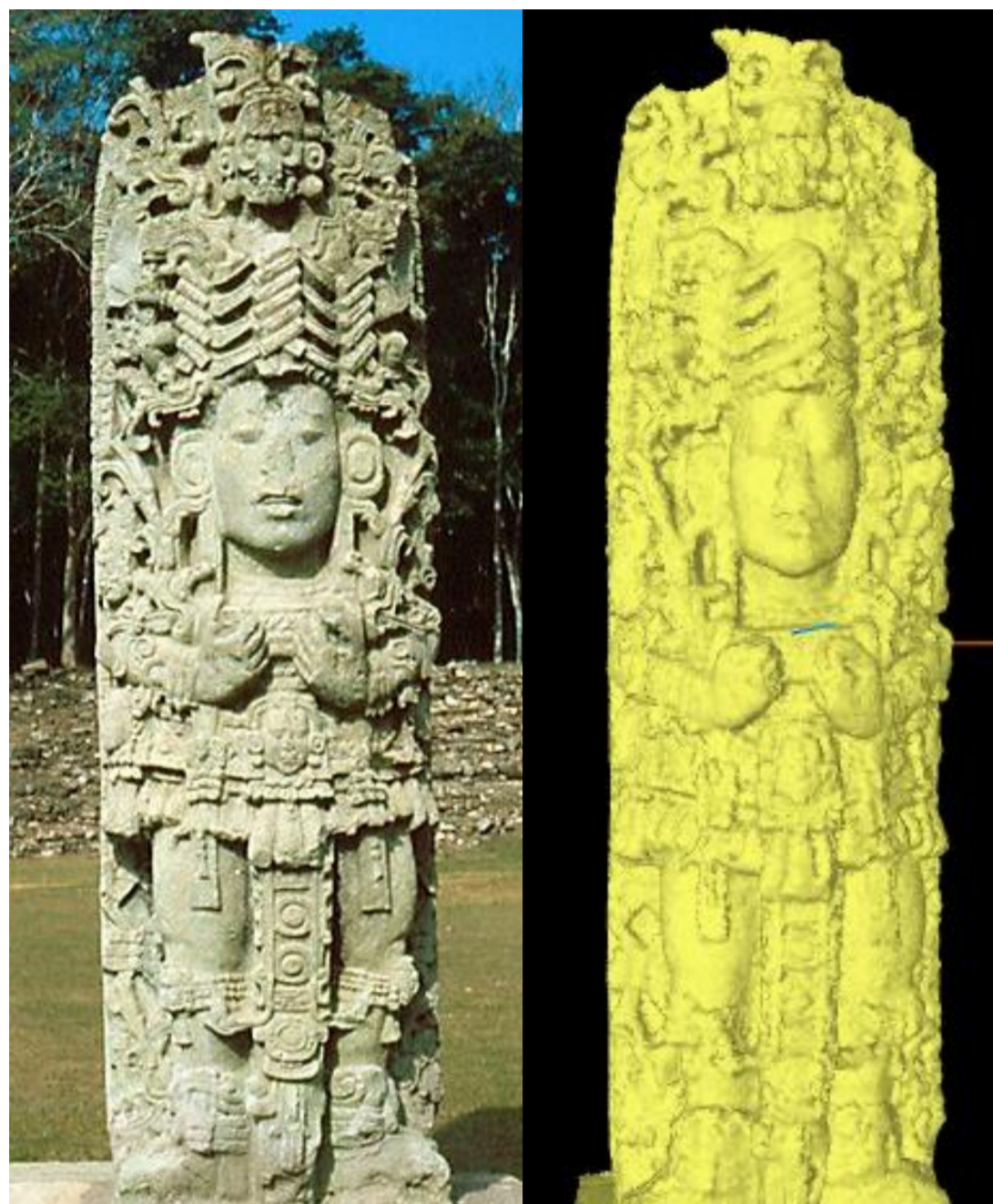


MayaArch3D – A web based 3D geoinformation system to analyse the archaeology of Copán, Honduras

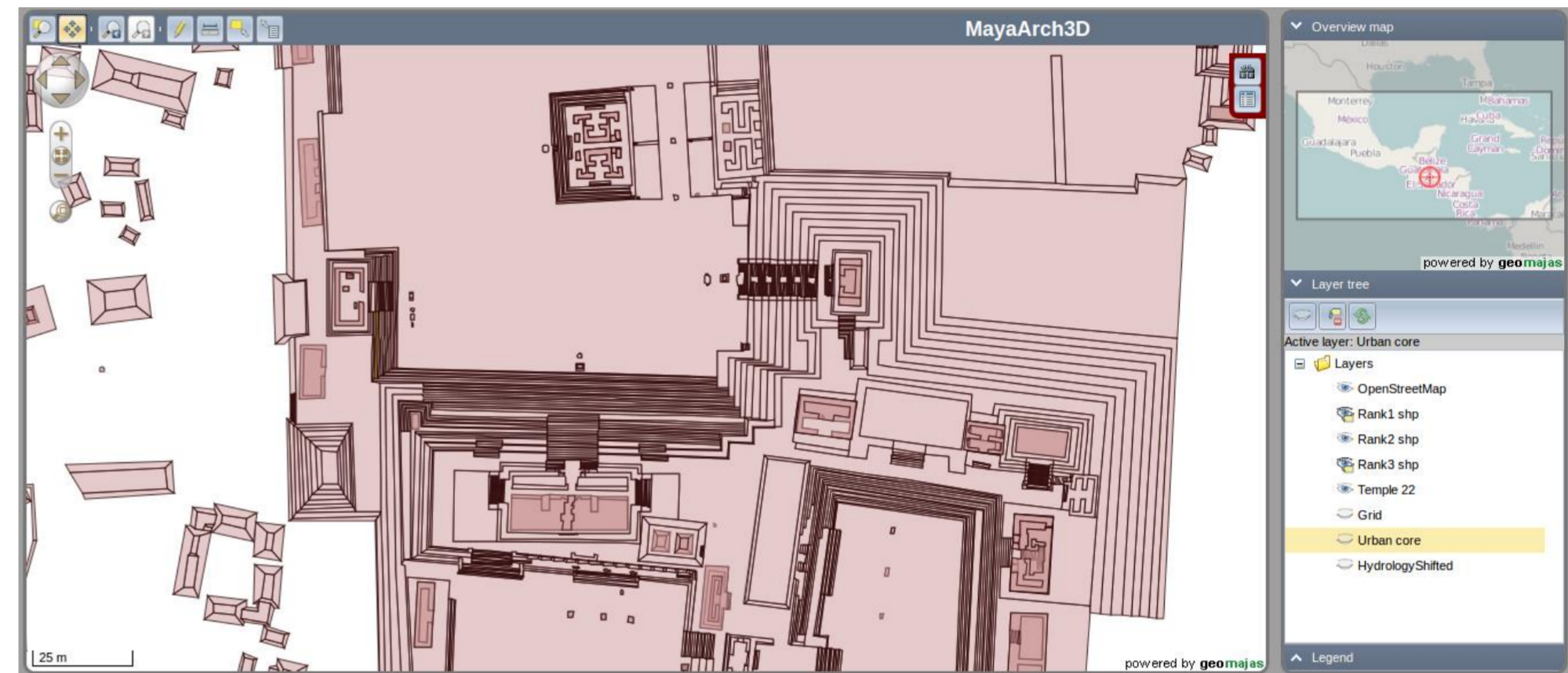
Michael Auer, Lukas Loos, Nicolas Billen, Alexander Zipf (University of Heidelberg)
 Jennifer von Schwerin, Markus Reindel (German Archaeological Institute)
 Heather Richards-Rissetto (Fondazione Bruno Kessler)

MayaArch3D is an interdisciplinary research project between the German Archaeological Institute and the GIScience Research Group of the Institute of Geography at the University of Heidelberg. The aim is to use 3D sensing technology and web based spatial data infrastructures to build a web based 3D platform to archive and document 3D archaeological objects in a georeferenced landscape .



Case Study: Copán, Honduras

The ancient Maya city of Copán and present-day UNESCO World Heritage Site is located in northwestern Honduras. From the 5th to 9th centuries, Copán was a cultural and economic crossroad and ruled by a dynasty of kings governing over 250 km².



Geobrowser with 2D data of the main civic-ceremonial complex

Project Goals

- IT-Infrastructure for archaeological objects in 3D
- 3D data acquisition and reconstruction
- Integration of multi-resolution and multi-format data
- Documentation and Archiving
- Spatio-temporal analysis and queries
- Web based platform with access levels for public and scientific community



Models of T22 in prototype of the web-based 3D front-end: Generated from 3D Studio Max (left) and from GIS data (right)

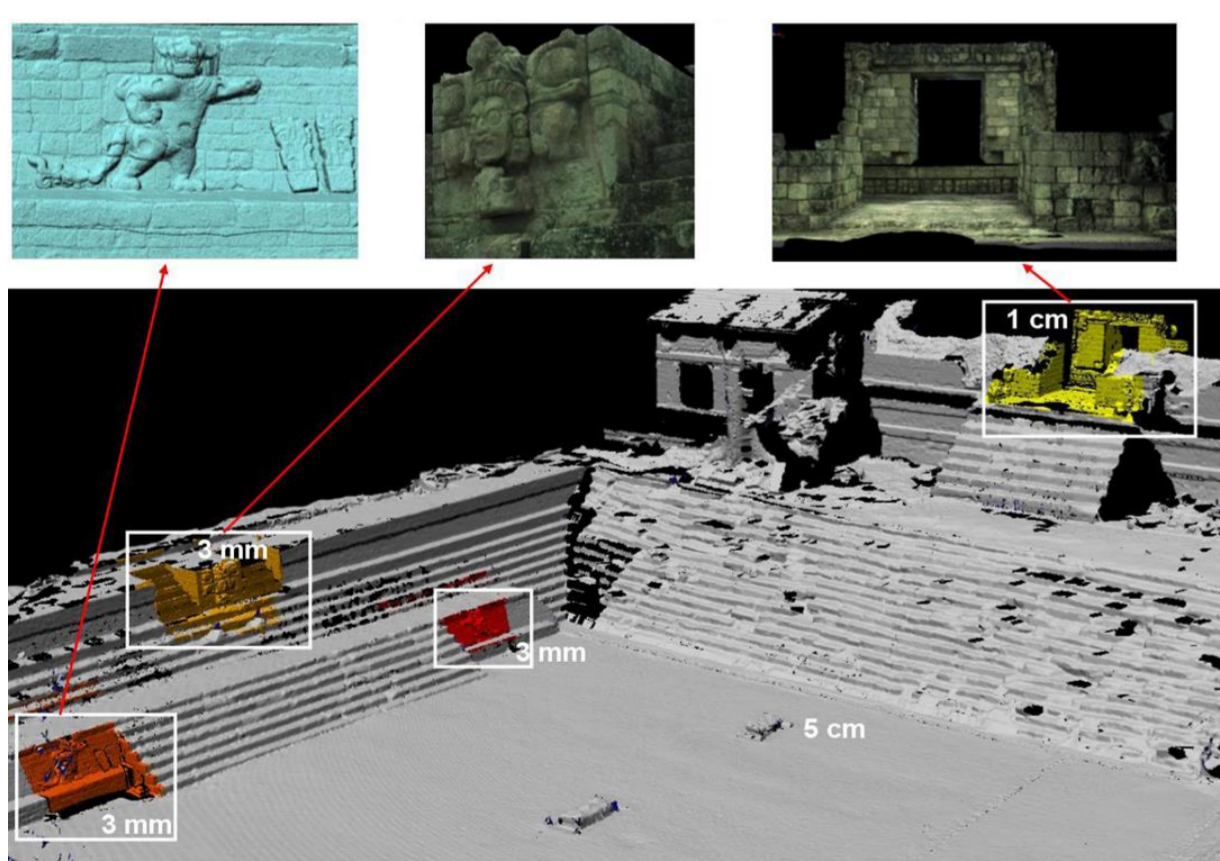
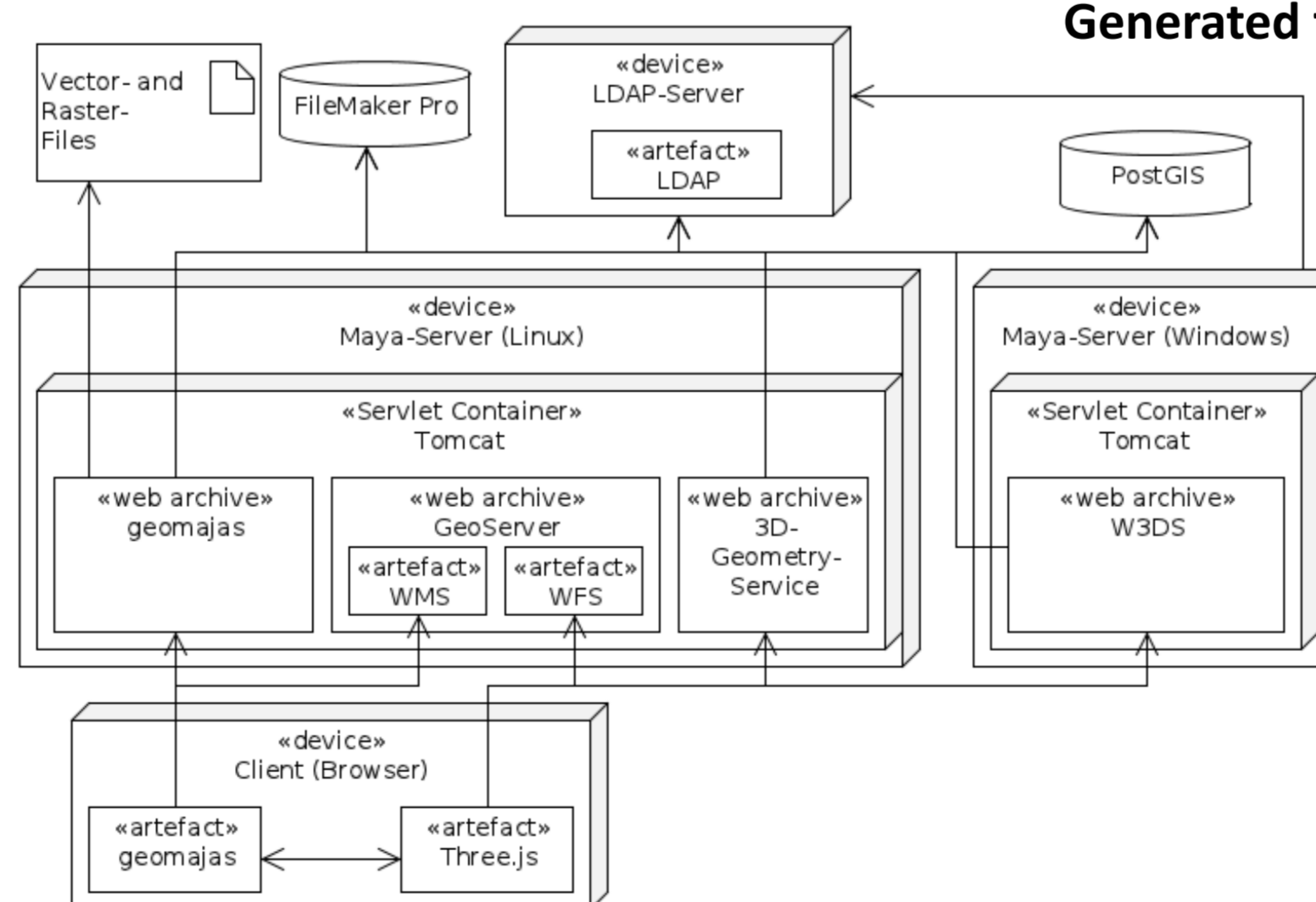
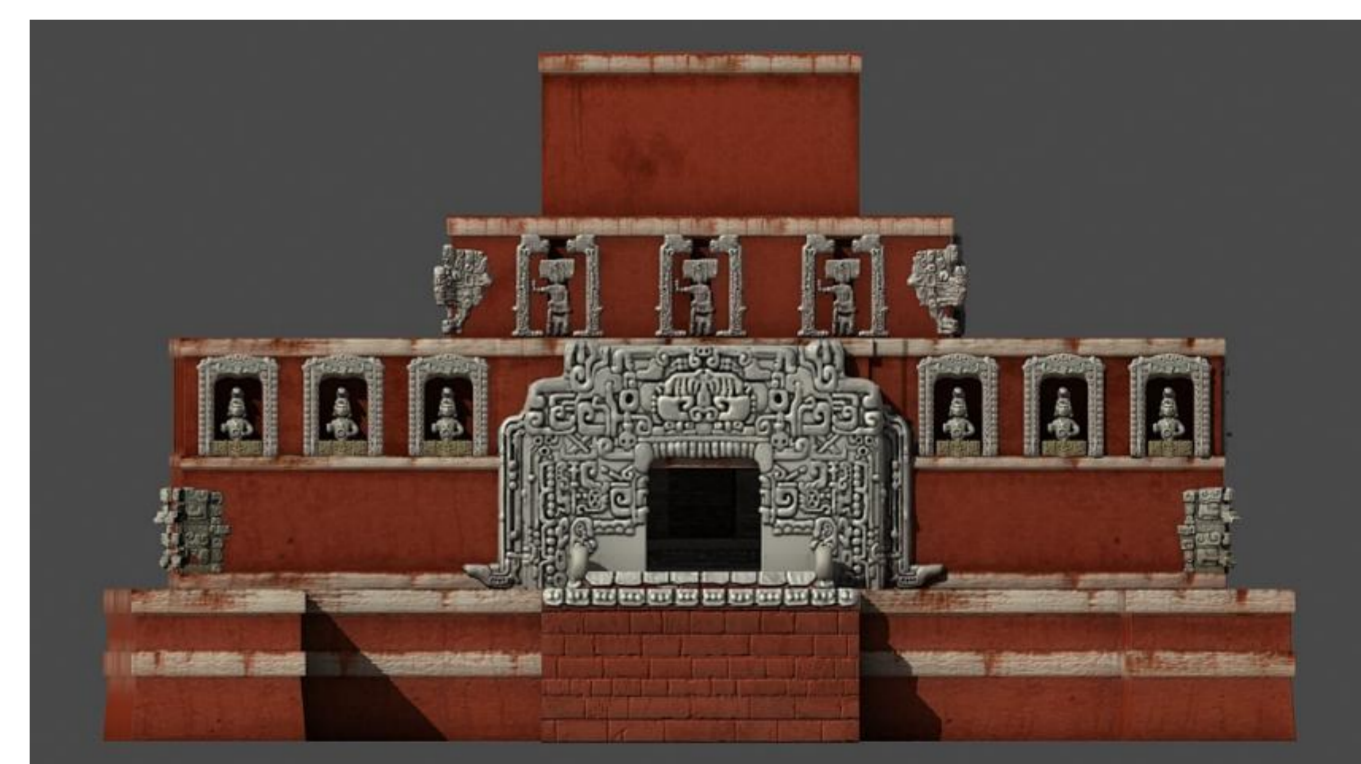


Photo and scanned model of stele A (top),
 Photo of the East Court (middle),
 Laser Scan of the East Court (bottom)



Architecture of the infrastructure



Reconstruction of Temple 22

The documentation of georeferenced 3D archaeological finds in temporal framework (4D) allows new types of spatial analysis. For example, 3D Visibility and Accessibility Analysis can reveal “hidden” complexities that inform on socio-political interaction and organization. Moreover, new interactive visual analysis tools to examine georeferenced inscriptions and sculpture enable micro-scale analysis of artifacts in their spatial and temporal contexts. Finally a web platform with user management system serves both the public and provides online access for collaborative research among Maya researchers.