

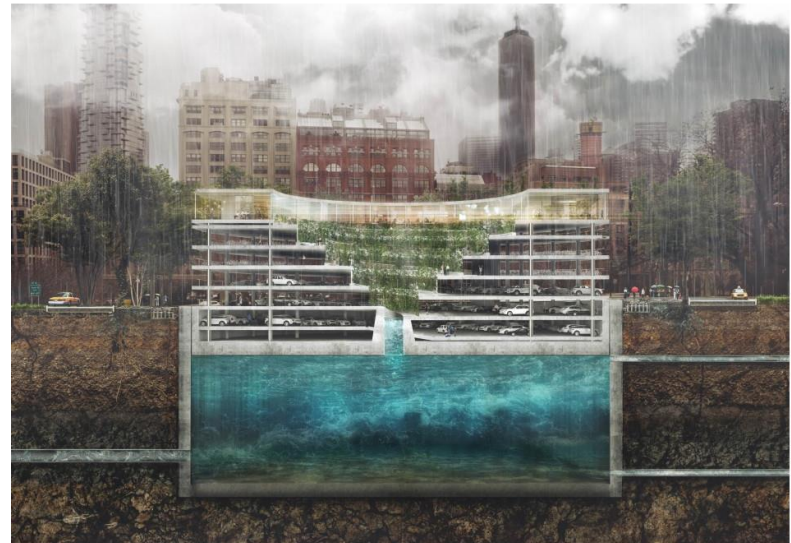
WG20 Urban Problems – Underground Solutions

- Animateur : Wout Broere
- Vice Animateur : Bruce Matheson
- Tutor : Olivier Vion
- Sunday meeting with 18 representatives from 10 countries
 - the Netherlands, UK, Switzerland, Japan, USA, Poland, Russia, France, Italy, Brazil
- Monday workshop on research opportunities with 31 persons

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How can underground space help cities to develop sustainably and become more resilient?

- > What are the resilience issues that need to be addressed?
 - > Climate change
 - > Sea level rise
 - > Flooding
 - > Hurricanes
 - > Earthquake
 - > Tsunami
 - > Congestion
 - > Pollution
 - > Social unrest, terrorism
 - > Blackouts, loss of utilities
- > Current Examples
 - > Rotterdam car park
 - > SMART tunnel
 - > Climespace
 - > Sponge parking



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The Goal

- > A document that addresses examples and ideas of how the use of underground space can influence resilience

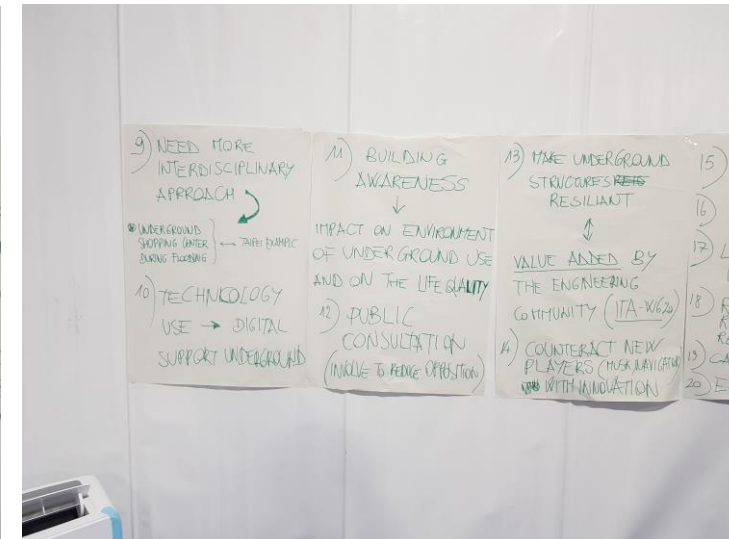
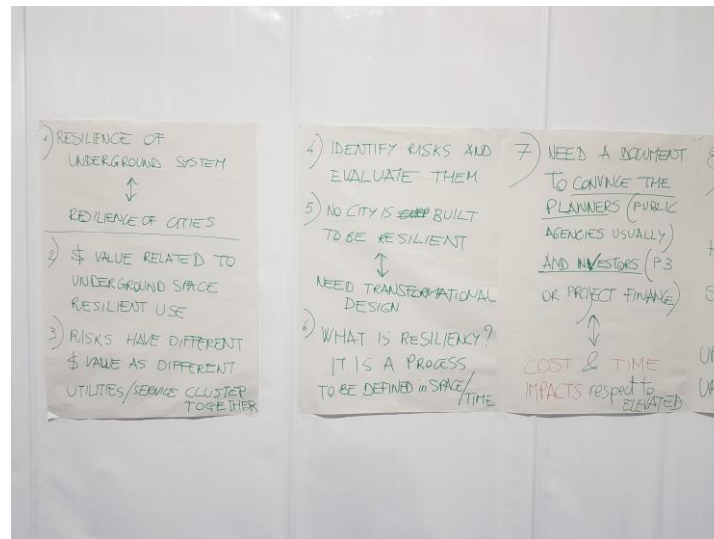
Progress

- > Created a short Terms of Reference for this document
- > Split the final report in 3 sections:
 - First a paper aimed at explaining the topic and presenting short descriptions of events and exemplary projects to show realized solutions.
 - A second paper is to include also what mistakes have been made in this respect. This means addressing failing components and identifying solutions that have missed the point.
 - The 3rd and last paper will highlight the possibilities to adapt existing systems to increase resilience and how to increase resilience in new systems.

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Progress

- Extended discussion on topics to be included
- 3 groups detailing aspects of the first paper:
 - Environmental impacts and natural disasters
 - Human influenced factors and urban planning
 - Value proposition



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Presentation on Istanbul Metro

- > Metro and infrastructure
- > Urban context
- > Free up surface space
- > Increase resilience
 - Rain infiltration
 - Flooding
 - Earthquakes



PREVENT
FROM FLOODING RISKS

THE TERRACES | Bostanci Plaza

- The concept adopted refers to the idea of “terraces” as main design element. This particular concept aims to solve a technical problem by defining an aesthetic strategy. The idea of building terraces bridges the different levels of the public area into a unique tridimensional public space, where clear differences are marked between accessible and non-accessible areas.

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Joint position paper on underground space research needs

- > Joint workshop with WG2, WG22, COB (NL)
- > Common themes with CEDR & EIM:
 - Infrastructure optimally meeting end user needs
 - Infrastructure meeting environmental and social sustainability needs
 - Infrastructure achieving added value from digitalisation
 - Required professional competences
- > Aims identified:
 - Availability is key
 - Digitalisation to meet societal needs
 - Adding value is a must

