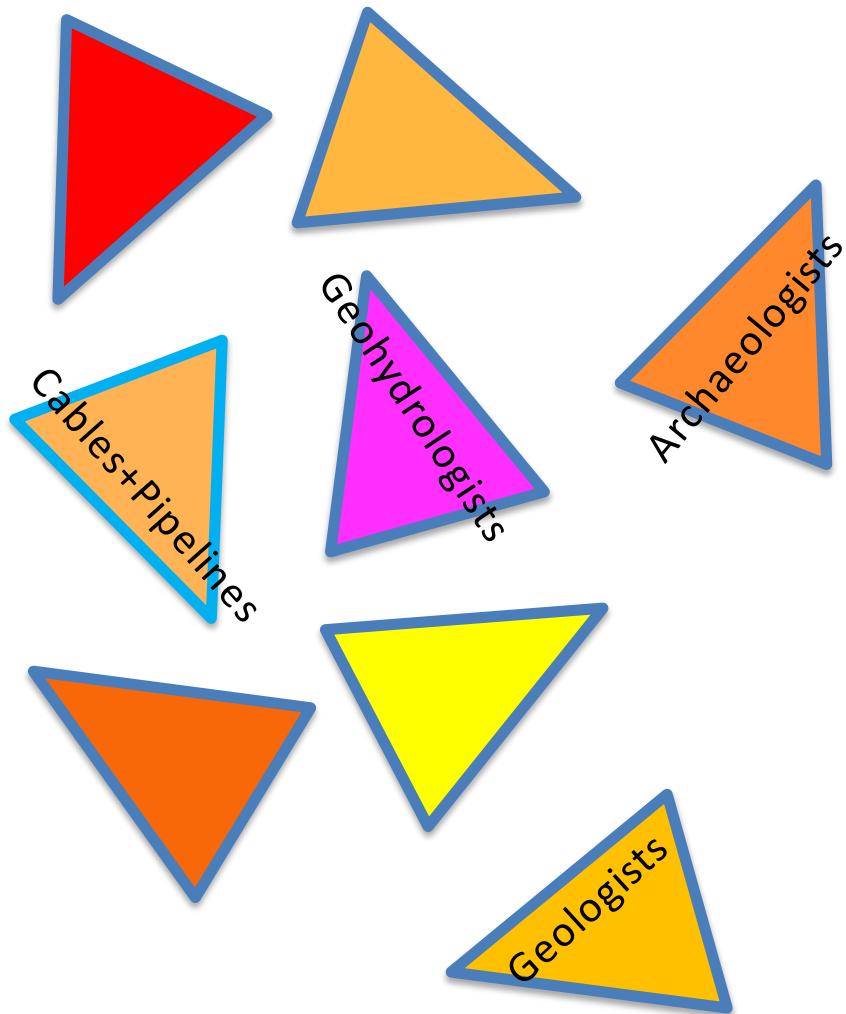
Search



The screenshot shows a web application interface. On the left, there is a sidebar with the title "COST SUB-URBAN" and a sub-section "3D GEOLOGICAL SUBSURFACE MODELLING". Below this, there are sections for "Key Topics" and "Seen in the urban context". The main content area on the right features a map of Europe with several green location markers. A search bar at the top right of the map contains the text "glasgow" and shows "4 of 32" results. The interface includes navigation icons (home, back, forward) and a zoom control on the left side of the map. The bottom right corner of the map area displays "Powered by esri" and "Esri, HERE, Garmin, NGA, USGS".

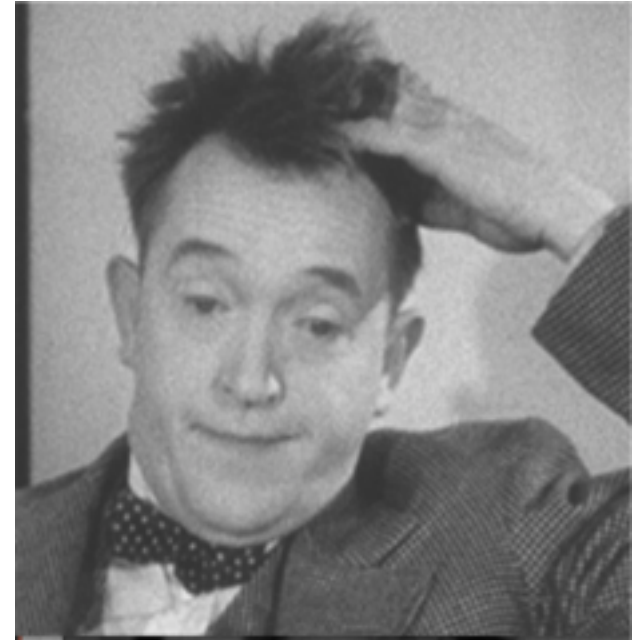
# Navigating through the Toolbox





No Integrated subsurface model

## Underground Topics



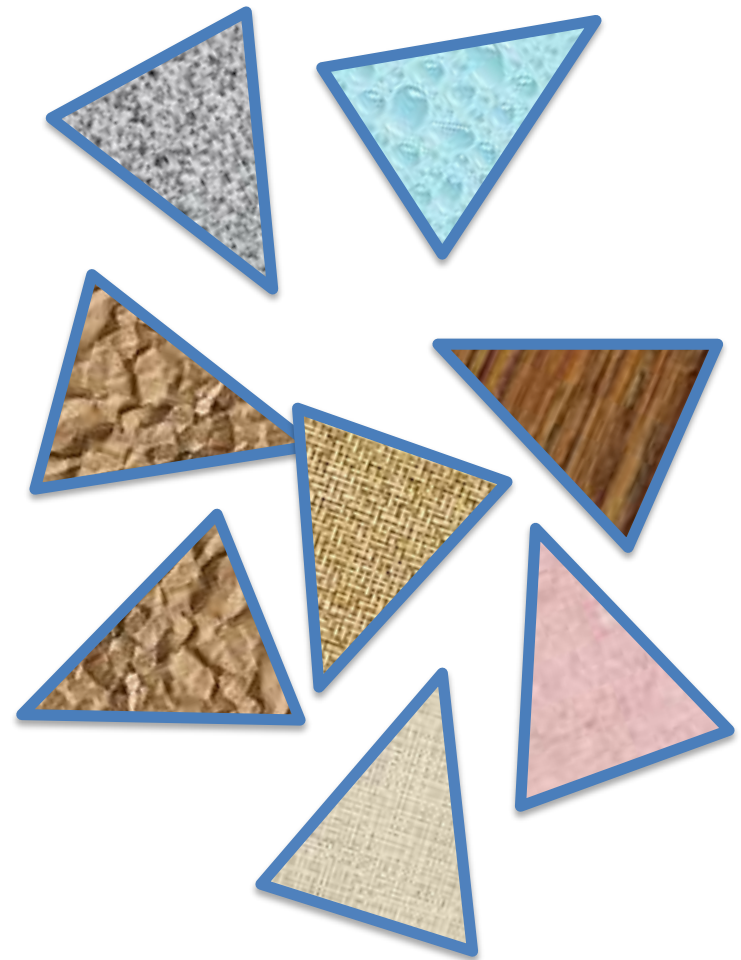
City planners

Subsurface is unknown territory, equates to costs and delays; opportunities not appreciated



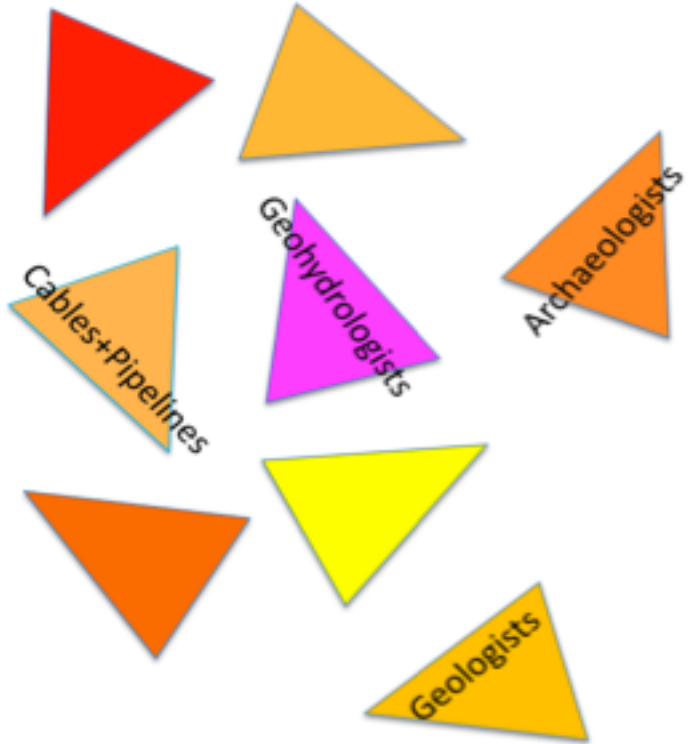
## Subsurface specialists

Working in different depts,  
Lacking insight with respect to  
the world of urban planning



Urban Planning Topics

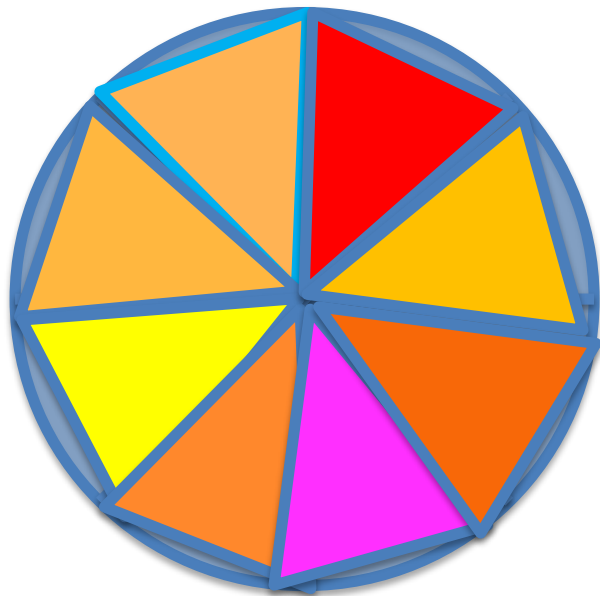
State of the art in urban geoscience  
research, sharing geoscience  
knowledge across the disciplines  
within the geoscience community,  
*good practices, gaps, common  
models*



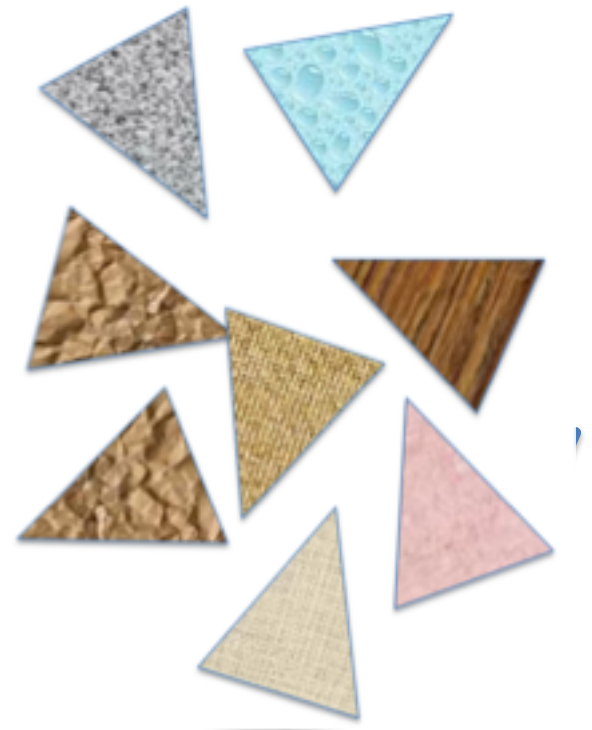
Giving urban planners the  
opportunity to familiarize  
themselves with the  
subsurface

Underground Topics

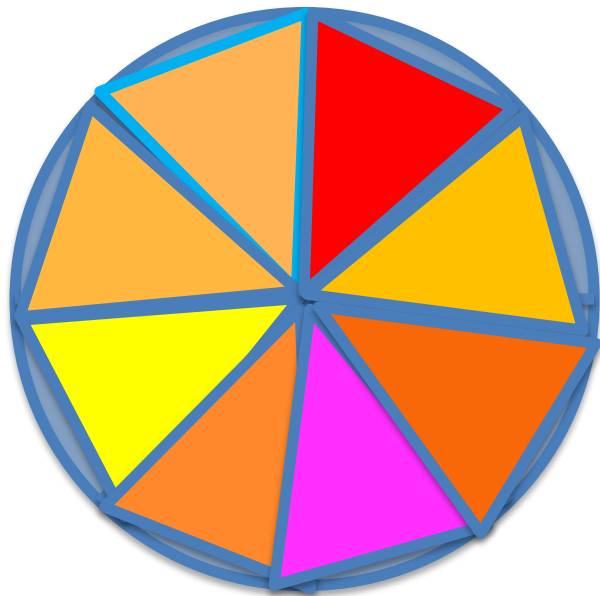
Giving insight in the world of urban planning



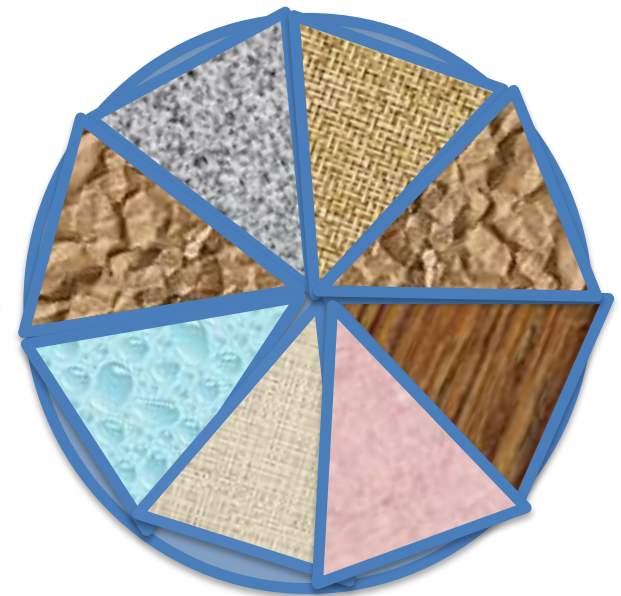
Underground Topics



Urban Planning Topics



Underground Topics



Urban Planning Topics



## Subsurface specialists and Urban Planners Pro-actively working together

- *Translation into workflows*
- *Bridging the gap between the communities*



Underground Topics

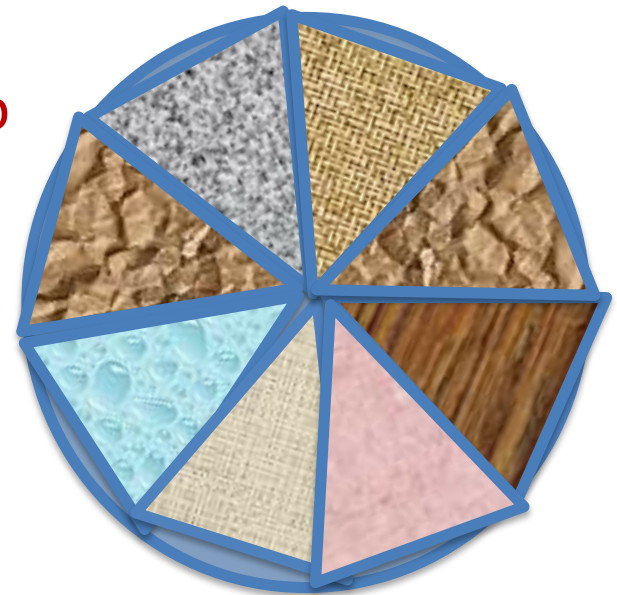
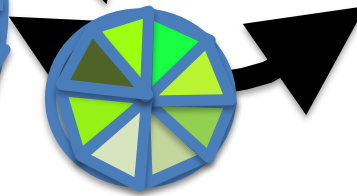
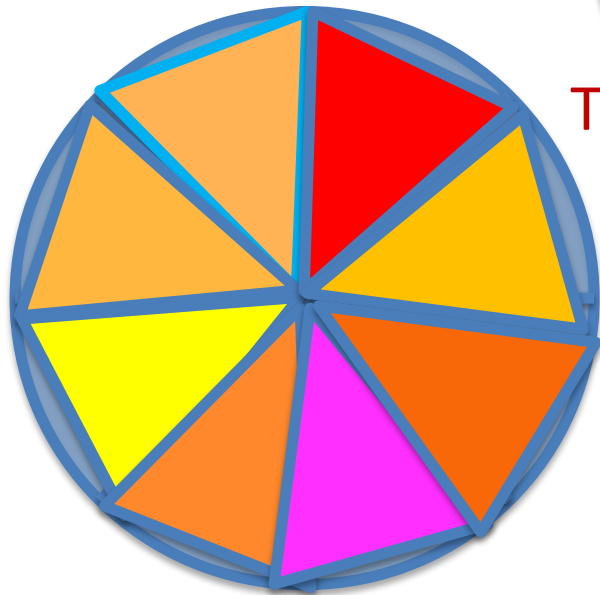
Urban Planning Topics

Inform and Empower policy- and decision makers  
*safeguarding subsurface ecosystem services,  
managing georisks, making a difference to our big  
cities...in Europe and beyond*

Translating into  
decision making

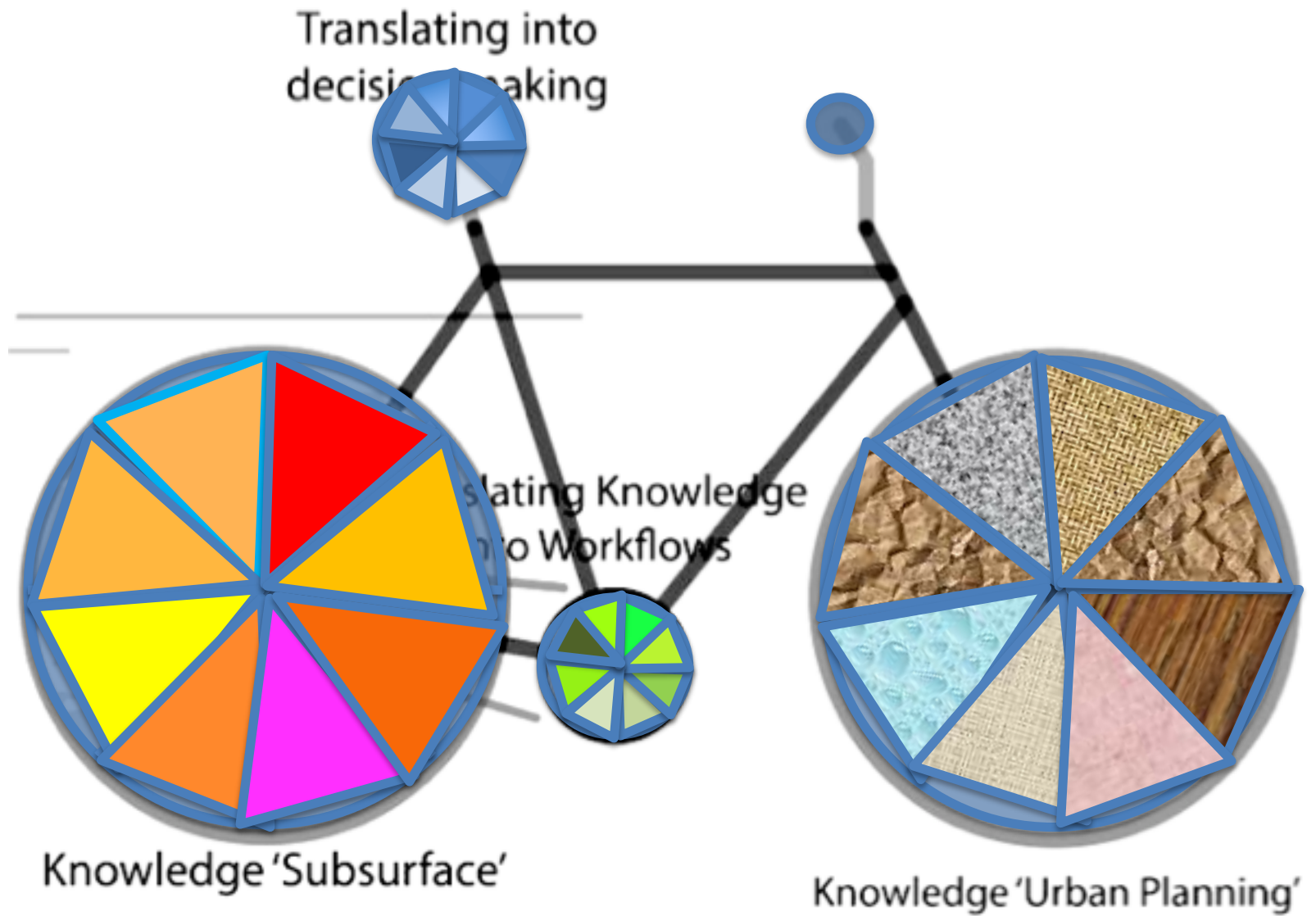


Translating into  
workflows

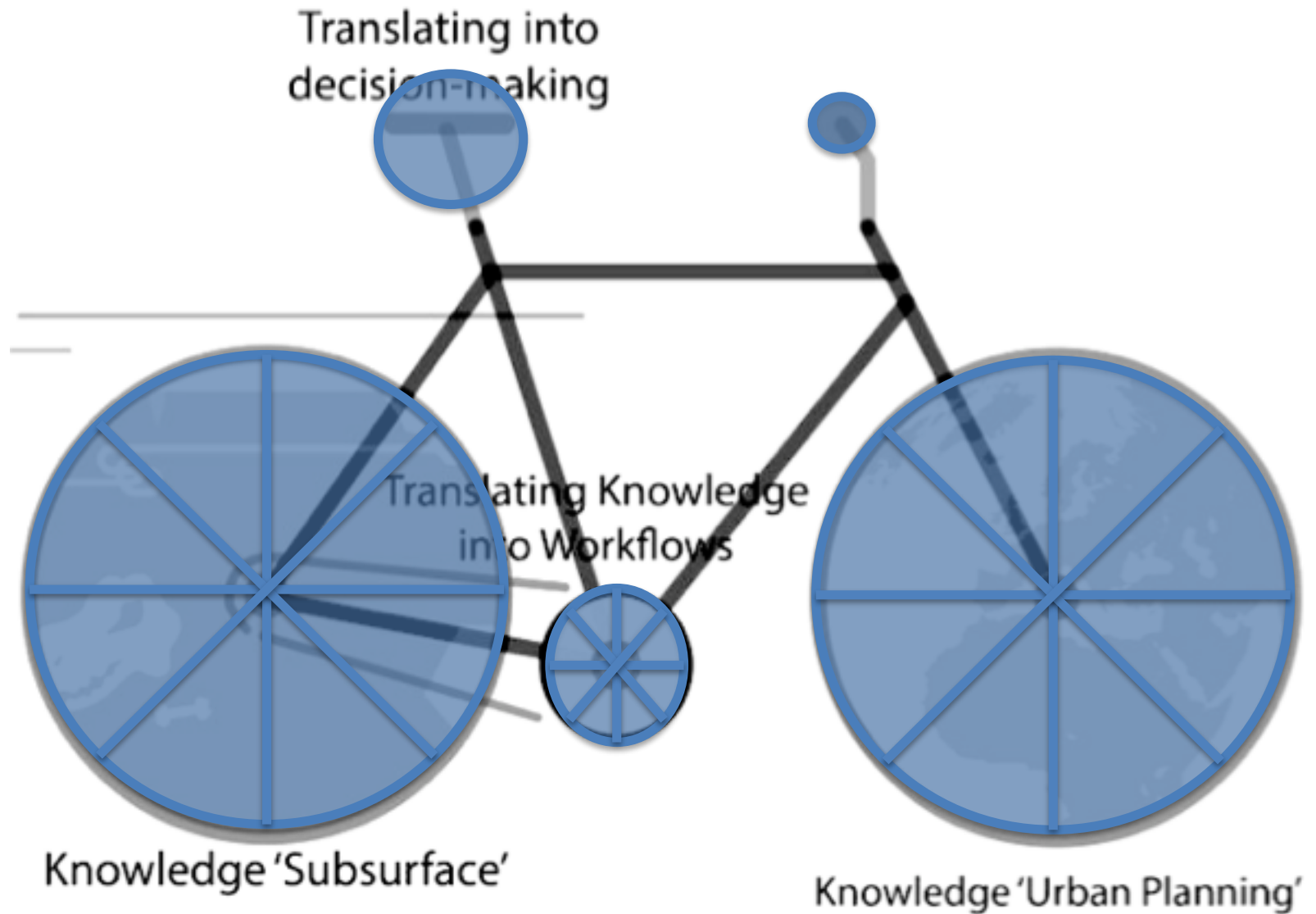


Underground Topics

Urban Planning Topics



# Navigating through the Toolbox



## Our audience:

- 3D modeller Engineering company in Kiev
- Geohydrologist Geological Survey in Bangladesh
- Urban Planner from the City of Singapore
- Professor on urban planning University of Bogota
- City Economist Prague
- Resilient City Officer in Karachi
- Member of City Council in Rome
- .....
- .....

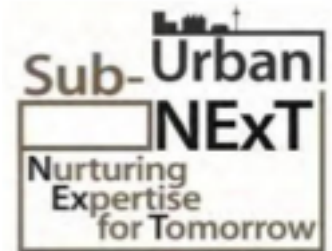
*Giving the users a feel for what can be achieved in their own organisation*

*Helping them to address issues with a fraction of the costs*



## Sub-Urban Next:

- with our **knowledge** and our **community** we want to connect with other cities in Europe and beyond, with other cities around the world
- we want to work together **with new partners around the world**, learning from their experiences and good practices
- together filling the knowledge gaps, **making the community grow**
- together transferring these experiences to the **NEXT generation**









SUB-URBAN  
KNOWLEDGE EXCHANGE

CITY STUDIES  
TOOLBOX

GOOD PRACTICE / BEST EFFORT  
NEWS  
EVENTS  
PUBLICATIONS  
CONFERENCE

## TOOLBOX

The Toolbox comprise a fit-for-purpose suite of recommended methodologies, good practice, guidance, and case studies to enable the free flow of key subsurface data and knowledge.

The toolbox is now accessible [here](#).