

CPAT Report No 906

Yr Hen Danerdy, Machynlleth, Powys

ARCHAEOLOGICAL SURVEY



THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

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N W Jones
February 2008

Report for the Machynlleth Tabernacle Trust



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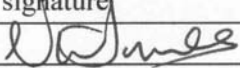
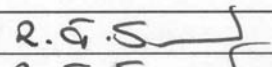

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NON-TECHNICAL SUMMARY

A programme of the building recording was undertaken at Yr Hen Danerdy, the old tannery, in Machynlleth on behalf of the Machynlleth Tabernacle Trust, with financial support from the Heritage Lottery Fund. The survey was conducted in connection with proposals to convert the building into a new gallery and store for the Museum of Modern Art which occupies the former Tabernacle chapel, immediately to the south of the former tannery. The survey included the following elements:

- a detailed building survey comprising a drawn, written and photographic record of the standing building
- a ground penetrating radar (GPR) survey of the interior of the southern range, together with a single profile to locate the external pits

Machynlleth had a long association with the tanning industry which can be documented from the 17th century until the early 20th century, although it is likely to have a much longer tradition. During the 19th century the tanning industry seems to have been centred around Heol Penrallt, and in particular the area known as Maes Glas. Although the documentary evidence clearly indicates the presence of tanning in this area from the 17th century, it is not possible firmly to associate the industry with this particular site. It seems likely that the building now known as Yr Hen Danerdy was constructed as a purpose-built tannery in 1819 and remained in operation until the end of the 19th century. Originally comprising two ranges forming an L-shape, part of the eastern range has since been demolished.

Based on the surviving evidence, and through comparison with the contemporary Rhaeadr Tannery, it has been possible to give an indication of how the tannery would have operated, although there is insufficient evidence to determine the function of all of the rooms within the building.

Five pits are known to have existed in the yard, and these may well have contained a lime solution used in the early stages of processing. The removal of hair and flesh from the hides would have been carried out in the 'beam house', which may have occupied the now demolished section of the eastern range, or possibly part of the southern range.

The tanning medium was a mixture of ground oak bark and water and the ventilation slots on the first floor at the southern end of the eastern range suggest that this is where the bark was stored.

The GPR survey identified two rows of three pits within the southern range which are likely to have contained the tanning solution. The first floor above the pits was the drying room where the tanned leather hung to dry on tenter rails. The room was well ventilated, with the air flow controlled by adjustable louvred vents. This range is also likely to have been the location of the currier's workshop, where the leather was finished according to its final usage.

Although the interior of the building has been largely gutted, and part of the eastern range demolished, there is still significant potential for the survival of buried features contemporary with the tannery and these may be affected by the proposed conversion.

1 INTRODUCTION

- 1.1 In November 2007, the Field Services Section of the Clwyd-Powys Archaeological Trust was invited by The Machynlleth Tabernacle Trust to undertake a programme of archaeological survey at Yr Hen Danerdy, the old tannery, in Machynlleth. The survey was conducted in connection with proposals to convert the building into a new gallery and store for the Museum of Modern Art, which occupies the former Tabernacle chapel immediately to the south of the tannery. The project was undertaken with financial support from the Heritage Lottery Fund.
- 1.2 The former tannery lies in the Maes Glas area, to the east of Heol Penrallt, north of the town centre (SH 27463009). The building probably dates from 1819 and has been largely gutted internally, and part of one range has been demolished. Nevertheless, the building still retains significant detail relating to its original function, include evidence for the original bark store, office, and hide preparation and drying areas.



Plate 1 Aerial view of Machynlleth with the old tannery building visible towards the top, behind the Tabernacle. Photo CPAT 03-c-0759

- 1.3 The requirements of the survey were the subject of a brief (BUI 675) produced in August 2007 by Mr M Walters, of the Curatorial Section of the Clwyd-Powys Archaeological Trust. The brief had specified that a programme of trial excavation should be undertaken to investigate the interior of the building, along with the yard area to the rear where five tanning pits are known to have existed. Following discussions with the client, and with the agreement of Mr Walters and the Heritage Lottery Fund, it was decided that a more practical approach would be to conduct a ground penetrating radar survey in these areas, although the evaluation of the tanning pits remained a possibility. Following further research, and the results from the radar survey, it was decided that the pits were located too close to the boundary wall and were buried beneath too great a depth of building rubble to warrant excavation.

2 THE TANNING PROCESS

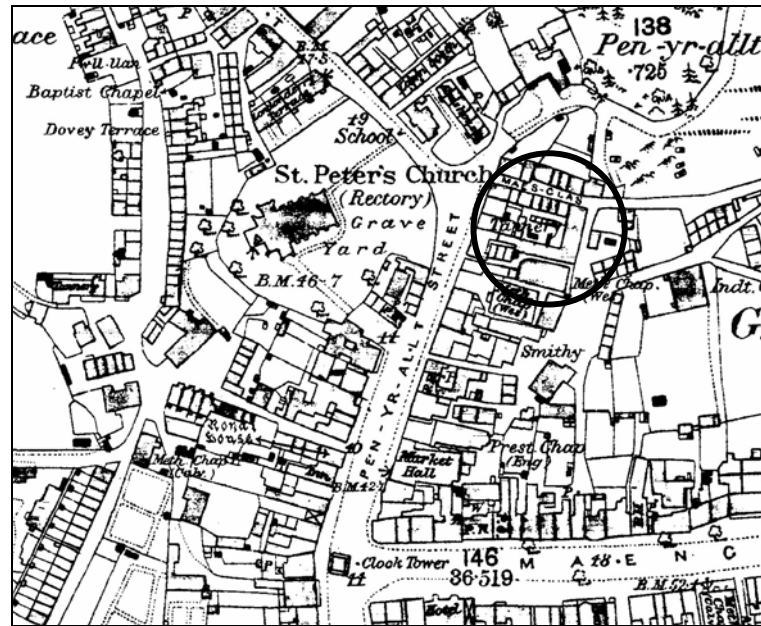
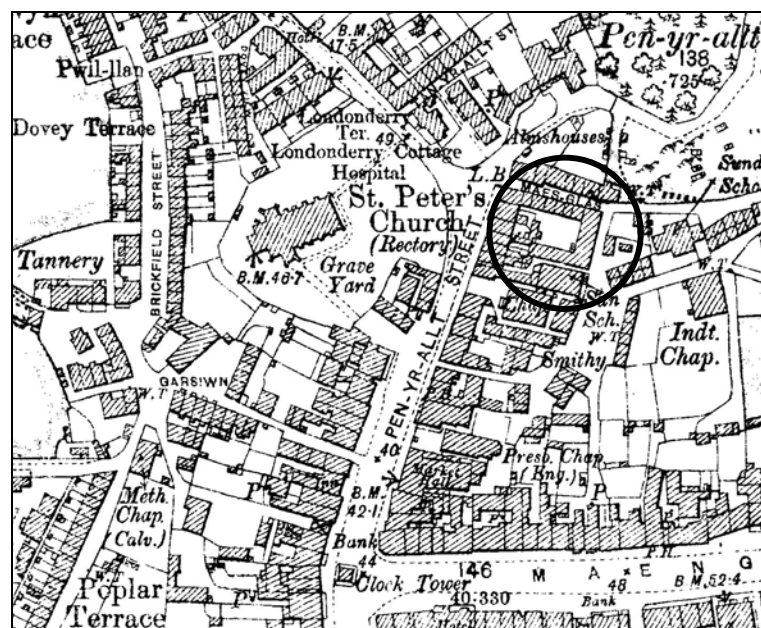
- 2.1 The processing of leather has always been an unpleasant activity, resulting in foul odours and noxious waste, which must have been all too apparent to the inhabitants of many Welsh towns. A number of related trades were involved in the leather industry, with the supply of raw materials, the production of leather, and the manufacture of leather goods.
- 2.2 A detailed account of the leather industry was published by H.R. Procter (1914) in *The Making of Leather*, and much of the following account is drawn from that source, with additional detail from J.G. Jenkins (1973) *The Rhaeadr Tannery*. There were many variations in the process of tanning, depending on the quality of the hides and the intended end product, although the most common procedures are outlined below. The tanning process required a good supply of clean, soft water, and many tanneries were located close to streams and rivers, although in Machynlleth this was not the case and the supply must have been provided by a spring.
- 2.3 The process started with the skinners who provided the cattle hides and sheep or goat skins. In warm weather salt would have been added to prevent putrefaction. Before the actual tannage could begin much had to be done to prepare the hides, starting with washing, sometimes using a drum or wash-wheel. Once clean, the hides were usually soaked in large pits containing lime and water, the pits containing the solution in a variety of strengths, which depend on how many times it had been previously used; the process took between 7 and 14 days until the hair could be easily removed. The hides were hauled from one pit to the next using sharp iron hooks on shafts up to 8ft in length, or long handled tongs for sheep and goat skins. Another method, less likely to damage the hides, was to attach a chain or cord by which they could be lifted.
- 2.4 The hides then transferred to the 'beam house' to be unhaired, which was done by placing them on a sloping table of wood or iron with a convex section called a 'beam', and scraping them with a special knife. Once the hair had been removed the hides were thrown into cold, soft water before undergoing 'fleshing' to remove any fatty tissue, again using the beam, but with a different tool. The hair was not thrown away, but was sold to plasterers and stone masons as an essential constituent of plaster and mortar.
- 2.5 Before tanning it was necessary to remove any lime by washing in clean, soft water, the use of chemicals or 'drenching' in an infusion of bran and water where fermentation neutralises the lime. The industry was notorious for the use of animal excreta in solution, although this was mainly for some soft leathers to remove excess lime by soaking them in 'mastering pits'. The use of pigeon or hen dung was known as 'bating', while the use of dog dung was known as 'puering'.
- 2.6 Before a hide could be tanned it had to be cut or 'rounded' into various pieces, removing the more inferior pieces, such as the shoulders, and leaving the thickest and best part of the hide, which was known as the 'butt'.
- 2.7 The purpose of tanning is to produce a product which is sufficiently soft, resistant to water, and not liable to decompose. The actual tanning process involved the immersion of hides in pits containing the tanning medium for varying lengths of time, depending on the grade of the leather. The most common tanning medium was produced using large quantities of finely ground, dried oak bark, added to cold water to make liquors of varying strengths. The hides started in the weakest solution, being gradually moved from one pit to the next with the strength gradually increasing. The freshly prepared medium was the strongest and, like the lime solution used earlier, the strength decreased the more the solution was used. With heavy hides the butts were initially suspended in a weak solution to ensure uniform absorption of tanning during the later stages. After suspending the butts were laid flat to straighten any creases before being placed flat in the next series of pits, known as 'handlers' or 'floaters'. The final set of pits were

known as 'layers', containing the strongest solution, where butts were laid flat in layers, each being covered with up to 1 inch of ground oak bark.

- 2.8 The tanned hides were then washed and scoured before being dried in a controlled atmosphere, normally undertaken in a room with adjustable slatted windows which allowed a good circulation of air without any direct sunlight.
- 2.9 Following the completion of the tanning process the currier was responsible for finishing the leather by softening, colouring and generally refining it to create the intended final product.
- 2.10 Apart from skinners, tanners and curriers, other related local trades included the manufacture of shoes and gloves, as well as the supply of oak bark.

3 THE TANNING INDUSTRY IN MACHYNLLETH

- 3.1 The history of the tanning industry in Machynlleth, and specifically in relation to the site in question, has recently been the subject of an article by Leslie Leigh (2007), and consequently most of the detail in the following section is drawn from that source.
- 3.2 Like most market towns in Wales Machynlleth had a long association with the tanning industry, which can be traced for a period of around 300 years from the earliest known documentary evidence, a reference to tanners in 1610, until the early years of the 20th century. The parish registers of 1782-1792 provide a clear indication of the importance of the industry, recording 15 people engaged in skinning, tanning and currying, with a further 30 saddlers and shoemakers, accounting for 15% of those recorded.
- 3.3 The recent restoration of Royal House, on the opposite side of Heol Penrallt, has revealed a link with the tanning industry, the house having been occupied in the late 17th century by Edward Hughes, a currier. One of the ground-floor rooms had a large fireplace, adjacent to which was a possible drying chamber which may have been used during the process of stretching and finishing tanned leather (Jones 2006).
- 3.4 The earliest indication of a tannery in the Maes Glas area comes from a record of rents in the town in 1686/7 which includes an entry on Heol Penrallt for Ismaell Jones, paying 3/6d for 'his house, tanhouse, barne and garden, lands of Cathrin Evans, widow'. In 1763 a summary of rentals for the Wynnstay Estate records a 'house, tanhouse and gardens', owned and occupied by Humphrey David, paying 1/-, which appears next to an entry for Maes Glas.
- 3.5 The 1861 census records David Evans, a tanner aged 22, as a visitor to Penrallt Street. By 1871 he resided in Penrallt Street near the Skinner's Arms and is described as a tanner and currier, and ten years later a more precise location is given adjacent to the tannery in Wesley Lane, the passage from Heol Penrallt which runs between the former Wesleyan Chapel and the tannery.
- 3.6 The earliest cartographic depiction of the tannery in Maes Glas is the Ordnance Survey 1st edition 1:2,500 map of 1889 (Fig. 1), surveyed in 1887, which is broadly contemporary with the tenure of David Evans. This shows an L-shaped building partly enclosing a yard area within which five pits are depicted. Another tannery is recorded further to the east, off Brickfield Street. The 2nd edition mapping of 1901 (Fig. 2) again shows the building, but does not identify it as a tannery, suggesting that the business had ceased, although the Brickfield Street tannery remained.

Fig. 1 Ordnance Survey 1st edition 25'' map of 1889Fig. 2 Ordnance Survey 2nd edition 25'' map of 1901

- 3.7 Clearly the tannery in Maes Glas was not the only tannery in the town and the trade directories from 1828 onwards indicate a number of very small tanneries, which are more likely to have dealt with light leathers. Indeed, Machynlleth only had a modest output of heavy leather, mainly for harness and boot soles, being outstripped by the larger tanneries at Dolgellau, Newtown and Rhaeadr, for example. The local industry processed a high proportion of light leather for shoe uppers, gloves and fashion accessories, the best quality being exported to the Lancashire cotton industry.
- 3.8 The 19th-century trade directories show considerable numbers of skinnners, tanners, curriers and oak bark merchants, peaking around 1850, and by 1880 the latter trade had disappeared and there were only two skinnners listed. Oak bark is an essential ingredient of the tanning process

(see below) and during the earlier 19th century a substantial amount of milled oak bark came from Felin Rhisglog, near Derwenlas.

- 3.9 A contemporary postcard of Machynlleth (Plate 2) shows part of the eastern range of the tannery, although sadly most of the building is obscured.



Plate 2 Extract from a late 19th-century postcard of Machynlleth. The eastern wing of the tannery is in the bottom right, partly obscured by the outcrop.

4 BUILDING SURVEY (Figs 5-9)

4.1 The building survey was conducted by the author between 11 and 14 December 2007, based on the Level 4 building survey specification as defined by English Heritage's *Understanding Historic Buildings: a guide to good recording practice* (2006). This level of survey was intended to create an analytical record of the building, and included the inspection and detailed recording of the interior and exterior of the former tannery, though it was restricted by health and safety considerations which prevented full access to part of the first floor. In summary the survey comprised the following elements:

- A written description of the building, recording its location, plan, form, date, function and development.
- A digitally produced drawn record comprising floor plans, elevations, sections and detail of roof trusses, together with additional hand-drawn detail.
- A photographic survey comprising external elevations, overall appearance, principal rooms, and specific features of architectural or functional significance. Photographs were taken in high resolution digital format.

4.2 The drawn record was based on a detailed total station survey which employed a Reflectorless Electronic Distance Meter (REDM), used in conjunction with Penmap survey software. Additional detail was added using a hand-held laser tape (Disto) and conventional measured survey. The resulting survey data was used to produce a series of digital plans, elevations and sections.

4.3 The purpose-built tannery originally consisted of an L-shaped building formed by two ranges. The eastern range measured 24.2m by 8.2m, aligned north to south, and extending as far north as Maes Glas. The northern two thirds of this range was demolished perhaps 40 years ago, although part of the external walling still stands to over 2m in height. The southern range survives intact and measures 16.8m by 6m, aligned east to west along the northern side of a passage leading east from Heol Penrallt. There was an enclosed yard area on the northern side of the building, within which five pits were depicted by the Ordnance Survey in 1889, along with what may be two small outbuildings.

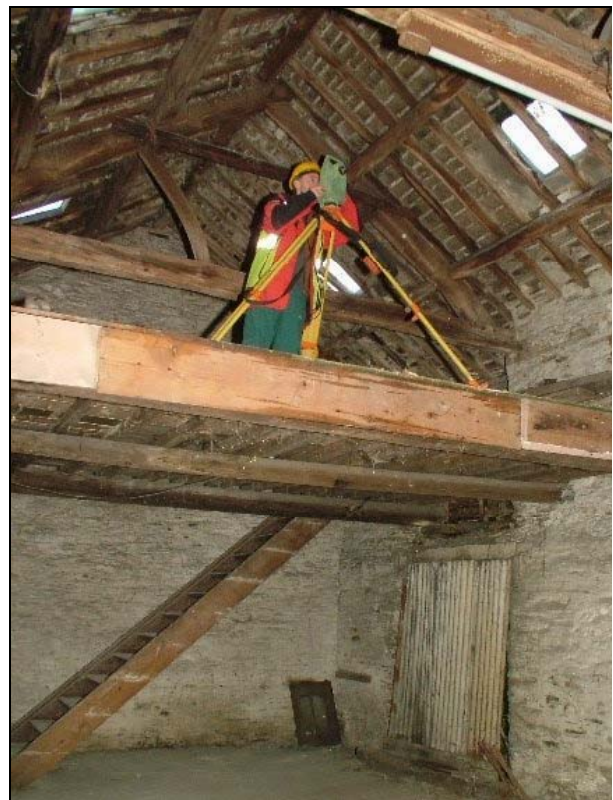


Plate 3 Digital survey of tannery interior. Photo
CPAT 2506.082

4.4 The surviving structure has been largely gutted internally, having been used in later years as a store room. There are few internal features which are contemporary with its use as a tannery, although the original trusses and some of the window frames do survive. The internal floor level has been raised, particularly in the southern range, by the deposition of a significant quantity of rubble, probably from the demolition of the eastern range, on top of which is a modern concrete floor. There is also a significant depth of rubble in the yard area. The level of the original floor is probably indicated by the top of the plinth at the base of the southern elevation, which matches the threshold of the blocked southern door.

- 4.5 The building has two storeys and is stone-built, largely utilising the friable fine-grained sedimentary rock typical of the town, although the southern elevation displays a plinth of boulders, most notably at the eastern end. The ground-floor openings all have brick arches, while those on the first floor have timber lintels, with the exception of a window in the west gable. There is a small and unobtrusive date inscription on a quoin at the southern end of the east elevation, which reads 'John Williams 1819' (Plate 4), and it seems reasonable to assume that this represents the date of construction.



Plate 4 Date inscription 'John Williams 1819'. Photo CPAT 2506.064

The Southern Range

- 4.6 The southern range is divided into five bays by three trusses and a partition wall which separates the eastern bay from the rest. The western three bays were originally open at ground- and first-floor level, although the floor has since been removed and replaced in part by a rough platform at the western end. On the ground floor there was a single doorway in the southern wall, which is now blocked, and four matching doorways in the northern wall, opening onto the yard. The stone partition wall originally had a central doorway which was later blocked; presumably at the same time new openings were inserted against the southern wall, through both the partition wall and the west wall of the eastern range.

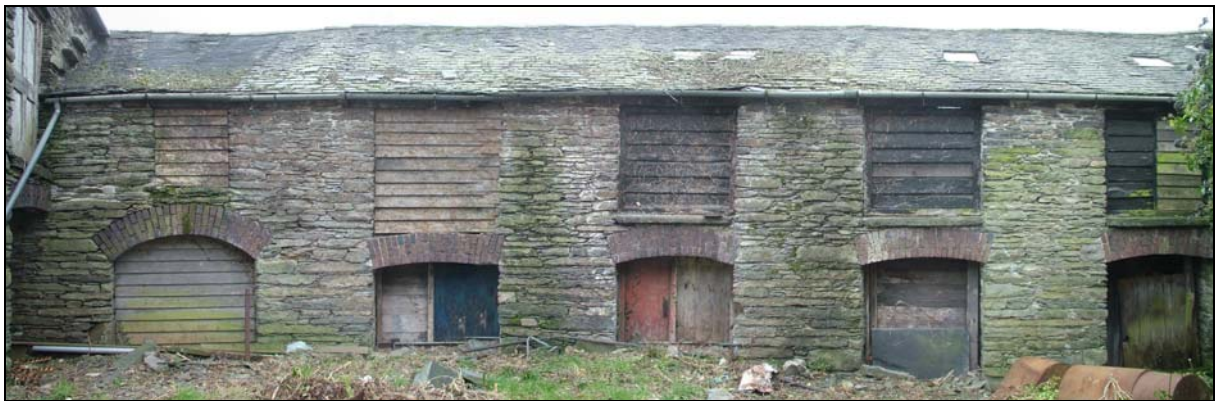


Plate 5 North elevation of the Southern Range

- 4.7 The first floor was undoubtedly the drying room, or airing loft, with opposing louvered windows. Of the four windows in the south elevation, three retain their original frames and louvers, one of which is complete with the pole bar that was used to adjust the ventilation. This window, the second from the west end, has five louvers attached to the central pole bar by means of iron staples. The louvers were fitted into the frame by means of a wooden peg in either end which allowed them to pivot (see Fig. 3 and Plate 6). The remaining windows, including those on the north side, have six rather than five louvers. In addition, the window at the western end of the north elevation is divided into two sections, the eastern half retaining its original louvers and pole bar, while the western half has been replaced; it was not possible to determine whether this

side was also louvred. The opposing window on the south may have been similar, although the frame has been lost. The large window at the eastern end of the drying room, on the north side, does not appear to have been louvred, but has a modified casement, suggesting that this end of the room served a different function. Comparison with the Rhaeadr Tannery suggests that this was also where currying took place (Leigh 2007, 108).



6 Louvred window in southern elevation of southern range. Photo CPAT 2506.101

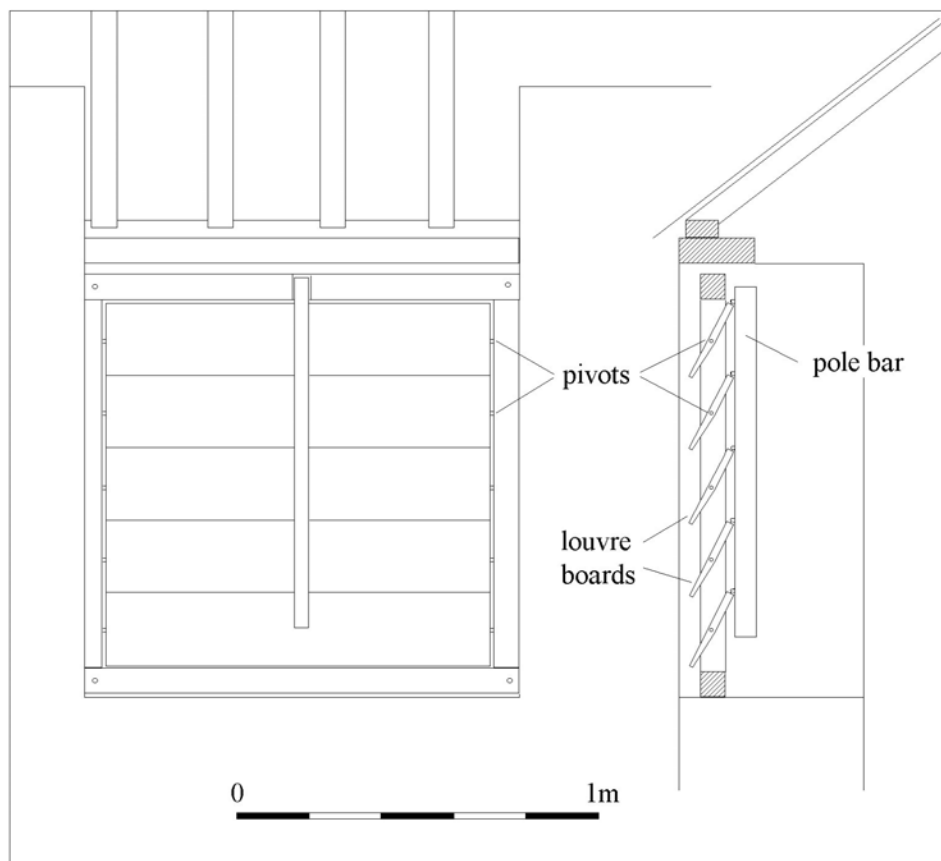


Fig. 3 Detail of louvred window in southern range

- 4.8 The three pegged trusses are of simple form but with unusual curved struts between the tie-beam and principal rafters, which support the ridge pole and two purlins on either side (Plate 7). Each truss has two mortices in the underside of the tie-beam which would have held posts. By comparison with the Rhaeadr Tannery, it may be assumed that these supported the tenter rails on which the tanned hides were hung to dry. It is also interesting to note the thick ropes tied around the ends of the trusses which may have supported further rails.



Plate 7 Southern Range Truss 2 viewed from the west. Photo CPAT 2506.002

- 4.9 The eastern bay clearly had a different function, being separated from the main area by the partition wall. On the ground floor there is a large doorway opening on to the yard with another doorway, now blocked, giving access to the eastern range. The joists for the first floor still survive, with their configuration suggesting that there may originally have been a trap door or stairs in the centre of the room, which was later boarded over. The floor level in this room was clearly higher than the rest of the southern range, but lower than the eastern range as there is a step up through the blocked doorway which links the two. On the first floor there is a single window in the north wall with a blocked central doorway through the partition wall, and an extant doorway leading into the eastern range.

The Eastern Range

- 4.10 The surviving southern end of the eastern range appears to have formed a single large room on both ground and first floors. On the ground floor the eastern wall now has a large inserted doorway which has removed any evidence for earlier openings. Doorways in the west wall originally led into the southern range (now blocked) and the south-east corner of the yard, while the southern wall has a single barred window, the original opening for which appears to have been reduced in height.
- 4.11 There is a single, pegged king-post roof truss with iron straps, which supports the ridge pole and two purlins on either side. The southern gable has six ventilation slots and there is a further single slot in the west wall, which unusually opens into the adjoining southern range rather than the exterior. Their presence indicates that this room was used for storing the oak bark which may have been brought in ready milled, or as bark strips to be dried and milled on site. There is, however, no evidence for any milling machinery or power source. A doorway in the east wall would have been used for loading the bark from the lane below, while other doorways led to the

northern part of the range, the yard with presumed external stairs, and lastly into the southern range. The exterior of the west wall has a number of sloping, projecting stones above the roofline of the southern range, designed to deflect water.



Plate 8 Eastern Range king-post truss and ventilation slots

- 4.12 Although most of the northern section has been demolished a substantial part of the northern end survives, including a blocked first-floor doorway which would have provided access directly from Maes Glas, the building having been terraced into the slope at this point. Significant sub-surface remains may survive in this area, including the original floor, wall foundations and internal features. The window opening in the partition wall which now forms the northern gable end suggests that the lost portion of the range included a loft space (see Plate 9).



Plate 9 Internal partition wall in the eastern range exposed following the demolition of the northern section. Photo CPAT 2506.048

- 4.13 It has been suggested that the demolished part of the range was the 'beam house' where the unhairing and fleshing processes were carried out (Leigh 2007, 108).

The yard

- 4.14 Unfortunately, there is no longer any visible evidence for features within the yard due to the deposition of a significant depth of demolition rubble from the eastern range. The main source of information is the 1889 Ordnance Survey map (Fig. 1) which clearly shows a row of five square pits, each perhaps 2m across. Comparison with the recent measured survey suggests that the pits lie close to, or extend beneath the modern wall which now forms the northern side of the yard. The excavation of test pits in this area in recent years revealed 'soft to firm brown clay with occasional wood fragments' at a depth of 2.5m below the present ground surface. It has been suggested that the clay might have been used to provide a watertight seal for timber-lined pits (Leigh 2007, 105-6).
- 4.15 The 1889 Ordnance Survey map also depicts what appear to be two small structures in the yard, one adjoining the southern range and the other between this and the tanning pits. The subsequent survey of 1901 also shows a possible external staircase in the south-east corner of the yard.

5 GROUND PENETRATING RADAR SURVEY (Fig. 4)

5.1 A ground penetrating radar (GPR) survey was undertaken by ArchaeoPhysica to investigate the interior of the southern range, with an additional profile across the external yard in an attempt to confirm the location of the pits depicted in 1889. The following text presents a summary of the survey results, based on the full report which has been submitted under separate cover (Lafuente & Roseveare, 2008). Numbers in brackets refer to Fig. 4.

5.2 A recently-excavated test pit inside the southern range, adjacent to the blocked southern door, demonstrated the nature of the upper deposits, comprising a 0.15m-thick concrete slab, on top of a considerable depth of building rubble. The GPR survey demonstrated that the rubble layer is around 0.8m thick, and probably lies directly on the original floor of the tannery at around 0.95m beneath the surface of the concrete. However, in the eastern room of the southern range the original floor appears to have been much higher, possibly just below the concrete.



Plate 10 Ground Penetrating Radar Survey inside the southern range. CPAT 2506.068

- 5.3 A number of anomalies were identified which might relate to post-tannery activity within the building, including a possible metal structure just inside the northern doorway into the eastern room (6) and three linear, parallel anomalies (7-9). A possible partition wall was also identified (2) which could have been contemporary with the tannery, but may be a later addition.
- 5.4 The survey was very successful in identifying structures relating to the tannery, including two rows of three tanning pits cut into the bedrock, each measuring around 1.8m by 1.5m (12-17). Two possible drains (10-11) were also identified, of which the westernmost corresponds to a blocked opening visible in the exterior of the south wall.
- 5.5 The single profile across the external yard appeared to confirm the approximate position of the five pits, although the data was not sufficiently clear to provide good definition. However, it did confirm that masonry belonging to the demolished side walls of the northern range survives just beneath the present ground surface, while the interior is likely to be between 0.5m and 1m below the surface. The yard appears to be buried beneath up to 1m of rubble, which also covers the external pits.

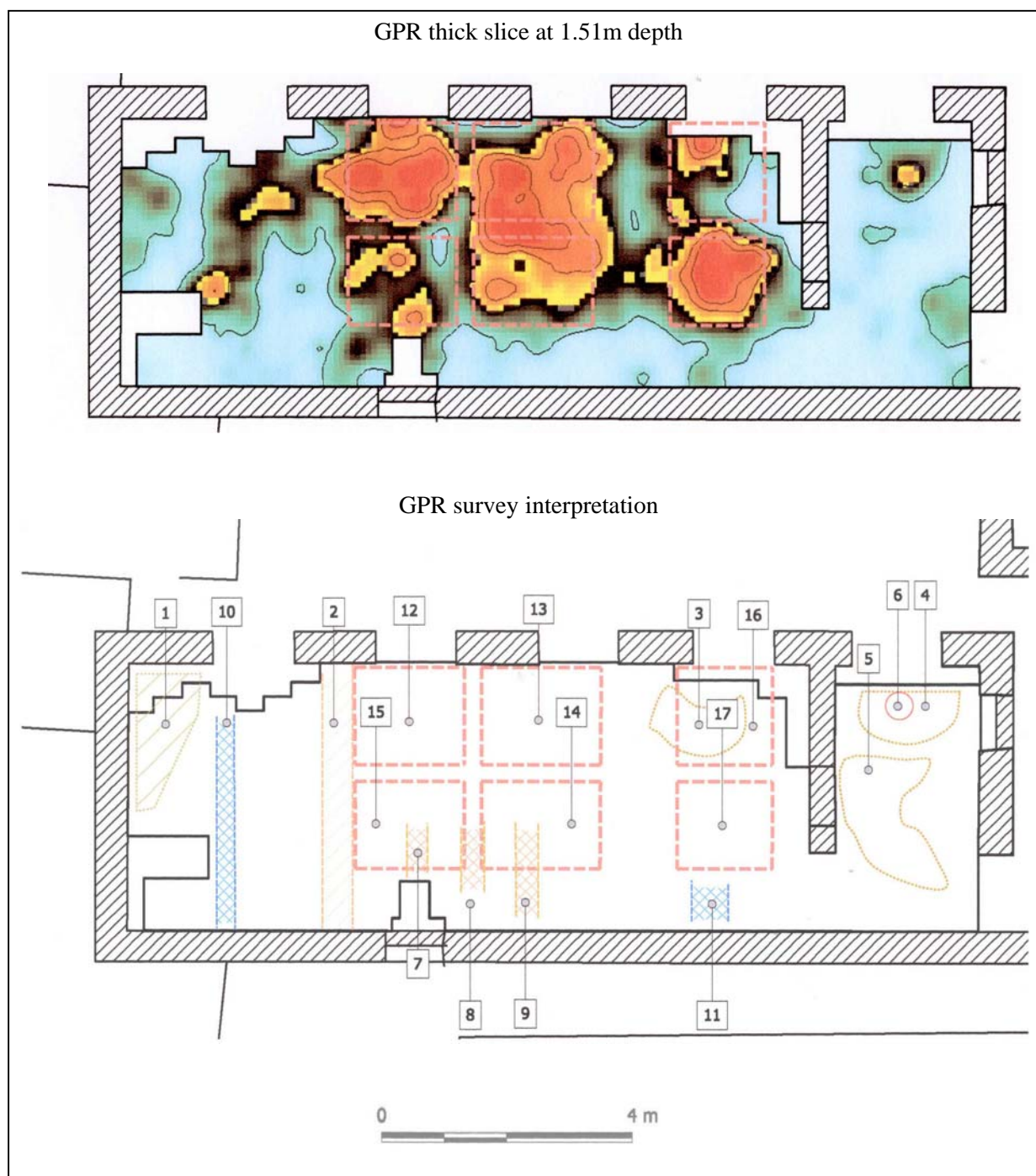


Fig. 4 Ground penetrating radar (GPR) summary (after Lafuente & Roseveare 2008, Dwg 04. © ArchaeoPhysica)

6 CONCLUSIONS

- 6.1 As we have seen, Machynlleth had a long association with the tanning industry. Although this can be documented from the 17th century until the early 20th century, it seems probable that tanning was an activity which goes back to the medieval origins of the town. During the post medieval period the tanning industry seems to have been centred around Heol Penrallt, and in particular the eastern side of the street, in an area known as Maes Glas, although by the late 19th century there was also a tannery known as Brickfield House further west in the Garsiwn area. As well as tanners, there were a variety of other related trades in this area, including skinning and currying. There is, however, little physical evidence of the industry today, which adds to the significance of Yr Hen Danerdy. The only other indication of the industry is the name of the public house on Heol Penrallt – ‘Skinners Arms’.
- 6.2 Although the documentary evidence clearly indicates the presence of tanning in this area from the 17th century, it is not possible firmly to associate the industry with this particular site. It seems likely that the building now known as Yr Hen Danerdy was constructed as a purpose-built tannery which may be dated on the evidence of a date stone inscribed ‘John Williams 1819’, and is consistent with the style of the king-post roof truss in the eastern range.
- 6.3 Although the tannery was small in comparison to others in mid-Wales it was certainly large enough to have processed both cattle hides and sheep skins and appears to have remained in operation until the closing years of the 19th century. During the latter part of its life the tannery was probably run by David Evans, who appears in Slater’s Trade Directory for 1886 as a tanner and currier, but by 1889/90 only as a currier, presumably reflecting a decline in the tanning industry in Machynlleth. This may have been partly a gradual loss of trade following the opening of the Cambrian Main Line railway in 1863. The Brickfield tannery on the western edge of the town remained active into the 20th century, possibly because of its location, with the more central location of Maes Glas eventually proving rather less popular for such a noxious business. During the 20th century the building was for a time used by the Dyfi Valley Lime Company for bagging lime.
- 6.4 Based on the surviving evidence, and through comparison with the contemporary Rhaeadr Tannery, it is possible to give an indication of how the tannery would have operated, although there is insufficient evidence to determine the function of all the rooms within the building. The first stage would have been to soak the hides in pits containing a lime solution, and comparison with Rhaeadr suggests that these may have been some of the external pits in the yard, although one pit may have been reserved for clean water. The unhairing and fleshing operations would have been carried out in the ‘beam house’, which may have occupied the now demolished section of the eastern range, or possibly either the western end of the southern range or the small room at the eastern end, both of which are roughly equivalent in size to the beam house at Rhaeadr.
- 6.5 The tanning medium was a mixture of ground oak bark and water and the ventilation slots on the first floor at the southern end of the eastern range suggest that this is where the bark was stored. There is no evidence for any milling machinery and it is possible that the bark was brought in ready milled. Having been suitably prepared, the hides were then placed in the tanning pits, which are likely to have been the six pits identified by the GPR survey inside the southern range, the hides being moved from one to the next into solutions of increasing strength. The tanned leather was then hung to dry on tenter rails on the first floor of the southern range. The room was well ventilated, with the air flow controlled by adjustable louvred vents. This range is also likely to have been the location of the currier’s workshop, where the leather was finished according to its final usage. However, at the time the building was constructed it was illegal to combine the processes of tanning and currying and the latter must therefore have originally been conducted elsewhere.

- 6.6 The tannery would have required significant quantities of clean, soft water, and it has not been possible to confirm a source at Maes Glas, which is some distance from the nearest watercourse. It has been suggested, however, that water may have been provided by a spring on the slopes of Pen-yr-allt (Leigh 2007, 108). The disposal of waste water would also have posed a problem and must have utilised a drainage system leading onto Heol Penrallt via the passage along the southern wall of the tannery. The GPR survey identified two possible drains beneath the southern range.

Archaeological and Historical Potential

- 6.7 Although the interior of the building has been largely gutted, and part of the eastern range demolished, there is still significant potential for the survival of features contemporary with the tannery which may be affected by the proposed conversion. The radar survey in particular has highlighted the presence of six internal pits and two drains, and the results suggest that the original floor was perhaps 0.95m beneath the surface of the concrete floor. It also seems likely that the original floor in the demolished section may well survive, buried by a relatively thin layer of demolition rubble, together with the yard surface which is buried by perhaps 1m of rubble. Although it is unlikely that the proposals will affect the majority of the yard it may be necessary to excavate an area alongside the northern wall of the southern range, which could expose original features.
- 6.8 There are a number of original features within the building which are either key to the understanding of its function, or of architectural interest, and consideration should be given to their preservation as part of the proposed conversion. Of particular note are the louvred windows, most of which survive almost intact and could easily be restored. Other features include the ventilation slots in the eastern range and the roof trusses, each of which is a key architectural feature.

7 ACKNOWLEDGEMENTS

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- 7.2 The survey was undertaken with the assistance of funding provided by the Heritage Lottery Fund.

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Cartographic sources

1889 Ordnance Survey 1:2500 1st edition Merioneth 47.12

1901 Ordnance Survey 1:2500 1st edition Merioneth 47.12

APPENDIX 1**PROJECT ARCHIVE**

101 digital images, CPAT film no. 2506

Total station survey – Penmap survey software

tannery.pts

tannery.dxf

CPAT Report No 906

Tannery Report.doc

CPAT Tannery Report.pdf

ArchaeoPhysica Ground Penetrating Radar Report

AP MTR071 Report Text 9final).pdf

DWG01 Profile locations.pdf

DWG02 Timescllices.pdf

DWG03 Selected slices.pdf

DWG04 Interpretation.pdf

Digital plans

1stfloor first floor plan

Eastelev east elevation of eastern range

Grplan ground floor plan

Grtimber ground floor timbers

Longsection longitudinal section

Northelev north elevation

Southelev south elevation

Section2 cross-section along west side of eastern range

Tansurv Total station survey

Westelev west elevation of southern range

Tandraw complete survey, including elevations

Truss 2 Cross section B-B

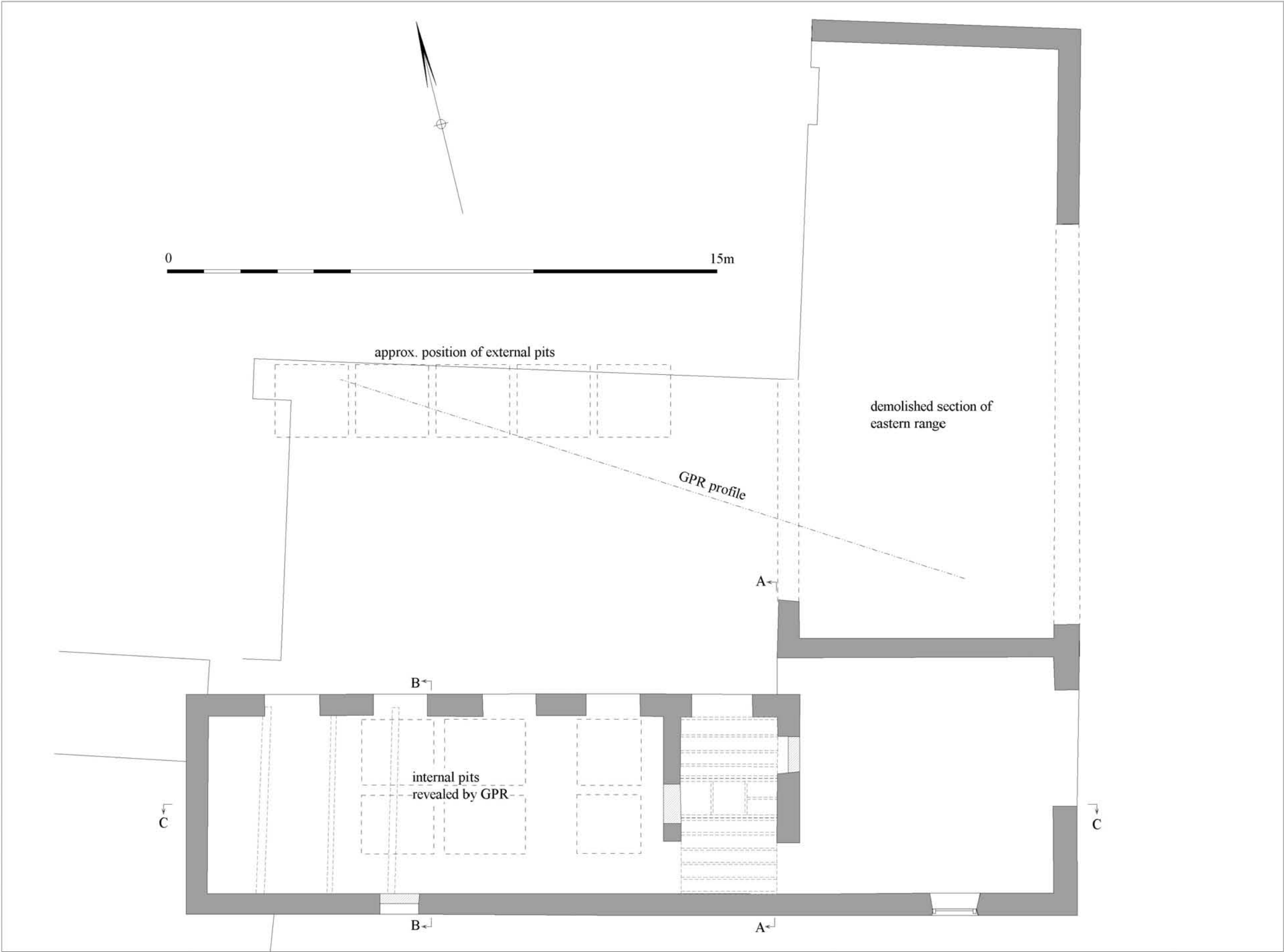


Fig. 5 Ground-floor plan

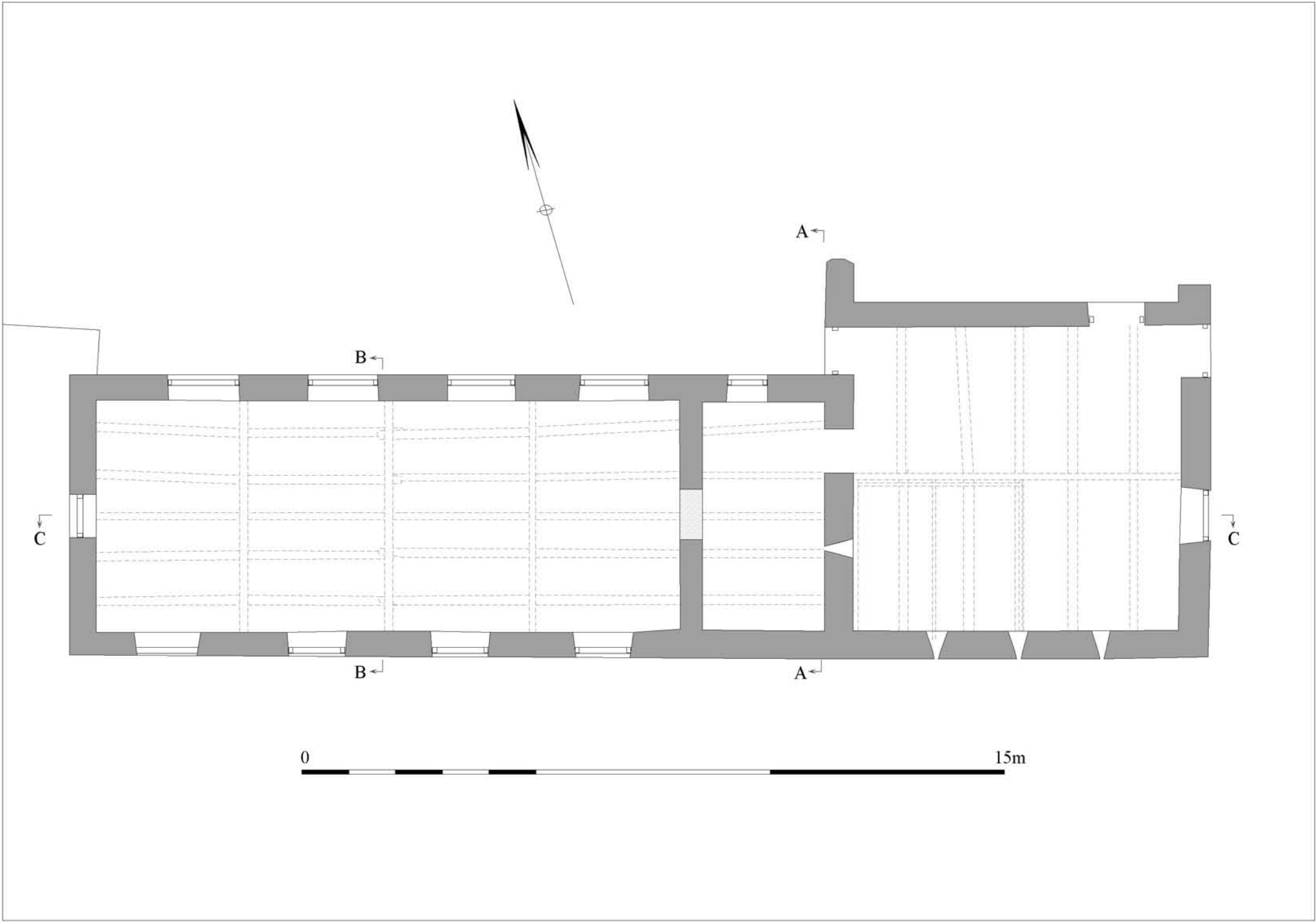


Fig. 6 First-floor plan



Fig. 7 North and south elevations

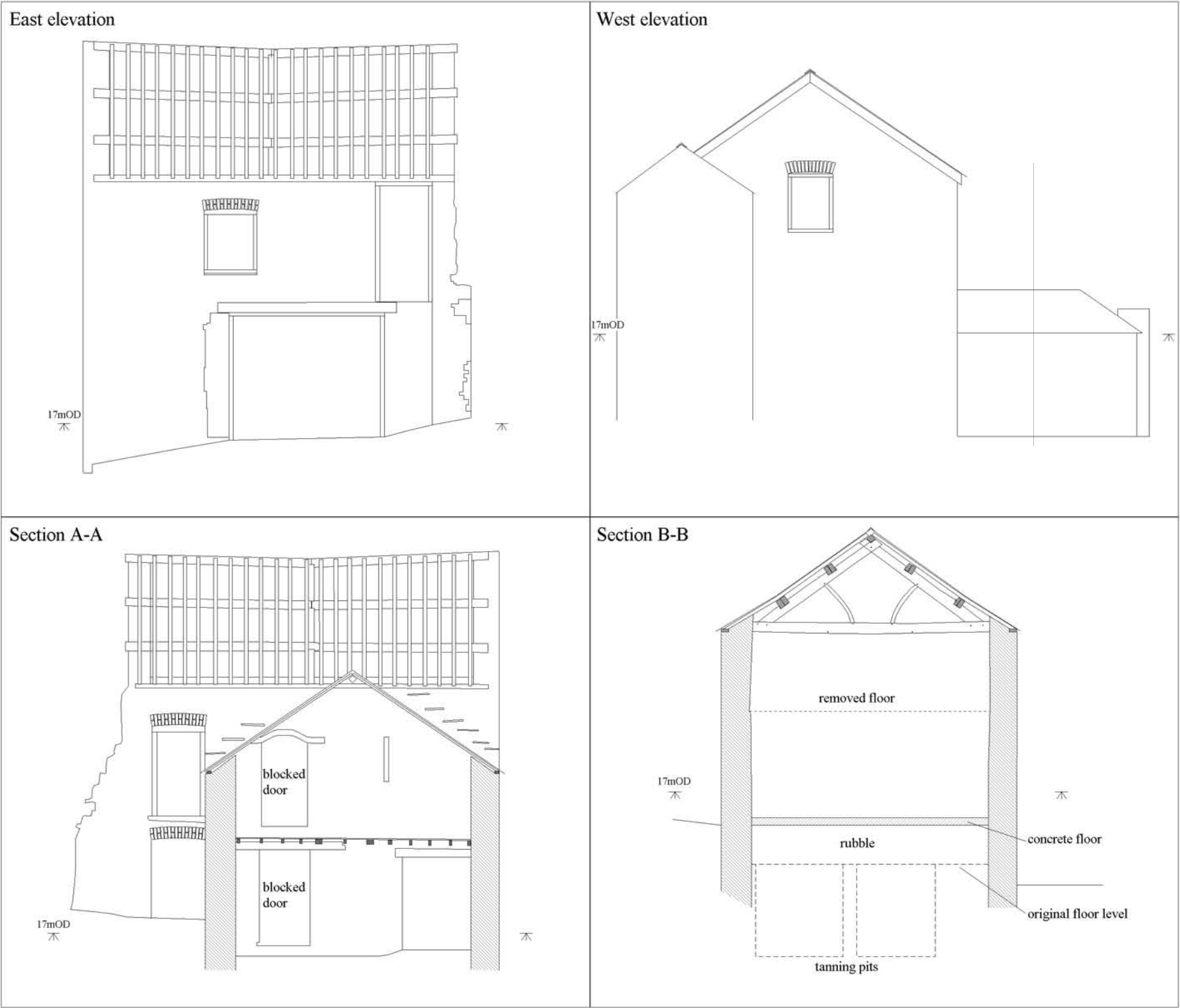


Fig. 8 East and west elevations and cross-sections A-A, B-B

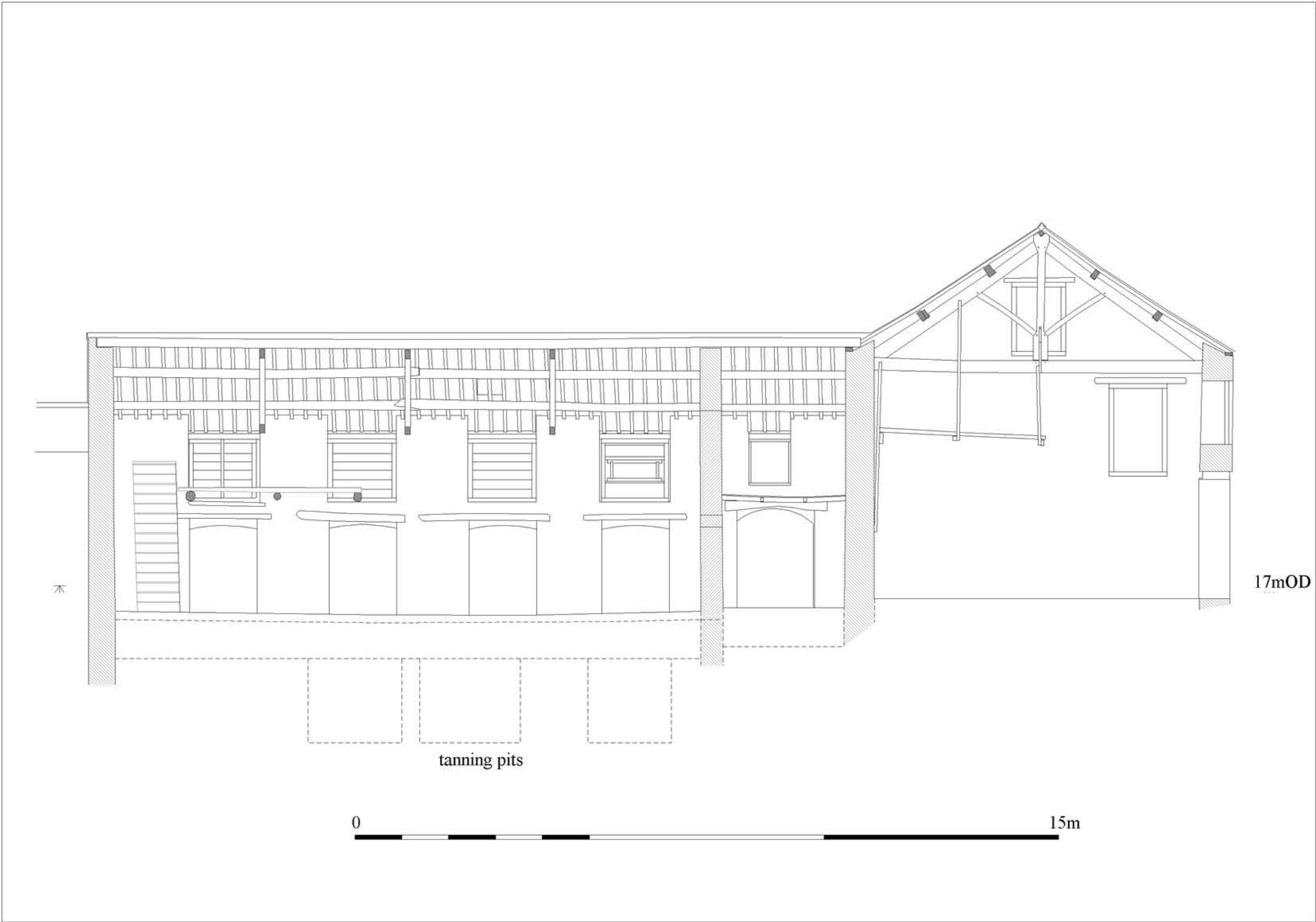


Fig. 9 Longitudinal section C-C