Techniques Used for Optimizing 3D Geovisualization of Terezín Memorial

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About Terezín

• Main and Small Fortress were built within a decade at the end of the 18\textsuperscript{th} century.
• Never served its original purpose.
• Changed to prison in 19\textsuperscript{th} century.
• Second World War
  – June 1940 – Prague Gestapo Police Prison (Small Fortress)
  – November 1941 – the town (former main Fortress) turned into a ghetto and an internment and transit camp for the Jews.
  – 1940 - 1945 – more than 200,000 people were imprisoned
  – „One in five died in“
  – nearly 90,000 prisoners died after their deportation to other places.
  – 1947 – the Memorial of National Suffering (later the Terezín Memorial), was established
About the project

• Project “Landscape of memory. Dresden and Terezín as places of memories on Shoah”
  (2012 – 2014)

  – Technische Universität Dresden, MitteleuropaZentrum für Staats-, Wirtschafts- und Kulturwissenschaften

  – Terezín Memorial

  – University of West Bohemia, Geomatics section at Faculty of Applied Sciences
About the project

• The project goal
  – accentuate Terezín urban area for its history and Terezín Memorial for its depth of knowledge
  – virtually present 3D model of both Small and Main Fortress of Terezín together with appropriate descriptive data of particular buildings and places
UWB Background

• Research focused on 3D data modeling for cultural heritage purposes (since 2005)
  – Castle Kozel
Technical challenges

• 3D model complexity
  – Fortification around the city
  – 250 buildings, different LODs
    • LOD0 to LOD2+ – 200 buildings
    • LOD3 – 50 important buildings

• Source data
  – 3000+ historical documents
  – Contemporary Technical map of Terezín Memorial
  – Stereophotogrammetric images
  – Pictures of the city
  – Google Street View
  – ...
Technical challenges

• Examples of source data
Technical challenges

• Examples of source data
Technical challenges

• Examples of source data
  – Not in a metric system
  – Plan documentation x real building
  – No outer walls – no usable textures
Technical challenges

• 250 buildings, fortification → LOD
Technical challenges

• Multi LOD
  – According to CityGML
Technical challenges

- **Multi LOD**

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Technical challenges

Building overview map

archive

text

kiosk / www client

ID

Built date

Destroyed date / null

ID_LOD0 link

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Contemporary outputs
Contemporary outputs

• Dresden
Future work

- Fortification
- Textures
- CMS
- ...

http://www.pevnostterezin.cz
Summary

- Interactive information system displaying 3D models of Terezín Memorial containing the multimedia historical content.
- The model will be available at Memorial’s premises and installed on kiosks.
- Alternatively the model will be available for presentation on the web.

Acknowledgements:
- “Landscape of memory. Dresden and Terezín as places of memories on Shoah”, reg. n. 100110544.
- EXLIZ – CZ.1.07/2.3.00/30.0013, which is co-financed by the European Social Fund and the state budget of the Czech Republic.
- NTIS – New Technologies for the Information Society”, European Centre of Excellence, CZ.1.05/1.1.00/02.0068.