

Living in a wooden box – Late Medieval log-houses in central Switzerland and northern Tessin

Wohnen in der Holzkiste – Spätmittelalterliche Blockbauten
in der Zentralschweiz und im Nord-Tessin

Vivre dans une boîte au bois – constructions en madriers tard-médiévales
en Suisse Centrale et au Nord du Tessin

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In two neighbouring regions, houses having a special type of construction –so-called visible floor-planks – have been identified as being especially old. Some of them date back to the 12th century.

The following contribution will present the most characteristic elements of these early buildings and add new information on the spread of this type of construction. Detailed analysis of several houses permits a view of living conditions since the late middle-ages. Subsequently I will try to sketch out constructive relations between them and late bronze-age houses in Zug and Zurich.

During „Bauernhausforschung“ research - (investigation of old farm houses) - in central Switzerland I found a group of log houses with a special type of construction: all the ends of the floor planks extend through the façade and are visible on the outside of the wall. The houses also have irregular beam ends. Dendrochronological analysis produced a surprising result - all houses of this special type were built before 1500 and some of them as long ago as 1176 and 1287 (fig. 1 and 10). Most of these houses have retained a very high portion of their original wooden construction from the cellar to the roof. They also display room arrangements intact from the time of construction. This permits more than just studies concerning carpentry and building technology, since original door and window openings, spaces and room

partitioning give an idea of what living conditions people must have been subject to 900 years ago.

In the northern part of Tessin, Giovanni Buzzi and Alain Orcel found houses of similar construction, reaching back to the 14th century. Fotos and sketches of houses in Graubünden and South Tirol (Italy) display the same type of construction, but the houses have not yet been analysed.

Archeologists have excavated foundations and remains of wooden houses built on platforms such, for instance, as Feedersee Moor (1100 BC) or Greifensee-Böschen (1048 BC). So we might ask if log buildings with visible floor plank ends might not be a carry-over or preservation of an ancient method of log-construction.



Fig. 1. Log building having floor plank ends visible on the exterior. No attic under ridgepole. House Nideröst in Schwyz, 117d. Photo B. Furrer 2000.



Fig. 2. Wedge plank for clamping internal floor planks tight. Silenen (UR), 17th/18th century. Photo B. Furrer 1980.

General aspects

In what follows I will treat only dwelling houses (no utility buildings) and only log constructions¹. I certainly need not explain how an ordinary log building works: Nearly 99.9 % of all log-cabins are fitted with floors which are not visible on the outside of the house, with one exception:

Sometimes a small gap remains visible. It served to accommodate a tapered plank, inserted from the outside as the last one through the wall (*fig. 2*). This plank can be struck in by a mallet and wedges all the other planks already in place into a groove or slot. Since these elements are well known, I will not treat them further.

Of more interest are houses in a rather tight formation which are equipped with a different type of floor construction. They are assembled in such manner that the plank-ends are visible from the outside of the house, all along the façade (see *fig. 5*). The interconnection of the individual planks is formed by rabbet or tongue-and-groove. Based on several dendro-analyses, we know that this type of construction was used in houses built in a period prior to 1500. At least two houses reach back to the 12th century. In fact, the eldest was built in 1176² (*fig. 1*).

The following map shows a concentration of such houses in the region Schwyz/Uri and another in the Blenio valley of northern Tessin. There are several reasons for this³. Houses in central Switzerland of that type were always used year-round and are situated on the valley floor, no higher than 850 m above sea level. They comprise a cellar, a ground floor with living space, bedroom(s) and the kitchen (and perhaps a few



Fig. 3. Multi-purpose farm house having floor planks visible on the gable side. Villa di Dagro (Malvaglia), 1399d. Photo B. Furrer 1980.

pantries), as well as an upper floor with five bedrooms or attic storerooms. There are no rooms in the gable peak and the lateral galleries are more than two meters wide.

Indeed the buildings in the Blenio valley display a difference to those in central Switzerland in that they unify the dwelling part with the hay barn, stable and granary (*fig. 3*). Stables are situated on the ground-floor, above them a hay-mow, a gallery and one or two granaries. The living part including a kitchen and two heatable rooms normally lies at one gable end, towards the hillside. The stove must be fired from the outside directly (not from the kitchen).

In contrast to central Switzerland, dwellings of this type are to be found at different altitudes or levels of agriculture which in turn determines the mixture of rooms. Topography in Val Malvaglia demands a specialised kind of agriculture and an emplacement of the buildings suited thereto. Villages in the region are mainly small. Buildings stand with their gables parallel to the slope. Utility portions of the buildings are disposed lower, dwelling portions higher on the slope. They seem to piggyback the utility portions⁴ (*fig. 4*).

¹ Visible floor-planks are also known in timber-framing (for instance, Zug Burg and Zug Stolzengraben).

² There are also frame-work constructions with floor-plank-ends, visible from the outside, as for instance in Zug, Burg, 15th and 18th century or Zug, Stolzengraben 16th century.

³ Literature: Furrer 1988; 1994; Descoedres et al. 1996; 1998; Buzzi 1993.

⁴ Buzzi 1993: Blenio.



Fig. 4. Multi-purpose farm house with stall, barn, lateral gallery, granary and dwelling. Olivone, Solario. Photo J. Hunziker about 1890.



Fig. 5. Floor planks visible in elevation as well as irregular tie planks in a house in Morschach, Tannen, 1341d. Photo B. Furrer 1984.

The details of construction

Apart from the visible ends of the floor-planks, the houses are characterised by further elements of construction:

An odd number of cantilever heads, i.e. only three per floor (fig. 5).

No chamber under the gently sloped roof (usable space, but no defined room).

High door sills and low door headers with correspondingly small door openings. Some examples have an opening only 1.11 m high (fig. 6).

Small openings, used as windows, shuttered by a board⁵ (fig. 7).

Four of the documented houses are fitted with a ridge post (Firstständer).

Interpretations and some aspects of living in wooden boxes

I would like to recall some of the elements of construction presented and try to give an impression of the consequences thereof in everyday life.

I will start with the most important space, the fireplace space. Actually I neither intend to speak of a room nor to employ the term „kitchen“. The illustration shows why: Instead of a kitchen-space, I would like to speak of a space associated with a fire place. All houses so far analysed have had their original fireplace situated in front of the rear wall. That is to say, we found no traces of fireplaces at any other location, especially not at a central location.

The volume or space considered as „kitchen“ is open up to the roof and it may be free of any other sub-division or compartment, or may contain one or two little box-like rooms which must have served as pantries or storerooms (fig. 8). There can have been but very little light coming through narrow slits.

⁵ Furrer 1998, pp. 139-149.

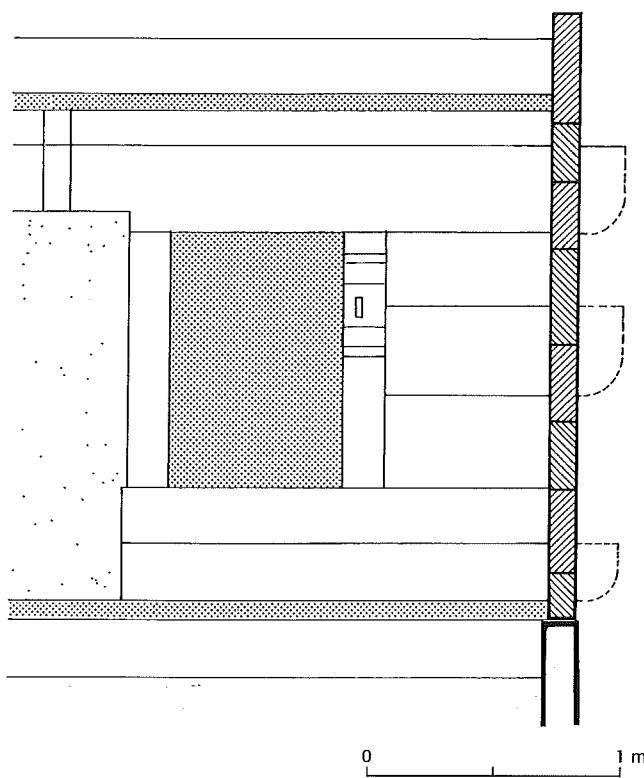


Fig. 6. Door between living room and kitchen space in the ground floor. Steinen, Herrengasse 17, 1200d.

A similar type of „kitchen“ was still being built in the early 19th century (1807, fig. 9).

As a matter of fact, we know of at least one example (Schwyz-Ibach 1336) where the „kitchen“ had the only fireplace and was therefore the only room in the house to be heated. What led us to this conclusion? The surface of the original floor planking of the most spacious room (later called the „Stube“) displayed traces of wear and attrition throughout. After removing the stove of 1777 we observed that the plank surfaces were also worn out under the stove. Carrying timbers dating from 1400 imply that the first installation of a massive stove took place sixty-four years after the building of the house in 1336.

So how did the inhabitants manage to keep warm in winter? Do we have to consider other heating systems, like movable fire-pots?

Due to the very tininess of the „windows“, people could not expect to have much light in their rooms either. The kind of work which could be executed in the rooms must have been limited.

And again the question of high doorsills - is this only a matter of technical or climatic considerations or do we have to consider elements of magic or superstition?⁶

Another remarkable fact remains to be mentioned. At least three examples show a later replacement of the sub-structure, the stonewalls of the basement (Schwyz, Ibach wooden parts 1336 substructure

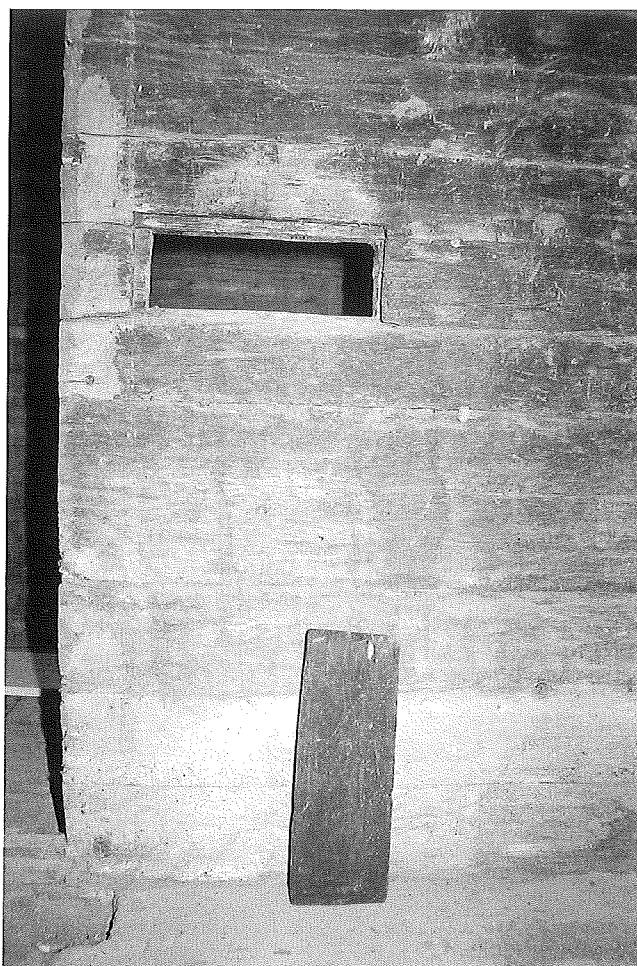


Fig. 7. Living room window, port in side wall of house; insertable cover board. Schwyz, Ibach, 1336d. Photo B. Furrer 1995.

replaced 1400; Schwyz Bethlehem wooden parts 1287, substructure replaced 1544 (fig. 10). Other examples in Steinen, Acher 1348 and Morschach, Tannen 1340).

But only for the Bethlehem house in Schwyz could we find a connection with social and economic processes to explain this. In 1544, in order to gain a representative and therefore painted room in the basement, the then-owner Dietrich in der Halten had the stone basement demolished and replaced by higher walls. The new cellar room served as a kind of recruiting-office for mercenaries. For the other houses we found no reasons other than simple repairs after damage or destruction.

The Acher house in the village of Steinen, built in 1348, had a room on the upper floor level with a lateral door, accessible from the arbor or gallery. The vertical access system could have been managed by stairs and ladders inside the house. But in some cases we also have to consider external access through the arbor and doors situated in the lateral wall on the upper level (Hocheingang).⁷

⁶ Descoedres – Furrer – Keck – Wadsack 1998: Zu einem spätmittelalterlichen Holzbau in Steinen. Das ehemalige Haus „Acher“ an der Kreuzstrasse 8. In: Mitteilungen des Historischen Vereins Schwyz, Heft 90, p. 55-83.

⁶ Descoedres – Furrer – Keck – Wadsack 1998: p. 82.

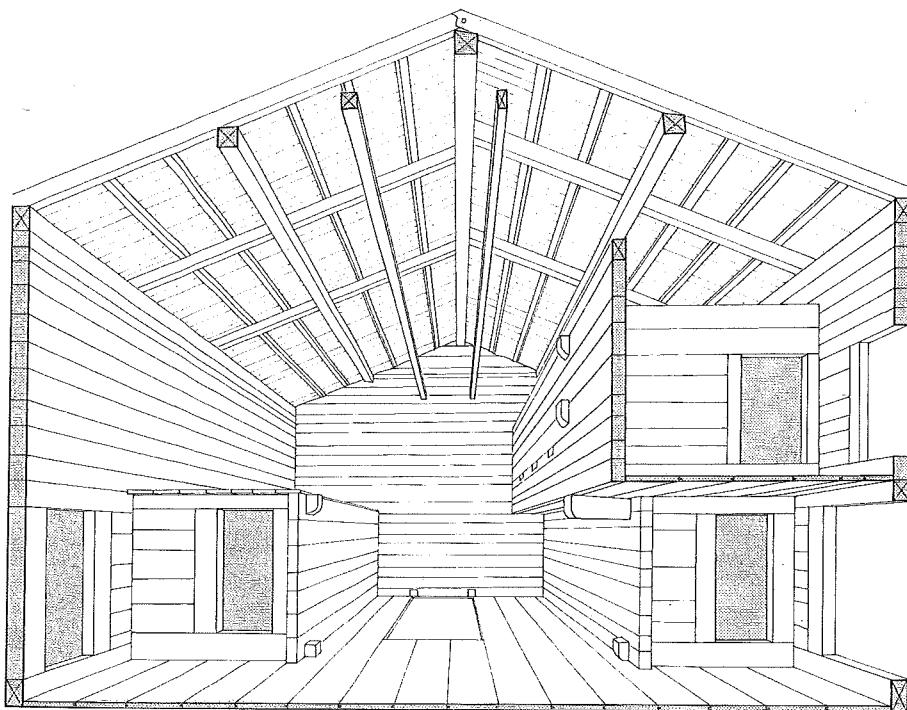


Fig. 8. View of kitchen space ("smoke kitchen") with pantries. Schwyz, Ibach 1336d (now in open air museum Ballenberg).

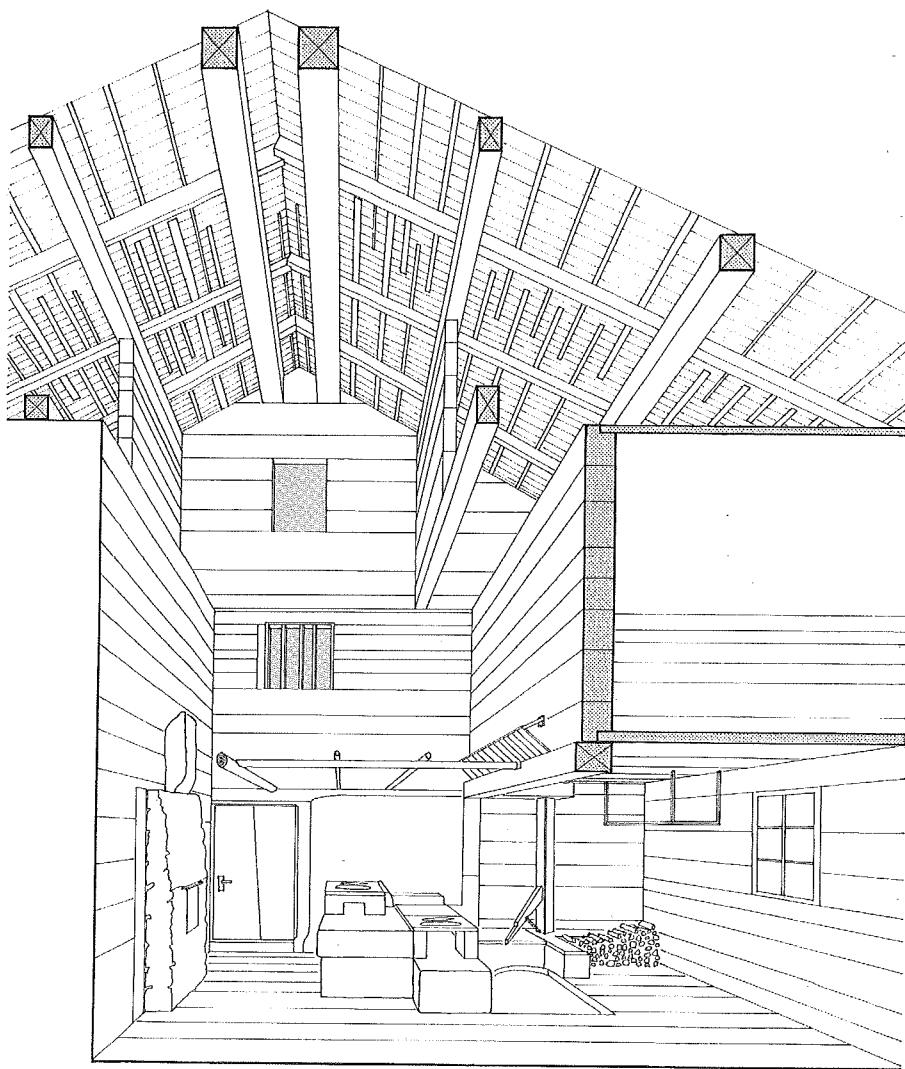


Fig. 9. Kitchen space ("smoke kitchen") in a farm house of 1807. Muotathal, Hilträteren.



Fig. 10. House "Bethlehem" in Schwyz, 1287; basement renewed with greater height, 1544. Photo B. Furrer 1987 (before restauration).

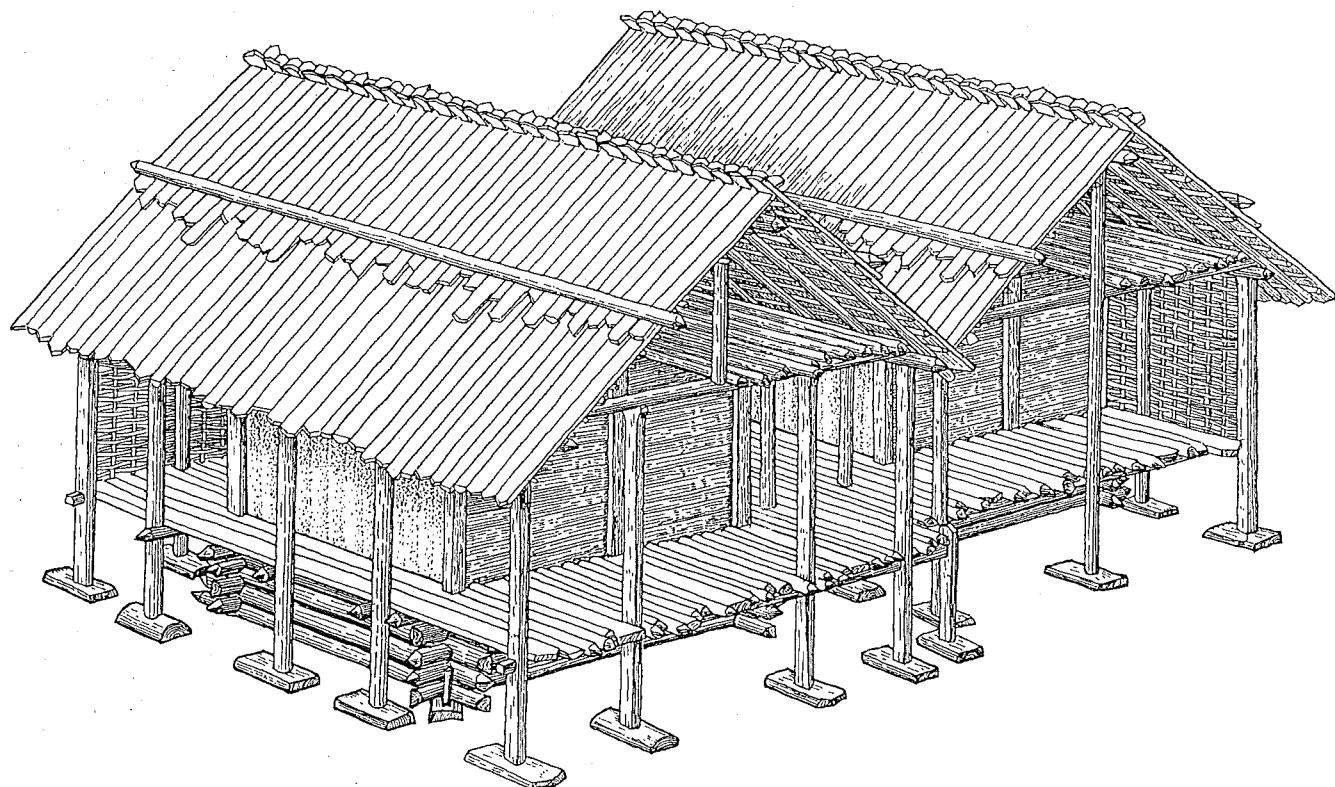


Fig. 11. Log frame foundations and surrounding posts on bearing shoes support a platform upon which houses are built. Reconstruction according to findings in Greifensee-Böschen (about 1045 BC). After *Helveticia Archäologica* 113, 29/1998, p. 7.

Conclusions and open questions

Log cabins of a certain type of construction, notably with plank ends visible on their façades, are very old and reach back to the 12th century. Most frequently they were built and are to be found in a small region of central Switzerland and northern Tessin. Some few examples have been discovered further east and in

South Tirol. Unfortunately the latter have not yet been analysed and dated.

Finally I would like to compare late medieval log houses having visible floor plank ends with similar constructions known from archaeological sites.

Structures of prehistorical buildings with platforms were found, for instance, in Federsee Moor (about 1100 BC, Rinerth 1929). The log structures in combination



Fig. 12. Floor planks protruding on the side of a house to serve as gallery and access landing. Multipurpose farm house in Ponte Valentino (Blenio, TI). Photo B. Furrer 2001.

with surrounding posts in Greifensee-Böschen (ZH, 1048 BC) led archaeologists to a reconstruction with platform-based settlements or houses (fig. 11).⁸ Haio Zimmermann published the picture of a log granary from northern Hokkaido (Japan) situated on a platform⁹.

I know that direct relations between prehistorical and medieval building methods cannot be made. There are long periods of missing links. All the same we can ask, whether the type of construction with visible plank-ends had an incredibly long tradition or simply arose independently for practical reasons? I know of several utility buildings which show platform construction in a very evident way. Particularly some buildings in the villages Dandrio and Anzano in Val Malvaglia (TI) or in Ponte Valentino have floor planks prolonged about 50 cm on the longside of the gallery. These planks and the stones of the basement walls form a small access-way to the drying-gallery and the granaries/sleeping quarters (fig. 12-13).

⁸ Ruoff 1998, p. 7.

⁹ Haio Zimmermann 1998: Pfosten, Ständer und Schwelle und der Übergang vom Pfosten- zum Ständerbau. Eine Studie zu Innovation und Beharrung im Hausbau. In: Probleme der Küstenforschung im südlichen Nordseegebiet, Band 25, Oldenburg, p. 25.

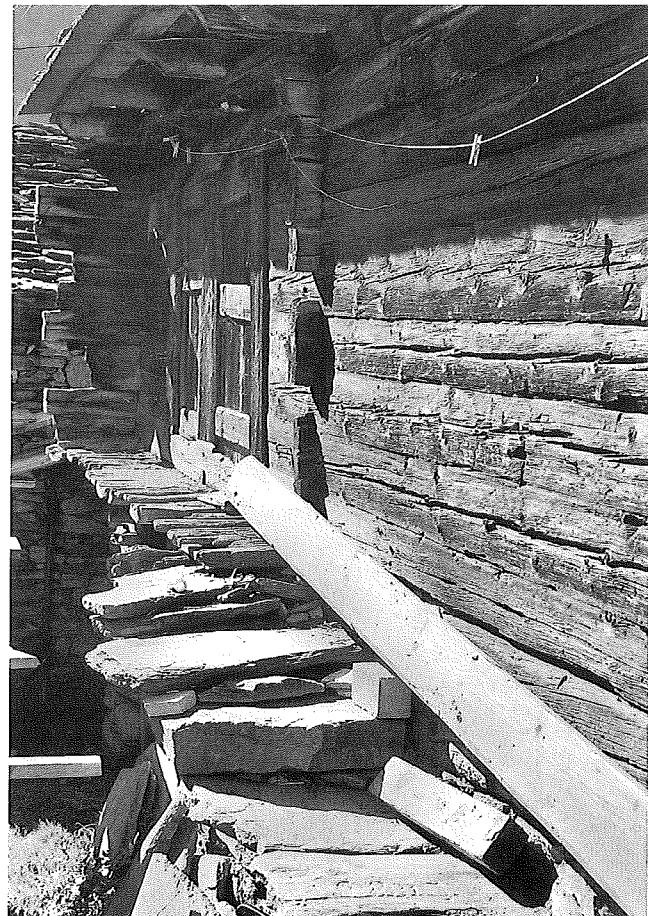


Fig. 13. Access to granary via basement wall and protruding floor planks in a multipurpose farm house. Dandrio, Malvaglia (TI). Photo B. Furrer 2001.

Zusammenfassung

In Verlaufe des Projekts „Bauernhausforschung“ in den Kantonen Uri, Schwyz und Zug bin ich auf eine Gruppe von Wohnhäusern gestossen, die in Blockbauweise erstellt eine konstruktive Besonderheit aufweisen: Sämtliche Boden-/Deckenbohlen sind dabei fassadensichtig verlegt und die Balkenköpfe der Zimmertrennwände stoßen lediglich an zwei bis drei Stellen durch die Giebelwand. Dendrochronologische Reihenuntersuchungen haben gezeigt, dass alle Bauten mit diesen Merkmalen vor 1500 entstanden sind, eine grössere Gruppe im 13. und 14. Jahrhundert. Die ältesten beiden Häuser datieren von 1176 bzw. 1287. Alle Häuser weisen einen sehr hohen Anteil an originaler Bausubstanz vom Keller bis zu Dach auf. Dies erlaubt nicht nur einen Blick auf spätmittelalterliche Zimmereitechniken. Bauzeitliche Tür- und Fensteröffnungen sowie Raumeinteilungen vermitteln auch eine Idee davon, in welchen Wohnverhältnissen damalige Menschen gelebt haben.

Im Bleniotal (Nordtessin) sind Giovanni Buzzi und Alain Orcel auf Bauten mit dichten Konstruktionsmerkmalen gestossen und die dendrochronologischen Untersuchungen ergaben Fälldaten zwischen dem 14. und dem 18. Jahrhundet. Darüberhinaus belegen vereinzelte Fotografien und Zeichnung typologisch gleichartige Bauten auch für Graubünden und das Südtirol, wobei dort aber Datierungen und bauanalytische Untersuchungen weitgehend fehlen.

Aus archäologischen Grabungen sind Strukturen bekannt, wo Häuser auf einer hölzernen Plattform errichtet worden

sind, z.B. Federsee Moor (D) oder Greifensee-Böschen (CH). Es stellt sich die Frage, ob die spätmittelalterlichen Häuser mit fassadensichtigen Boden-/Deckenbohlen eine Art Fortführung frühgeschichtlicher Baumethoden darstellen. Insbesondere bei Speicherbauten ist diese Konstruktion noch bis ins 18. Jahrhundert angewendet worden. Sowohl bei Wohn- als auch bei Ökonomiebauten können Bodenbohlen, welche über die Fassaden hinausreichen, eine Arbeits- oder Zugangsplattform bilden.

Résumé

Au courant du projet „les maisons rurales“ du canton d'Uri, Schwyz et Zug j'ai découvert un groupe des maisons avec des particularités dans leur construction; tous les planchers passent en façades. Les analyses dendro indiquent que les constructions de ce type étaient faites avant 1500, la plus part au XIII^e et XIV^e siècles. Les plus vieux bâtiments datent de 1176 resp. 1287 (Schwyz). En portant un taux très important en matériel original les bâtiments nous invitent de reconnaître non seulement certaines manières médiévales de bâtir; ils permettent aussi de se faire une image des conditions d'habiter à cette époque.

Giovanni Buzzi et Alain Orcel ont analysé et décrit des constructions analogues de la vallée de Blenio dans le nord du Tessin. Non seulement il est étonnant de constater des constructions en madrier dans une région rurale, qui est dominée depuis long temps par les constructions en pierre. Les bâtiments de la vallée de Blenio forment en plus des fermes polyvalentes dans une structure agricole traditionnelle assez compliquée, mais typiquement alpine. Dans les maisons complexes sont assemblés des chambres de séjour, des greniers, granges, galeries et en sous-sol des étables. Des bâtiments portant les mêmes éléments de construction sont connus au Grisons et Tirol du Sud, mais rarement datés ou analysés à fond.

Certains sites archéologiques comme par exemple Federsee Moor (D) ou Greifensee-Böschen (CH) montrent des structures qui laissent penser à une construction, qui combine des soubassements en madriers et poteaux, surmontés d'une plate-forme. On peut se demander si les bâtiments récents avec des planchers passant en façade forment une sorte de continuation des méthodes de constructions toutes anciennes.

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