Intelligence in Subsurface Infrastructure
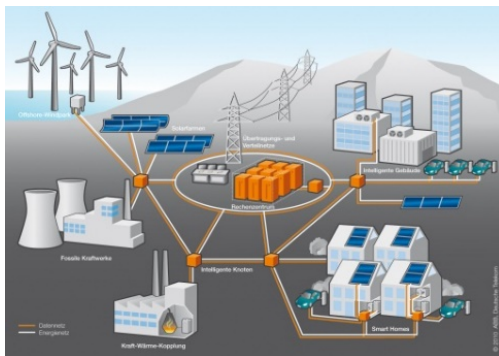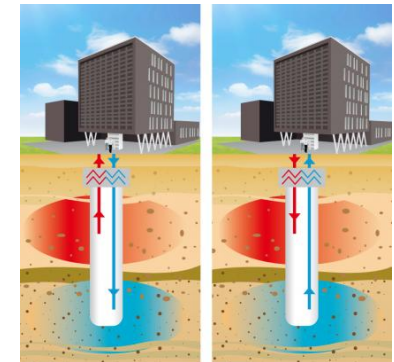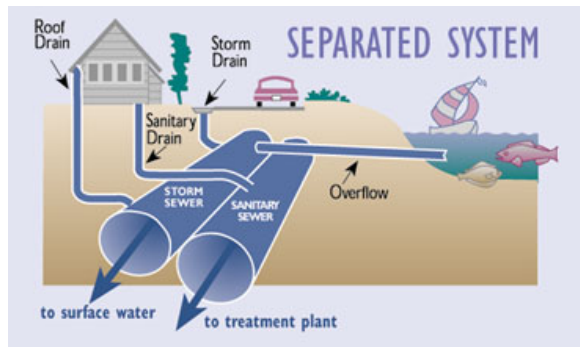
Léon olde Scholtenhuis, Carl Schultz, Sisi Zlatanova

27 November 2017 . University of Twente . Enschede

what's already there ...

Europe: > 90% utilities **buried**

more being added...

on-site excavation incidents

In the Netherlands:

€ 100-130 mln. damage due to excavations (source: Kwink Group)

33.000 reported cases of excavation damage (Cadaster 2015)

Subsurface Waste Container The Hague **10 Nov 2014** *6 casualties*

BASF-Plant Ludwigshafen **23 Oct 2014** *1 fatal accident 21 wounded*

House blast Urk **3 June 2016** *0 injuries …*

workshop goals

- bring diverse experts together to meet

- identify interests and relationships in theme of subsurface infrastructure

- build momentum around research topic: "intelligence in subsurface infrastructure"

- plan next steps

diverse expertise

Civil Engineering	3D Modelling	Artificial Intelligence
Construction Management	3D GeoInformation	ICT
Change and technology adoption	Geo-spatial data modelling	Machine learning
Architecture and Urbanism		

(participant introductions)

Sisi Zlatanova
Architecture and the Built Environment
Delft University of Technology

3D object reconstruction, 3D data structures, 3D
geo-databases, 3D spatial relationships (topology),
3D visualisation (VR and AR)

Søren Wandahl
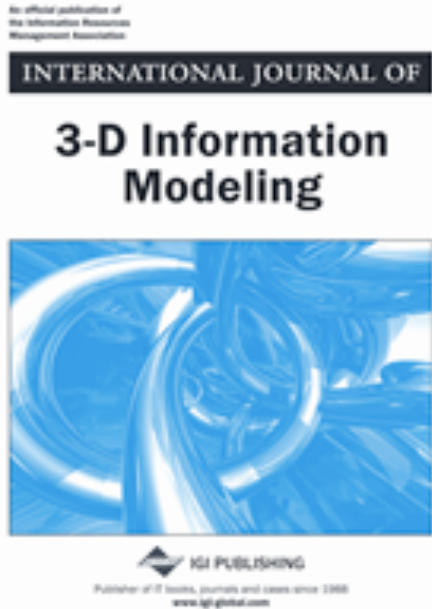Construction Management
Aarhus University

energy efficient construction processes and
optimization of construction processes

Schedule

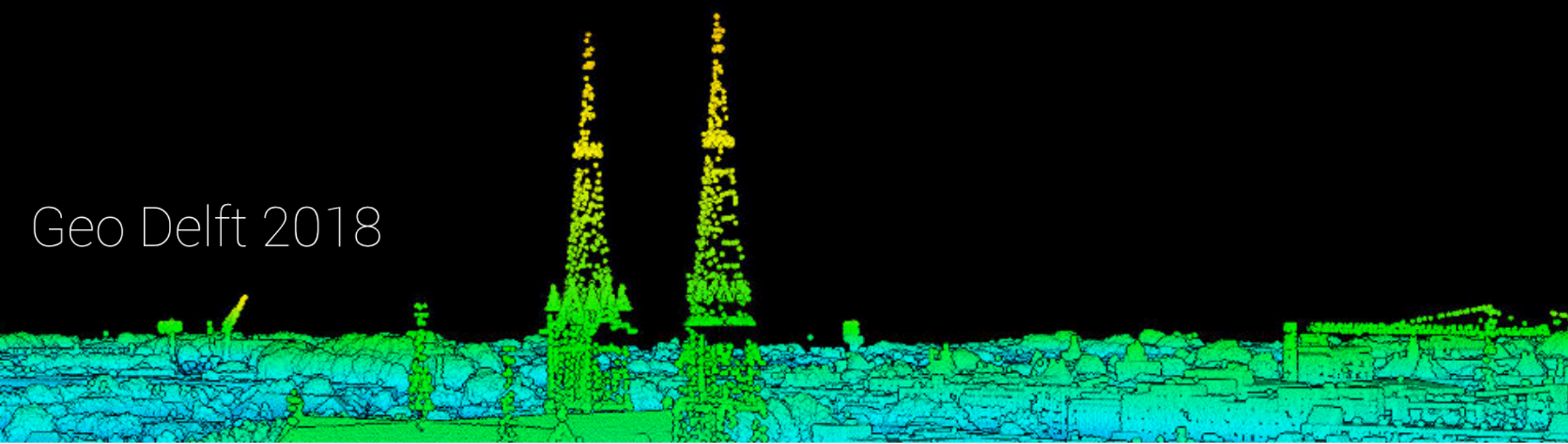|		
10:45	Day Introduction	Léon, Carl
11:00	Research Presentation	Carl Schultz
11:20	*Coffee break*	
11:35	Research Presentation	Sisi Zlatanova
11:55	Research Presentation	Léon olde Scholtenhuis
12:15	*Lunch*	
13:30	Research Presentation	Erik Klems, Lasse Hedegaard
13:50	Research Presentation	Nicole Metje
14:10	Research Presentation	Mark van der Meijde

Schedule

Time	Activity	Speaker
14:30	*Coffee break*	
14:45	Research Presentation	Fransje Hooimeijer
15:05	Research Presentation	Mehul Bhatt
15:25	Research Presentation	Mila Koeva
15:45	Research Presentation	Tatjana Kutzner
16:05	*Break and refreshments*	
16:30	Presentation on EU funding opportunities	Melanie Braamhaar (EU Office)
17:30	Concluding discussion, remarks on follow-up, drinks	

Smart Cities' buried infrastructures: engineering the silent servants of urban space

(planned Special Issue in IJ3DIM)

- *theme*: concepts, approaches, techniques for managing city undergrounds

- indicate your interest to us (500 word abstract) by **7 December 2017**

- SI topics:

  - remote sensing for subsurface utilities   - visualisation
  - modelling lifecycle data   - collaborative planning
  - multi-stakeholder construction issues   - semantic data models

- full manuscript due 4 months after SI approval

- will be open call, prioritse workshop delegates

- external peer review

Geo Delft 2018

session track: **Intelligence in Subsurface Infrastructure**

<u>dates</u>: 1 - 5 October 2018 (submit end of March)

<u>communities</u>: ISPRS, FIG, UDMS, 3D GeoInfo

<u>topics</u>: data collection, advanced modelling, data management, data analysis, dissemination, visualisation

https://www.tudelft.nl/geodelft2018/