

Location: D-08451 Blankenhain
Planning: Eckhard Beuchel, Crimmitschau
Earth building: self-build / Lehm bau Beuchel
Construction: 1992-1995



The Old Water Mill, Rußdorf



Earth oven

The former water mill is situated at the foot of a long strung out village wedged between a stream and pond on one side and a wooded incline to the rear. The village of Rußdorf is dominated by three large ponds which like the stream were once used to power the mill. The village buildings are mostly spread out in clusters of three-sided courtyards. The retention ponds and the wier as well as the mill-channel are still part of the mill though now partially blocked.

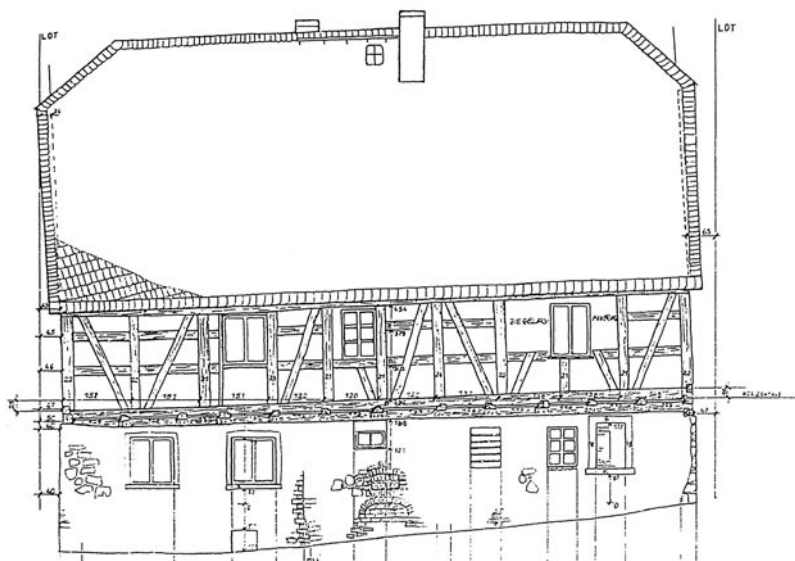
All milling machinery was removed from the mill in a first conversion of the mill to a farmhouse between 1947 and 1948. In its current form, the upper floor and roof space of the building is a half-

timbered construction with earth infill panels with a mixed brick/stone masonry ground floor. Research and historic finds in the building (including an original profiled wooden ceiling which was built with re-used timber joists – the old peg-holes are still visible) suggest that the previous building was a so-called Umgebindehaus from 1688 which was changed and extended in 1760. An Umgebindehaus is a hybrid construction of a Germanic timber-frame house built over and around a Slavic log-cabin type ground floor.

The house now contains living quarters in the upper floor and roof, a flat for visitors on the ground floor and an office where the milling machinery once was.



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Building survey showing deformation, Rear elevation



External render with prick patterning

The building has been completely renovated. The half-timbered construction was repaired and previously made inappropriate changes were corrected. The original infill panels were repaired or replaced using traditional techniques (vertical stakes without willow weave). To improve the thermal properties of the external walls a second inner layer of straw-clay reels (straw-clay wrapped around horizontal battens to form elongated reels) was applied from the inside. All ceilings, sloped roof surfaces and internal walls were plastered using earthen plasters in a variety of different techniques in order to improve the indoor air climate. The terracotta and flagstone floor at ground level is also laid in a compacted earth bed.

The half-timbering was left visible on the outside with the infill panels finished with an earthen render mixed with a proportion of horse manure. Eight years on the infill panels do not show any signs of wear and tear. Using a large wooden fork or comb a pattern was pricked into the

still wet plaster. This is an old traditional technique and serves three purposes: it increases the moisture absorbent surface area, it helps to reduce stresses which form in the surface of the plaster as it dries (the same principle used when cutting into bread before baking), and it also serves as an attractive decoration giving the building a unique identity.

The building is heated using a wood-pellet-fired central heating using integrated wall and floor heating as well as long radiation convectors at skirting board level. A wood-fired stove in the upper floor heats a large bench formed out of earth providing pleasant radiative warmth in the living rooms. It can also be used as an auxiliary heating source. An earth oven for baking bread was also reconstructed with a roofed covering.

All earthen material was sourced from the site or nearby surroundings. A large proportion of all earthen building works were carried out by the client and friends as self-build.



Repairing the timber-frame infill panels

Usable floor area: 280 m²
Building costs: ~300 000 €
Heat demand: 77,5 kWh/m²/Jahr



Former living room with original wooden ceiling



Wood-fired stove and hot air heated bench