

The Medieval Jewish Quarter in Cologne

A virtual reconstruction of 6000 m² of archaeology

Marc GRELLERT, Technische Universität Darmstadt, Digital Design Unit, Germany

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Introduction

The virtual reconstruction of large archaeological sites has a long tradition at the Digital Design Unit of the Technical University Darmstadt (Faculty of Architecture). Prominent examples are projects relating to the imperial tombs at Xian with a sub-project devoted to the Terracotta Army (2005 - 2007), Ephesus in Turkey (2007 - 2010) and the excavations at Tell Halaf, Syria (2013 - 2014).

For the MiQua Museum in the heart of Cologne – currently under construction – the Digital Design Unit is developing a virtual reconstruction of the medieval Jewish quarter of Cologne and the synagogue. The reconstruction is based on the excavations which cover an area of 6,000 m².

Archaeology and Reconstruction

Buried Structures

The reconstruction of the medieval Jewish quarter – situated in the immediate vicinity of the Rathausplatz – is a shining example of a scholarly reconstruction. Working closely together, the Stadtarchäologie Köln (Urban Archaeology Cologne), the research team of the MiQua museum project, the TU Darmstadt¹ and external architectural historians/building researchers are currently investigating the architectural history of the synagogue and the Jewish quarter² and developing exhibits for the planned museum. The most recent excavation results of the Stadtarchäologie Köln as well as earlier records of excavations and findings³ provided the basis for an initial digital model that presents a three-dimensional record of the findings within the museum area (Fig. 1). Among these findings are the vestiges of the Roman praetorium.⁴

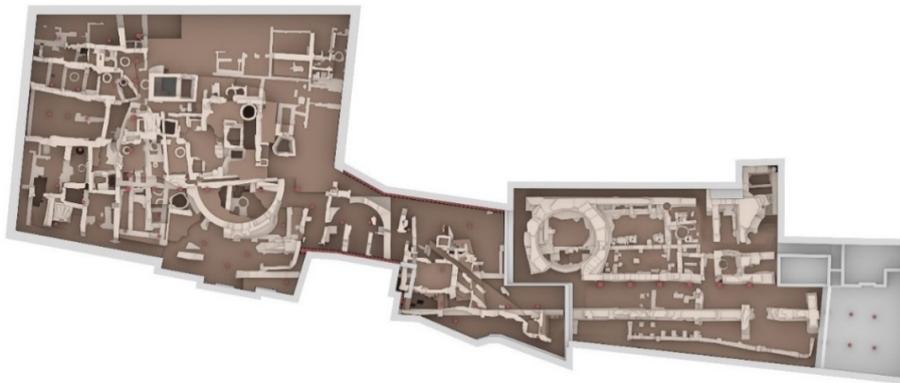


Fig. 1. Digital feature model (© Architectura Virtualis, Cooperation partner of TU Darmstadt).

Proceeding from this digital model, which consists primarily of cellar walls, the next step was to construct a model that included the site and the floor of the ground floor. Because there were only three spots that yielded information about the medieval street level, further sources had to be consulted to reconstruct the terrain. An architectural survey of the Rathausplatz, which had been part of the Judengasse ('Jews' Lane') in the Middle Ages, showed a ground slope. In a process of parallel translation this was shifted downwards until

¹ Darmstadt Team: Marc Grellert, Shoran Soltani, Norwina Wölfel. The Darmstadt team was given scientific advice by Pia Heberer and Norbert Nußbaum.

² For an overview of the research results regarding the Jewish quarter, see Kliemann and Potthoff (2019), Kliemann and Wiehen (2019), Potthoff and Wiehen (2018), Kliemann and Ristow (2018)

³ See Doppelfeld (1959)

⁴ For the most recent research into the Cologne praetorium, see Ristow (2019)

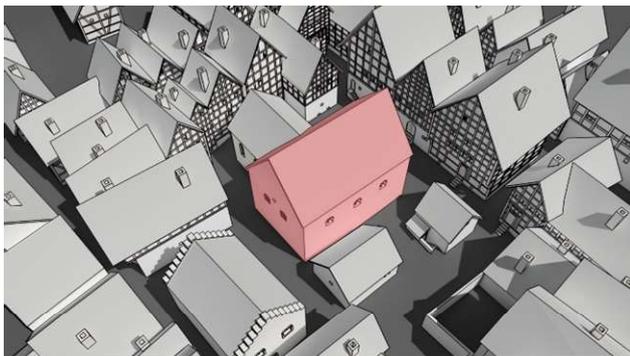
congruence with the three original heights of the medieval street level was achieved. Research into the architecture of the old city suggests that cellars were lit and ventilated above street level, so that the floor level of the ground floor probably lay between 50 and 100 cm above street level.

As the Jewish quarter was bigger than the excavated plots, the question arose as to whether it was possible to establish the footprints of further buildings. Comparison of the excavated cellar walls with the earliest, relatively precise map of the city of Cologne – the cadastral map of 1837 – yielded interesting results. Overlaying the archaeological findings with the cadastral map showed that the extant cellar walls are almost exactly congruent with the situation of 1837. For an abstract orthogonal representation of the Jewish quarter, further plot boundaries were hypothesised with the aim to delineate a typical medieval architectural structure. At the same time, these results were compared with earlier research into the Jewish quarter.⁵

Structures Above Ground Level

Although a plausible layout of the site and the floor plans had been developed, the question what the buildings actually looked like remained unanswered. An engraving of a panorama of Cologne in 1531 by Anton Woensam shows numerous half-timbered buildings. It is thus reasonable to assume that 200 years earlier – in 1349 – most buildings in Cologne and in the Jewish quarter were half-timbered. What little had remained of that into the twentieth century disappeared in the destruction of Cologne in the Second World War. The last systematic investigation of the old city of Cologne was undertaken before 1939. Hans Vogt's studies into the appearance of the medieval half-timbered houses suggest that the upper floors were jettied (Vogts 1966). Since Cologne no longer has any extant buildings of the period, might suitable examples be found in other locations? Limburg, a mere 120 km away, still has comparable half-timbered houses of the time around 1300. What's more, the team could draw on an extant comprehensive body of scholarly research including drawings of their original structures (Ebel 2002, Bormert 2002). These buildings served as models for the reconstruction of the rising walls.

The resulting picture of the Jewish quarter with half-timbered houses was complemented by what we know of a synagogue built in stone. Also reconstructed in stone are the women's synagogue the building above the mikvah, one residential building, the assumed bakehouse and the bathhouse.



a



b

Fig. 2. a) Simplified (comic-strip aesthetic) bird's eye view of the Jewish quarter with the synagogue highlighted in red, b) Atmospheric reconstruction of a corner in the Jewish quarter seen from a pedestrian's perspective
(© Stadt Köln, Dezernat Kunst und Kultur, VII/3 - Archäologische Zone/Jüdisches Museum, LVR-Jüdisches Museum im Archäologischen Quartier (MiQua), Technische Universität Darmstadt, Fachgebiet Digitales Gestalten).

⁵ See Kober (1920)

The question was how to deal conscientiously with the very hypothetical nature of the reconstruction of the buildings above ground level on the one hand and the visitors' need for vividness on the other. We believe our approach provides a paradigmatic solution to this problem. A bird's-eye-perspective overview presents the Jewish quarter with the communal facilities of the synagogue, women's synagogue, bakehouse, and *hekdesch* (hospital-cum-poorhouse) in black and white. The emphasis on the edges of the reconstructed buildings invests the overview with a certain comic-strip aesthetic that underscores the reconstructive character of the representation (Fig. 2 a). This is complemented by tracking shots from a pedestrian's perspective, in which the reconstruction is atmospheric and features a large number of details based on medieval examples, among them stone socles, stairs, doors, windows, roofing and guttering (Fig. 2 b).

The project team's decisions about the reconstruction process and the results will, once again, be documented on www.sciedoc.org, the documentation tool for virtual reconstructions developed in Darmstadt.⁶ A first publication is planned for 2019.

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⁶ See Grellert et al. (2019) and Pfarr-Harfst and Grellert (2016).