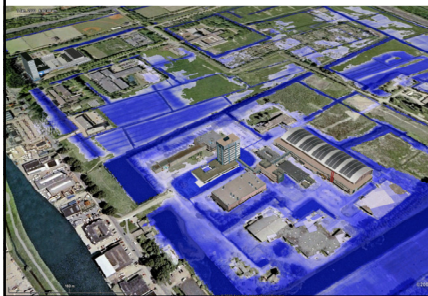




High performance computations and 3d- visualisation

Johannes Leskens MSc. (Nelen & Schuurmans)
Jan-Maarten Verbree MSc (University of Delft)



3Di-project

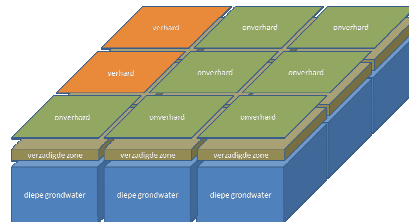
Goal: Bridging the gap between models and
decision making:

- Decision-makers don't trust de models
- Decision-makers don't understand de results



3Di-project

- Goal: making a new standard of simulation models:
 - 3D-visualisation of model results
 - High detailed, integrated, interactive modeling
 - 100 times faster calculations



3Di_e

3Di-project

- Motives:
 - New level of detail (DEM-2)
 - Higher performance of processors (CPU and GPU)
 - Developments in computer games
 - 3D

3Di_e

3Di-project



- Partners

- Delft University of technology
- Deltares
- Nelen & Schuurmans



3Di-project



- Launching customers

- Waterkader Haaglanden
- Waterboard Hollands Noorderkwartier
- Waterboard Delfland
- Kennis voor Klimaat

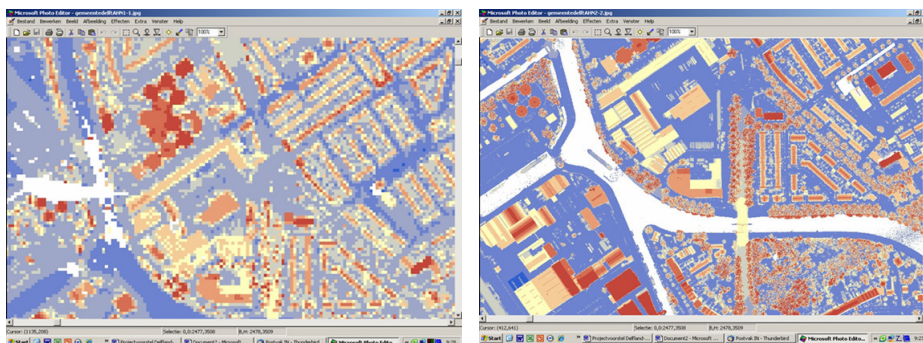


3Di-project

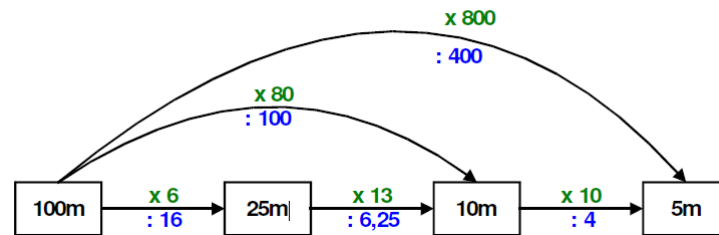
- Planning
 - 4 years
 - Each year 1.000 000 euro
 - Acceleration calculation core: factor 100
 - Interactive 3D modeling
 - Integrated model
 - floods and pluvial inundation from ditches and sewer
 - Rainfall – runoff in grid
 - Web portal



Improving speed



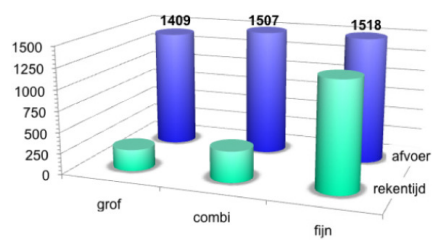
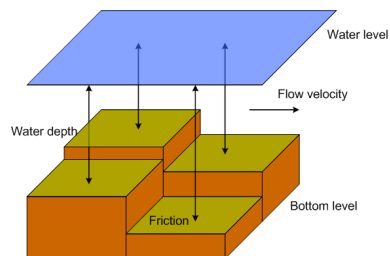
Improving speed



3D_e

Improving speed

- How?
 - Subgrids



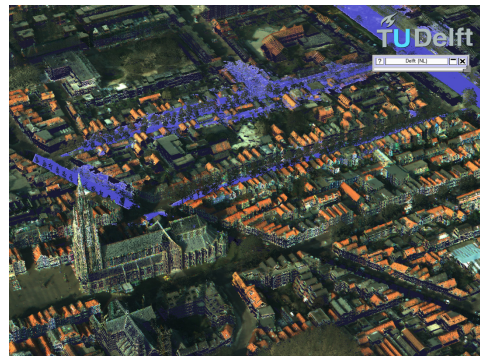
Improving speed

- How?
 - GPU



3D_e

3D visualization



3D_e

3D visualization

- Demo movie



Conclusions



Can we bridge the gap with more detailed en faster modeling and 3D visualisation?

- Better notion of consequences of climate change
- Exploratory way of using the models
- Be careful in predictive modeling
- Further research in case studies

