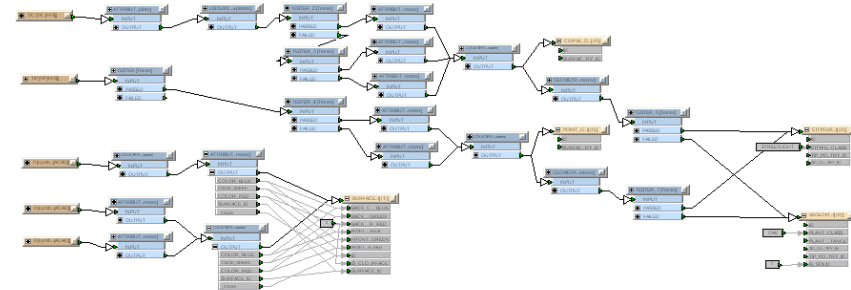
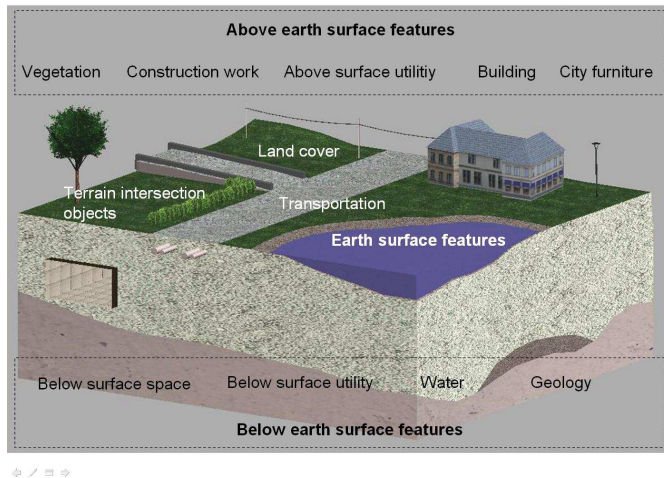


Integrated 3D Information model (3DIM)

Data processing description



Ludvig Engård

2007-12-11

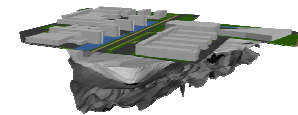
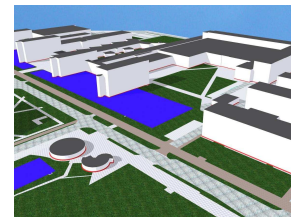
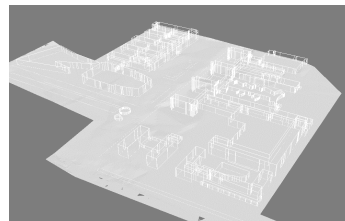
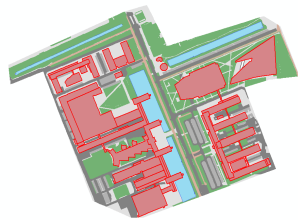
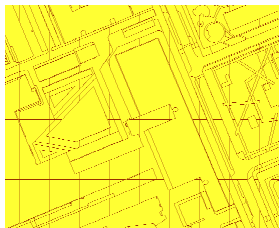
3DIM development - initial iteration 2007

1. Studies of existing models CityGML + subsurface information models
2. Conceptual modelling (UML) top-level objects of 3DIM
3. Database implementation (UML)
4. Collection and preparation of test data (TU Delft Campus)
5. FME Data processing to reach 3DIM structure on test data
6. Database import of test data (to Oracle Spatial)
7. Verification and retrieval in CityGML (without subsurface features)

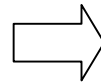
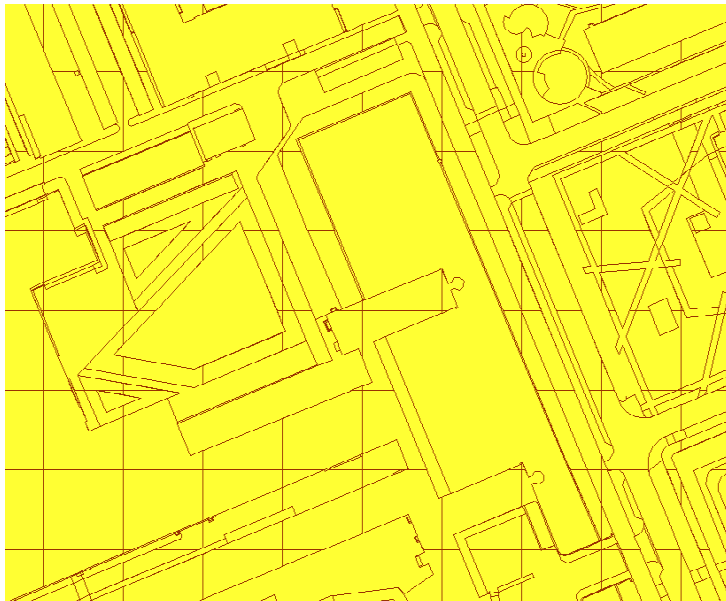
Two implementation alternatives compared

Data processing

- Classified full partition 2D polygon model
- Elevation data resampling
- Height values on roof polygons
- Integration of terrain intersection objects
- Building extrusion to boundary model

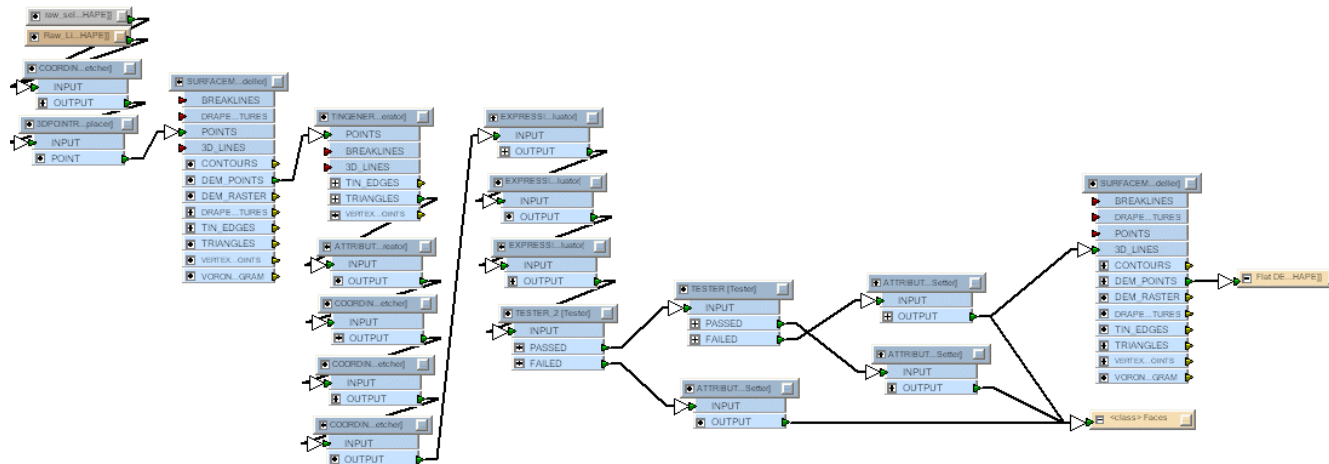


Lines > Full partition > Classification



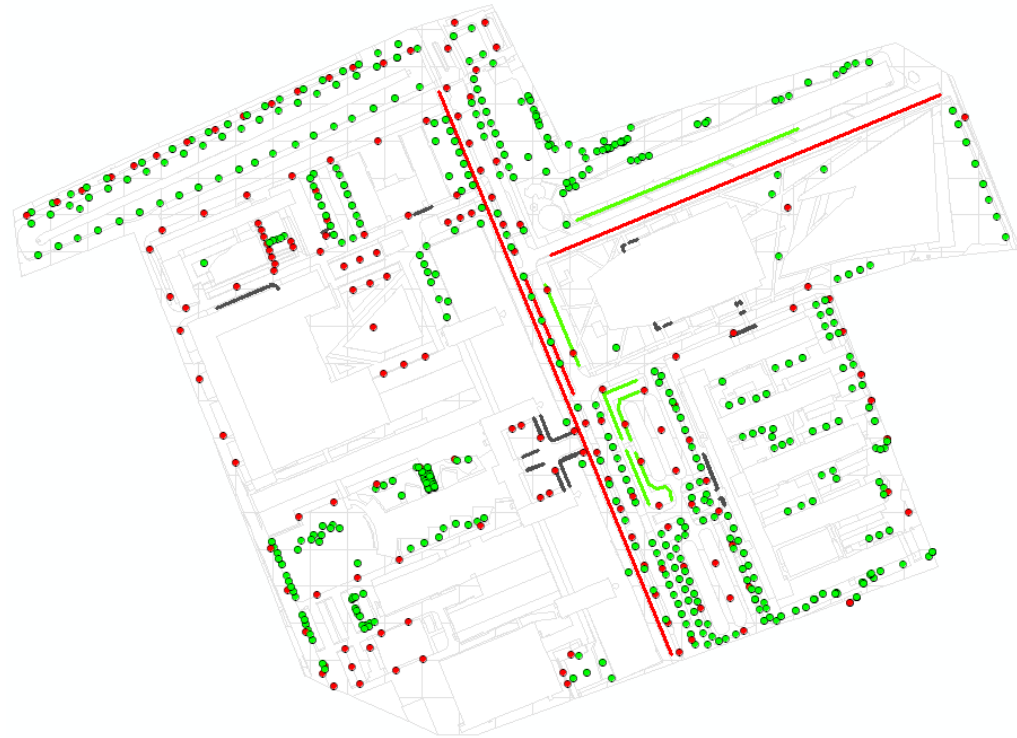
Elevation data resampling

- Building removal from laser scanning data
- Method: identification of flat and low surface

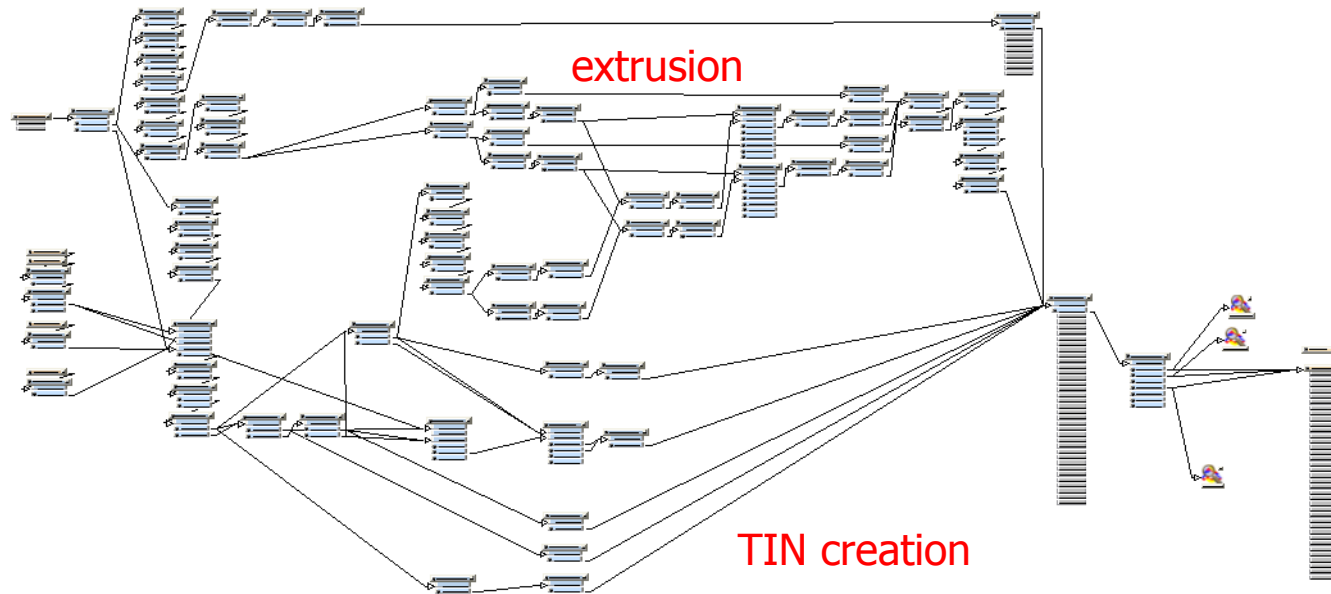


Choice: Terrain Intersection Objects

- **Points:** Trees and streetlights
- **Lines:** Walls, Rows of trees and streetlights



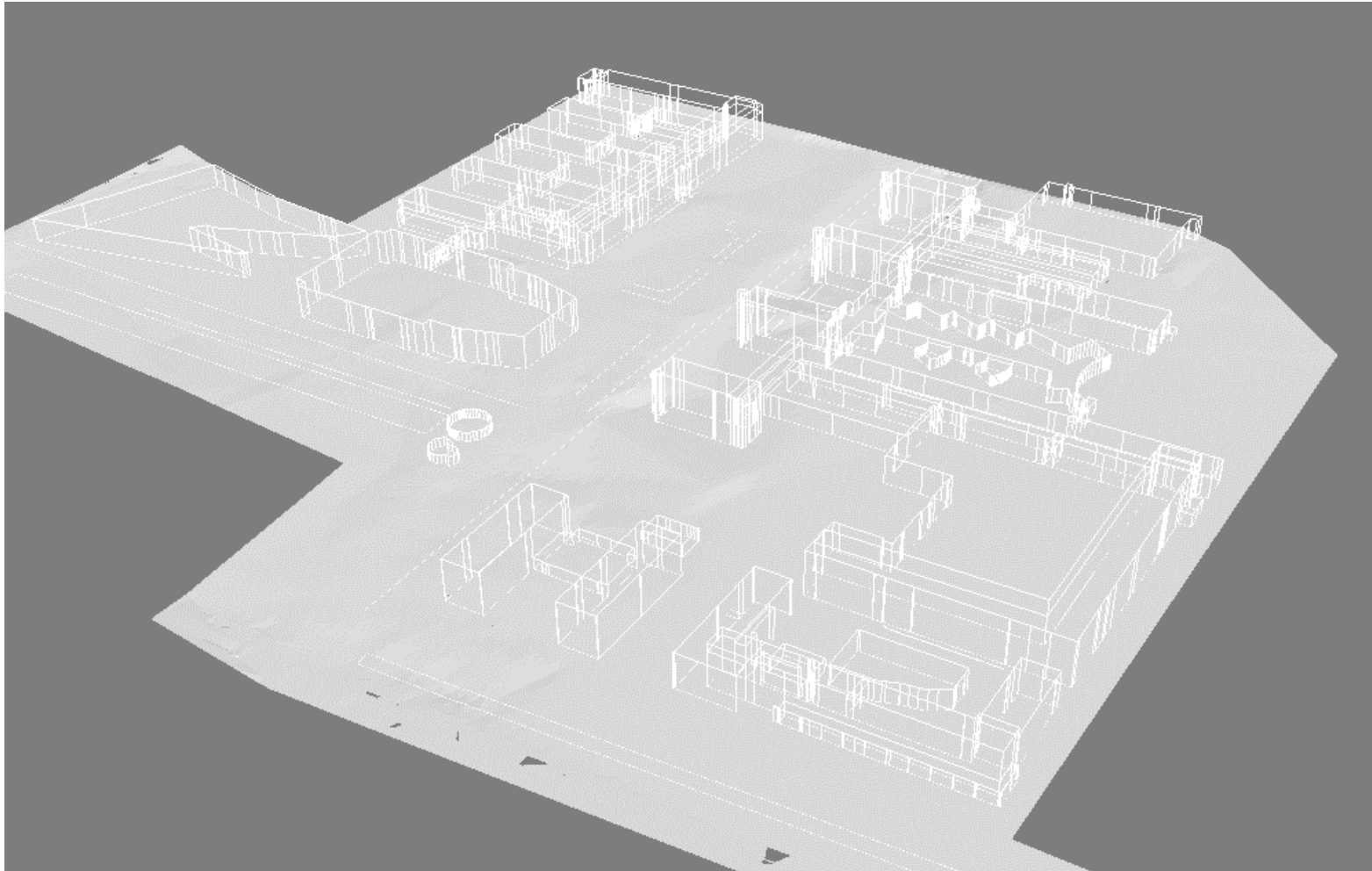
FME extrusion



Input: Ground elevation points, Roof polygons, Classified ground polygons, Constraint lines and points

Output: 3DIM example model (Classified 3D boundary model)

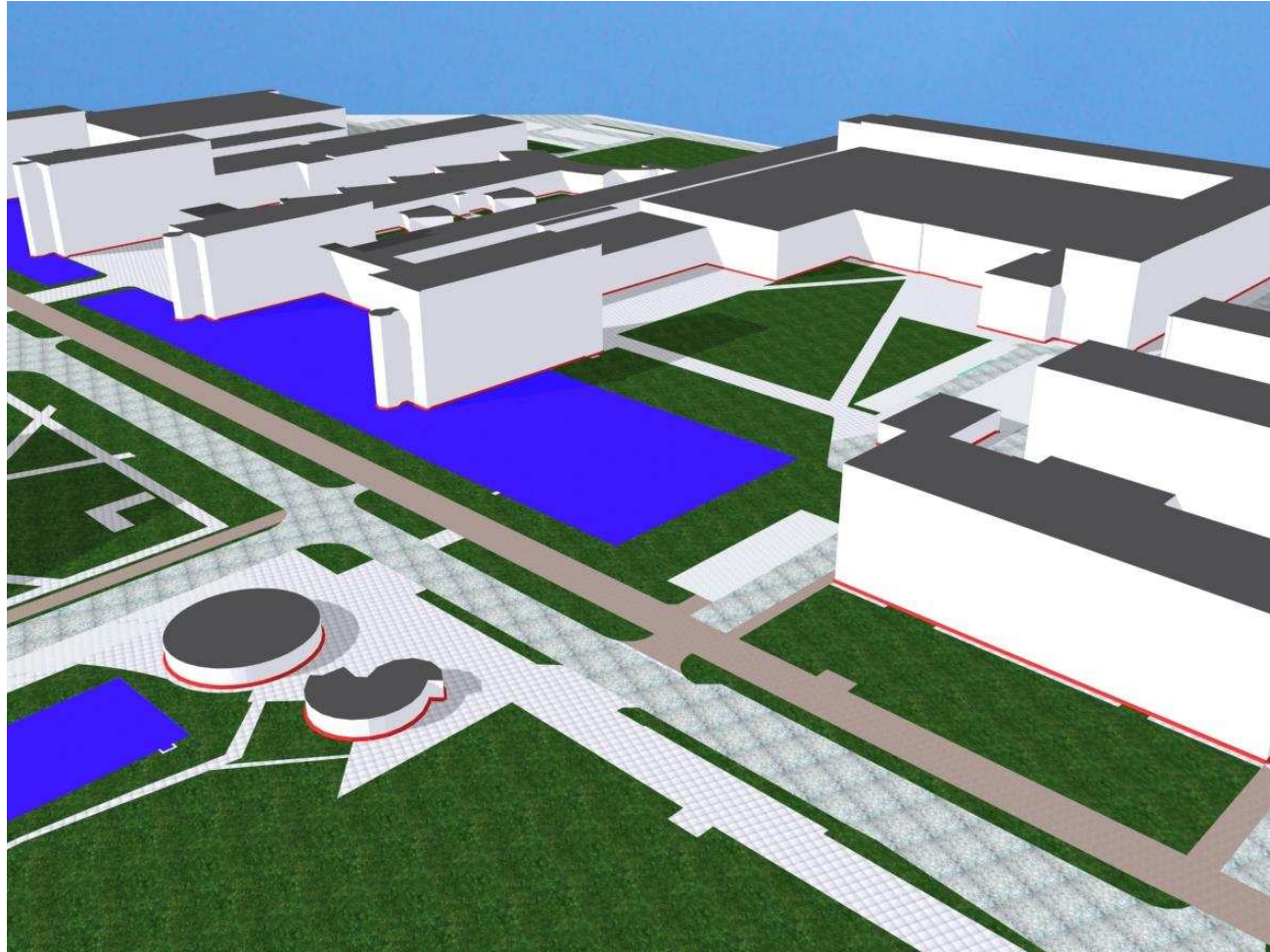
Result



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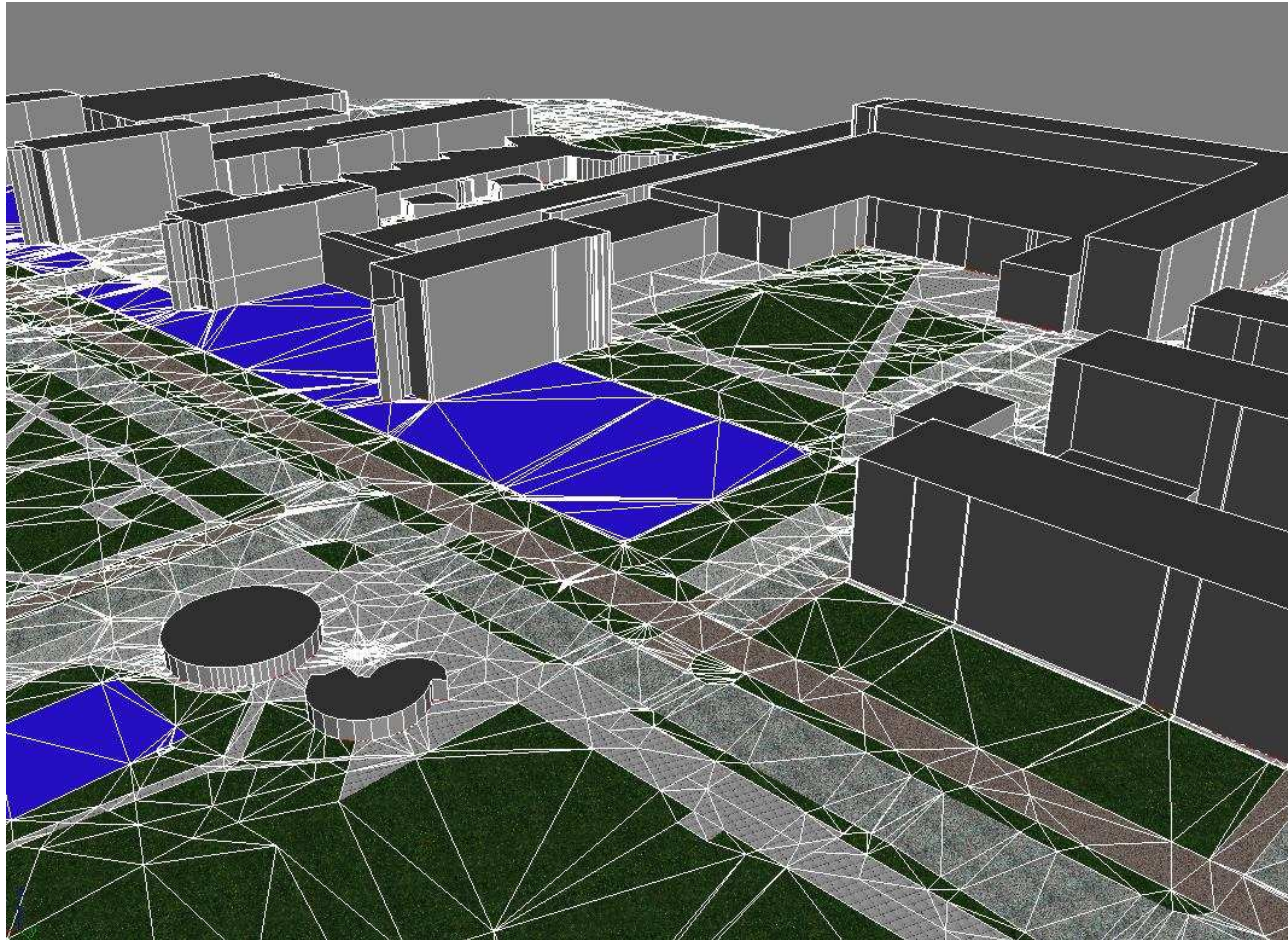
Colored result



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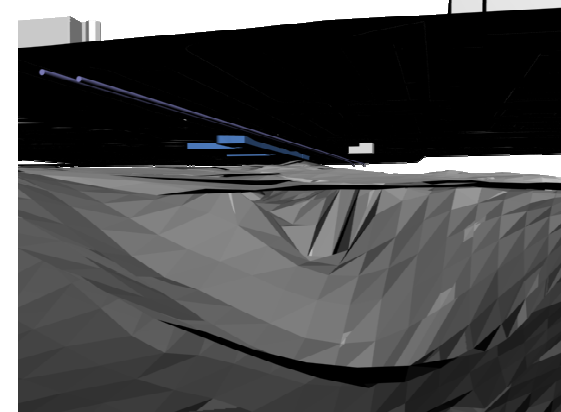
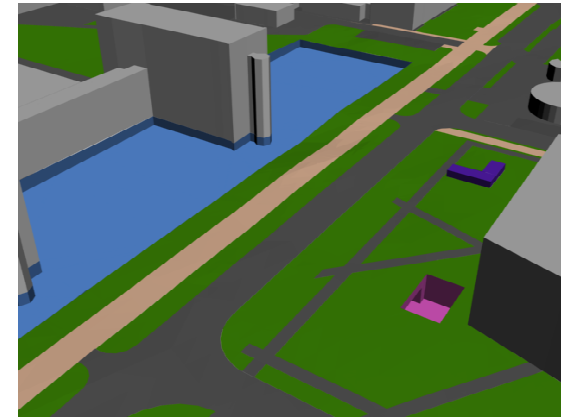
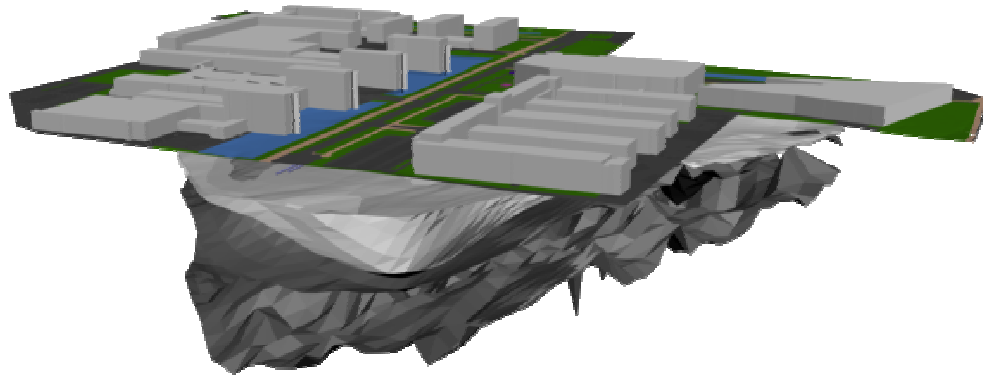
Colored with visible data structure



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Geologic layers add-on and additional data according to 3DIM



Next to come: Database load and retrieval...