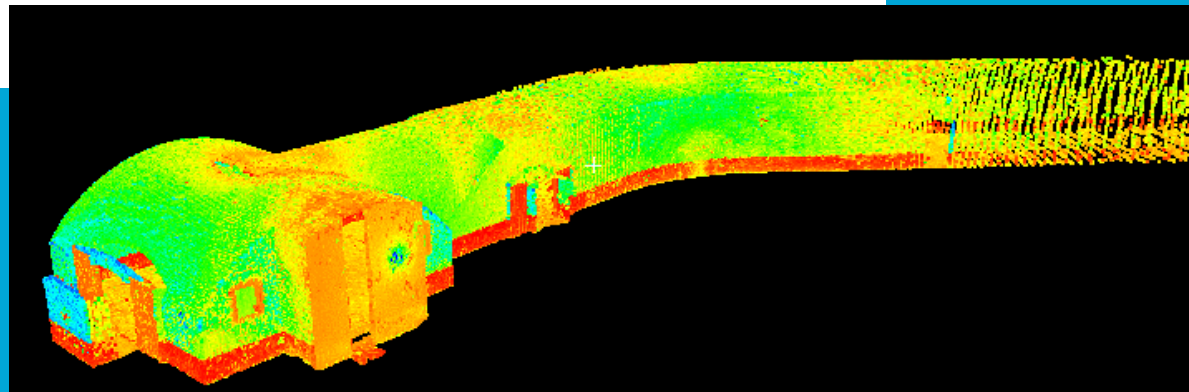
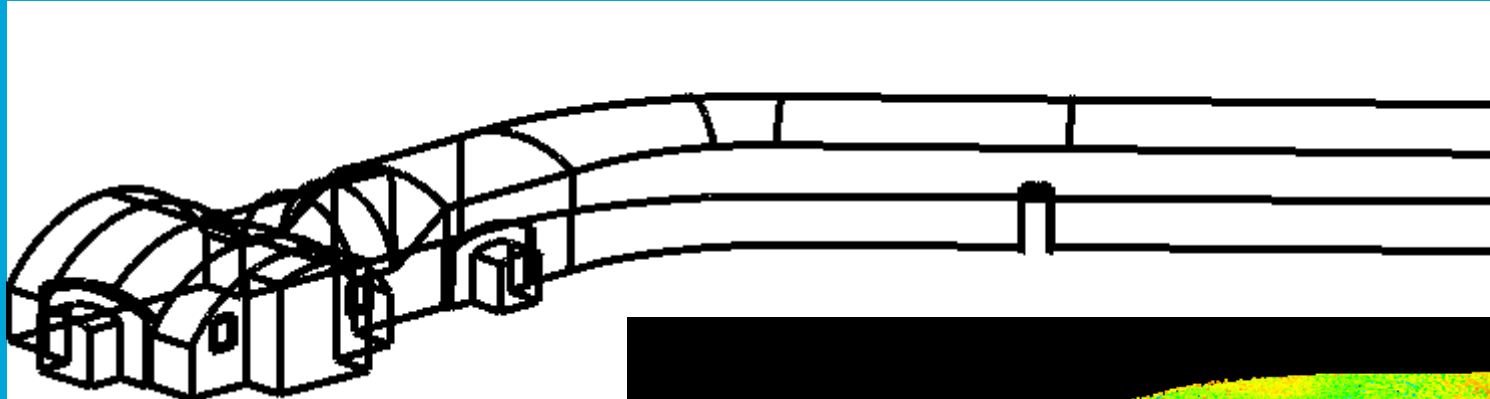


Indoor models Geofort: raw and interpretation



International 3D topo top-up day

Bas van Goor

January 8, 2008

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The Geomatics Synthesis Project

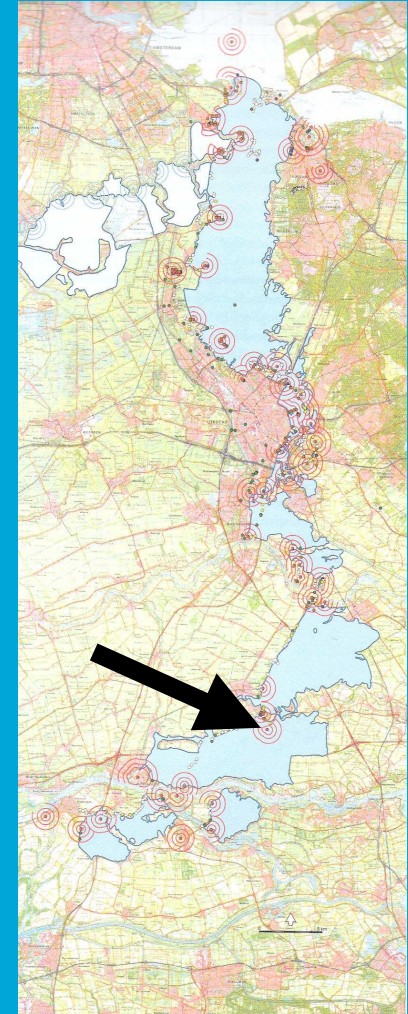
- Combine subjects in the MSc Geomatics
- A synopsis of the different disciplines
- Practice teamwork
- Experience the entire process from project definition to application
- Be of scientific interest

The Geomatics Synthesis Project

- *Geofort: towards the best measured part of the Netherlands*
- Four goals:
 - Historical model
 - Outdoor model
 - Visitor tracking and tracing system
 - Interior 3D model

The Geofort

- Fort Nieuwe Steeg
- Part of the “Nieuwe Hollandse Waterlinie”
- Educational attraction where visitors are informed about the importance of and can experience geo-information





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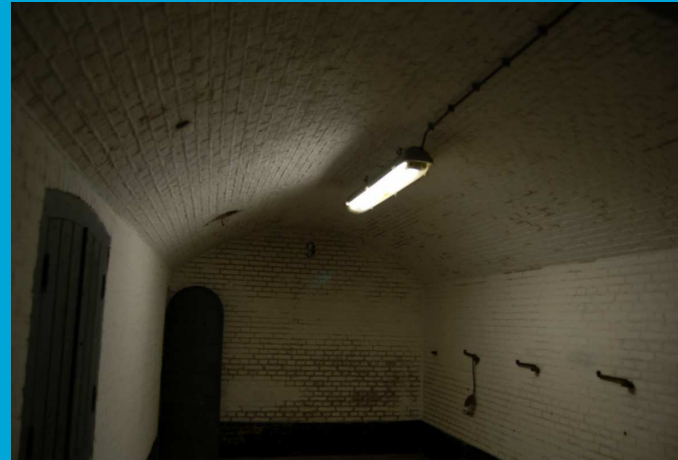
Indoor model



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The A-building



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Indoor model

Purpose of the model:

- Basis for tracking and tracing system
 - Geometric accurate (~ 5 cm)
- Visualisation to the public (on site or via Internet)
 - Textures
 - Contain all major features

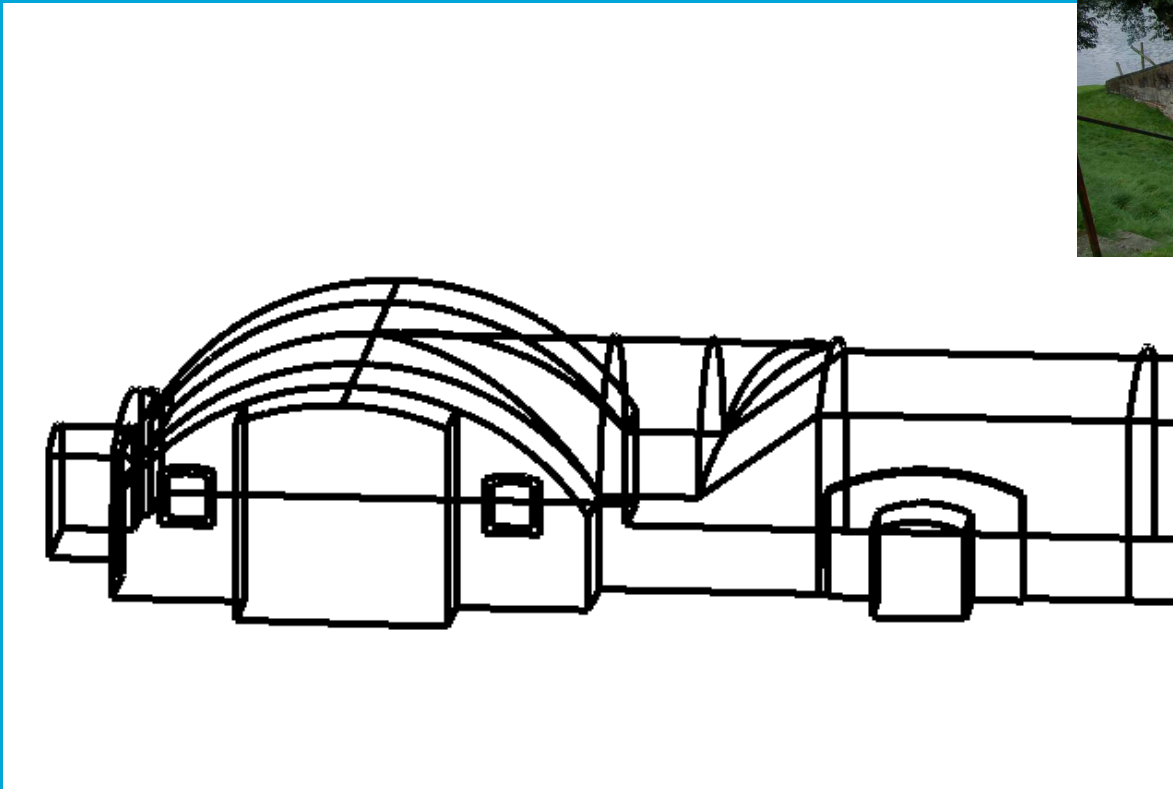
Resulting model: 3D vector model

Tacheometry is used for high accuracy measurements

Only lines, so small in database storage

The construction of the A-building influences the accuracy of the model

3D vector model



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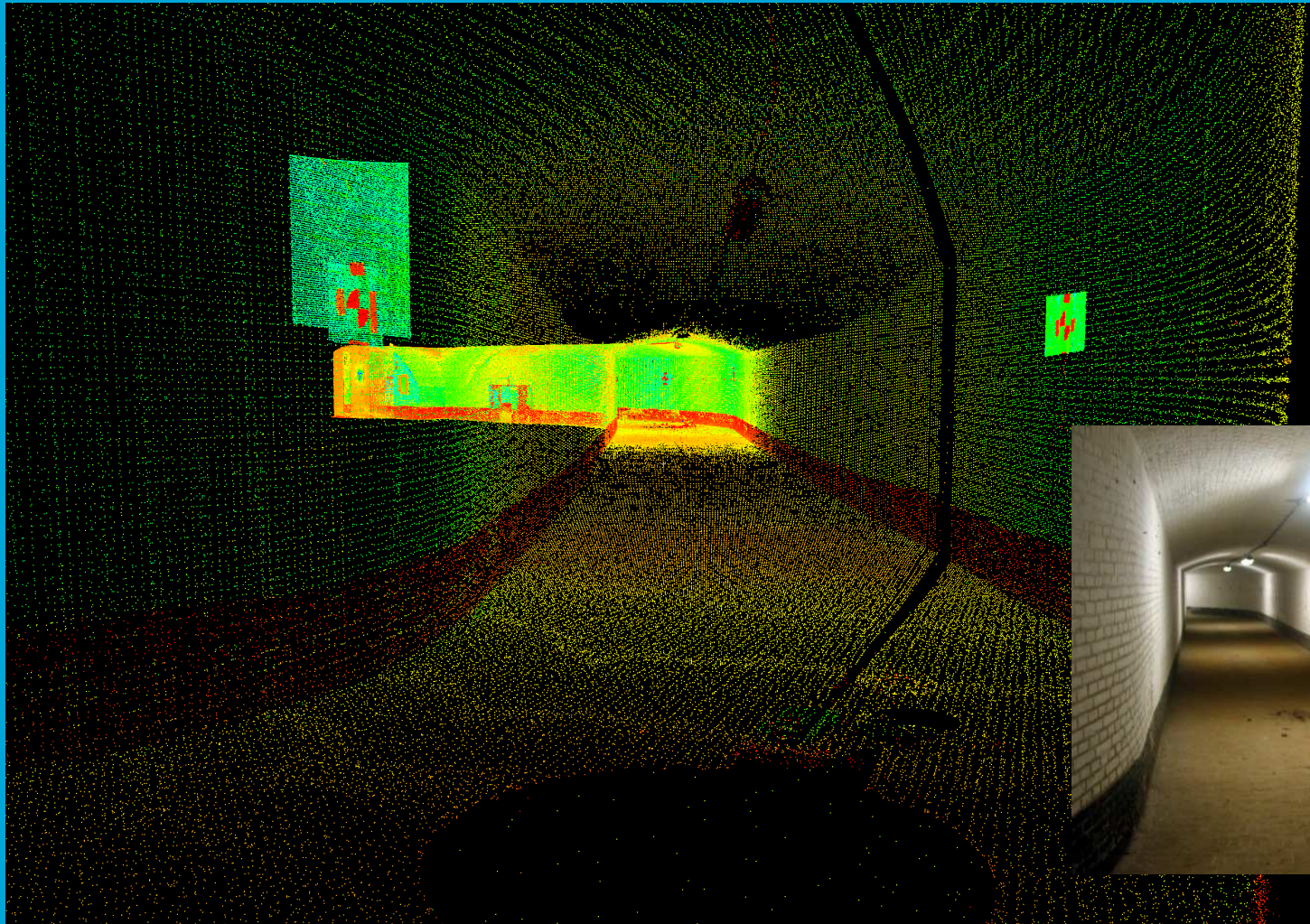
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Resulting model: laserscan point cloud

12 scans, containing more than 17 million points

For the registration, paper targets are used. Position of targets determined using tacheometry

A lot of information, but hard to interpret without any other information



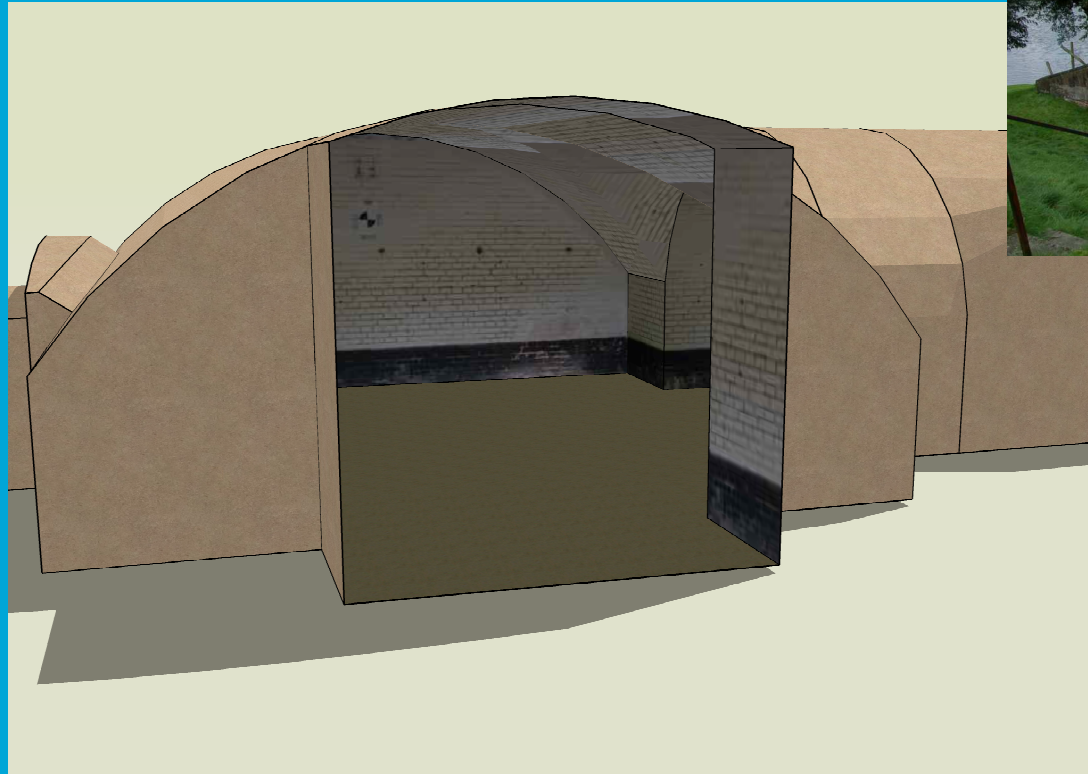
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Resulting model: SketchUp

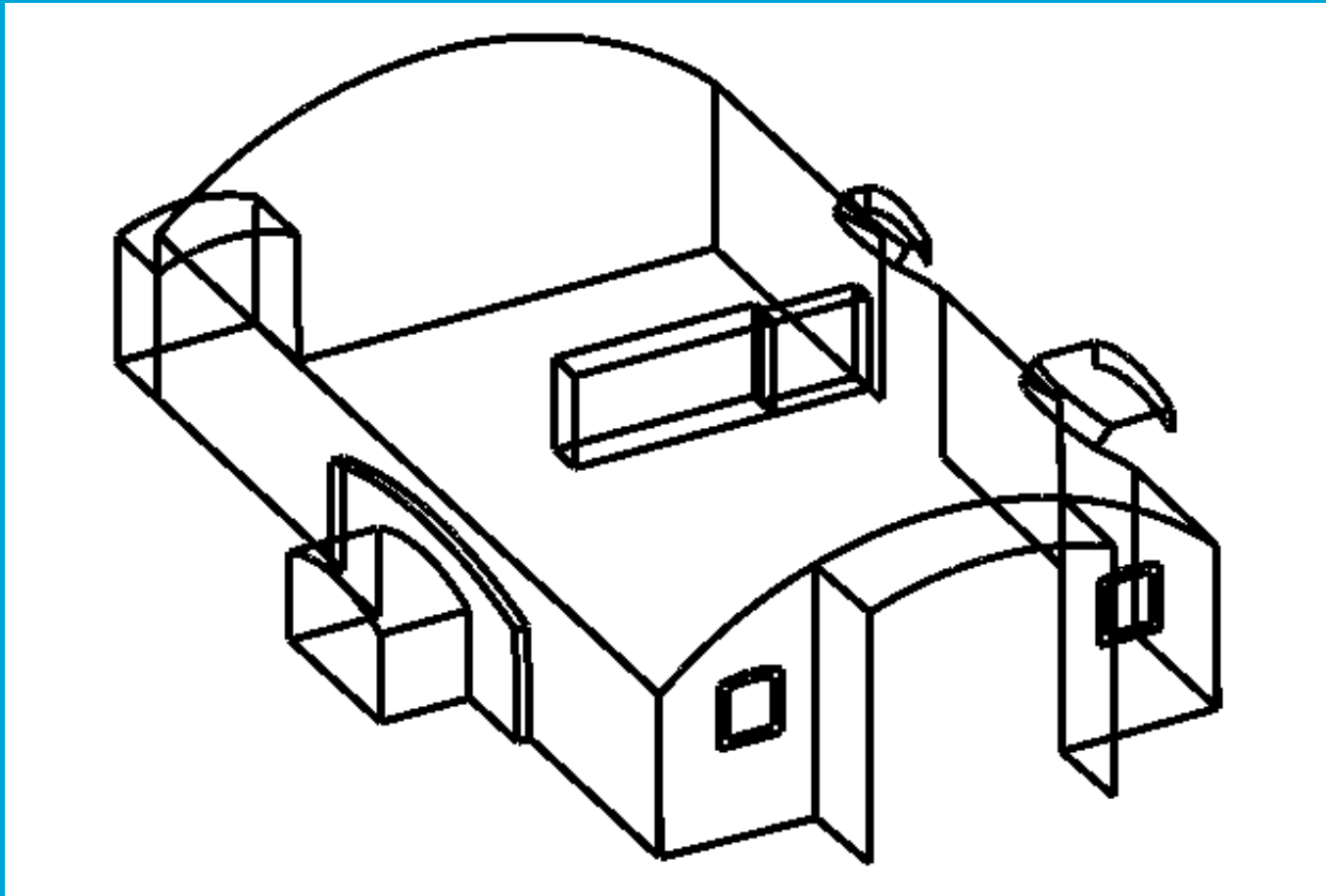
To improve the visualisation, textures are added to the 3D vector model

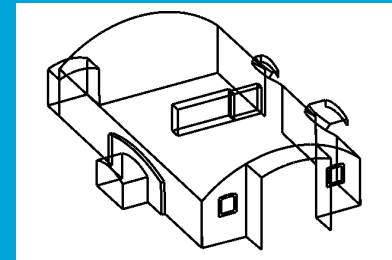
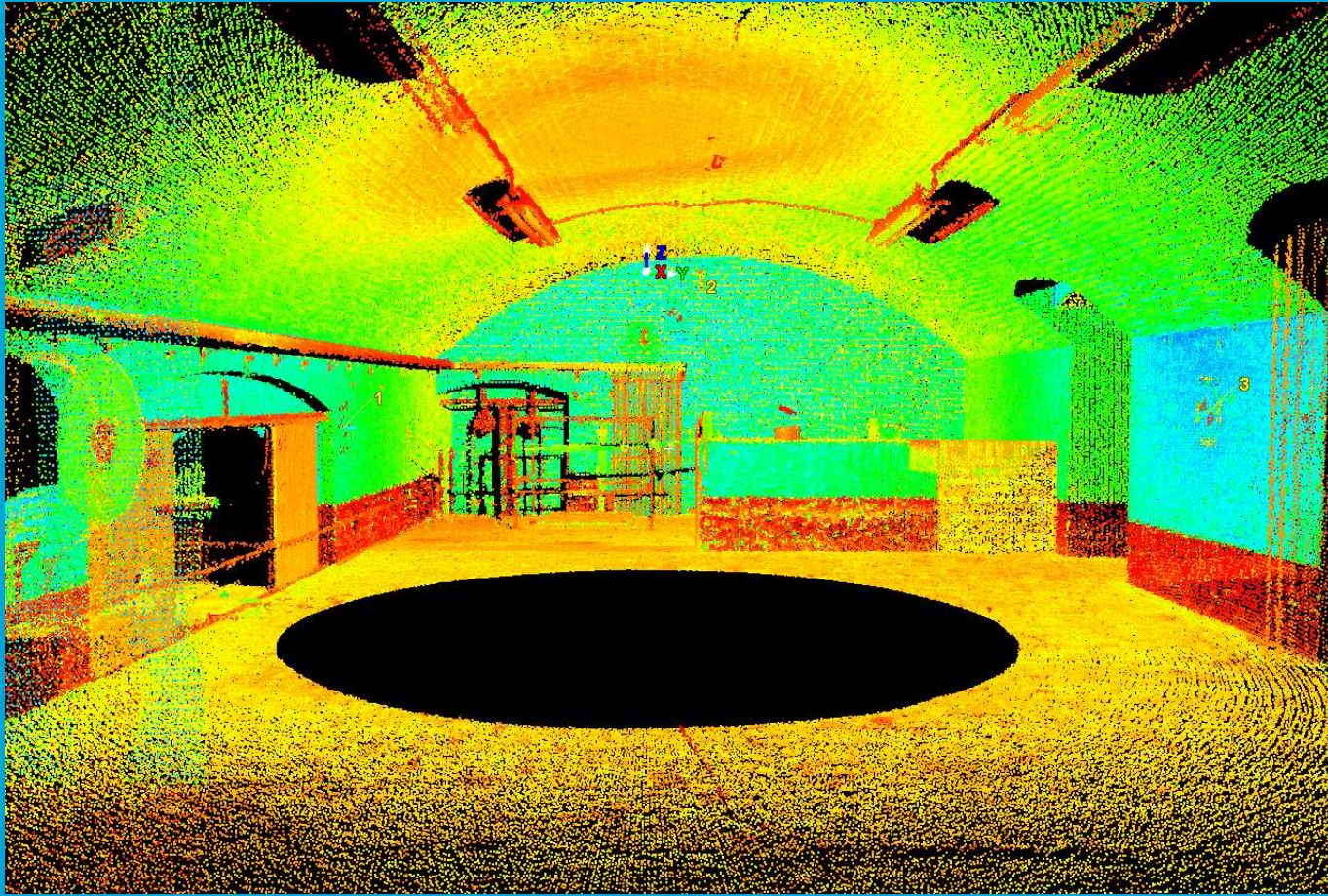
Surface triangulation is done in SketchUp



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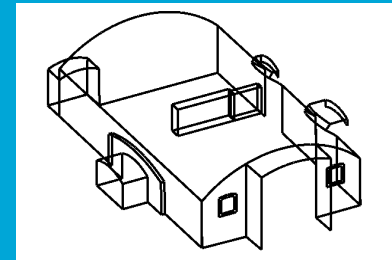
14

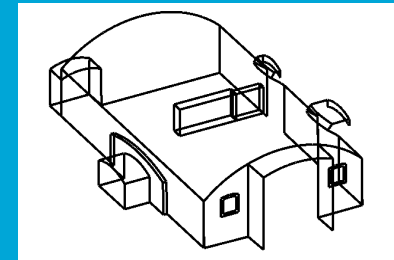




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Summary

- Indoor models are created as a basis for the tracking and tracing system and for visualisation purposes.
- Tacheometry and laserscanning
- SketchUp for visualisations

Questions?