Low-cost approach for a 3D-visualization of historical structures in Metropolis (Ionia)

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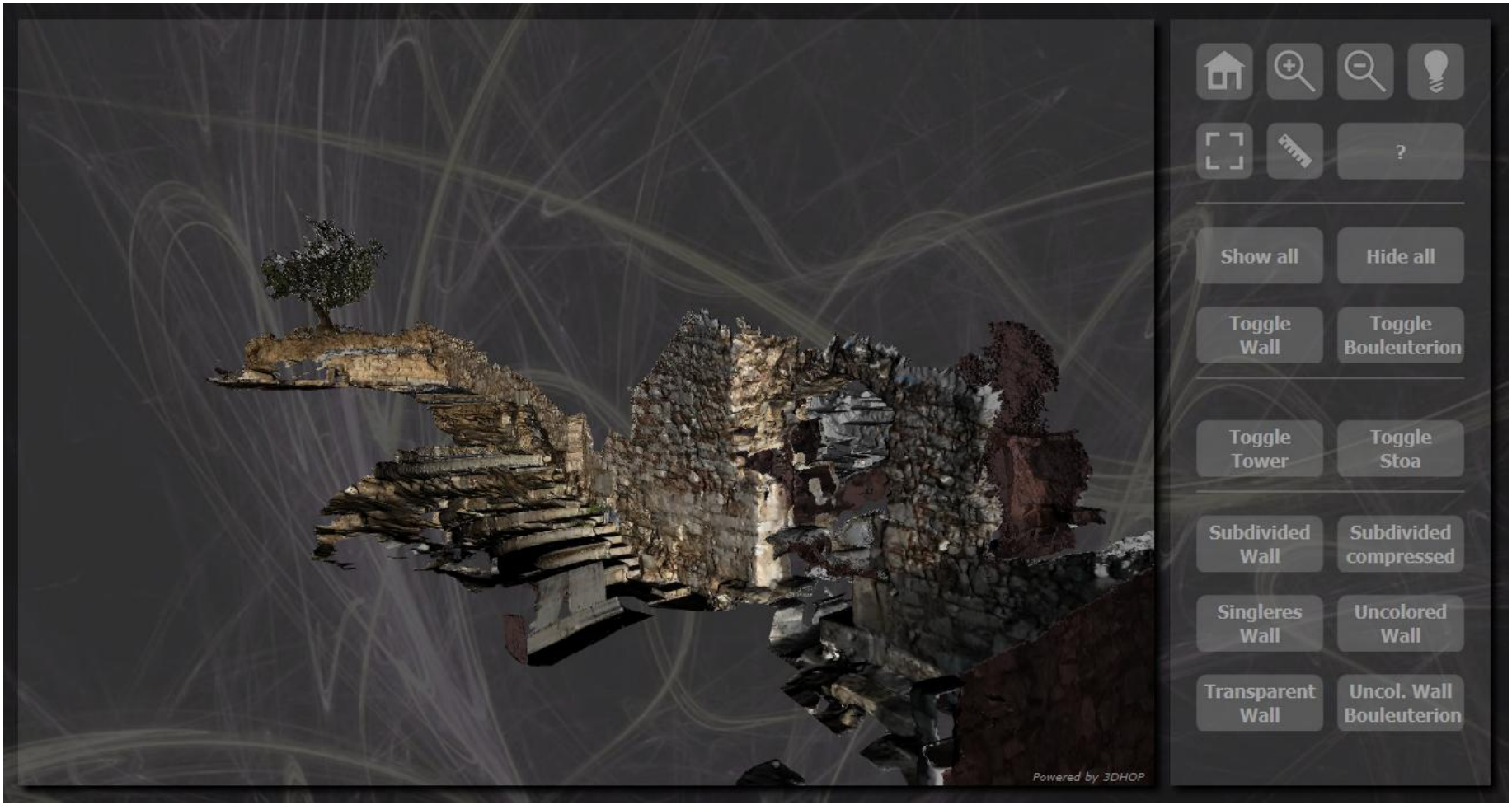
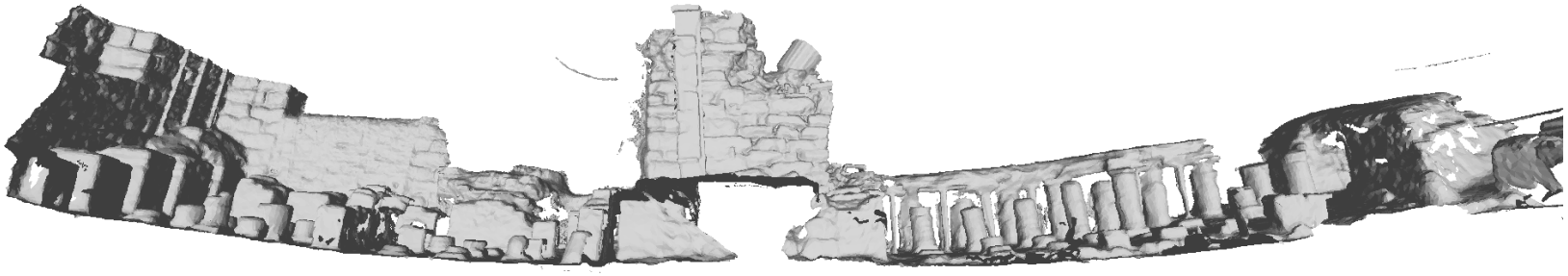

?
Show all
Hide all
Toggle Wall
Toggle Bouleuterion
Toggle Tower
Toggle Stoa
Subdivided Wall
Subdivided compressed
Singleres Wall
Uncolored Wall
Transparent Wall
Uncol. Wall Bouleuterion
Powered by 3DHOP

Where is Metropolis?

Data collection (Scans)

Kinect© as a low-cost 3D-Scanner

Data collection (Scans)



Bending of a model because of a low point accuracy

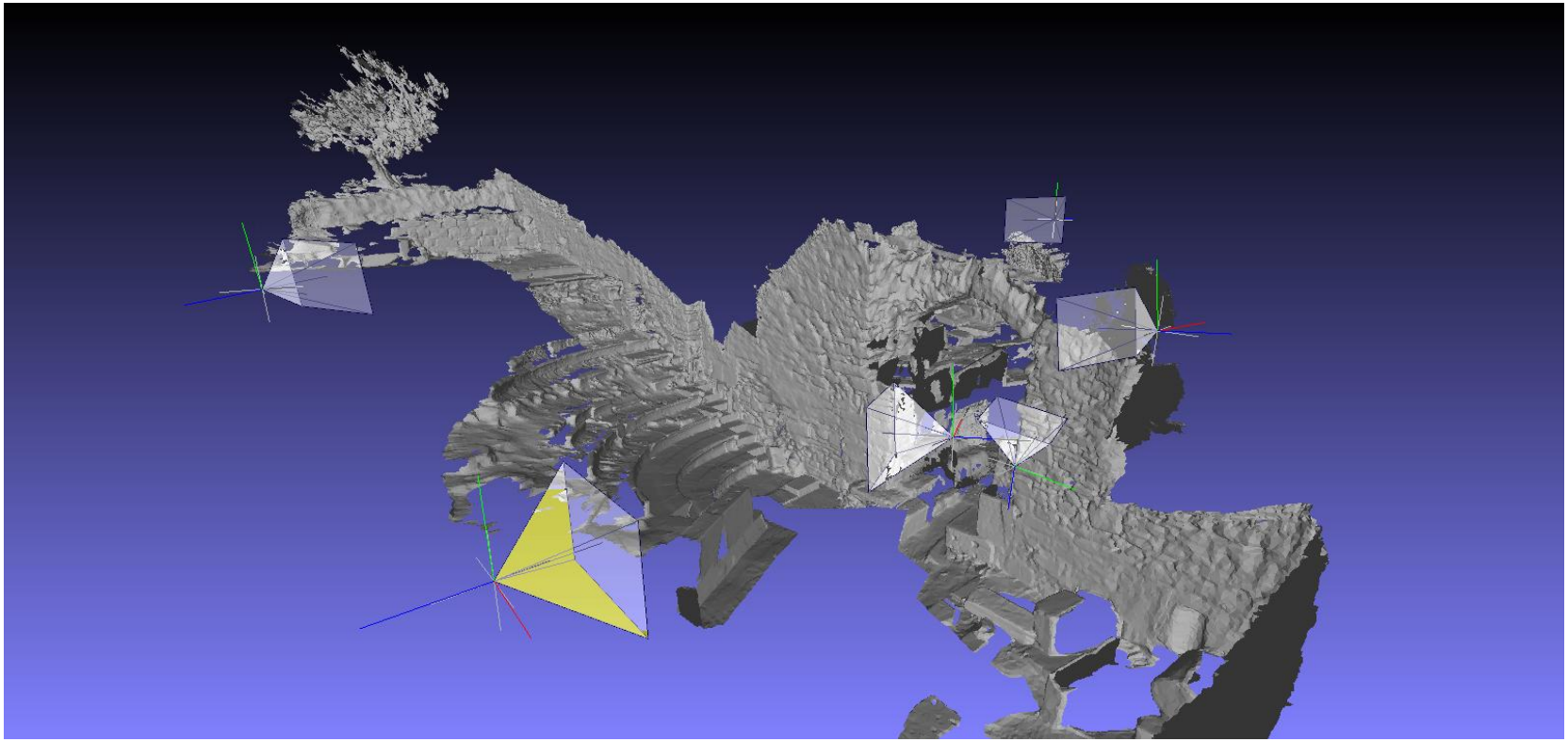
Data collection (Images)

Average Smartphone for collecting color data

Data collection (Images)

Optimal
image for texturing

Texturing: Image Registration



Positions of the cameras

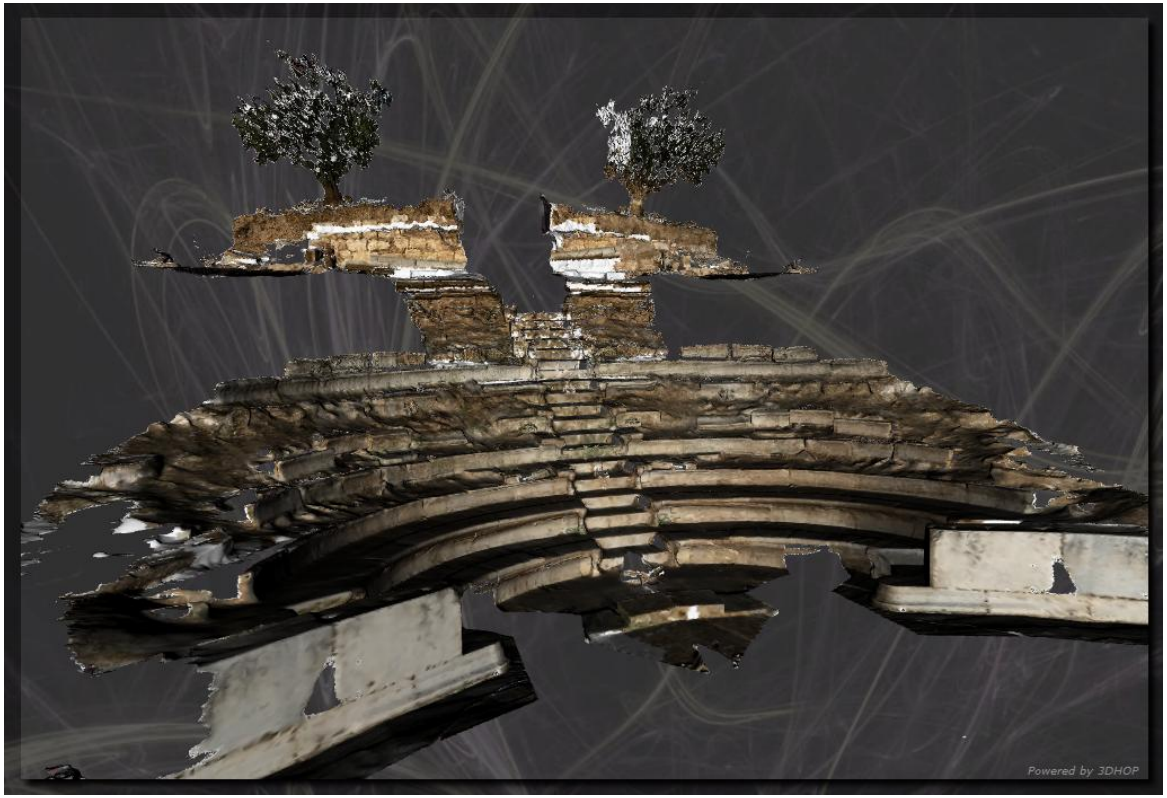
Texturing: Color Projection

Texturing the model: detailed view on a bench of the bouleuterion

Time-based splitting

Byzantine wall was erected through the middle of bouleuterion

Time-based splitting



Bouleuterion without the byzantine wall

Visualization: Tool-Requirements

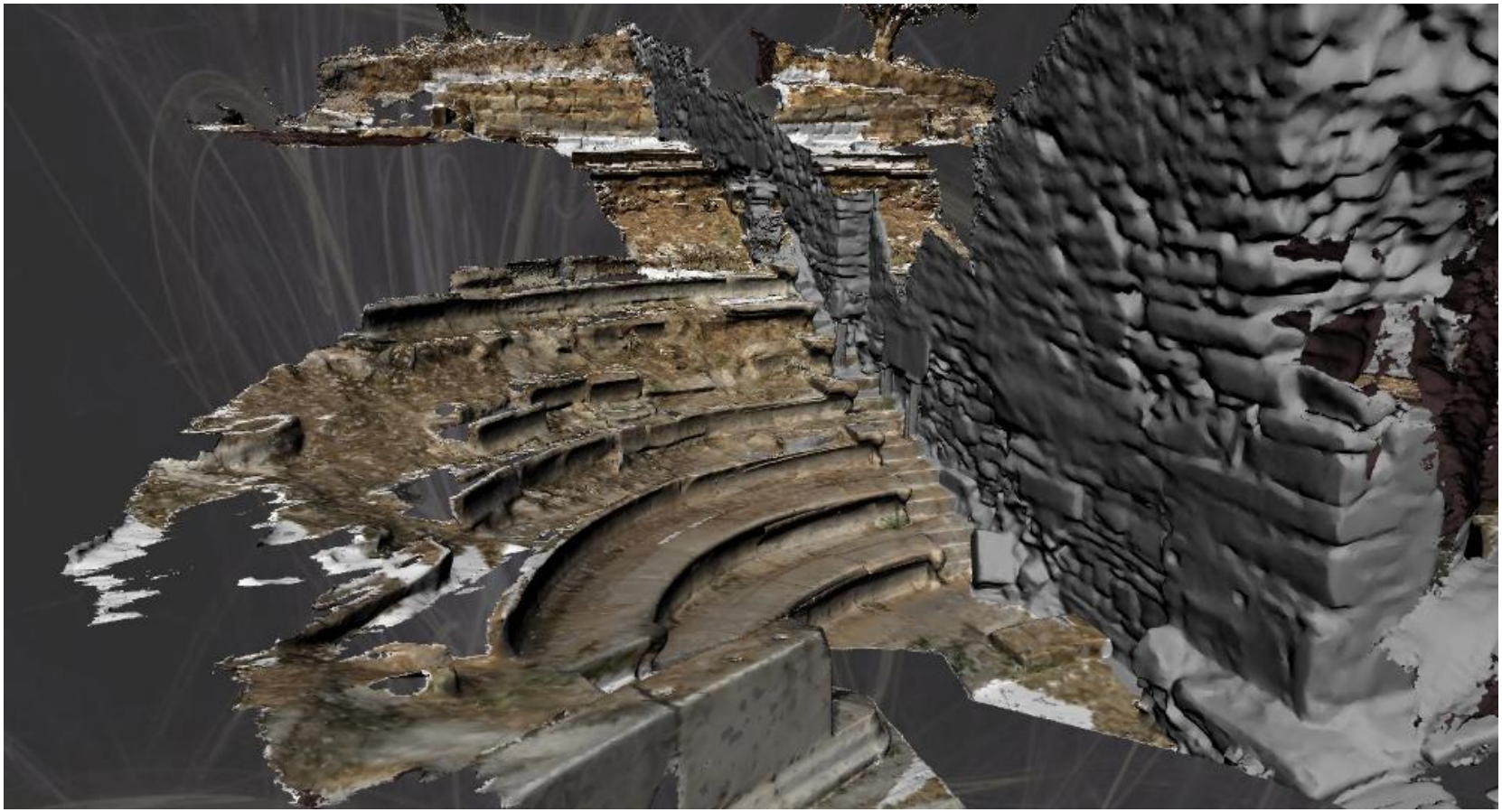
Visualization of the data: Which tool to use?

→define requirements

Visualization: Georeference

- Problem:
  - too many digits for each value
- Only GIS support georeferenced
  - No online functionality for 3D
- Option: local system, correct dimensions

Visualization: 3D-Hop



Conclusion

- Low-cost visualization is possible
- Quality of collected data has the biggest influence on quality of the result
  - Limited scan distance of the Kinect
  - Images should meet quality criteria
- 3D-Hop best solution for a visualization
- Low variety on software tools

Thank you for your attention. Questions?

For more information

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