Practical observations concerning 3D technologies in the service of Heritage Management

Boglárka Laki, Mensor3D Ltd.

Mensor 3D

overview

- about Mensor 3D Ltd.

- recent projects - some examples
  - documenting the remains of a Renaissance fortress
  - excavating of a medieval church and glass manufacturing workshop
  - laser scanning the Prónay castles

- observations

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recent projects
3 examples

observations

antecedent...

Humansoft
member of 4iG

- **iCollWare project**
  - supporting the business procedures of the forensic expertise utilizing up-to-date 3D modelling and data recording technologies
  - sept. 2011 – june 2013
  - ~ 3 m EUR

- **SziMe3D AR project**
  - 3D technological inno-vations in the fields of tourism, education and sports
  - june 2012 – may 2014
  - ~ .... m EUR

Mensor 3D

- founded in 2014 by HUMANsoft Ltd.
- 10 professional
  - architects
  - civil engineers
  - mechanical engineer
  - Consultants
- in regular cooperation with
  - universities
  - museums
  - 3D vizualization company
- actual fields of operation
  - cultural heritage
  - architecture
  - engineering
  - healthcare

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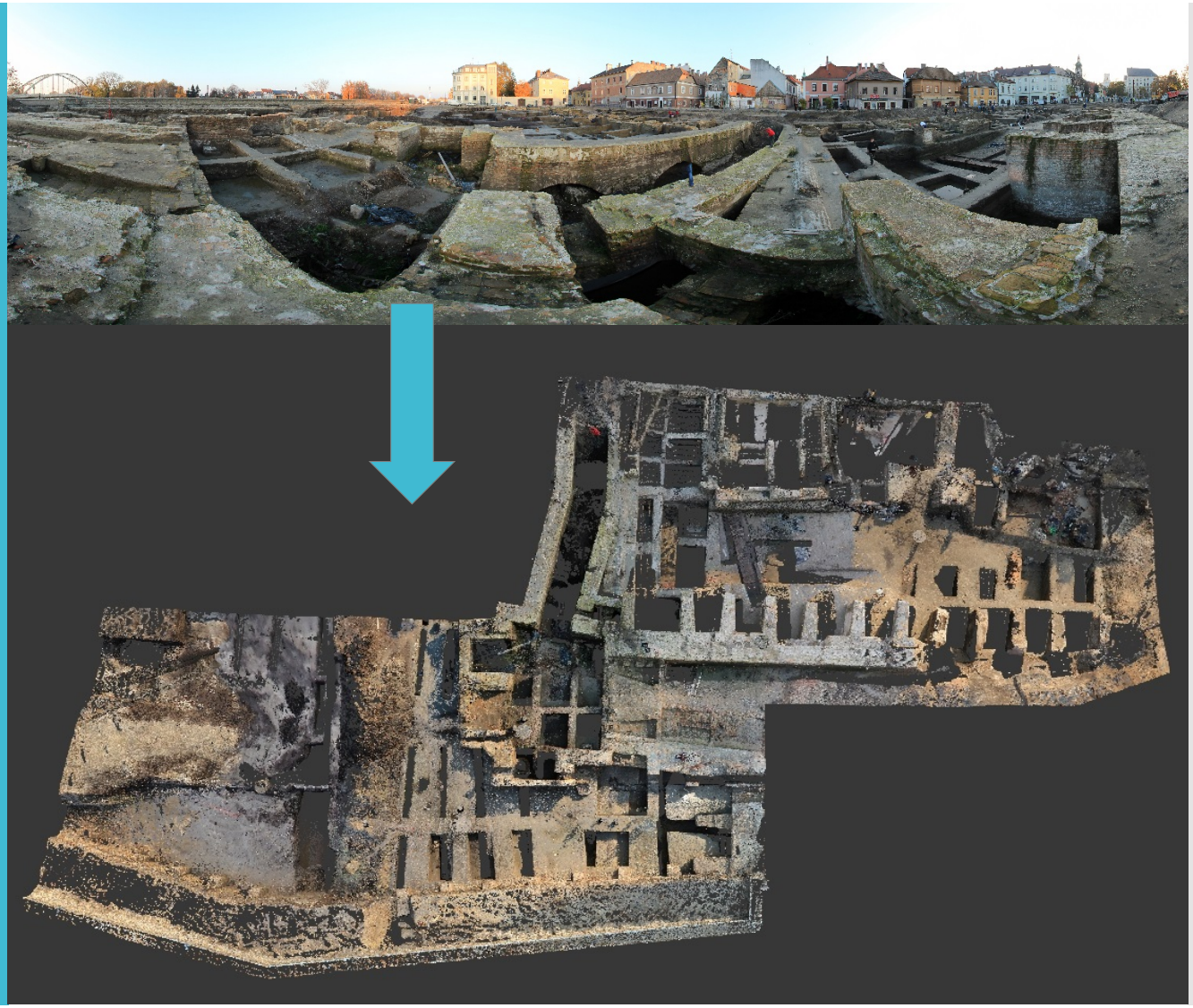
recent projects renaissance fortress

observations



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recent projects renaissance fortress

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3D Terrestrial Laser Scanning the excavation of the 16th century military fortress in Győr
documenting the actual status of the work and the remains (5 times)

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recent projects renaissance fortress

observations

3D fly through – from a precise, measurable, long lasting pointcloud

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recent projects renaissance fortress

observations

Wood bridge, dated earlier as the fortress
3D documentation of treathened or perishing objects

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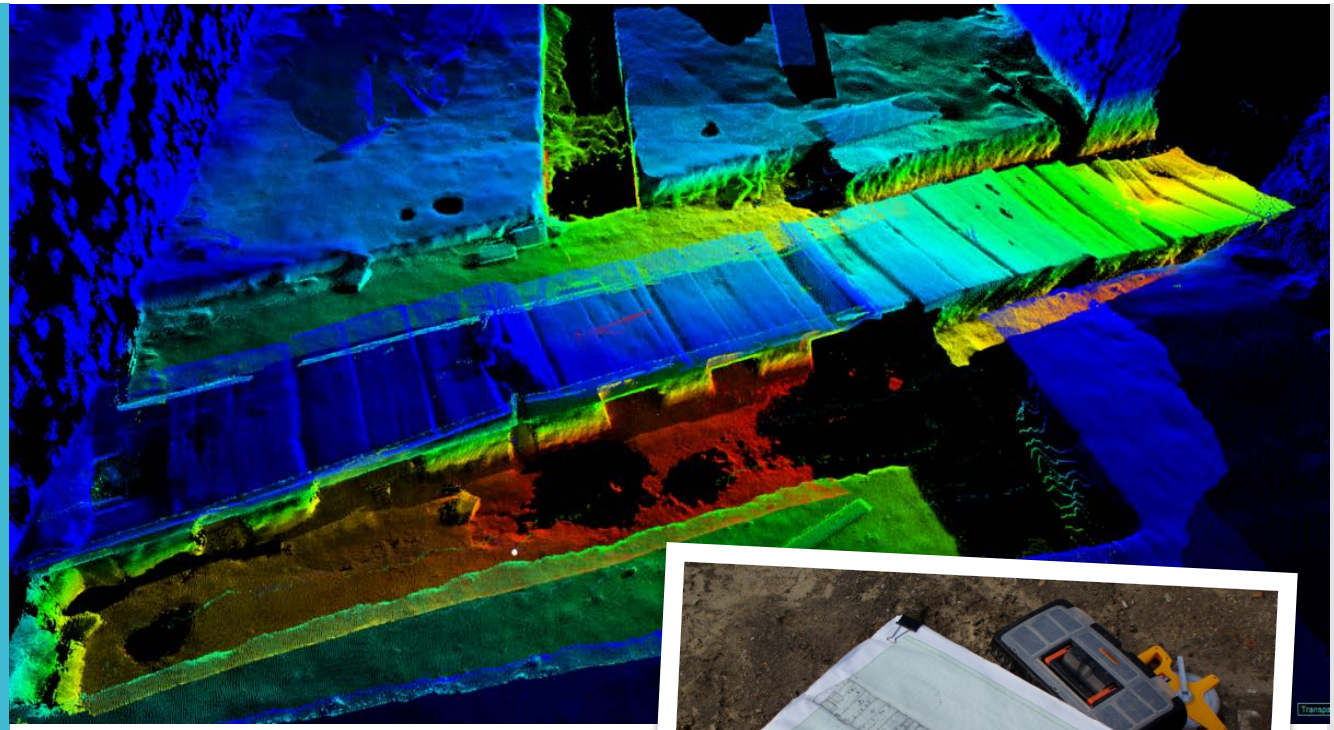

Traditional survey methods can be combined with modern technologies (e.g. 3D scanning, photo 3D, aerial survey)

Resulting a more detailed dataset and archive file for the future

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3D Terrestrial Laser Scanning the excavation of the Medieval Church and Glass Manufacturing Workshop in Pomáz
Documenting the actual status of the work and the remains (6 times)

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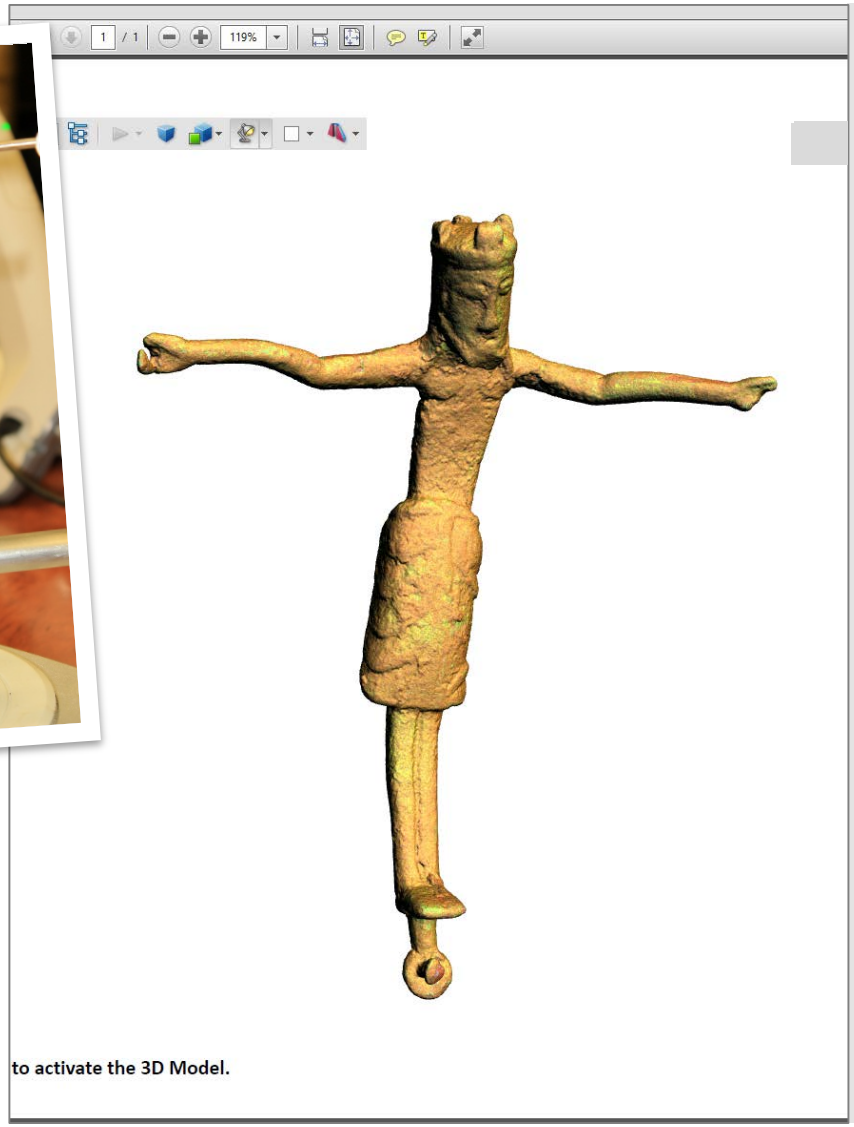

3D object scanning and publishing

general PDF
measurable model
360° and cutaway view

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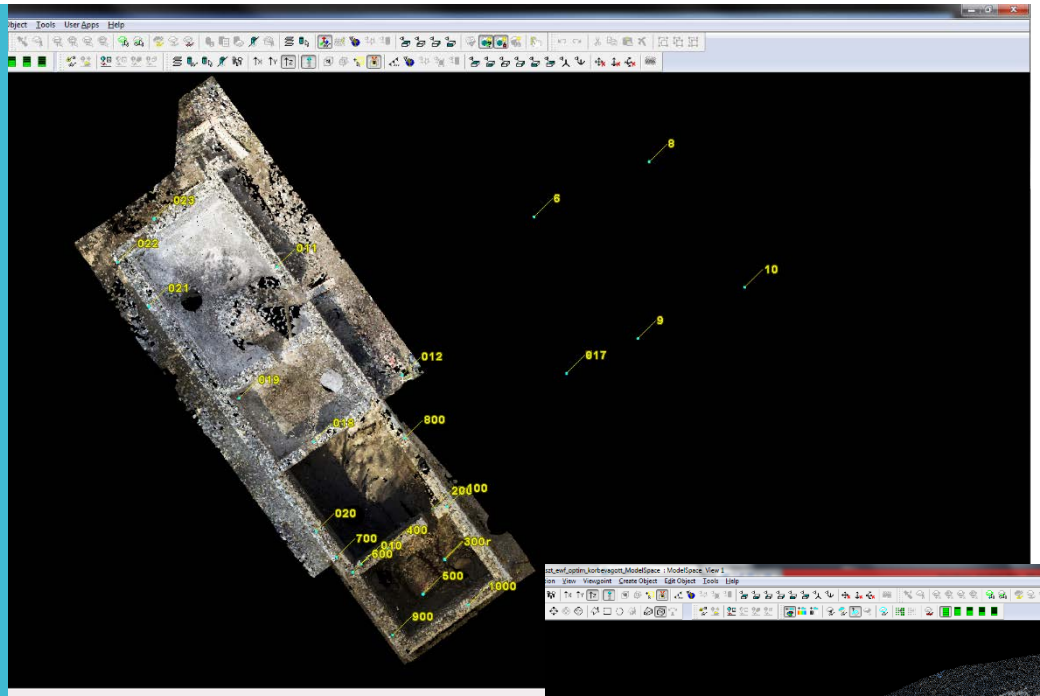

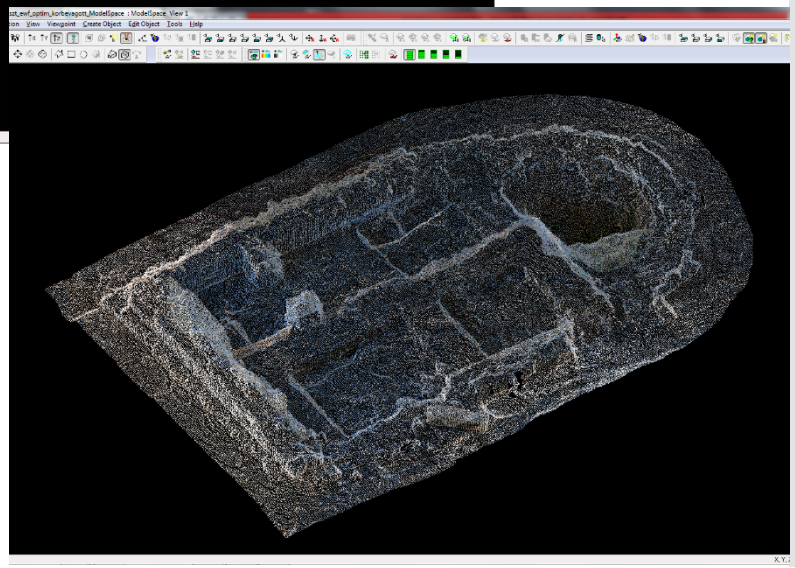

georeffered 3D pointcloud in different views

can be used for analysis, demonstration, reconstruction

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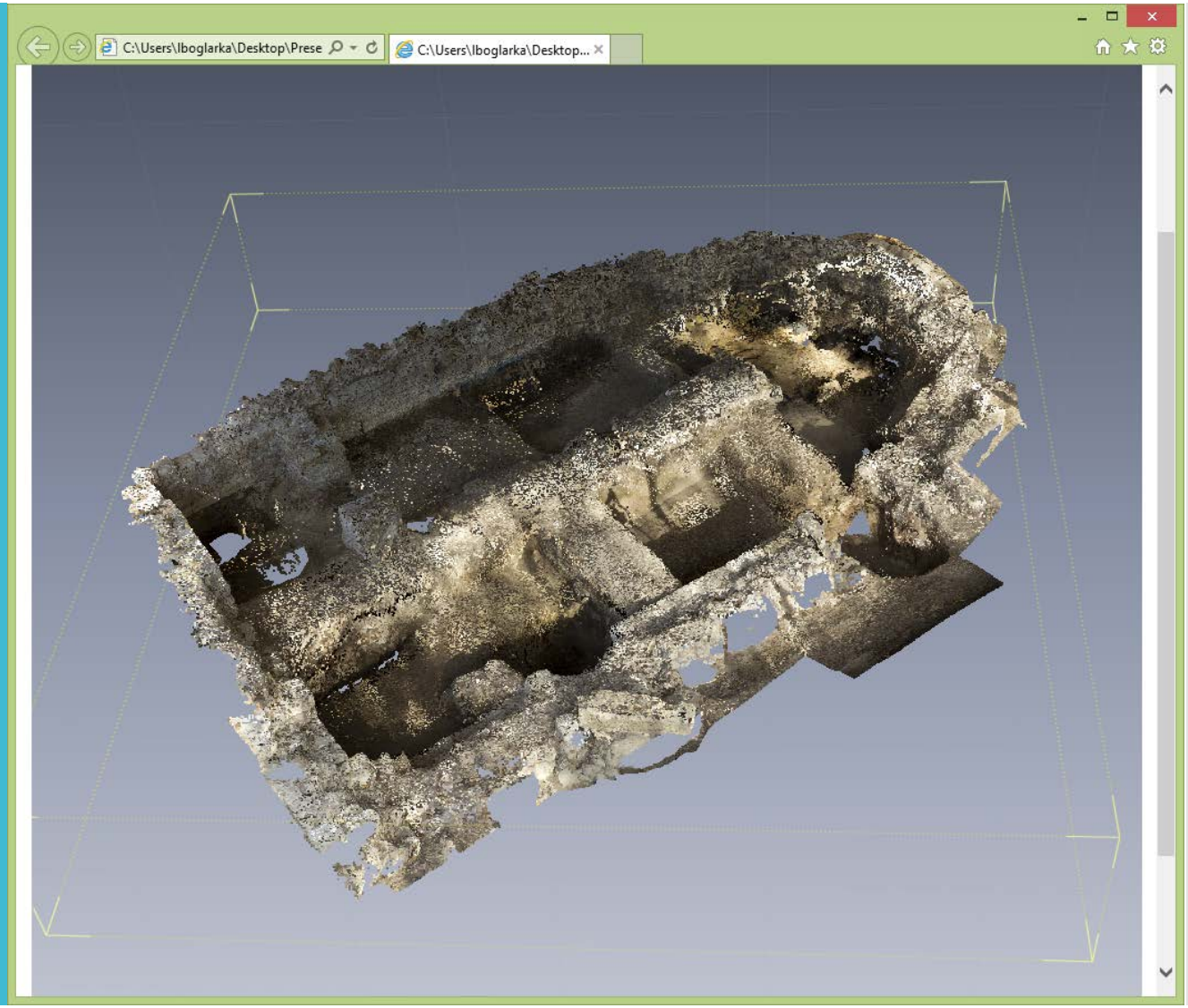

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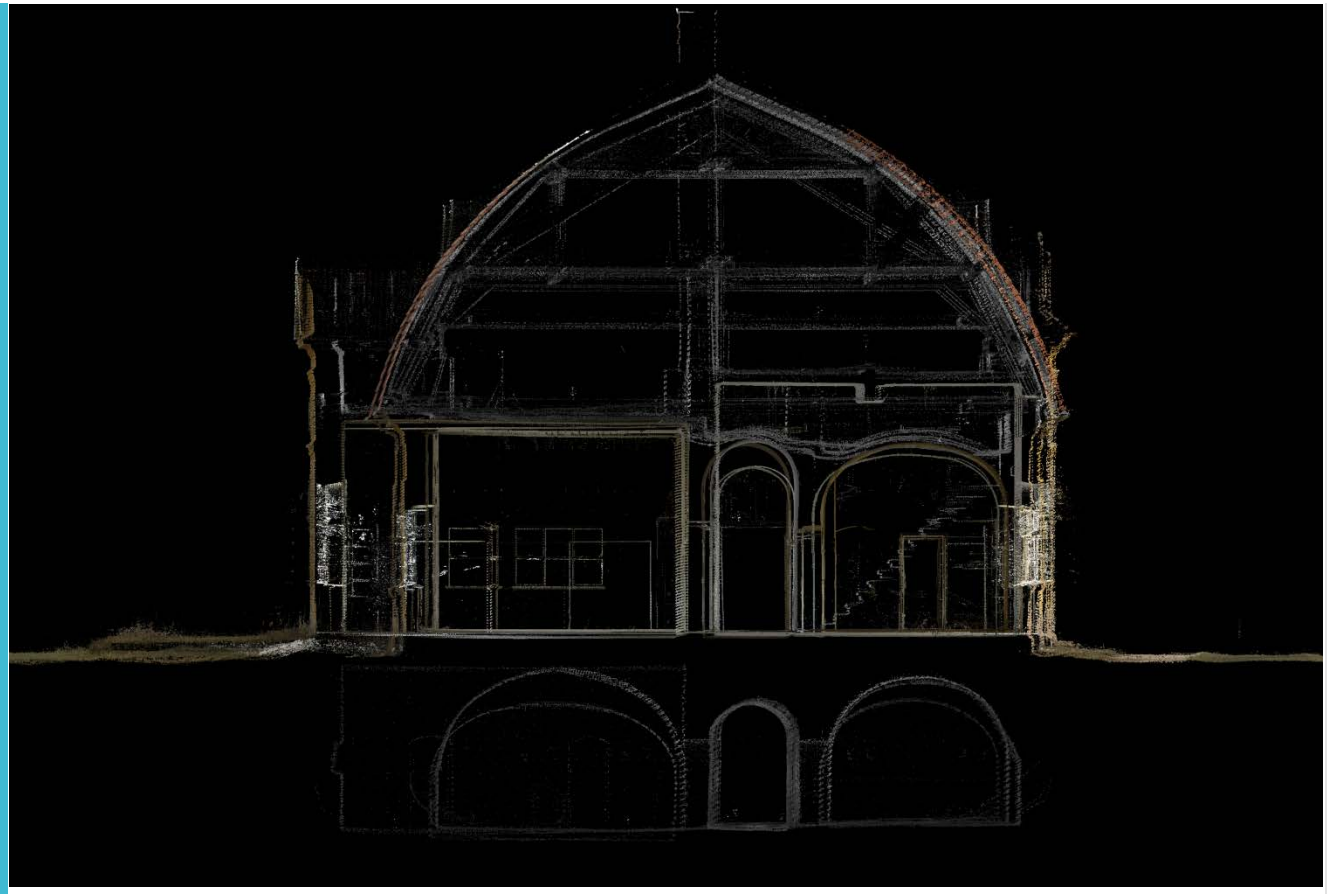

documenting actual conditions of untended buildings
supporting maintenance and monitoring tasks
virtual building reconstructions from 3D survey and 3D modelling

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orthogonal point cloud and 2D facade view made based on it

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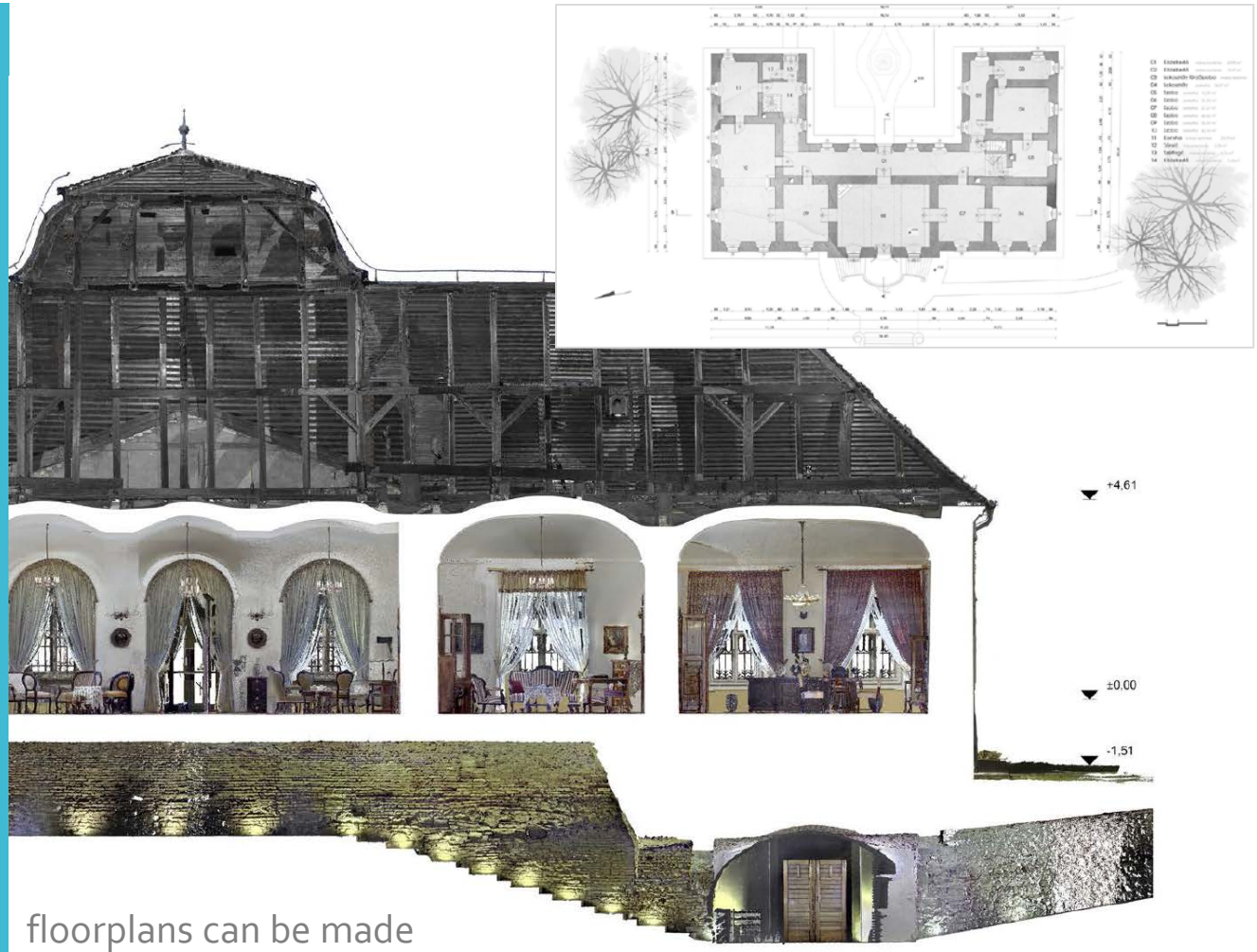

floorplans can be made
surface connections get visible on any plane
sections and views any location and orientation out of 3D pointcloud

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3D pointcloud by 3D scanning

advantages

- produce accurate 3D point cloud
- suitable for tiny to large scale objects
- can be combined with other survey methods
- serves as base for
  - documentation
  - analyses, hypotheses
  - demonstrations, scenography
  - 3D printing
  - architectural products
- can be accessed any time from anywhere

limits

- large amount of data
- glass and shiny surfaces need to be pre-handled

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3D pointcloud by photo 3D

advantages

- needs only a camera, pictures can be taken by anybody
- easy survey method
- free processing softwares available
- suitable for mid size to large scale objects
- can be combined with other survey methods
- serves as base for
  - documentation
  - demonstrations, scenography
- can be used for shiny surfaces also

limits

- inaccurate model (size, shape)
- not suitable for tiny, small objects
- dependent on natural light

Thank you for your attention!

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