

## **The Late Antique and Early Byzantine workshop- and milling-complex in Terrace House 2 of Ephesos (Turkey) - Documentation and analysis by means of 3D laser scanning.**

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The project, which was carried out at the Römisch-Germanisches Zentralmuseum Mainz between 2010 and 2012, focusses on the documentation and archaeological analysis of a Late Antique and Early Byzantine water-powered workshop- and milling-complex in Terrace House 2 of Ephesos.

By means of 3D laser scanning the current state of the whole feature was documented and the processed geometrical data were used for the archaeological analysis in the form of a point cloud. Narrow parts, complex structures, and small rooms of the feature could be surveyed efficiently using a 3D laser scanner. Additionally, panoramic images were recorded which render the possibility to color the point cloud helping to identify and understand the feature more easily in the model. The developed consistent 3D point cloud of the entire workshop- and milling-complex was used as spatial data base for analyses, reconstructions, and technical drawings, such as ground plots and sectional views for publications.

To deal with specific questions, e.g. to determine the course of the chute or the size and position of the waterwheels, it was essential to have the opportunity to work with the whole geometric data. For that purpose the data were exported to utilize them in an internet browser. By using a free of charge plugin they are available off line or in the internet. The interface can easily be operated and allows to measure and mark 3D distances and coordinates of single points within one scanner position. These can be saved and exchanged. In addition, using this technique a selection of the 3D data will be made available for common use.