

## Modern rammed earth projects in Germany and Austria



### Room for prayer and reflection

#### St John the Baptist's Church, Refrath

The so-called "Room of Silence" was constructed of rammed earth from 2014 to 2015 at St John the Baptist's Church in Refrath near Cologne. The formwork, custom-made of beech shuttering boards, was used to encase walls that vary between 32 and 130 cm thick and extend to a height of approximately 5 metres. A total of 68 tonnes of rammed earth mass was used to construct the walls. The semi-oval form of the church and the various openings in the ceiling and walls give it a distinctive, modern character. The circular skylight allows daylight to illuminate the space while at the same time affording a glimpse of the neighbouring church tower from within the room. Different coloured glazing in the deep, splayed openings in the walls create a changing spectrum of light within the space, contributing to the special atmos-

phere of this space of reflection. The combination of the archaic earthen materiality and the technical



precision of its architectonic form achieve a satisfying blend of ancient and modern.

The construction of the rammed earth walls was especially challenging, in particular the construction of the formwork in the semi-oval form as well as the tapering openings for the windows. Using a specially constructed shuttering, similar to that used for concrete formwork, the basic figure of the walls was constructed within the surrounding rectangular space. The pre-mixed rammed earth mass was then filled in 15 cm layers into the shuttering and compacted using hydraulic rammers. 45 layers were re-

quired to reach the total height of the walls. 16 individually-constructed formwork elements were made to create the tapered window openings and the earth mass reinforced with geogrid mesh.

The use of rammed earth is also symbolic, embodying the realm of the earth, grounded in the everyday while the sky, visible through the circular skylight, symbolises the heavens and the Kingdom of God.

Designed by the architect Thomas Duda and built by Lehbau Glück, the final result is a distinctive space with a unique and special atmosphere.



**Rammed earth wall  
Hotel Hirsch in Fellbach**

Built in 2015-2016, the wall in the hotel is a rammed earth wall facing element with an integral fireplace and a large wall opening. The wall is 270 cm high and 10 cm thick and constructed using smooth concrete shuttering panels. The warm, archaic atmosphere of the rammed earth wall creates a wonderful transition to the modern seminar room in the room behind.





### Rammed earth wall

#### Hotel Hermann in Münsingen

A special feature of this approximately 30 m<sup>2</sup> large rammed earth wall is that it leads from inside to outside, from the foyer to the forecourt of the hotel. To protect the wall against the effects of rain, the top of the wall is protected with sheet metal wall coping and the rammed earth impregnated with a water-repellent agent. For the wall construction, ready-made shuttering panels made by NOE® formwork were used. The wall was constructed in 2010.



### Rammed earth wall

#### Köbelin Vineyard in Eichstetten

A rammed earth wall with a total surface area of 45 m<sup>2</sup> was constructed as a central feature of Köbelin Vineyard's tasting room. Built as a wall-lining element, it clads an open staircase, serving as the balustrade, and incorporates openings for a door and fireplace. In addition to constructing the formwork using concrete shuttering panels, steel lintels were also incorporated into the construction. A particular challenge of this project was the subconstruction necessary for the wall openings, stair lining and the open fireplace.





**Prefabricated rammed earth elements**

**Brunner showroom, Eggenfelden**

For the sales area of the fireplace and stove manufacturer Brunner Eggenfelden, Lehmbau Glück combined the construction of an in-situ rammed earth with the mounting of prefabricated rammed earth wall and ceiling vault elements, made by Eder Rammed Earth Elements to create a harmonious interior. The unadorned walls and vaulting and tall narrow splayed openings give the interior a character reminiscent of Romanesque churches.







**Rammed earth walls,  
Feuerstein Funeral Undertakers, Bludenz, Austria**

In 2009 and 2010, Lehmbau Glück realised a series of rammed earth elements for Feuerstein Funeral Undertakers in Bludenz, Austria. In the two funeral chapels, two rammed earth wall elements were erected, one 42 m<sup>2</sup>, the other 30 m<sup>2</sup>, each 15 cm thick. A special formwork system was constructed using shuttering panels and geogrid mesh was incorporated as reinforcement. A horizontal damp proof course was included at the base of the wall elements.

A particular challenge of this project was an approximately 18 m long and 5 m high rammed earth wall that extends from inside to outside. The external section, with a surface area of 77 m<sup>2</sup> is 42 cm thick and incorporates an insulation core. In the interior (surface area 81 m<sup>2</sup>), the wall narrows to a thickness of 18 cm. The wall is held with steel columns and cross beams, and the wall incorporates horizontal brick courses and a special geogrid mesh. To protect the wall against the effects of rain, a metal plate covers the top of the wall and the rammed earth wall is impregnated with a stabilising agent. In addition, individual, approximately 3 cm thick lime layers were added to act as a water barrier. The wall incorpo-

rates an insulation core of foamed glass granulate where it borders the interior spaces, as well as steel reinforcement to distribute the load of the skylight. For the shuttering, ready-made aluminium shuttering elements by Noe Formwork were used, mounted predominantly horizontally. Here too, rammed earth serves a symbolic function in the context of the funeral undertakers, symbolising the earth to which the deceased returns.





Rammed earth wall, Feuerstein Funeral Undertakers, Bludenz, Austria

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