

Digital twin of past cityscapes

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Digital twins of past cityscapes

AIMS:

- ◎ Digital replica of the existing situation
- ◎ Knowledge hub / data integration / heritage data management
- ◎ Analysis / Simulation

Digital twins of past cityscapes

CHALLENGES:

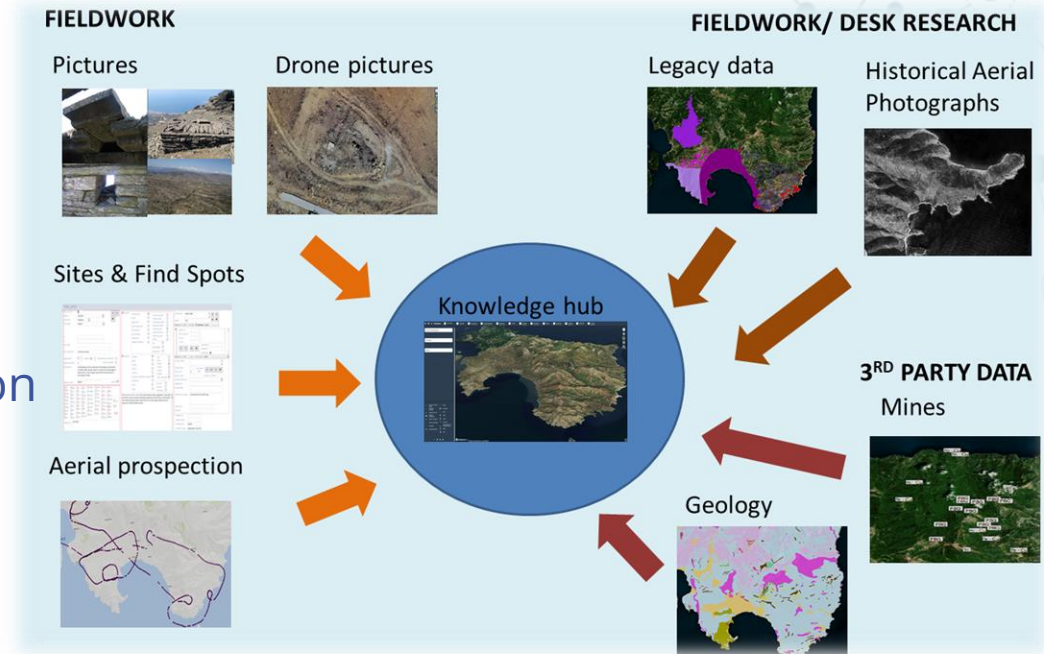
- ◎ Archaeological data are fragmentary and incomplete
- ◎ Inconsistency in data quality
- ◎ Ethics of “reconstructing” the past

Case studies

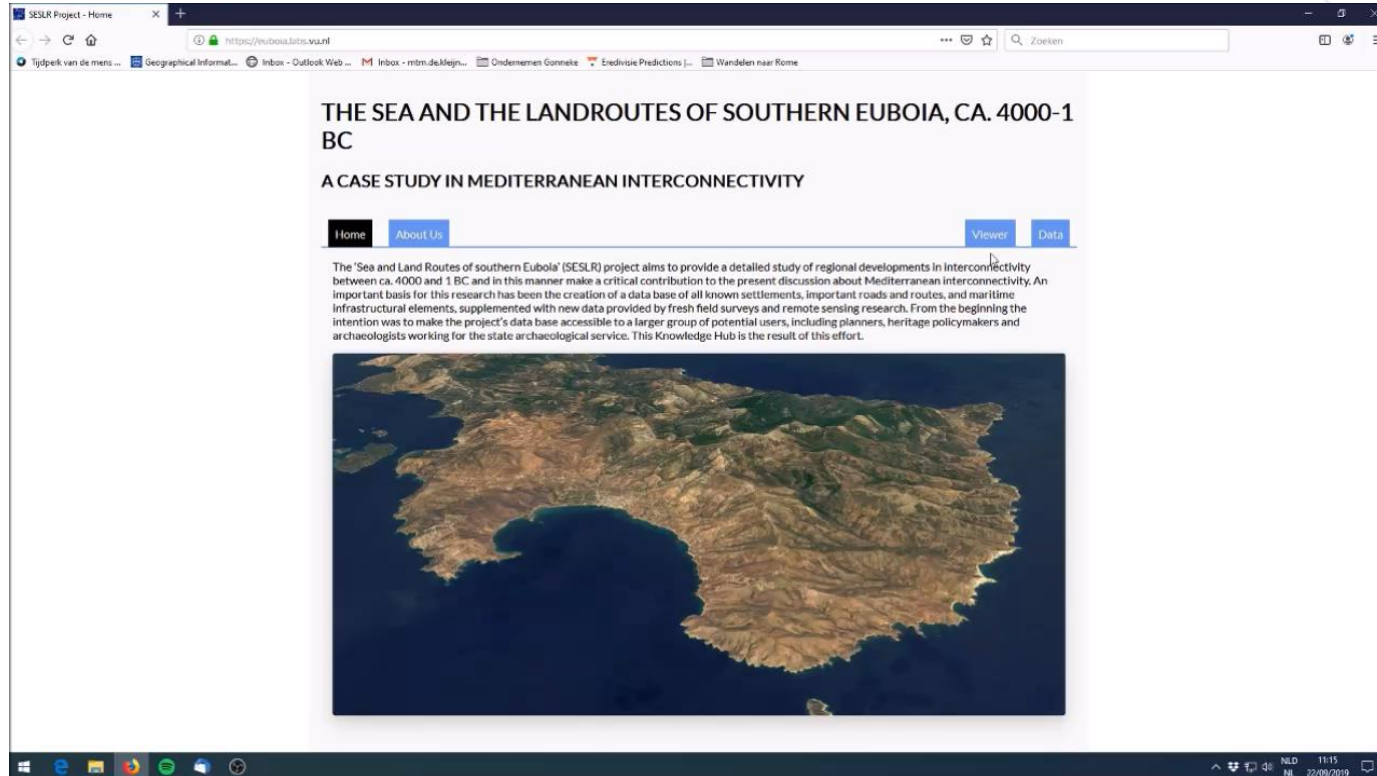
- ◎ Knowledge Hub for the Archaeology and Heritage management of Southern **Euboea**
- ◎ Mapping the **Via Appia**
- ◎ Visualizing past cityscapes: **Koroneia 3D**
- ◎ 3D / 4D Amsterdam

Heritage management Southern Euboeia

- Knowledge hub / Spatial Data Infrastructure
- AIM: to contribute to the preservation and protection of the archaeological sites in the area.



Heritage management Southern Euboeia



Mapping the Via Appia project

© Spatial Data Infrastructure



De Kleijn *et al.* 2016. A 3D spatial data infrastructure for Mapping the Via Appia. *Digital Applications in Archaeology and Cultural Heritage* 3: 23–32

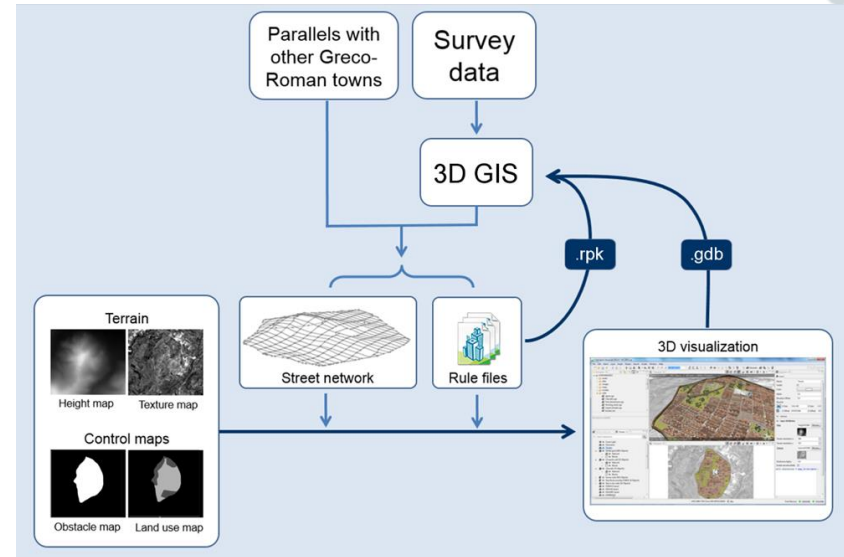
Mapping the Via Appia project

<http://mappingtheviaappia.nl/project/> online access at <http://148.251.106.132:8090/dist/>



Koroneia 3D

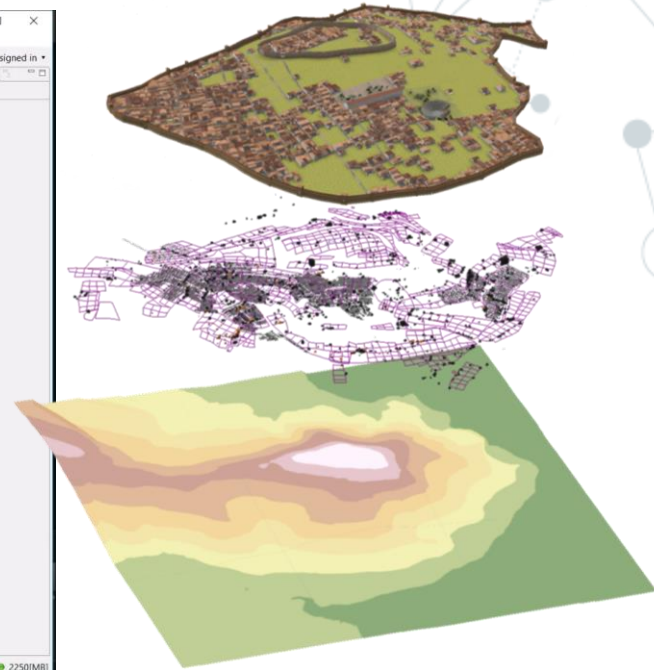
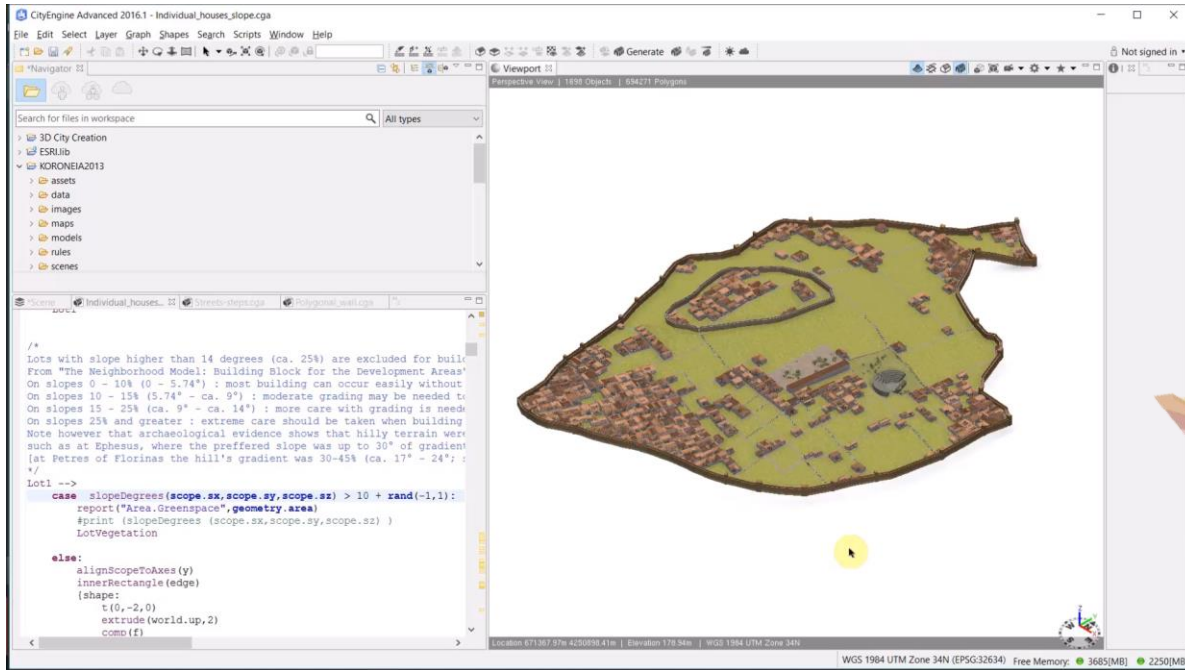
- ◎ Data integration platform for research purposes
- ◎ Simulation of reconstruction hypothesis to estimate population figures
- ◎ GIS-driven, rule-based approach



C. Piccoli 2018. *Visualizing Cityscapes of Classical Antiquity: From Early Modern Reconstruction Drawings to Digital 3D Models*. Oxford: Archaeopress. Open Access at <https://bit.ly/2mmSkg4>

Koroneia 3D

Simulations of what-if scenarios (based on slope values)

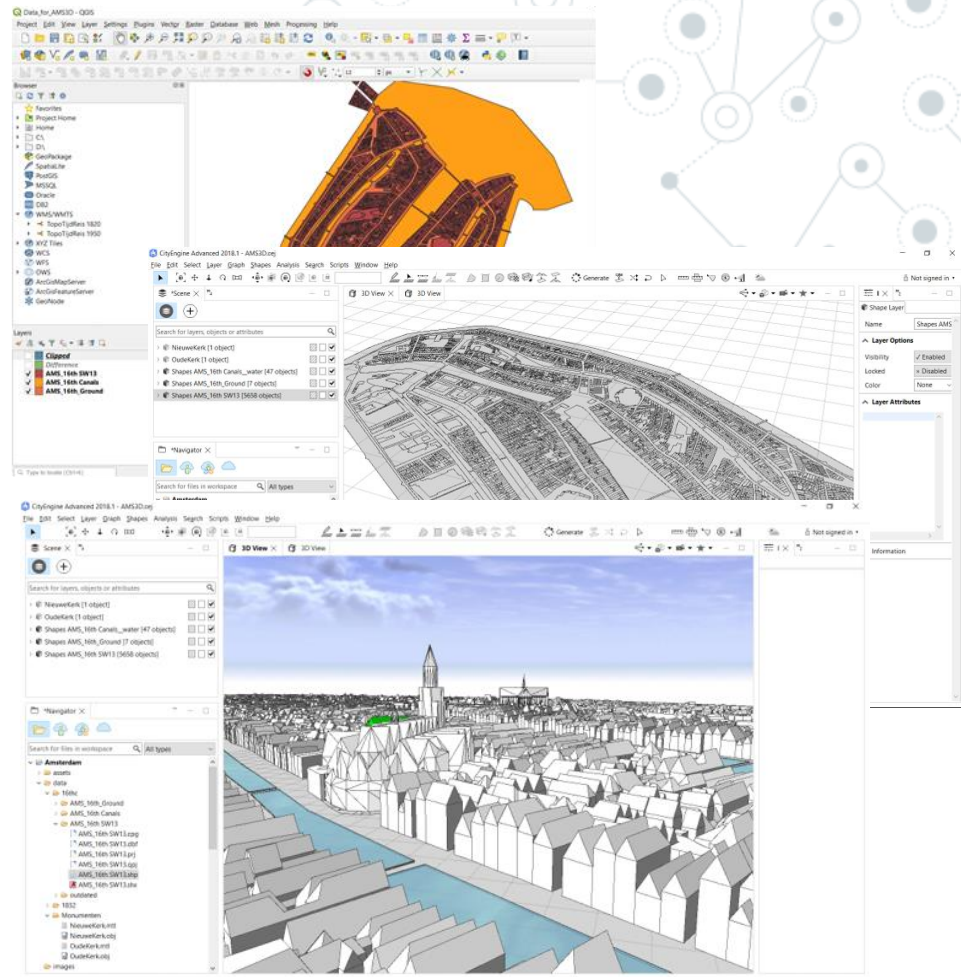


Rules files and 3D assets available on github: <https://github.com/cpiccoli/rules>

3D / 4D Amsterdam

- ◎ Pilot project
- ◎ Data integration platform
- ◎ GIS-driven, rule-based approach

Pilot project part of the Amsterdam Time Machine
(coordinators: Prof. Dr. Julia Noordegraaf and dr. Claartje Rasterhoff, University of Amsterdam)



Discussion

- ◎ Long-term sustainability: Who is responsible?
- ◎ IT literacy
- ◎ Harmonization of heterogenous datasets
- ◎ Transparent process from data to interpretation

See also: McKeague *et al.* 2019. Mapping Our Heritage: Towards a Sustainable Future for Digital Spatial Information and Technologies in European Archaeological Heritage Management. *Journal of Computer Applications in Archaeology* 2(1): 89–104. DOI: <https://doi.org/10.5334/jcaa.23>

Thank you for listening!

Contacts

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