



The Dye House, Hallthwaites, Millom, Cumbria

Archaeological Building Investigation



Oxford Archaeology North

November 2005

Mr P Metcalf

Issue No: 2005-06/387

OA North Job No: L9495

NGR: SD 1820 8539

Document Title: THE DYE HOUSE, HALLTHWAITES, MILLOM, CUMBRIA
Document Type: Archaeological Building Investigation

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Issue Number: 2005-06/387
OA Job Number: L9495

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SUMMARY

This report outlines the results of an archaeological building investigation, which was carried out to RCHME (1996) Level III standard at The Dye House, Hallthwaites, Millom, Cumbria (SD 1820 8539). The Dye House is thought to be one of the earliest woollen manufacturing sites in the area and, as such, contributes much to the understanding of the industrial archaeology of the Lake District.

Information gathered during the desk-based assessment suggested that the original building had been built between 1771 and 1829, although there was little information specifically about the Dye House dating to before the late nineteenth century, by which time it was owned and run by the Moore family.

The building investigation revealed that although the Dye House is in an advanced state of disrepair and much of the fabric has already collapsed, several periods of development could be identified. The complex is constructed from differing materials some of which is local (mainly unworked) stone and river cobbles, which was presumably the cheapest and most easily available material. Parts of the complex are constructed from better quality split stone of typical South Lakeland tradition.

The results of the building investigation suggested that there were six principal phases of activity, the earliest of which comprised only a small building, which was expanded throughout the nineteenth century.

As some areas (mainly the floors) are obscured by collapsed wall debris further investigation, possibly in the form of a watching brief, is recommended prior to any development of the complex taking place.

ACKNOWLEDGEMENTS

Oxford Archaeology North would like to express its thanks to Mr P Metcalf for commissioning the project and to Cumbria County Council Historic Environment Service (CCCHES) for providing the brief and additional information regarding the project. The staff of the Cumbria Record Offices at Barrow-in-Furness and Whitehaven also deserve particular thanks for their efficient help and assistance. Additional thanks are also due to Ray Wilson of the Gloucestershire Society for Industrial Archaeology for his help.

The building investigation was carried out by Karl Taylor, Chris Ridings, and David Hodgkinson. Daniel Elsworth and Kathryn Blythe compiled the background history. This report was compiled by Karl Taylor and Daniel Elsworth, and edited by Alison Plummer, who was responsible for project management.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 The remains of the Dye House are due to be restored as part of a grant-aided project, and it was considered likely that the scheme would affect the building, which is considered to be of historic interest. As a result, a brief was issued by Cumbria County Council Historic Environment Service (CCCHES) for a building investigation of the remains of the Dye House, Hallthwaites, Millom, Cumbria, including a rapid desk-based assessment, in July 2004 (*Appendix 1*). Oxford Archaeology North (OA North) was asked to submit a scheme of works for the archaeological recording by the current owner, Mr P Metcalf of Hallthwaites (*Appendix 2*).
- 1.1.2 The Dye House forms part of a group of buildings formerly relating to the woollen industry situated in Hallthwaites, including a woollen mill and walk mill. These are known to have been in use until the beginning of the twentieth century.
- 1.1.3 A Level III-type building survey (RCHME 1996) was carried out in order to analyse the plan, form, function, age, and development of the Dye House. This comprised a drawn, textual and photographic record of the interior and exterior of the complex.
- 1.1.4 This report sets out the results of the building investigation, together with drawings illustrating the plan and form of the Dye House.

2. METHODOLOGY

2.1 PROJECT DESIGN

2.1.1 A project design (*Appendix 2*) was submitted which was based upon a written brief supplied by CCCHES (*Appendix 1*). Following acceptance of the project design OA North was commissioned to undertake the work. The project design was adhered to in full with respect to the building investigation and was consistent with the relevant standards and procedures of the Institute of Field Archaeologists (IFA) and generally accepted best practice.

2.2 RAPID DESK-BASED ASSESSMENT

2.2.1 Several sources were used to compile the background history of the site, and both primary and secondary sources were examined.

2.2.2 ***Cumbria Record Office (Carlisle) (CRO(Carlisle))***: copies of early maps, in particular the Ordnance Survey, were obtained and others examined.

2.2.3 ***Cumbria Record Office (Barrow-in-Furness) (CRO(Barrow-in-Furness))***: primary sources relating to the Dye House and associated buildings, early directories, and a large number of secondary sources regarding local history were examined.

2.2.4 ***Cumbria Record Office (Whitehaven) (CRO(Whitehaven))***: primary sources, in particular the diaries of one of the Dye House owners were consulted, as well as some secondary sources.

2.2.5 ***OA North Library***: secondary sources relating to wider industrial history and historic buildings were examined.

2.2.6 ***Private Collection***: secondary sources regarding industrial and local history held in the collections of OA North members of staff were also examined.

2.3 BUILDING INVESTIGATION

2.3.1 ***Descriptive Record***: written records using OA North *pro-forma* record sheets were made of all principal building elements, both internal and external, in addition to any features of historical, archaeological or architectural significance. Particular attention was made to the relationship between the various parts of the buildings, especially those that could allude to its development.

2.3.2 ***Instrument Survey***: the plans, internal and external outline elevations and cross-sections of the buildings were surveyed with a reflectorless electronic distance measurer (REDM). These were produced in order to illustrate the form, phasing and development of the buildings. Features of historical,

structural and archaeological significance were annotated on to the drawings. An industry standard CAD package was used to produce the final drawings.

- 2.3.3 **Photographic Survey:** photographs were taken using 35mm back and white print and colour slide formats. This part of the photographic archive consists of both general site views and detailed photographs of features of particular interest. In addition, black and white medium format rectified photographs were taken of all the elevations. These were produced to capture elevation detail not surveyed with the REDM.

2.4 ARCHIVE

- 2.4.1 The results of the archaeological building survey will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). This archive, including a copy of the final report, will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the SMR (the index to the archive and a copy of the final report). In this instance the archive will be submitted to the County Record Office in Barrow in Furness.

3. BACKGROUND

3.1 LOCATION, TOPOGRAPHY AND GEOLOGY

- 3.1.1 The Dye House (SD 1820 8539) is situated on the east side of the village of Hallthwaites which is approximately 5km north of Millom, Cumbria. The site lies on a level adjacent to the Black Beck and is approximately 40m OD.
- 3.1.2 The solid geology of the area comprises Palaeozoic undifferentiated andesitic lavas and tuffs. The drift deposits are predominately boulder clay (British Geological Survey 1979).
- 3.1.3 It forms part of a group of buildings relating to the woollen industry positioned throughout Hallthwaites, including a woollen mill and walk mill. These buildings are not in close proximity to each other, presumably because they have been positioned close to suitable water supplies.

3.2 HALLTHWAITES

- 3.2.1 Hallthwaites is an outlying hamlet of Millom in what was formerly south Cumberland. The general area has evidence of human activity from at least the Mesolithic period onwards (Young 2002), although there is little specific information regarding the study area prior to the medieval period. Hallthwaites formed part of the chapelry of Thwaites, which was held under the lords of Millom until the seventeenth century, when it passed to the Lowthers and then the Earls of Lonsdale (Whellan 1860, 408). The earliest reference to Hallthwaites is from 1449, and it is thought that the name derives from the prefix 'hall' attached to the earlier (Norse) 'thwaites' meaning clearing (Armstrong *et al* 1950, 417). The area merits little mention although by the post-medieval period it was clearly becoming a local centre of industry with slate pencil making and a blacking mill being active in the area (Warriner 1932, 48), besides the woollen mill with its associated walk mill and Dye House. Industrial activity continued to play an important part in this otherwise rural location into the early twentieth century (Anon 2005).

3.3 THE WOOLLEN INDUSTRY IN CUMBRIA

- 3.3.1 The production of woollen cloth has an extremely long history in Cumbria. It was undoubtedly carried out throughout the later prehistoric and Romano-British periods, although direct evidence is, for obvious reasons, elusive. Remains of charred fabric, thought to be linen, found associated with Bronze Age burials demonstrates how early the production of woven cloth began (Higham 1998, 1). Evidence for wool working during the early medieval period is more forthcoming (Satchell 1984, 10) and, although it was clearly only on a small-scale, it was probably widespread. A short time later, in the early thirteenth century, the borough charters of Ulverston, Kendal and Warton all make particular reference to fulling and dying (Munby 1985, 103), which was in many cases strictly controlled by the lord of the manor. This

demonstrates the importance of wool and the use of water-power at an early stage in the history of Cumbria, and it is generally acknowledged that in some areas, such as Kendal, the rise in the trade in cloth led to considerable economic growth (Satchell 1984, 15-16). The thirteenth century in particular saw a major increase in the woollen industry, which has been dubbed '*an Industrial Revolution of the 13th century*' (Watts 1967, 200).

- 3.3.2 During the sixteenth century, however, the industry in Cumbria declined somewhat due to fluctuating markets, the quality of Lakeland wool and outside competition (Elliott 1961). At this time much of the textile industry was small-scale and based in the home, with spinning equipment and sheep commonly found in inventories of the period (Pidock 2000). This domestic industry would produce enough material for the home and a surplus to sell to supplement its income, although other fabrics would also have been produced (*op cit*, 25). The domestic production would rely on processing at a fulling mill and Dye House, which might mean transporting the 'raw' material some distance, as was the case in the valleys around Kendal (Scott (ed) 1995, 29).
- 3.3.3 As the Industrial Revolution of the eighteenth and nineteenth centuries began to take hold Cumbria was soon heavily involved, and wool continued to play an important role. New woollen mills were built in Kendal for example after 1800 as new mechanised technology became available (Wilson 1968, 132), and in the mid-eighteenth century woollen manufactories were developed in Carlisle (Towill 1996, 25). Many industries, including woollen spinning and dyeing began to take '*factory or workshop form between the mid-eighteenth and nineteenth centuries*' (Marshall and Davies-Shiel 1969, 20). Water-powered woollen mills continued to play an important role in Cumbria throughout this period, '*in spite of the development and spread of the steam-engine*' (Watts 1967, 201). Steam engines had a relatively slow introduction into much of Cumbria, and it was not until the mid- to late-nineteenth century that their use became more widespread (*op cit*, 201-4).
- 3.3.4 The production of textiles during the late medieval and early post-medieval periods required a number of phases of work, and research into landscapes in Cumbria has shown areas where groups of related features can be identified, including walk mills, tenter grounds and potash kilns (Davies-Shiel 1972; 1974). This has also been shown to apply in parts of Lancashire (Higham 1998), although both woollen and linen manufacture used similar processes so the evidence of these features cannot be taken to automatically imply woollen production.
- 3.3.5 Physical evidence for mills and related structures in Cumbria is not forthcoming from the medieval period, although a few examples thought to be seventeenth century in origin have been recorded (Davies-Shiel 1978, 43). While a variety of mill types and associated structures, such as drying kilns, are known from the eighteenth and nineteenth century (*op cit*, 60-8; Brunskill 2002, 117-20), little is recorded about Dye Houses. Water power for the mills could be supplied in a variety of ways (Davies-Shiel 1978, 17-22), and the woollen mill and walk mill at Hallthwaites both utilised a single mill race (Plates 1-3), but Dye Houses themselves were not water-powered as such. Nevertheless, they would have made use of great quantities of water for

washing and dyeing the cloth, hence the Dye House at Hallthwaites is positioned close to the Black Beck (Fig 2).

3.4 DYE HOUSES

- 3.4.1 Dye Houses formed an integral part of the woollen industry, and it is clear that from an early date cloth was given a variety of colours. Sites at which woollen cloth was produced would tend to contain many of the necessary stages of processing in order to maintain efficiency, particularly by the nineteenth century (Satchell 1984, 56). This could include weaving and fulling mills, tenter frames and drying grounds and even areas where the dye was produced (*op cit*, 56-7).
- 3.4.2 Examples of Dye Houses in Cumbria are extremely scarce and nothing directly comparable could be identified during the desk-based assessment. Where examples are known, these are often part of larger complexes or different branches of the textile industry, such as Langthwaite Cotton Mill at Carlisle (Mawson 1976). Other examples are known in the North West, but these also tend to form part of very large complexes, or are associated with cotton manufacture rather than wool (Ashmore 1982). Early records are known elsewhere in the country; in East Anglia, for example, there are numerous references to Dye Houses (known as ‘Woadhouses’) in the sixteenth century, many of which may have been housed in shops that formed part of larger domestic dwellings (Alston 2004, 39). Such shops are usually very small however, often only a few meters square, and may have incorporated flues in the roof to allow the escape of smoke and hot air (*op cit*, 40 and 53). This corresponds with evidence from Yorkshire, where the few documentary sources referring to Dye Houses suggest that in the late eighteenth to early nineteenth century they tended to be small in size, perhaps 11m by 4m or slightly larger (Giles and Goodall 1995, 50).
- 3.4.3 Many of the earlier Dye Houses were shared by several clothiers, with only the larger merchants possessing their own (Alston 2004, 54), although this situation would have undoubtedly changed over the following centuries as the industry grew. A variety of colours could be produced during the sixteenth and seventeenth centuries including ‘*browne blew, Blew and Black, Sky culler, Green, Gilloflower, Contre russett, white Browne, purple, Red, Black redd, Blew and Browne, Black and Green and Sad new culler, Sheps culler and Turkye culler*’, and this continued to grow in number into the nineteenth century (Satchell 1984, 53). It is not known which colours were used at Hallthwaites, although the most well known colour produced in Cumbria, ‘Kendal Green’, is a possibility. This was made by a combination of a yellow produced by a native plant, weld, and blue produced by British but not local woad (Marshall and Davies-Shiel 1969, 93) or Indigo, which came from India (Jones 1996, 121).
- 3.4.4 Records of a comparable complex at Beckfoot, also in Millom parish, in 1771 refer to it as comprising ‘*All that mess and tenement or dwelling house, called the old house the new cowhouse, and loft over it the peathouse, Dyehouse, fulling mill, Indigo mill and carding mill, and the two lower pairs of Tenters*’

(BD HJ/Precedent Book 1/p20-22 1771), perhaps suggesting that blue or green cloths were produced. A second Dye House was apparently also to be built at the end of the existing Dye House ‘*on or before Christmas the next*’ (*ibid*). This potentially shows that a complex of buildings such as that at Hallthwaites could easily have its origins in the eighteenth century.

3.5 THE DYE HOUSE AT HALLTHWAITES

3.5.1 The origins of the Dye House at Hallthwaites are obscure, but it is evident that it was part of a complex of buildings making and finishing woollen cloth. Nothing indicating its presence is visible on the earliest maps of the area to show any detail, nor is the associated mill shown (Hodgkinson and Donald 1771). By the time of the earliest first edition Ordnance Survey map of the area (1865), the entire complex at Hallthwaites had been created, so the Dye House was presumably constructed within the intervening period. The directories are a little more revealing, however, and demonstrate that Dyeing associated with blanket manufacture was carried out at Hallthwaites from at least 1829, as summarised in Table 1 below.

<i>Date</i>	<i>Name</i>	<i>Occupation</i>	<i>Source</i>
1829	Thomas Pickthall	Dyer and blanket manufacturer	Parson and White 1829, 227
1847	James S Moore	Dyer Etc	Mannix and Whellan 1847, 351
1861	James Stevenson Moore	Woollen manufacturer and Dyer	Morris, Harrison and Co 1861, 195
1901	JB Moore and Sons	Drapers and woollen manufacturers	Bulmer and Co 1901, 594
1934	JB Moore and Sons	Woollen manufacturers	Kelly’s Directories Lt 1934, 258

Table 1: Occupiers of the Dye House at Hallthwaites

3.5.2 Little is known about the first recorded owner Thomas Pickthall, but the Moore family who succeeded him and ran the business for approximately 100 years are recorded in some detail. John B Moore is almost certainly the son of James Stevenson Moore, and he appears to have at first jointly run the business, which incorporated the associated mills and other buildings, with his brother R Moore (DH 322/4 1887). In 1887 JB Moore took sole control of the business when the partnership with his brother was dissolved (*ibid*).

3.5.3 A collection of diaries belonging to John B Moore from 1878-1880 give a vivid picture of the day to day life at Hallthwaites, and while they rarely mention the Dye House or the mills, the numerous trips and journeys

undertaken are evidently primarily to do with the business, although this also included a considerable amount of farming (DH 322/1-3). He regularly crossed the Duddon Sands to go to Ulverston, usually on Thursday (market day). Other entries relate to delivery of goods: 10th November 1879 'took *Mussicks Blankets*' (DH 322/2) and 8th June 1880 '*Took R. Dickinson some cloth and Blankets we have had nearly 2yrs, they did not grumble but Mrs Dickinson said it was very nice cloth and paid me*' (DH 322/3). Other journeys were made for the collection of money: 24th February 1880 '*went by first train to Drigg collecting a few accounts up, came back by midday train to Ravenglass collecting bills*' (*ibid*). Details of the physical operation of the business are rare, however, but there are numerous entries connected to dealing with materials: 11th June 1879 '*weighing and packing all day*', 5th September 1879 '*weighing up wool put into Leasedales shop*', 2nd December 1879 '*packing for Whitehaven*', 8th December 1879 '*sacking in morning*', and 9th December 1879 '*weighing up wool and empty sacks*' (DH 322/2).

3.5.4 There are only a few specific references to the buildings making up the complex. Between the 5th and 6th of December 1879 the cold weather stopped the walk mill wheel from turning: '*Trying to loose walk mill wheel frozen up, was at it and about walk mill all day*' and '*Working at walk mill and mill race at Hallthwaite until three o'clock, got up to knees in river working to clear water course from wheel, ice 4 inches thick was all fluddered [flooded?] up, got all clear and wheel to run at good speed*' (*ibid*). The only direct mention of the Dye House comes a few days later on the 9th December: '*had William [his son?] walling at Dyehouse*' (*ibid*). A more mysterious entry from the 18th February 1878 may relate to a building at Hallthwaites, possibly even the Dye House, but this cannot be certain: '*Got a letter from Lawrence, claims for Building being burnt 32-6-8*' (DH 322/1).

3.5.5 Despite the lack of detailed information about the business and the Dye House, these sources do give some idea of its scale. During the late nineteenth century at least, it was evidently operated by a small number of people, probably only a single family, with John Moore doing much of the work, including maintenance, deliveries and collecting bills, himself. The business evidently supplied a large area, however, as mention is made of trips as far north as Whitehaven, as far south as Barrow-in-Furness and Ulverston, all along the Cumberland coast, and even east into Yorkshire. Although it is likely that many of these visits were not business related, the Moore's were evidently very enterprising and willing to travel in order to sell their goods. The complex, including the Dye House is known to have ceased production in 1935, with many of the original fittings still intact (Marshall and Davies-Shiel 1971, 16). Many of the buildings within the complex were subsequently used by a poultry farmer (*ibid*), who appears to have purchased much of the estate, including the Dye House in 1939 (BD/HJ/131/16/6 1939; BD/HJ/131/16/7 1939). Even at this date the Dye House came with its own tenter ground and the right to erect tenter frames upon it (BD/HJ/131/16/7 1939).

3.6 MAP REGRESSION

- 3.6.1 As stated above, the earliest detailed map of the area (Hodgkinson and Donald 1771) does not appear to show the Dye House or any of the related structures, such as the mill (which are generally shown on this map). By the time the first Ordnance Survey maps of the area were made the entire complex at Hallthwaites in more or less its present form exists.
- 3.6.2 **Ordnance Survey 1865-7:** these are the earliest detailed maps of the site, and by this time the entire complex has been constructed, including the woollen mill, walk mill and Dye House (Plate 1). The buildings appear much as they do today, although the east side continues to the north-east corner, rather than stopping short as it now does. The tenter frames to the north of the Dye House are also clearly shown.
- 3.6.3 **Estate Plan 1875 (BD/TB/SP/1/52):** although not particularly detailed the basic plan is still evidently the same on this plan. The tenter frames to the north are still also present, although only two rows are shown.
- 3.6.4 **Ordnance Survey 1899:** the buildings have essentially the same form, and the tenter frames to the north are still present (Plate 2). The west end is shown with two small outshuts attached to it, although these may have been present before and not shown.
- 3.6.5 **Ordnance Survey 1924:** the buildings have essentially reached their present form by this time (Plate 3). The north-east corner has been shortened to its present dimensions, but the outshuts on the west end are still present, as are the tenter frames to the north.
- 3.6.6 **Ordnance Survey 1972:** the buildings have reached their present form by this date. The outshuts at the west end have been removed, as have the tenter frames to the north.

4. BUILDING INVESTIGATION RESULTS

4.1 INTRODUCTION

4.1.1 At the time of writing, the Dye House at Hallthwaites is in an advanced state of decay and dereliction. Only half of the building has its original roof (Rooms 1, 2, and 3) and most of the walls are now reduced to, or below, approximately first floor height. A substantial amount of collapse is present within most of the other rooms, which obscures the floor. The southern part of the building (Elevation 7) forms part of the boundary with the adjacent property to which there was no access. Consequently, it was only possible to photograph Elevation 7 from the road. For the purposes of the survey each room and elevation was individually numbered as shown on Figures 3 and 4.

4.2 ARRANGEMENT OF THE BUILDING

4.2.1 The whole complex comprises seven rooms and is set out in an asymmetrical 'C-shape' with the long axis of Rooms 1, 2, 3 and 4 aligned east/west (Fig 3). Rooms 1, 2, 3, 4 and 5 form an 'L-shape' and rooms 6 and 7 appear to have been built on to this. Most of the rooms are able to be accessed from a central area, which almost forms a small (grassed) courtyard. The Black Brook runs to the east of the building. Rooms 1 and 2 are situated below Room 3, while Rooms 4, 5 and 7 extend through both the ground and first floors.

4.3 FABRIC

4.3.1 The buildings are traditionally constructed using random local stone (most of which is uncoursed) and their general appearance is consistent with local industrial vernacular buildings. Most of the stone is unworked and some (particularly the quoins) appears to have been collected from the riverbed and used directly in the fabric. It is evident that some rooms differ in construction details and fabric, with some parts of the building exhibiting superior construction methods. There is occasional rebuilding and patching with a mixture of hand-made and modern brick. Lime mortar is visible throughout the complex although a few sections of wall appear to be of dry stone construction typical of the Southern Lake District. Patches of external render are visible in various places. Most of the window and door lintels are timber.

4.3.2 The remaining roof (above Room 3) has a pitch of approximately 25 degrees, has slightly projecting eaves and comprises local slate laid in diminishing courses with a stone ridge. The remains of a brick-built chimney are present below the eaves of this roof on the north side (Fig 3). There are no rain water goods present. The rest of the complex is unroofed, but it reasonable to assume from the surviving evidence that it was roofed in a similar manner to the remaining roof. There is evidence to suggest (see *Section 4.4.1*) that the surviving roofed building (Rooms 1, 2 and 3) was constructed in more than

one phase. The building investigation results also provide evidence that the rest of the complex was constructed in various phases.

- 4.3.3 Internally, the roofed building (Rooms 1, 2 and 3) has lime-plastered and/or lime-washed walls. The spaces between the roof battens are similarly plastered. Lime wall plaster also survives in varying quantities in most of the other rooms of the complex. The floors, as noted above, are generally covered by collapsed material and are for the most part obscured. However, the floors in Rooms 1 and 2 are visible and are mostly cobble and concrete.

4.4 EXTERNAL BUILDING DETAILS

- 4.4.1 **External Elevation 1:** (Fig 7; Plates 4-5) this forms the long north external wall of Rooms 1, 2, 3, and the gable wall of Room 4, and is constructed from random uncoursed local stone, most of which is unworked. There are traces of lime mortar and lime render present particularly in the centre section of the wall (Room 2). There are four window openings, two providing light for the upper floor (Room 3) and one each for Rooms 1 and 2. All the windows differ in size and there is evident rebuilding corresponding to the remodelling of each opening, particularly the west windows. The first floor windows were glazed with simple multi-light frames (now much degraded). The east ground floor window is blocked, the west is boarded. All the openings have slate sills and the first floor windows have timber lintels (formed from the wall plate). A doorway with a distinctive arched head is present in the gable of Room 4 which once gave access to the (now gone) first floor. This is reached via a flight of degraded steps (possibly with eight steps originally) of the same construction as the rest of the building. A door with a single light is still present, as is the door surround (although both are much degraded). Either side of the door are two apertures (Fig 7) which may have supported a porch. A similar aperture (lined with brick) is located to the west of the door at low level. These are also visible internally.
- 4.4.2 It is evident that the wall was not constructed in a single phase, as shown by the two, very clear, vertical butt joins visible in the elevation (Fig 7). These correspond to the dividing walls between Rooms 1, 2 and 4. It would appear that Room 4 was the first to be built followed by Room 2 then Room 1 as Rooms 1 and 2 only have quoins on their western sides. The elevation of Room 1 is quite distinct in that it contains numerous large rounded boulders similar to those visible in the bed of the Black Brook. An inserted chimney (stack missing) constructed from hand-made brick is present just to the east of the western window on the first floor.
- 4.4.3 **External Elevation 3:** (Fig 9; Plate 6) surviving to a height of approximately 1.3m, this elevation comprises the east walls of Rooms 6 and 7. The wall of Room 6 is constructed from a mixture of split stone and river cobbles of varying sizes, while that of Room 7 is of similar construction to the rest of the room. The rest of the building There are three openings, two in Room 7 and one in Room 6. The north opening in Room 7 has a stone lintel, while that in Room 6 has a timber lintel and both were probably windows (no trace of glazing survives). The southern opening in Room 7 may have been a door and

appears to have been narrowed. The elevation of Room 6 butts up to the north elevation (Elevation 6) of Room 7 and is slightly stepped back, indicating that Room 6 was probably constructed later. The elevation is in poor condition and is much denuded.

- 4.4.4 **External Elevation 4:** (Fig 10; Plate 7) this elevation comprises the south wall of Room 7, which, at the time of survey, was unable to be inspected. This was due to the elevation forming part of the boundary of a private garden, through which access was not permitted. Photographs were taken from the road in order to permit a brief description of the elevation. In most details, the elevation is similar to the south internal elevation (Elevation 14; Fig 19) of Room 7 (Section 4.5.20).
- 4.4.5 The elevation is constructed using the same materials as the rest of the building. There are two window openings in the east side of the wall, both with timber lintels. Brick rebuilding is present above the easternmost window. A vertical butt joint is visible slightly to the east of the west side of the wall. Quoins are present on the eastern side of this join, indicating that Room 7 was later extended with a single storey construction (later extended to form Room 6). Additionally, the west gable wall (Elevations 5 and 15) of Room 7 indicates a (lower) north/south running roof.
- 4.4.6 **External Elevation 5:** (Fig 11; Plate 8) this is the much denuded west gable wall of Room 7 and is constructed in the same manner as the rest of the room with uncoursed flat stones and random-sized angular, sub-angular and rounded boulders. There are some large quoins (unworked) at both sides of the elevation and there are two ground floor window openings both with splayed reveals. The south window has a very large stone lintel. There is some brick infilling below the sills of both windows. A small opening of unknown purpose is present to the south of the south window.
- 4.4.7 **Elevation 6:** (Fig 12) this is the north external elevation of Room 7 and the south internal elevations of Rooms 5 and 6. For discussion of the internal elevations of Rooms 5 and 6 see Sections 4.5.13-4.5.19. The construction details are similar to those walls of Room 7 already discussed, although the stones used are slightly smaller. There is a vertical butt joint 1.2m east of the western end of the elevation which probably relates to a blocked doorway (not visible internally).
- 4.4.8 **Elevation 7:** (Fig 13; Plate 9) forming the west external elevation of Rooms 5 and 4 and the east internal elevation of Room 2 (Section 4.5.4), the exterior part of Elevation 7 is much degraded and little survives. At the south end of the wall a doorway allowing access into Room 5 has a surviving timber lintel. The fabric comprises angular and sub-angular split stone and large unworked quoins are present at both ends of the wall. To the north of the elevation a doorway allows access into Room 4. This has a very precarious door head similar to the door on Elevation 1, which allowed access to the upper floor of Room 4 (Section 4.4.1).
- 4.4.9 **External Elevation 8:** (Fig 14; Plate 10) this is the south-facing exterior elevation of the main roofed building which contains Rooms 1, 2 and 3. It is

constructed in similar fashion to Elevation 1. There are two ground floor doors allowing access into Rooms 1 and 2 and two first floor windows which provide light for Room 3. The east window is a small four-paned affair (glazing missing), whilst the west window is a larger three-over-one sliding sash without horns (glazing missing). Both frames are in a poor state of repair and the west jamb of the west window has been patched with brick. The west door (into Room 1) has seven planks (rotted at the bottom), is of battened construction, and is side-hinged with a single nailed and bolted strap hinge and iron pintle. It has a timber lintel (probably reused), a simple timber surround, and a wooden latch. The east door differs slightly in that there are only four (wider) planks one of which has been repaired. The hinge arrangements also differ and it is harr-hung with two nailed iron pegs. There is a timber lintel with a projecting slate drip course. Both doorways have stone thresholds.

4.4.10 A vertical butt joint is visible (also visible on Elevation 1, *Section 4.4.1*) which divides the elevation into two unequal parts. The eastern part (Room 2) is almost all covered in lime render and was probably constructed first. Large quoins, similar to those on the other elevations, are present at the west side of the elevation (Room 1).

4.4.11 **External Elevation 9:** (Fig 15; Plate 11) this forms the east-facing gable elevation of Rooms 1 and 3. It is constructed from a mixture of varying stone types and sizes which were probably collected locally and has large quoins. A single door with a stone lintel and missing threshold is the only access into Room 3, and is reached via a flight of semi-collapsed stone steps (similar to those described in *Section 4.1.1*). There is a small flagged landing at the top of the steps and, unlike those steps described in *Section 4.4.1*, there is a storage space beneath. The steps contain possible evidence of a handrail in the form of leaded holes in the steps (R Newman *pers comm*). The door is side-hung and of battened construction similar to that in Room 1. There is a simple timber surround and the whole assembly is in very poor condition. Above the door is a slate drip course below which are two square holes that may have held a timber for a porch (one of which still contains a timber).

4.5 INTERNAL BUILDING DETAILS

4.5.1 **Room 1:** (Fig 3; Plate 12) (Fig 16 Elevation 10; Fig 25 Elevation 20; Fig 26 Elevation 21 and Fig 27 Elevation 22) occupying the western side of the ground floor of the main roofed building, this square room is currently being used as a general storage area. It is accessed via a single door located in Elevation 8 (Fig 14; *Section 4.4.9*). The walls are constructed from coursed angular and sub-angular stone and there is a moderate amount of lime plaster and/or limewash remaining which obscures the fabric. There is a course of larger 'padstones' at the base of each wall.

4.5.2 There are two windows present on Elevation 10 as described in *Section 4.4.1* one of which is boarded and the other has been permanently blocked and rendered with cement (Plate 12). Both windows have timber lintels and sills and appear to be fire damaged. The area between these windows has been partially rebuilt in brick. The east wall (Elevation 22) contains a further

window, which has been blocked with brick and has a timber lintel and concrete sill.

- 4.5.3 There are ten east/west ceiling joists which form part of the floor of Room 3 above, most of these measure 3½ inches by 6 inches and some appear to be of modern appearance. A crude timber ‘scaffold’ supports the ceiling at the western end. A series of iron nails and a chain are present on the southern joists. Timber boards, 6 inches wide form part of the floor in Room 3. The floor, although fairly cluttered, appears to be mainly flagged.
- 4.5.4 **Room 2:** (Fig 3; Plate 13) (Fig 13 Elevation 7; Fig 16 Elevation 10; Fig 25 Elevation 20 and Fig 28 Elevation 23) east of Room 1, this room is of similar appearance and is also being used as a general store room. It is accessed via a single door located in Elevation 8 (Fig 14 *Section 4.4.9*). In common with Room 1, the walls have the remains of lime plaster/limewash present and are constructed from coursed small-to medium-sized sub-angular and sub-rounded stones. Larger ‘pad stones’ are to be found at the base of each wall.
- 4.5.5 There is a single window located in the north wall (*Section 4.4.1*) which has been crudely blocked with a collection of random-sized stones and logs (Plate 13). It has a timber lintel and rough sill. There is a second window in the west wall (Elevation 22) which corresponds to that described in the east wall of Room 1 (*Section 4.5.2*) and it is blocked with brick. A timber-lined hatch (partially blocked) is present within the east wall (Elevation 7).
- 4.5.6 There are seven ceiling joists visible, which are 4¾ inches wide, are roughly finished, and are plainly earlier than those in Room 1. These are overlain with timber boards approximately 10 inches wide.
- 4.5.7 **Room 3:** (Fig 4; Plate 14) (Fig 13 Elevation 7; Fig 16 Elevation 10; Fig 25 Elevation 20 and Fig 26 Elevation 21) comprising the first floor of the roofed section of the complex, above Rooms 1 and 2, this rectangular room is accessed via the doorway described in *Section 4.4.11*. There are four windows (*Sections 4.4.1 and 4.4.9*) both with splayed reveals. The walls are of similar appearance to both Rooms 1 and 2 and are mostly lime-plastered or limewashed with some brick patching and repair. There is a butt join visible in the south wall (Elevation 20) 1.2m east of the west window. The wall which divides Rooms 1 and 2 does not continue up into this room but there are slight bulges on each of the long walls in the area where the wall would have been. It is possible that the wall has been removed to create a larger space.
- 4.5.8 The floor is laid down to 10 inch wide timber boards on the east side and 6 inch wide boards on the west. The roof is supported by a single principal rafter truss located in the centre of the room (roughly in line with the butt join noted from Elevations 1 and 8 (*Sections 4.4.1 and 4.4.10* respectively)). East of the truss there are four purlins (carried on the back of the principal rafters), together with a ridge purlin. West of the truss there are only two, higher quality (and probably later) tenoned purlins. The opposite ends of the purlins rest on the gable walls. The remainder of the roof comprises common rafters and battens, the spaces between which are lime plastered. It is probable that the truss was inserted when the room was enlarged.

- 4.5.9 **Room 4:** (Figs 3 and 4; Plate 15) (Fig 16 Elevation **10**; Fig 17 Elevation **11**; Fig 23 Elevation **18**; and Fig 24 Elevation **19**) located to the east of Room **2**, this appears to have once been two rooms on two floors as joist slots and surviving timbers in the north and south walls suggest (Fig 3). There is an aperture in the east wall (Elevation **11**) which may have housed an east/west beam. It is now roofless and is a single large room. Remnants of lime plaster are present, particularly on the west wall only apparent above first floor level. (Fig 23 Elevation **18**).
- 4.5.10 The walls are constructed from angular and sub-angular mainly split stone with few rounded cobbles or boulders, although there are several randomly placed bricks in the north (Elevation **10**) and west (Elevation **18**) walls. There are butt joints at the north-west, north-east, and south-east corners.
- 4.5.11 There are three doorways present, two on the first floor and one on the ground floor. The ground floor doorway is located in the south-west corner of the room (see *Section 4.4.8*). The first floor was once able to be accessed from outside via the doorway located at the top of the steps on Elevation **1** (*Section 4.4.1*). A second door located in the south-east corner of the room provided access to the first floor room that once existed above Room **5**. There are no windows, although a blocked aperture located on the first floor of Elevation **18** may represent one, which was blocked when Room **2** was constructed. There is a timber-lined recess located just to the east of the doorway in Elevation **18**.
- 4.5.12 Surviving fragments of the roof suggest that it was probably a continuation of the surviving roof of Room **3**, which then turned south through 90° to cover Rooms **4** and **5**. The uneven floor of this room is obscured due to the considerable amount of wall collapse.
- 4.5.13 **Room 5:** (Plate 16) (Fig 12 Elevation **6**; Fig 17 Elevation **11**; Fig 22 Elevation **17**; and Fig 23 Elevation **18**) formerly on two floors, this roofless square room is situated immediately south of Room **4** and to the west of Room **6**. The walls are constructed from random angular and sub-angular coursed stone with lime mortar and are less well built than Room **4**. There is some brick rebuilding and patching. As in Room **4**, there is a considerable amount of collapse, which obscures the floor.
- 4.5.14 There are four doorways; one allowing access into the room from outside and two further doors allowing access to Rooms **6** and **7**. The doorway allowing access to the courtyard (Elevation **18**) is partially collapsed, the single timber lintel having rotted. The doorway in to Room **7** has a similar lintel while that into Room **6** has three timber lintels. There is a single first floor door allowing access into Room **4**.
- 4.5.15 The roof has collapsed (which ran north/south), together with a substantial amount of upper wall fabric. There are surviving joist slots at ceiling height in the north and south walls, together with the surviving remnants of an east/west beam above the door in to Room **6** (Plate 16). This is chamfered and rests directly upon the lintel and appears to have been sawn off at some point.

- 4.5.16 There are a number of recesses on both floors that appear to be either blocked windows or are ovens/boilers of some description. A recessed grate with massive stone lintel located to the south of the doorway into Room 6 (Elevation 11) corresponds with a semi-circular construction on Elevation 2 in Room 6 (Plate 16). Within this can be seen a brick vault and a small recess which may have housed a baffle. The grate is iron and there is an iron frame with hinges present. Above this can be seen some brick rebuilding which probably reveals the course of the flue. To the right of this, in Elevation 6, is a recess with a timber shelf and lintel, which is probably a spice cupboard. A second fireplace is located in the centre of the south wall (Elevation 6). It is quite shallow and has a timber lintel. Above the doorway into Room 6 is a blocked window, which has splayed reveals and a crude timber lintel. It is blocked with a single course of random, generally small-sized stones. It was probably blocked when Room 6 was constructed.
- 4.5.17 **Room 6:** (Plate 17) (Fig 8 Elevation 2; Fig 12 Elevation 6 Fig 18 Elevation 13) this room appears to have been constructed as an outshut some time later than the main building and was probably roofed with a monopitch and lies to the east of Rooms 4 and 5. It may well have existed on two floors (or there may have been a loft space) as a diagonal scar and surviving timber supports in Elevation 2 probably represents a previous staircase (Fig 8).
- 4.5.18 The east and south walls are constructed from small-to medium-sized angular and sub-angular stone with some river cobbles present. There are surviving areas of lime plaster/wash (which exhibit graffiti), which are present on the west wall. There is an area of brick rebuilding above the door in the south wall (Elevation 6). A vertical wall scar present in the west wall (Elevation 2) represents a butt joint between Rooms 4 and 5 (Fig 8).
- 4.5.19 There were probably two windows in the east wall (Elevation 13) although the northern one of these has collapsed. The southern window has a crude timber lintel and very slightly splayed reveals. Two doors are present giving access to this room via Rooms 5 and 7 (there is no external doorway). Both doorways have timber lintels and the lintel over the door into Room 7 has a projecting slate drip course which suggests that this was originally an external door. This doorway has a small side window and both are quite low (probably due to the amount of collapsed material on the floor). A stone semi-circular structure projects into the doorway into Room 7 and is a later build, which butts up to the west wall. It was probably built in order to house the grate described in Room 5.
- 4.5.20 **Room 7:** (Plate 18) (Fig 18 Elevation 13; Fig 19 Elevation 14; Fig 20 Elevation 15 and Fig 21 Elevation 16) this is the largest room of the complex and is constructed from a mixture of coursed angular, sub-angular and sub-rounded stone with lime mortar. There are areas of brick patching and repair above the doorway in to Room 6 in Elevation 16 (Fig 21), next to the window in Elevation 15 (Fig 20) and next to the window and doorway and gable on Elevation 14 (Fig 19). The butt joint between Rooms 6 and 5 can clearly be seen to the west of the door in Elevation 16 (Fig 21).

- 4.5.21 This room probably had an ‘L-shaped’ roof at some point, evidenced by the gable on Elevation **15**. The central section immediately south of Room **5** was possibly of one and a half or two floors. There is slate water-tabling present on the gable of Elevation **16** (Fig 21) which represents a roof line. It is possible that Room **5** extended down and incorporated the central portion of Room **7** or that a single storey outshut originally existed here the roof of which was subsequently raised and incorporated into Room **5**. The outshut constructed to form Room **6** (*Section 4.5.17*) may have been an extension of an earlier outshut which now forms the eastern quarter of this room. The eastern end of Elevation **14** is stepped back slightly, which suggests a later build.
- 4.5.22 There are two doorways allowing access into this room from Rooms **5** and **6** and a single narrow opening allowing access from outside via Elevation **13**. A blocked aperture within Elevation **14** (Fig 19) may represent an external door. There are four surviving windows, three with timber lintels (the other slate), and three denuded/blocked apertures, which may represent windows. All of the windows have splayed reveals.
- 4.5.23 There is a possible fireplace and three flue-like openings (Plate 19) located on Elevation **16** (Plate 19, Fig 21). The flue openings have sloped-back walls and split stone lintels. The flues appear to follow a course through the wall thickness. There is no evidence of soot blackening and their use is unknown. The fireplace corresponds to that on the south wall of Room **5**. Another, brick-built flue is present to the east of the large central window on Elevation **14**.
- 4.5.24 The floor although obscured by large amounts of collapsed wall material was observed to be stone-flagged in places. Also visible were some internal structures which consist of othostats – probably a tank of some description.

5. DISCUSSION

5.1 INTRODUCTION

- 5.1.1 The discussion of the building attempts to address three questions: the phasing of construction and alteration visible within the building, the dating of these phases and the uses to which the parts of the building were put.

5.2 PHASING

- 5.2.1 It is possible to identify a total of six phases of construction within the Dye House, each of which is of slightly different construction detail;
- 5.2.2 **Phase 1:** analysis of the plan of the building and evidence from inspection of the fabric of the building appears to suggest a hypothesis that the first phase of building comprised a single north/south aligned two storey structure, the northern part of which survives as Room 5. It is possible that the central part of Room 7 formed the southernmost part of this original structure or that it was a single-storey outshut (evidenced by water-tabling in Elevation 16) which was extended and rebuilt. Evidence for this is limited but the nature of the gable in Elevation 14 in Room 7 suggests the roof of Room 5 continued south to Elevation 14. It is possible that further evidence for the nature of the relationship between Rooms 5 and 7 remains obscured by the large amount of debris present on the floor of Room 7. There is no surviving evidence of any original stairway or access to the first floor. The water-tabling present on Elevation 16 suggests that the roof line was somewhat lower than the current surviving height of the gable (Fig 21) and gable on Elevation 14.
- 5.2.3 **Phase 2:** the next phase of building probably resulted in the addition of a further room (Room 4) to the north of the original structure. It is clearly of more considered construction than Rooms 5 and 7, and makes the use of better quality materials with hardly any river cobbles. The building then would probably have been a long two-storey construction. Access to the first floor was provided by the stone steps located on Elevation 1, and the first floor of Room 5 was accessed via the first floor of Room 4.
- 5.2.4 **Phase 3:** the next phase is difficult to ascertain clearly but it is possible that Room 7 was extended to the west some time later than the addition of Room 4. The roof then became 'L-shaped'. Following this, Room 7 was extended to the east with the addition of an outshut. At some point Room 7 became a single large room.
- 5.2.5 **Phase 4:** following the extension of Room 7 to the east, it is probable that Room 6 was constructed, which resulted in the blocking of the first floor window in Room 5. Room 6 could have been constructed at any time following the extension of Room 7 and may, therefore, postdate the additions of Rooms 1 and 2.

- 5.2.6 **Phase 5:** the addition of a two-storey extension (Room 2 and part of Room 3) was made during this phase of construction. A clear build line is visible in Elevation 1 (Plate 5) which clearly shows that Room 2 was added to Room 4. Modification of the existing north/south roof of the original build was necessary to accommodate the new addition. Elevation 18 was extended up to create a new gable to support the roof. There is no evidence for any doorways allowing access to and from this new extension from Room 4 and access arrangements for the first floor remain unknown. It is probable that the extension was intended to be of two stories from the outset. Most of the south external walls of Rooms 2 and 3 (Elevation 6) are rendered.
- 5.2.7 **Phase 6:** the Phase 5 extension was later extended further to the west with the addition of Room 1 and the associated steps. A vertical build line can clearly be seen in Elevation 1 (Plate 4). Room 3 was evidently also created at this time probably by removing the upper part of the east gable wall. The roof was also modified with the addition of new purlins and a truss was obviously required to compensate for the missing cross wall. The roof appears to have been re-covered some time later.

5.3 DATING

- 5.3.1 Comparison with other examples of Dye Houses is difficult, and the documentary sources provide little useful information regarding the origins of the Dye House, except that it is likely to have been built between 1771 (Donald and Hodgkinson) and 1829 (Parson and White). This would most likely correspond to the earliest (Phase 1) part of the building, and its small size would also support this (Alston 2004). The reuse of timber also suggests an early date, although timber was being reused from as early as the sixteenth century due to its scarcity and price, and this continued into the eighteenth (Tyson 2000, 41-3).
- 5.3.2 All building phases must have been completed by 1865 as the buildings take on their final form on the Ordnance Survey map of that date. The numerous areas of patching and rebuilding evident within the building cannot be easily dated, even when they are in brick. This was probably something that was done on a regular basis and John B Moore's reference to walling being carried out in December 1879 (DH 322/2 1879) may be nothing unusual.
- 5.3.3 Obviously, economics and necessity dictate the quality and type of building materials used in the construction of vernacular industrial buildings. Most of the building incorporates a fair amount of material gathered or quarried locally, with that material collected from the river representing the least possible investment in building materials. Room 4, however, represents a significant investment. The different building materials used in the various phases of building probably represent the material that was available (within the budget) at the time.

5.4 USE

- 5.4.1 It is likely that various activities took place at this building as part of the Dyeing process. Presumably wool for use at Hallthwaites was first softened ready for weaving at the walk mill, before being made into fabric (blankets are specifically mentioned in the documentary sources). The fabric was then presumably taken to the Dye House, where it may have been bleached, or at least washed, prior to the application of colour. The tenter frames to the north would have been used at this stage, to dry and stretch the cloth. The fabric would have then been boiled with the Dye, before being returned to the tenter frames to dry and stretch. It is not clear if cloth was stored on site prior to distribution (or wool prior to weaving), although the extensions made to the building may have been to facilitate this.
- 5.4.2 A photograph published in Marshall and Davies-Shiel 1976, showing staff of J.B Moores sitting outside their carding mill (Plate 20) suggests that Rooms **1**, **2**, and **3** formed the carding mill. Two quoins located just to the right of the person's head sitting at the extreme right of the photograph appear to correspond to two large quoins located at the western edge of Elevation **6** (Plate 10).
- 5.4.3 The detailed way which the building was used is not certain, and the large amounts of rubble and debris covering the floors made the identification of features difficult. Nevertheless, it would appear from the presence of numerous fireplaces in Room **5** that this was the focus of activity, and where pots filled with the cloth and Dye would be boiled. Presumably, a number of smaller pots were, at least at first, used. How these were arranged is not clear; possibly they were positioned on grills over the fire, or perhaps they were behind the fireplace in a similar manner to set pots recorded on the Solway Plain (Jennings 2003, 73). The presence of apertures in the wall to the south of Room **5** might support this, although they are very high. Whether there were additional buildings corresponding to Phase 1 that are no longer present is unclear, but the later phases probably relate to an expansion of the business, rather than changes in its operation. The presence of upright slabs in Room **7**, perhaps forming a tank, is comparable with tanks used for washing the cloth seen in other Dye Houses (Poutney and Beddow 1976). Adjoining buildings were presumably used for storage, particularly of wool, and the presence of high-level doors perhaps supports this and suggests that the first floor was utilised for this purpose.

6. IMPACT AND RECOMMENDATIONS

6.1 INTRODUCTION

- 6.1.1 The remains of the Dye House at Hallthwaites are in a rapidly deteriorating condition, and this is likely to continue to be the case prior to their renovation. The building investigation combined with the desk-based assessment has provided an understanding of the development of the Dye House, which is an important survival of a once important local industry. Nevertheless, there are still areas that it was not possible to examine, and these could potentially reveal significant additional detail.
- 6.1.2 Any proposed development of the structure will undoubtedly impact upon this important industrial building, and while the standing remains have now been recorded in detail there is still the potential for below-ground features to be identified. These could provide useful information in understanding the processes that went on at the building in more detail, as well as providing dating evidence for the various phases of use.

6.2 RECOMMENDATIONS

- 6.2.1 As the floors within the ground floor rooms were obscured by collapsed wall material, the identification of any internal structures was impossible during the building survey. Room 7 in particular contains features that may help to identify the industrial processes carried out on the site. It is recommended therefore, that a watching brief or further building survey should be carried out when debris is cleared from the floors. Similarly, any excavation of new services or foundation trenches should also be monitored by watching brief in order to identify earlier features or to collect dating material. Any identified features of particular architectural/historical importance, such as tanks or hearths, should be conserved *in situ* as far as is practicable.

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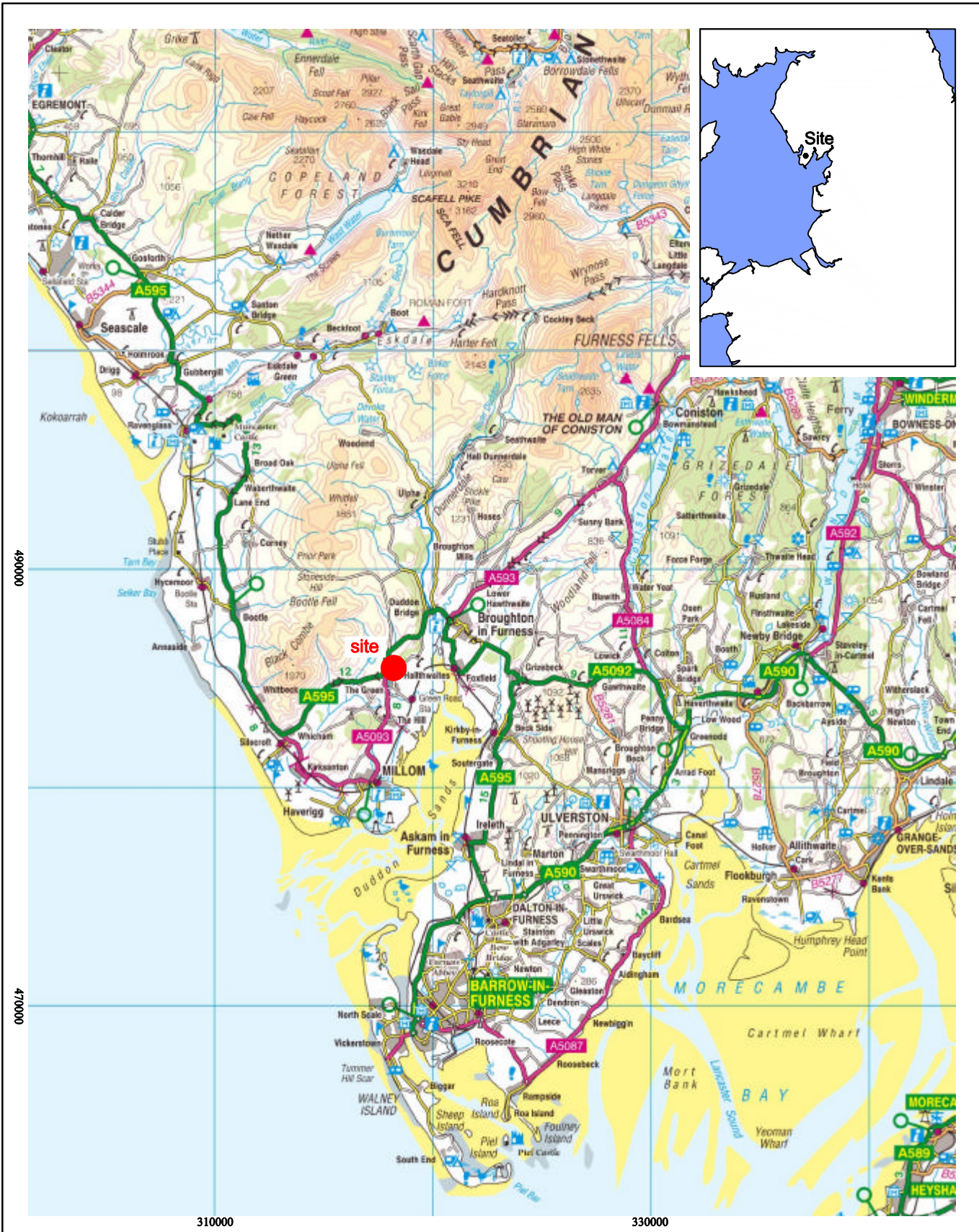
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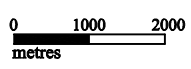
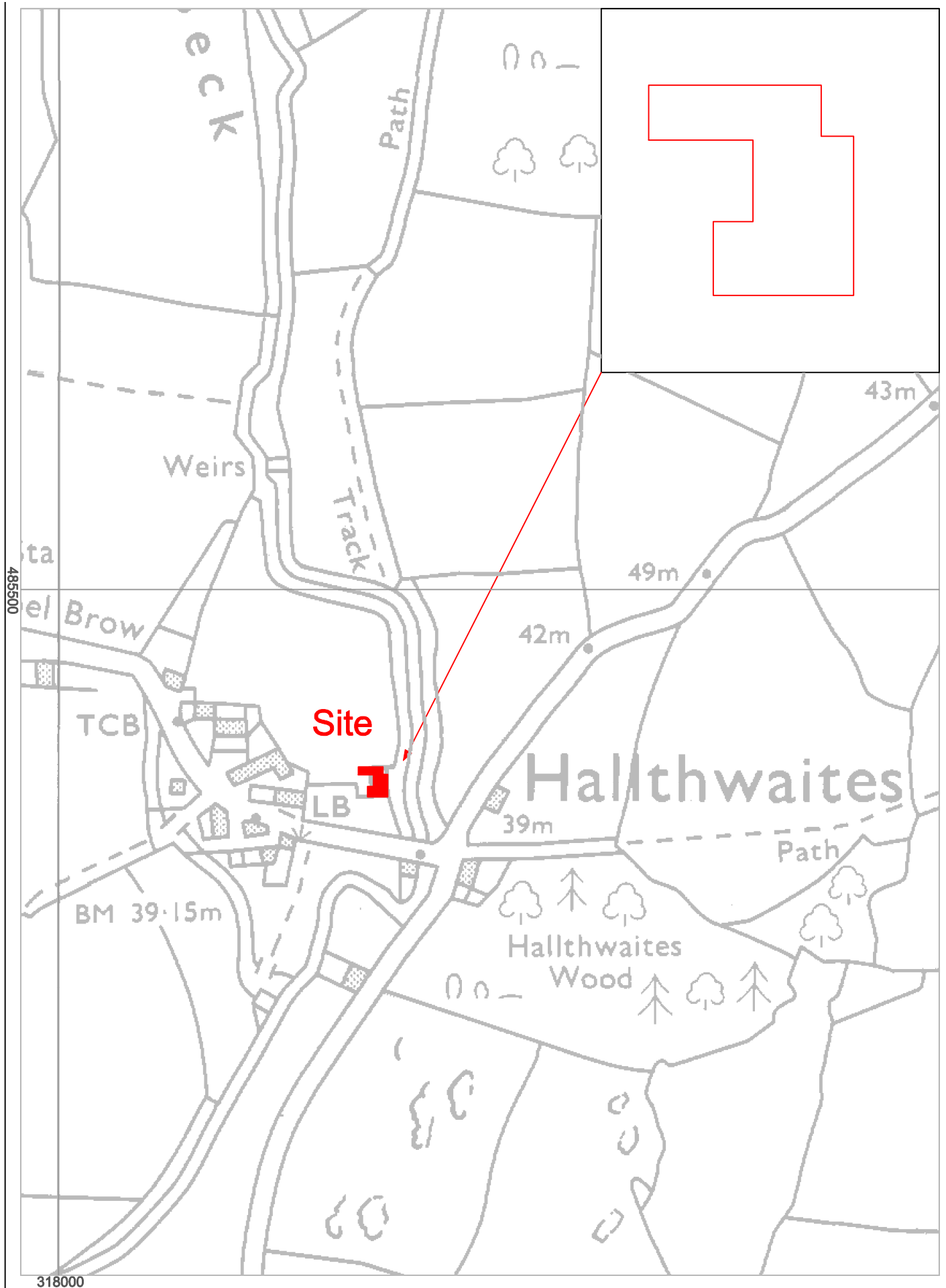


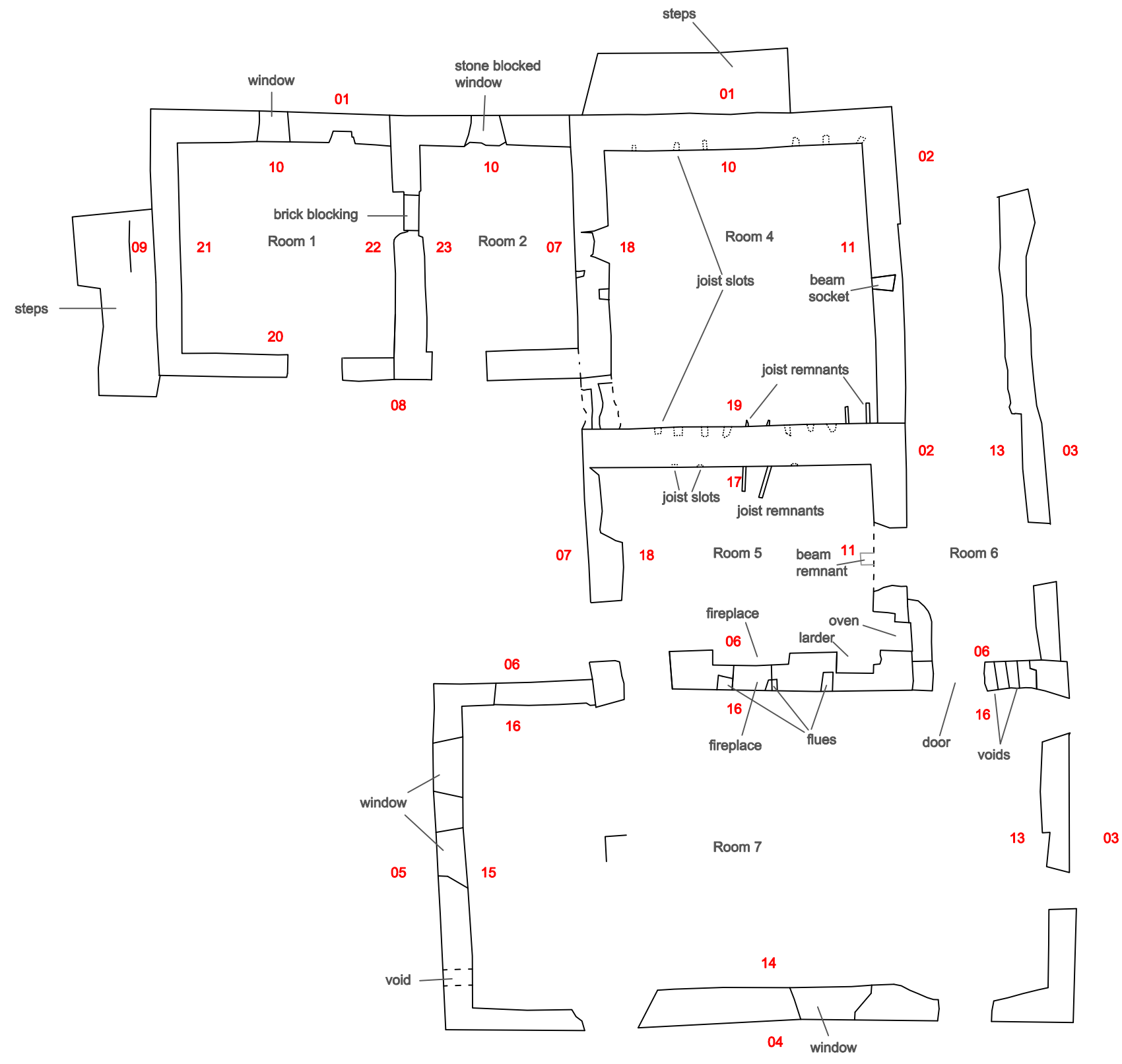
Figure 1: Location Map



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Figure 2: Site plan



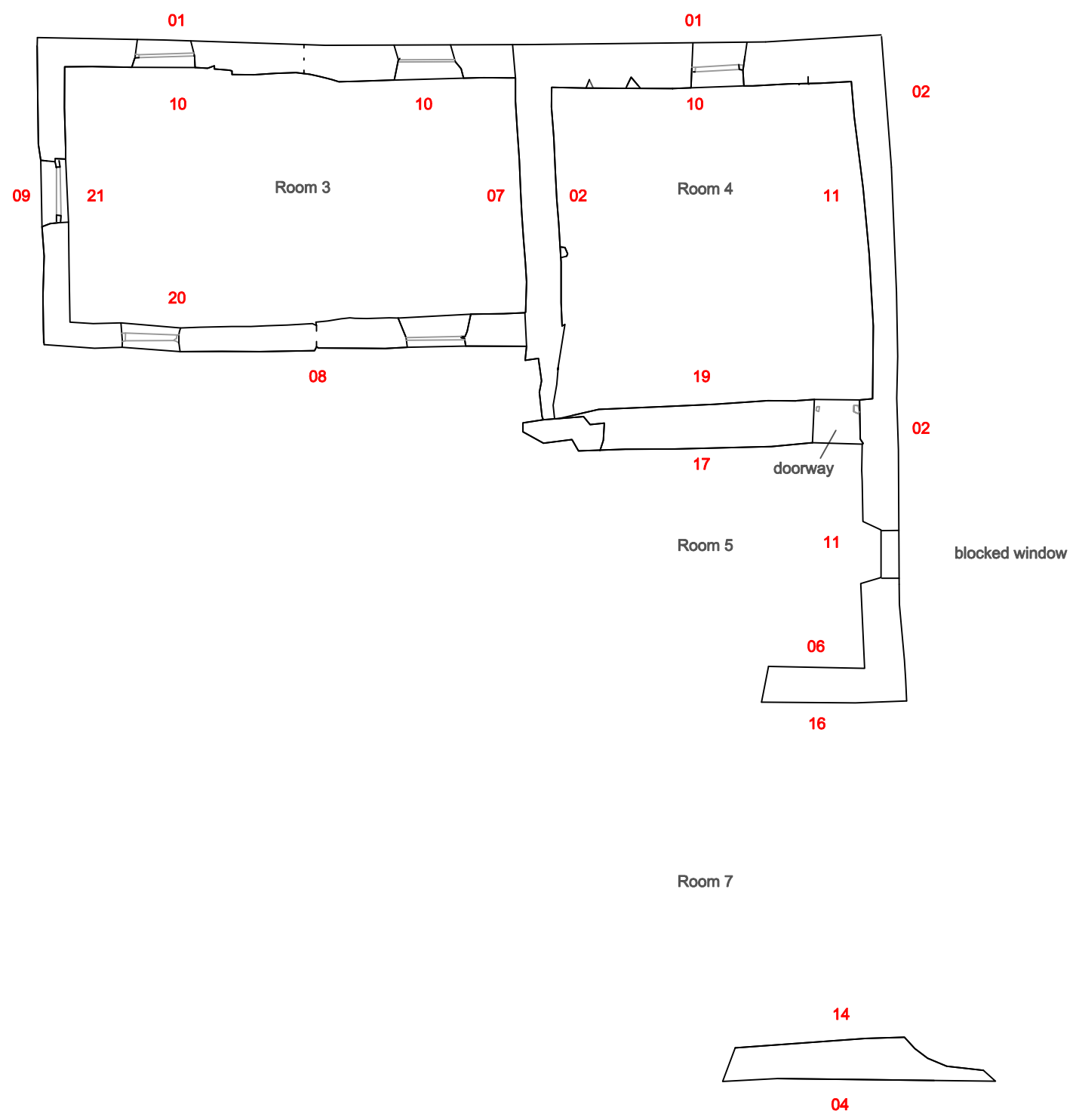
01 - Elevation Number



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Figure 3: Ground floor plan



▲ 01 - Elevation Number
N



Figure 4: First floor plan

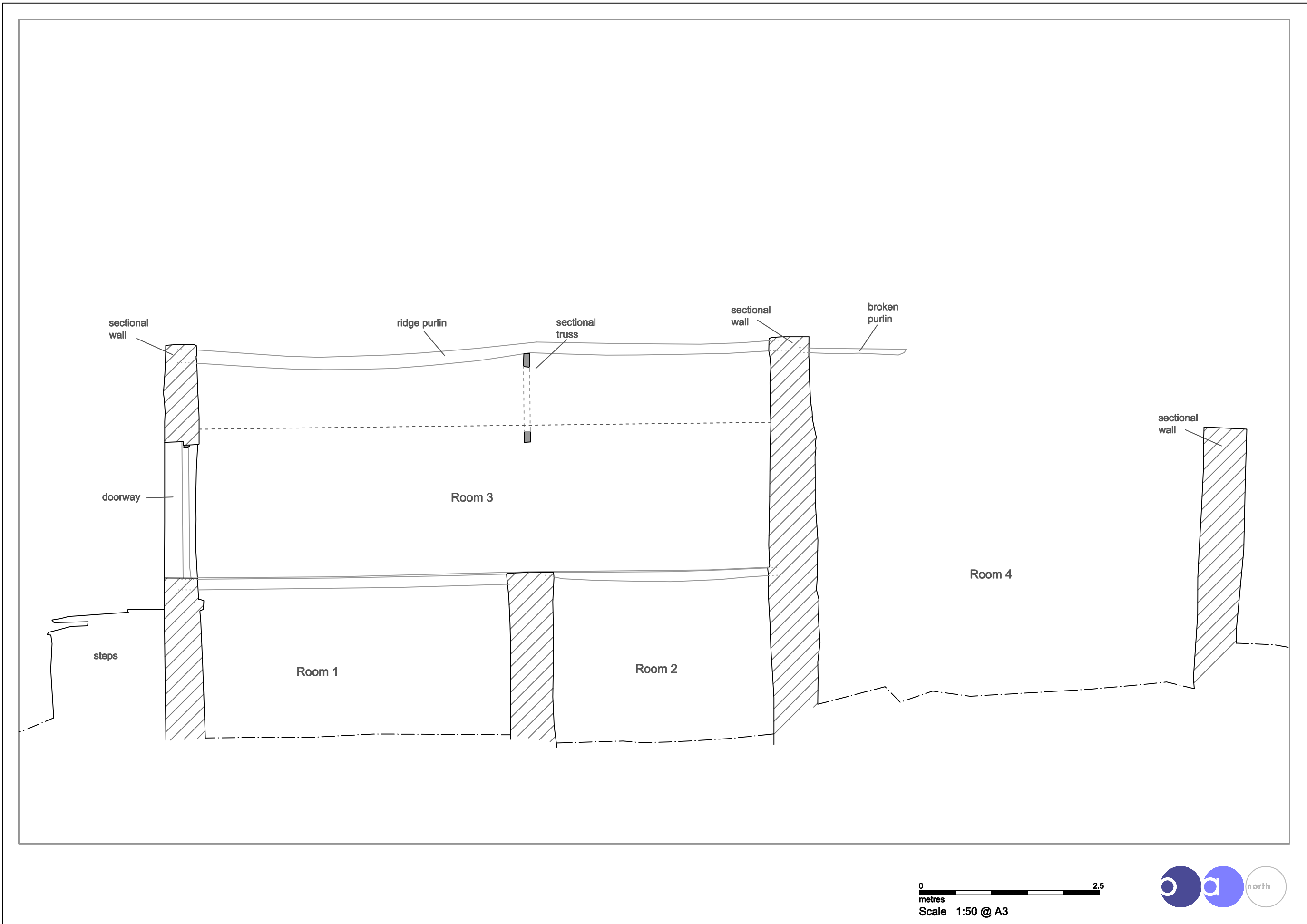
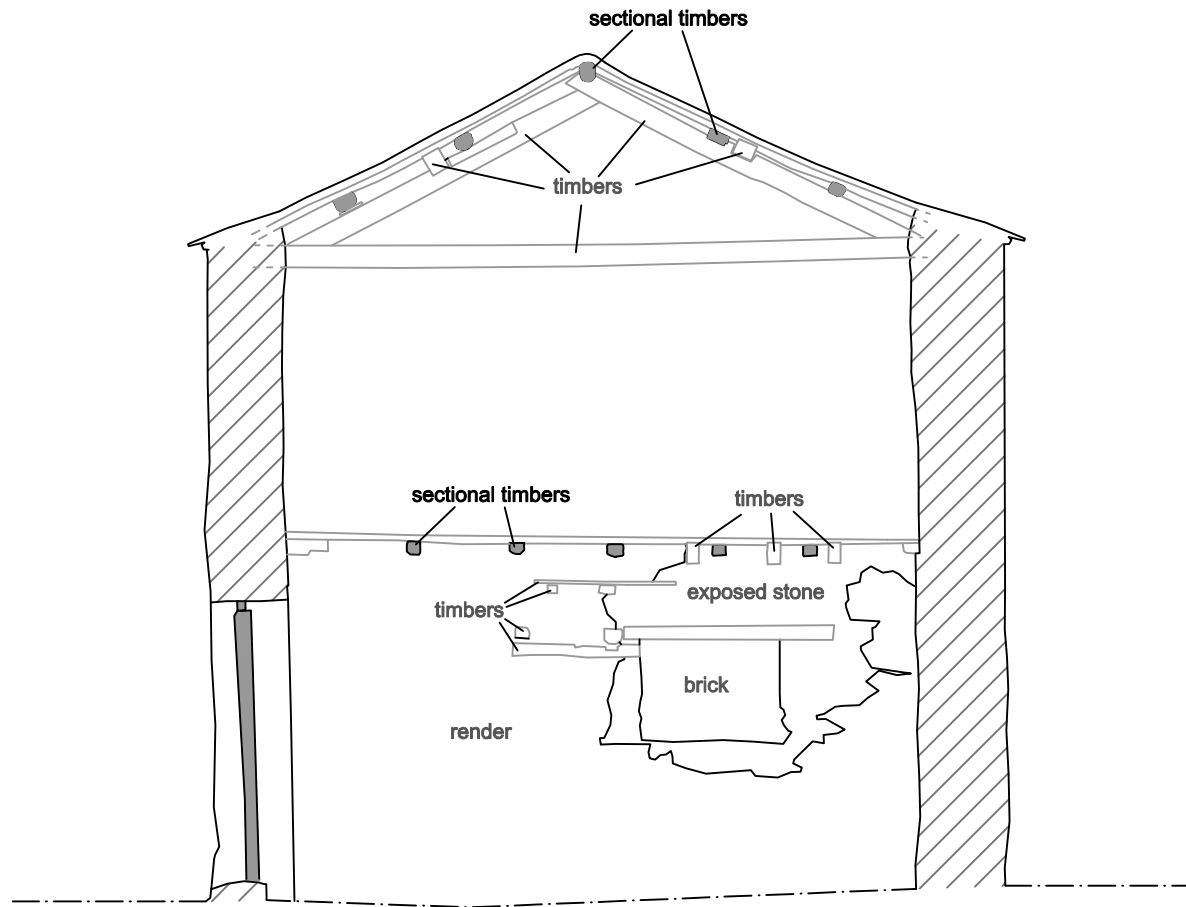


Figure 5: Long section (north-facing)



all lintels timber unless otherwise stated

0 2.5
metres
Scale 1:50 @ A4



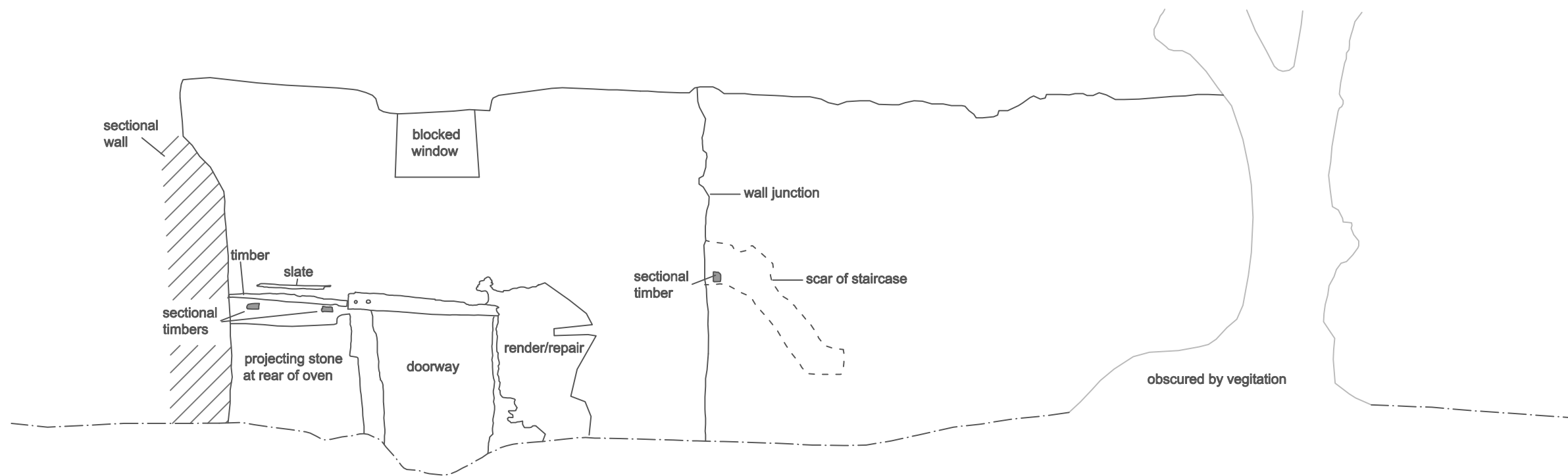
Figure 6: Short section (west-facing)



Figure 7: Elevation 1

S

N



all lintels timber unless otherwise stated

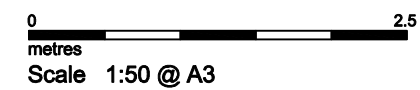
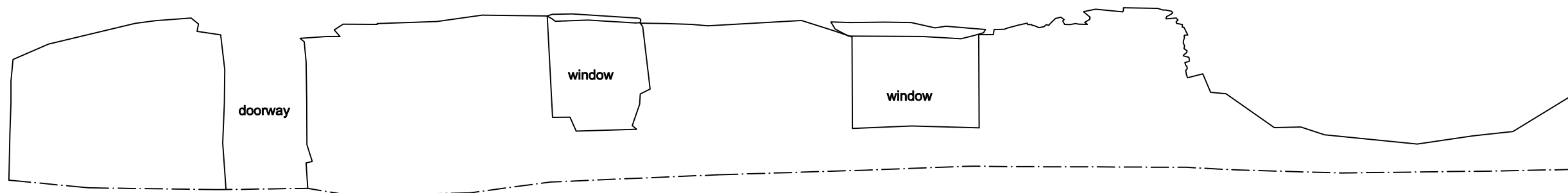


Figure 8: Elevation 2

S

N



all lintels timber unless otherwise stated

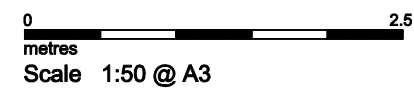


Figure 9: Elevation 3

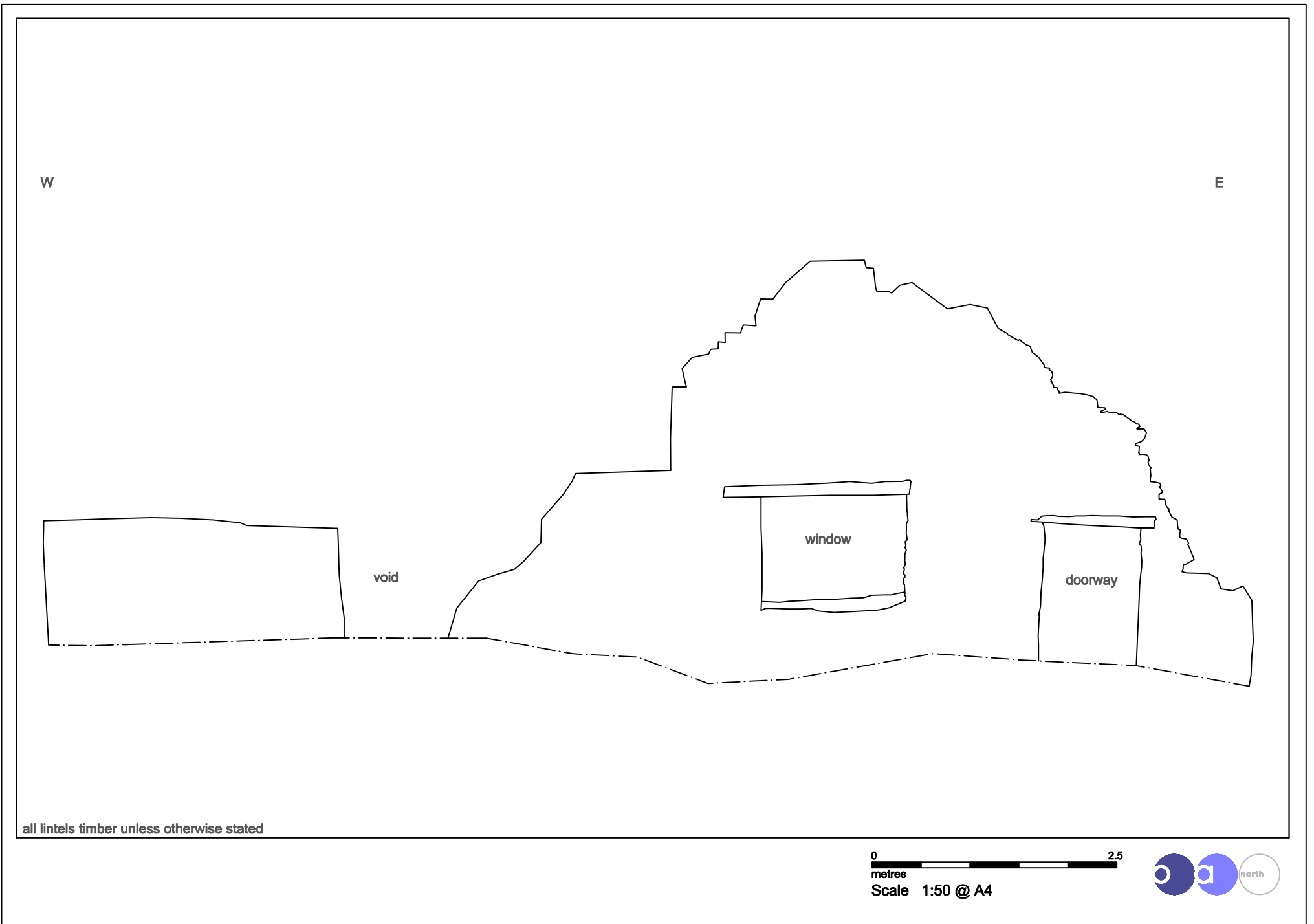
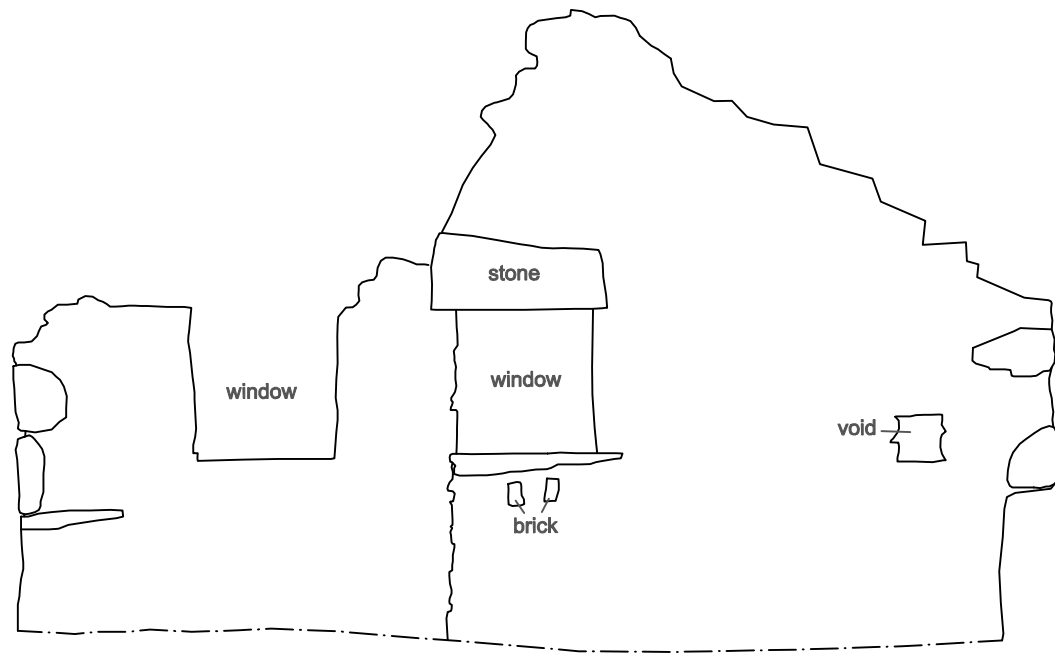


Figure 10: Elevation 4

N

S



0 2.5
metres
Scale 1:50 @ A4



Figure 11: Elevation 5

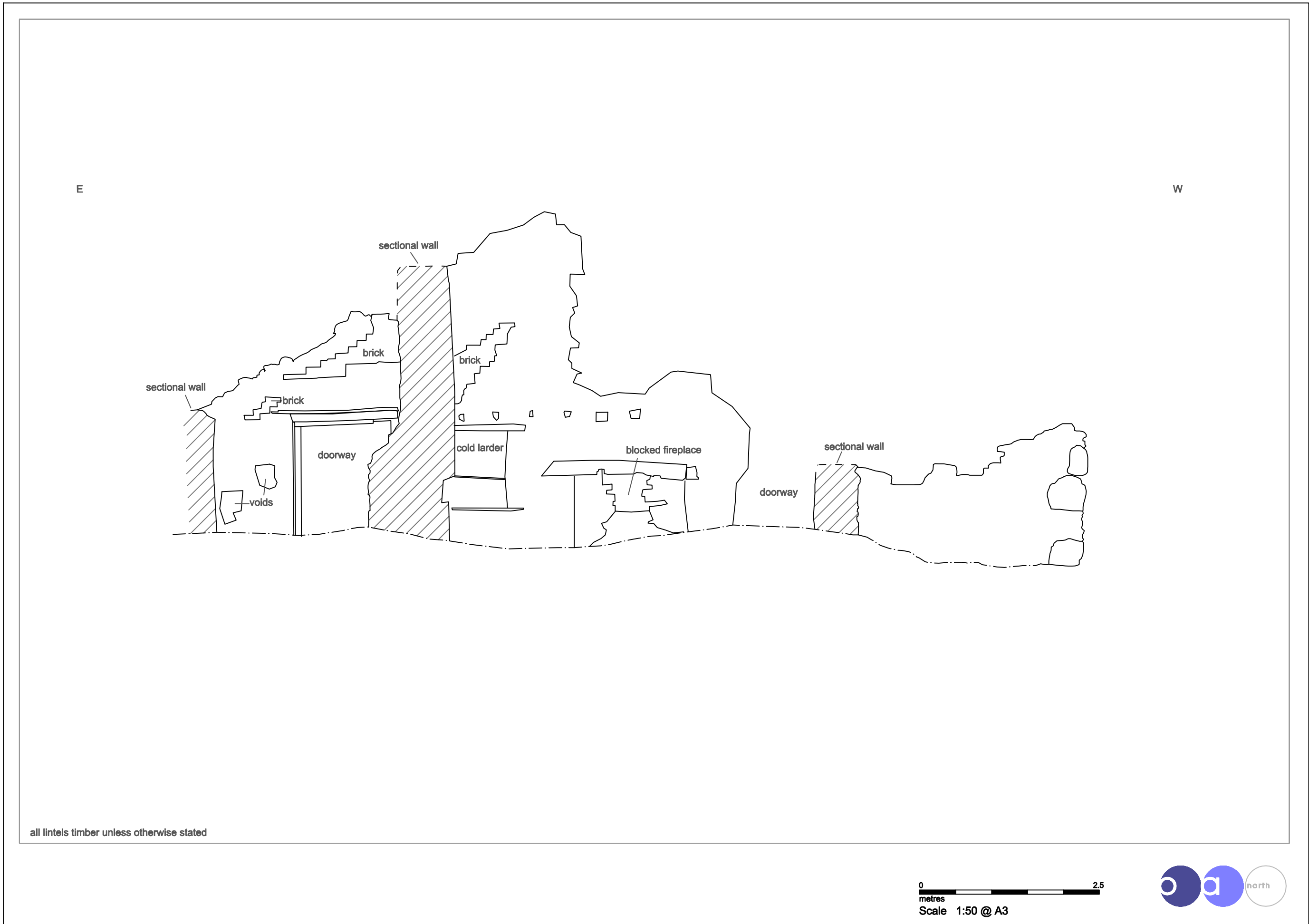


Figure12: Elevation 6

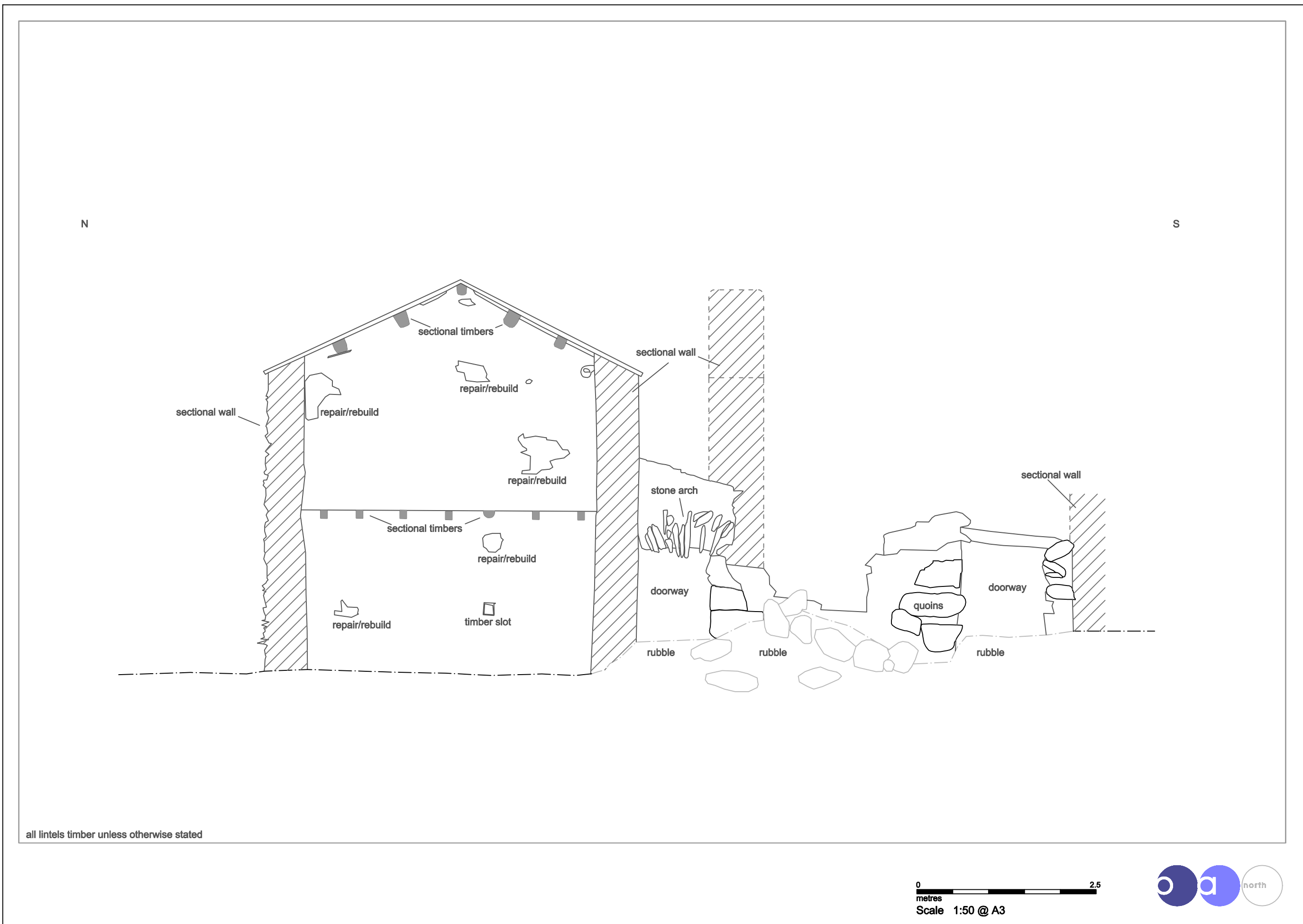


Figure 13: Elevation 7

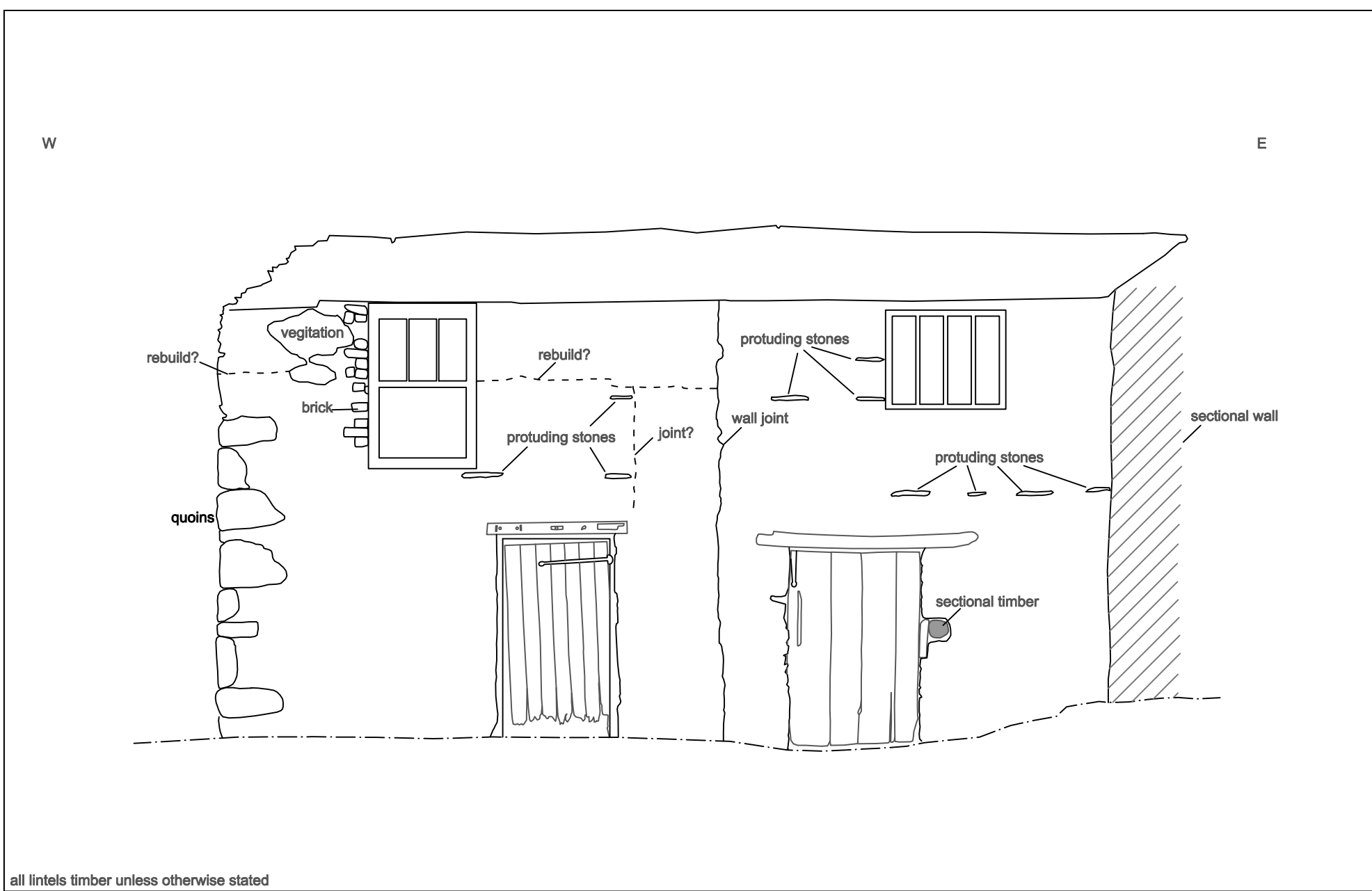
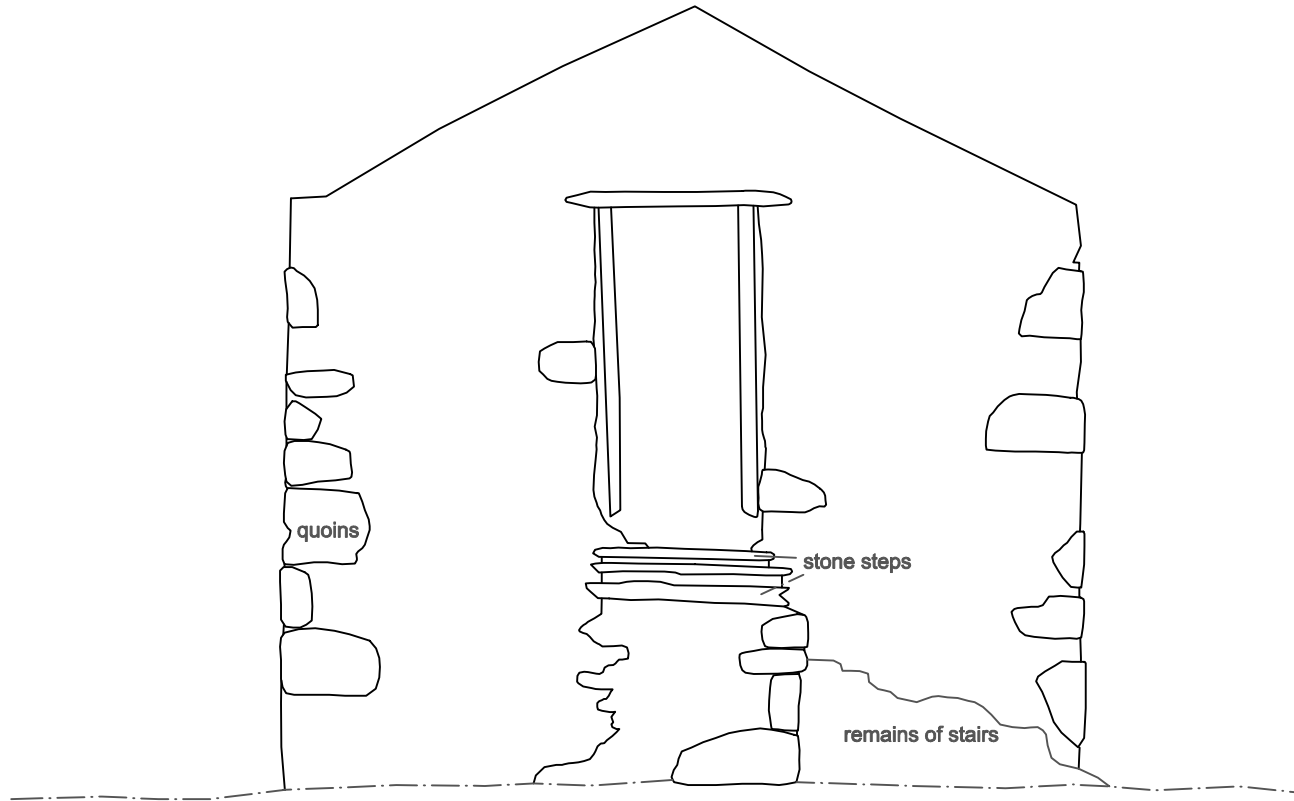


Figure 14: Elevation 8

N

S



all lintels timber unless otherwise stated

0 2.5
metres
Scale 1:50 @ A4



Figure 15: Elevation 9

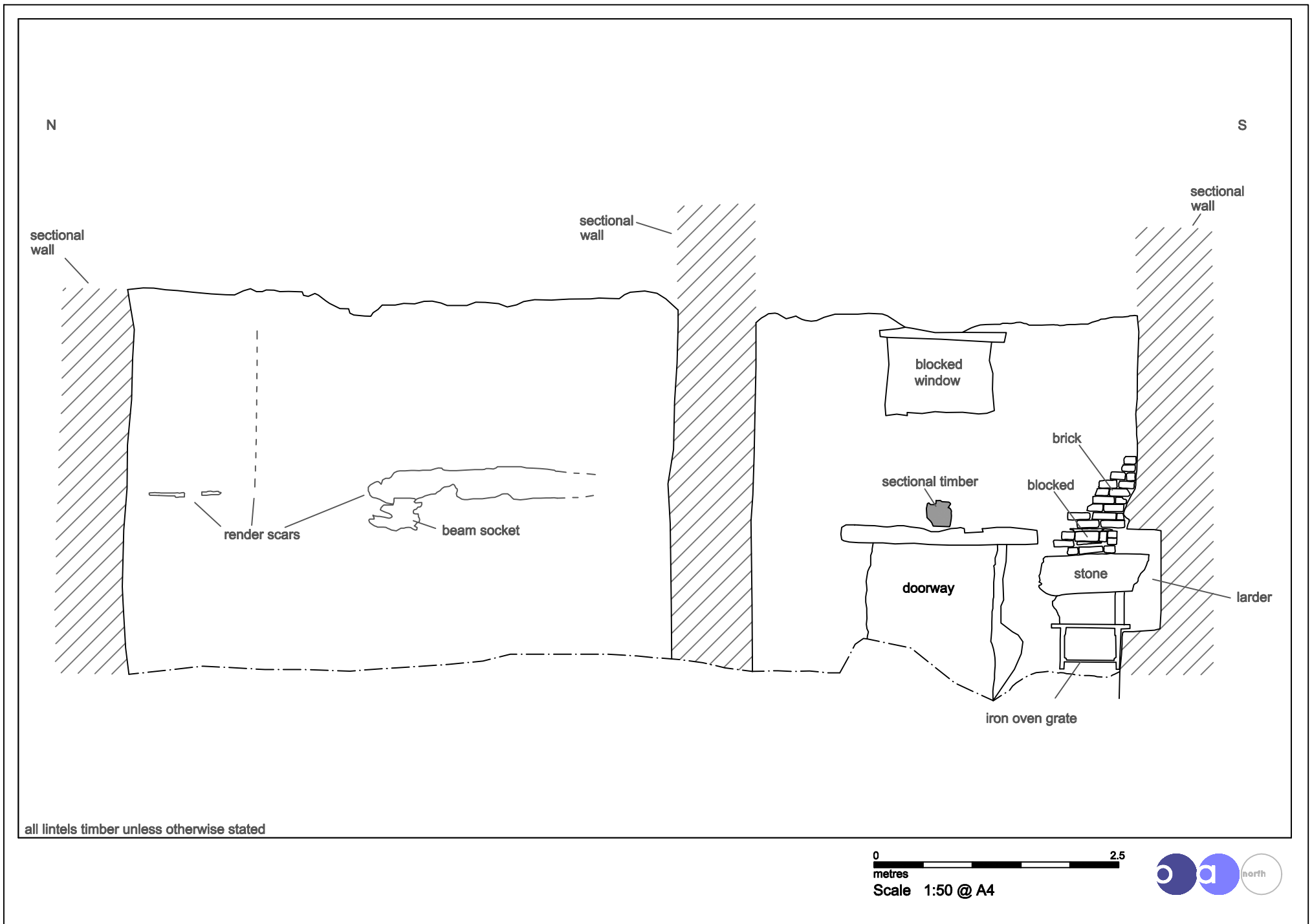
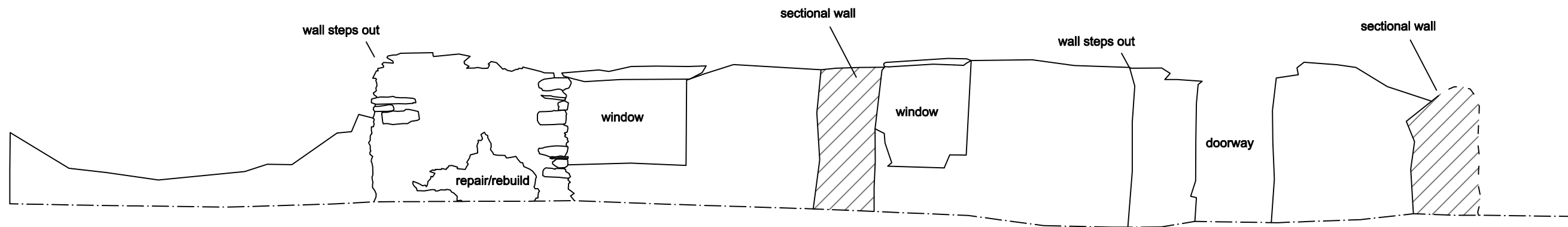


Figure 17: Elevation 11

N

S



all lintels timber unless otherwise stated

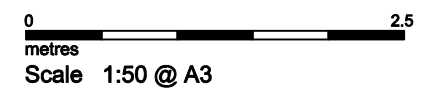


Figure 18: Elevation 13

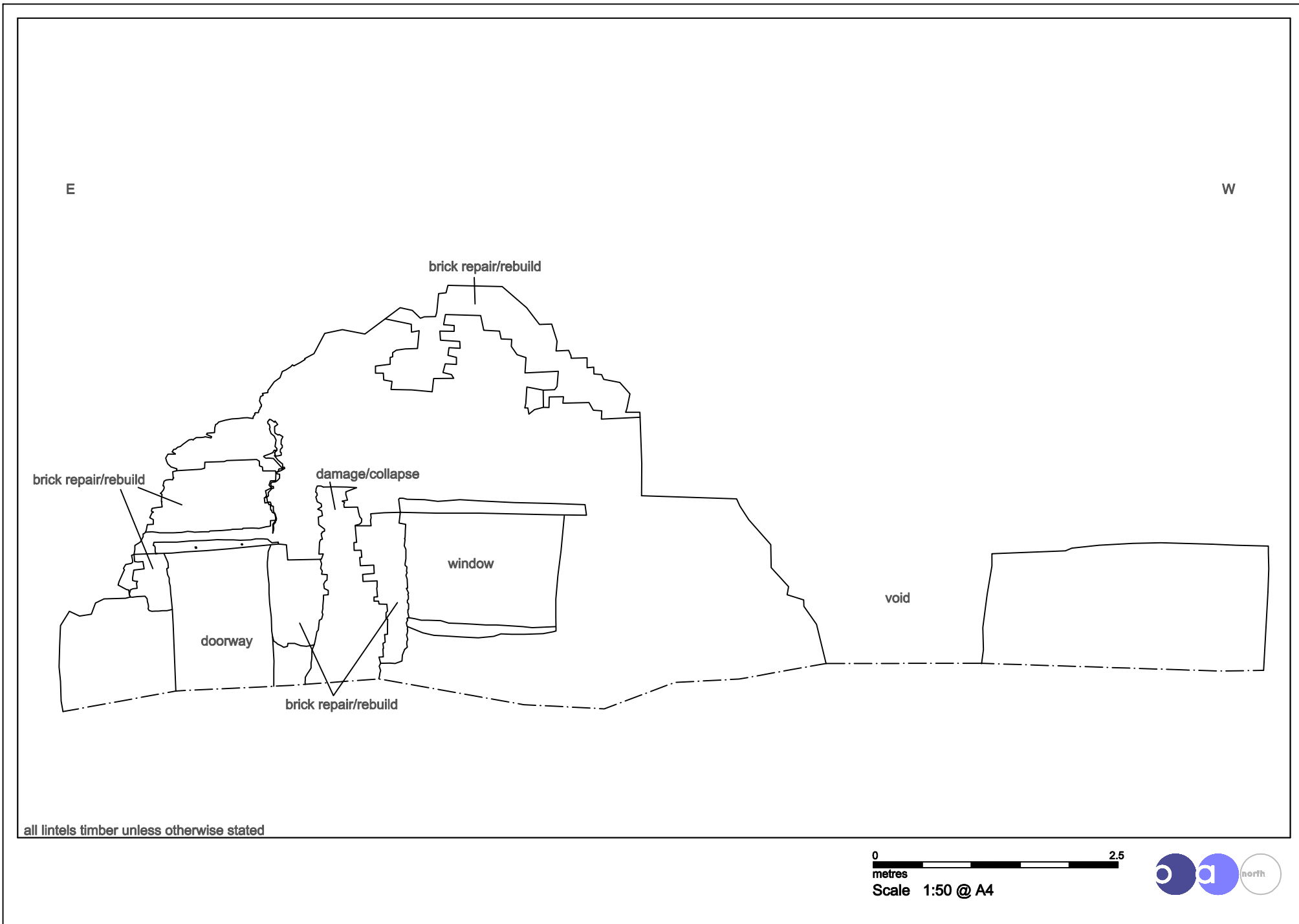
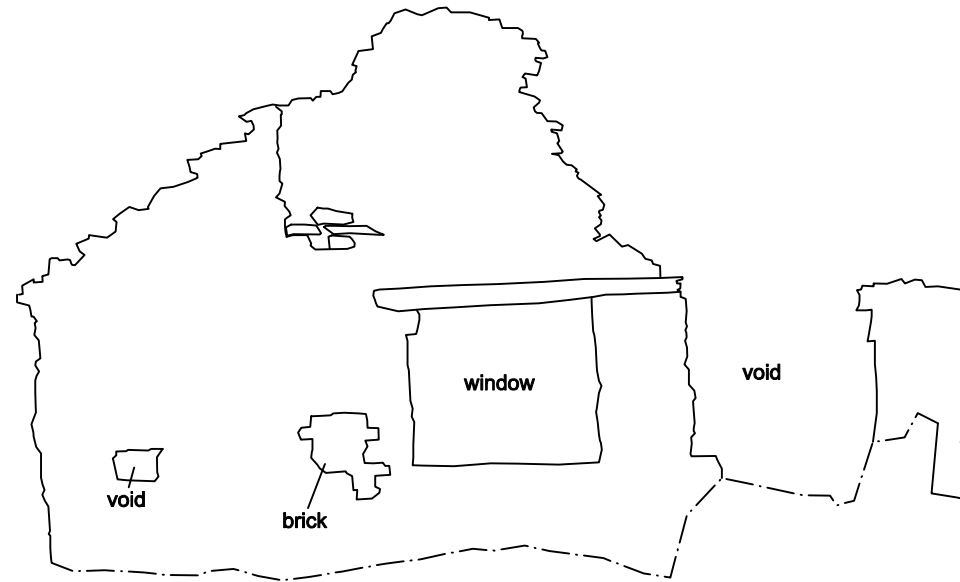


Figure 19: Elevation 14

S

N



all lintels timber unless otherwise stated

0 2.5
metres
Scale 1:50 @ A4



Figure 20: Elevation 15

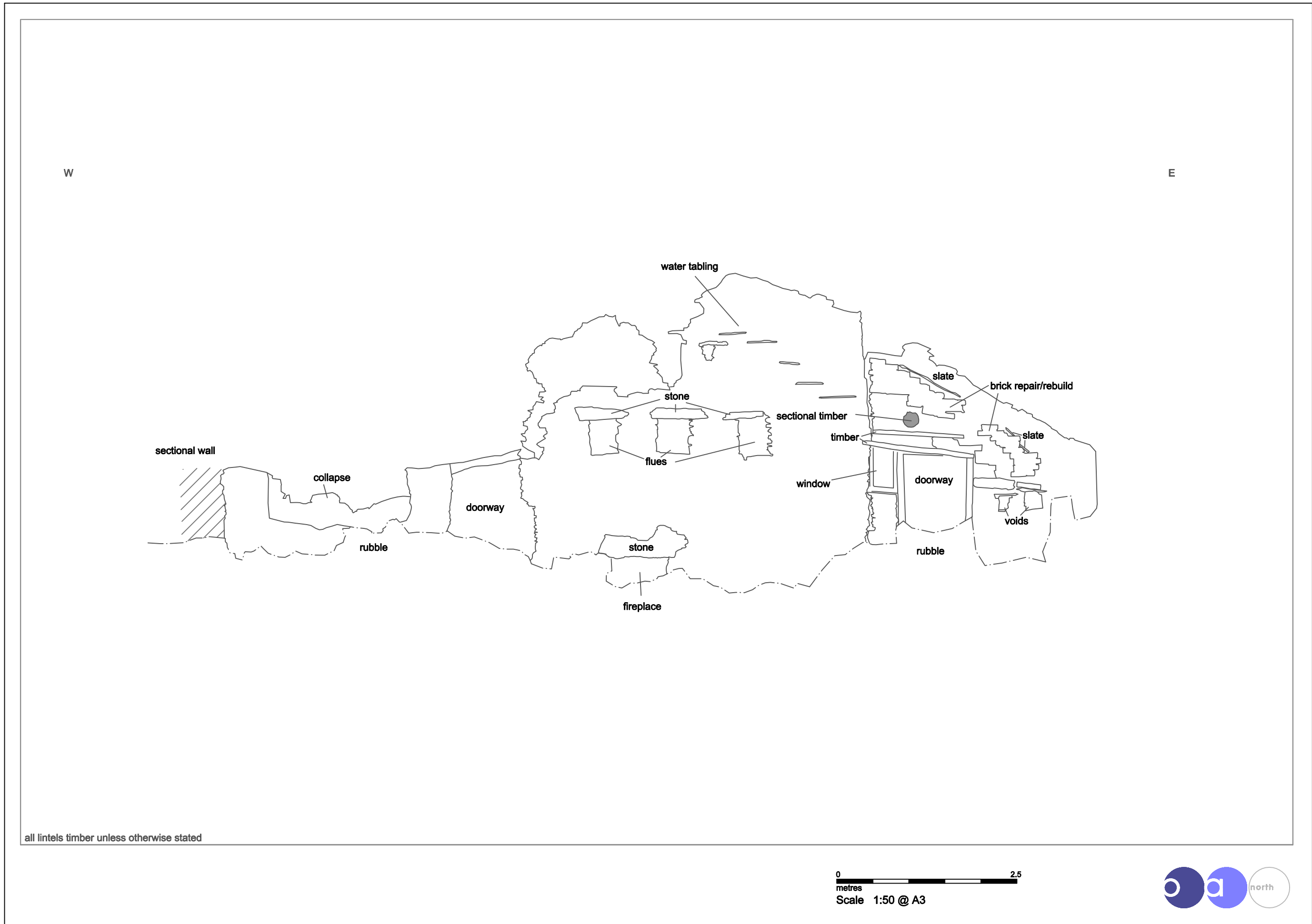
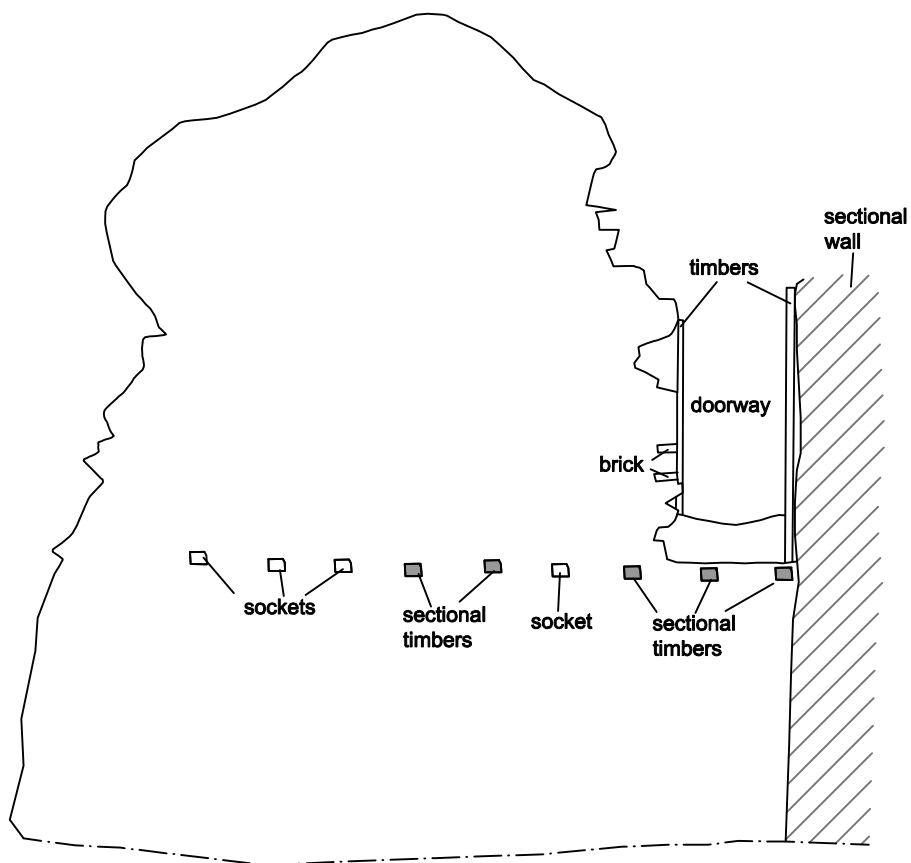


Figure 21: Elevation 16

W

E



0 2.5
metres
Scale 1:50 @ A4



Figure 22: Elevation 17

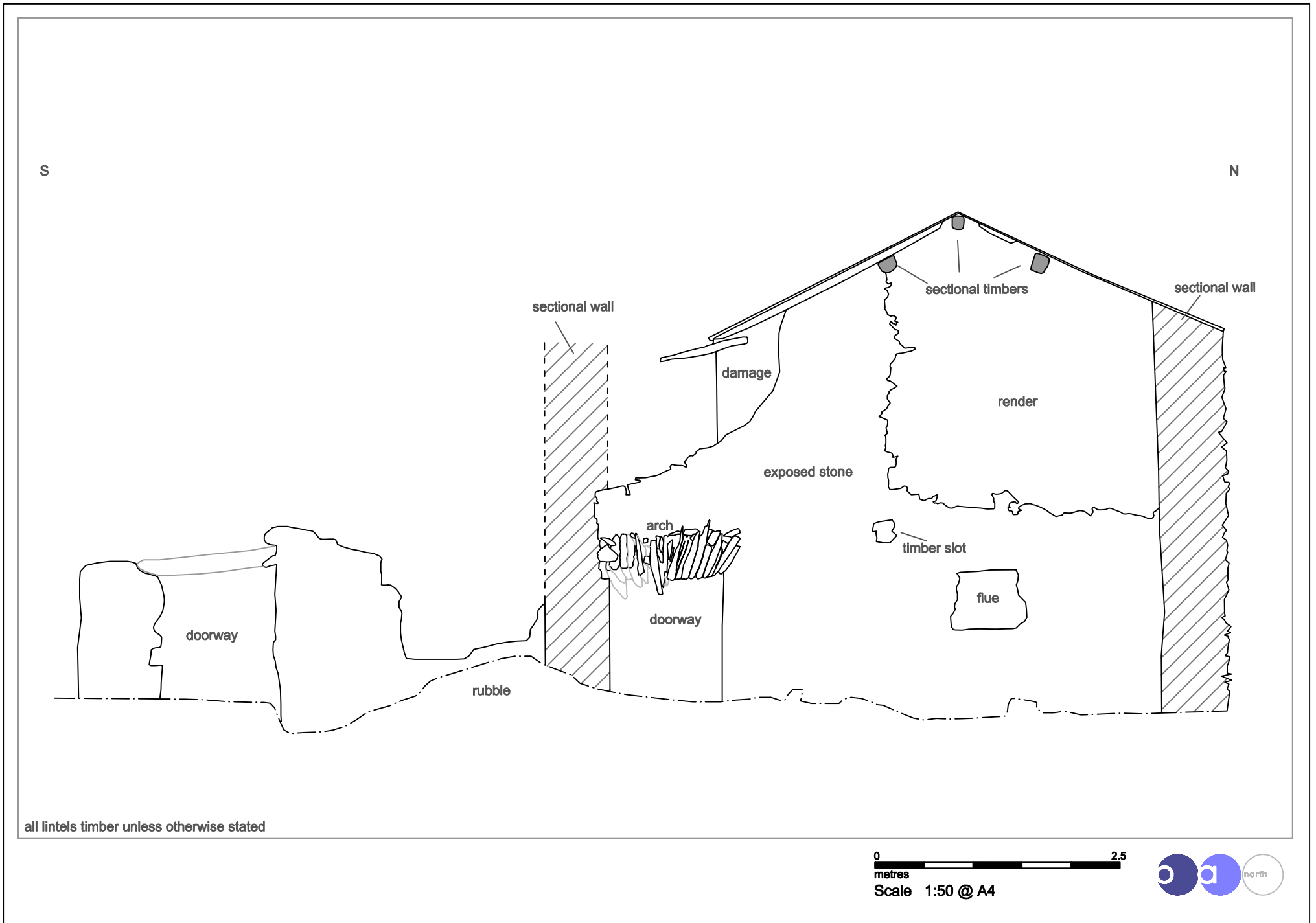
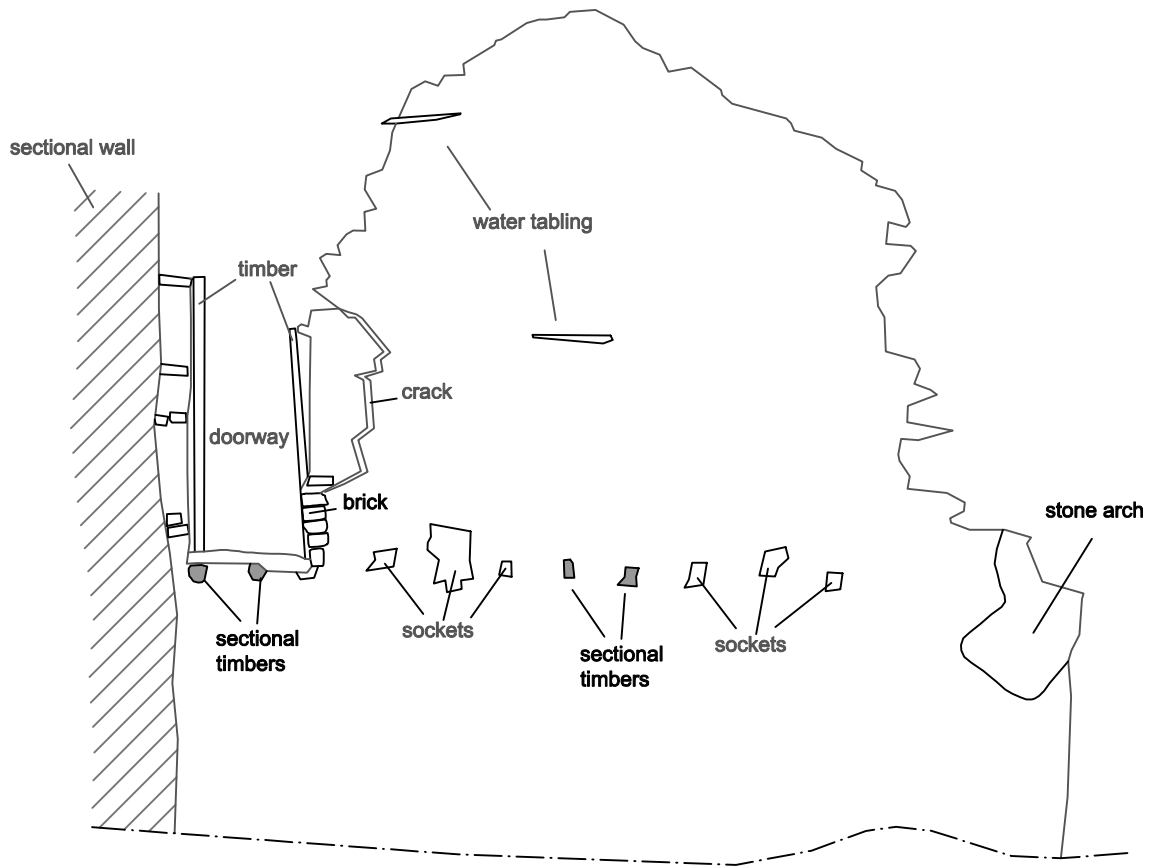


Figure 23: Elevation 18

W

E



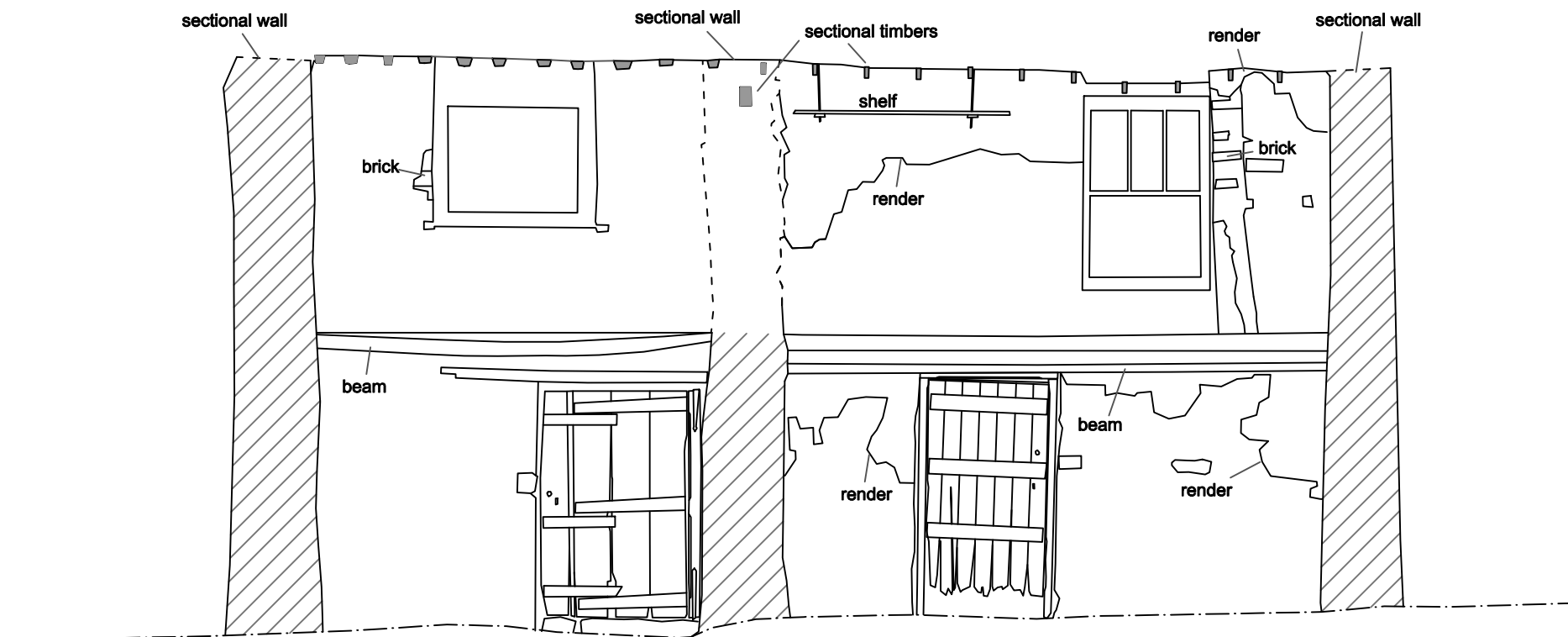
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Figure 24: Elevation 19

E

W



all lintels timber unless otherwise stated

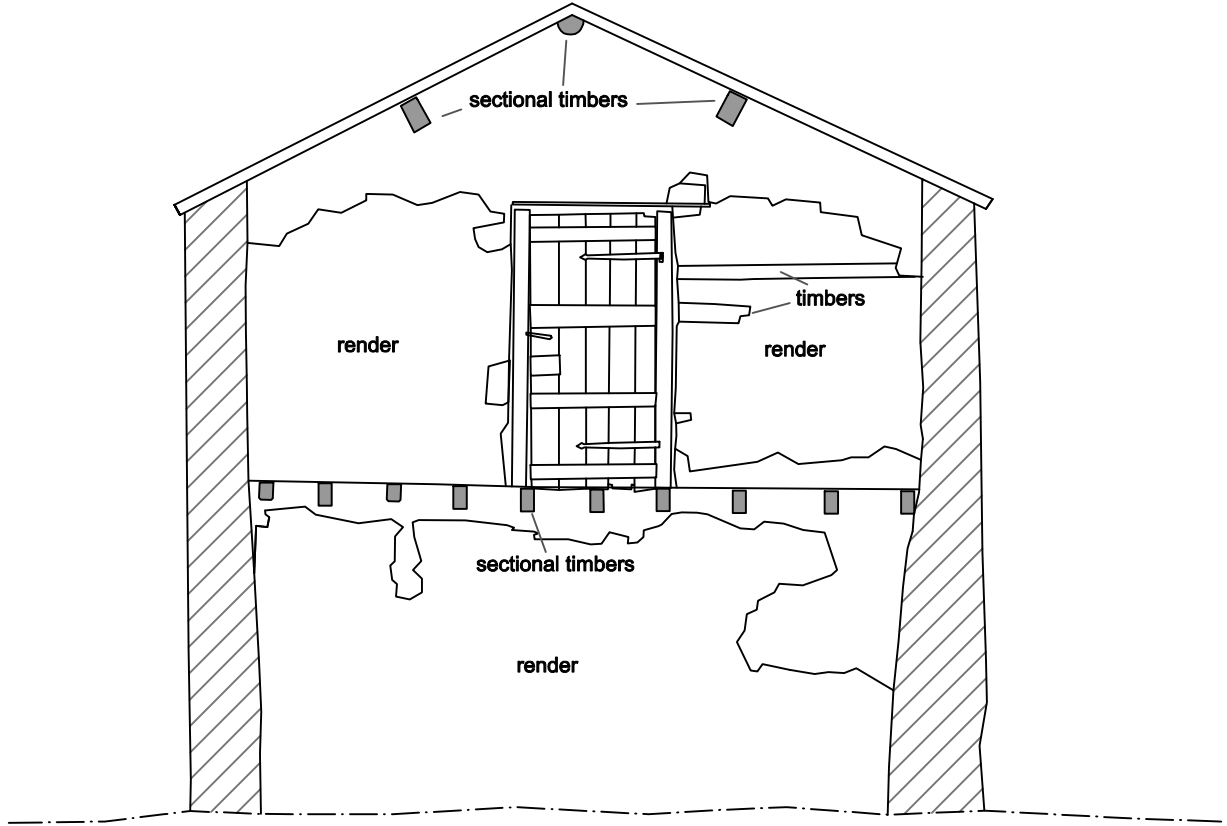
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metres
Scale 1:50 @ A4



Figure 25: Elevation 20

S

N



all lintels timber unless otherwise stated

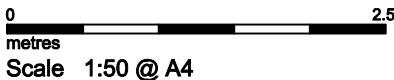
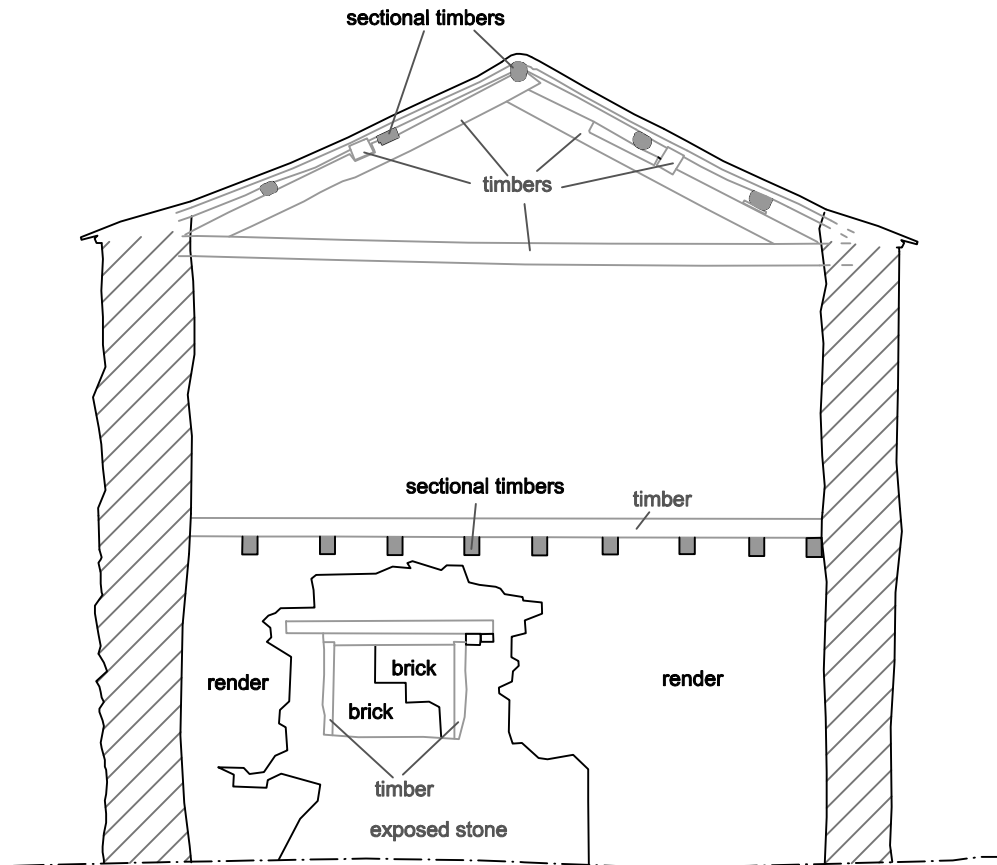


Figure 26: Elevation 21

N

S



all lintels timber unless otherwise stated

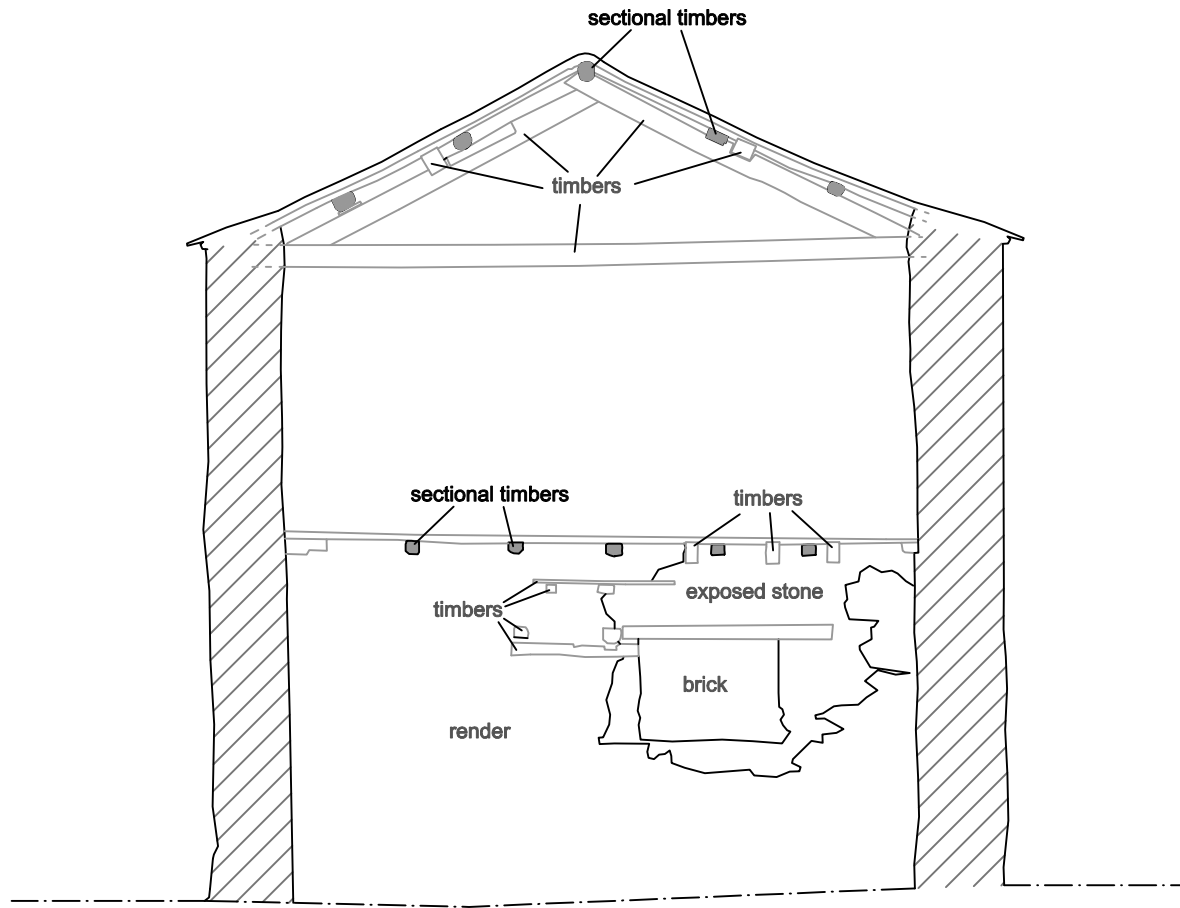
0 2.5
metres
Scale 1:50 @ A4



Figure 27: Elevation 22

S

N



all lintels timber unless otherwise stated

0 2.5
metres
Scale 1:50 @ A4



Figure 28: Elevation 23

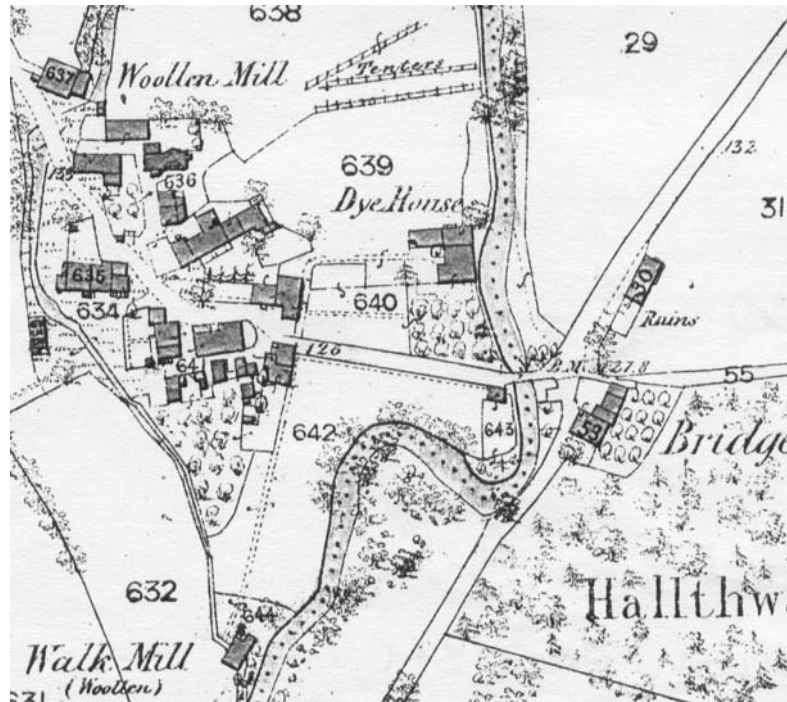


Plate 1: Part of the Ordnance Survey map of 1865 showing the Dye House and related buildings

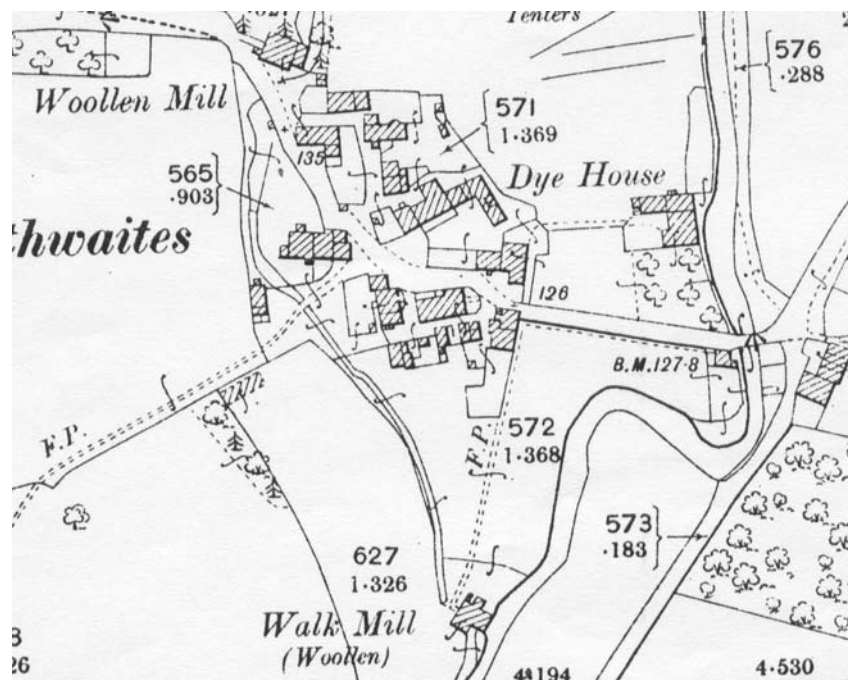


Plate 2: Part of the Ordnance Survey map of 1899 showing the Dye House and related buildings

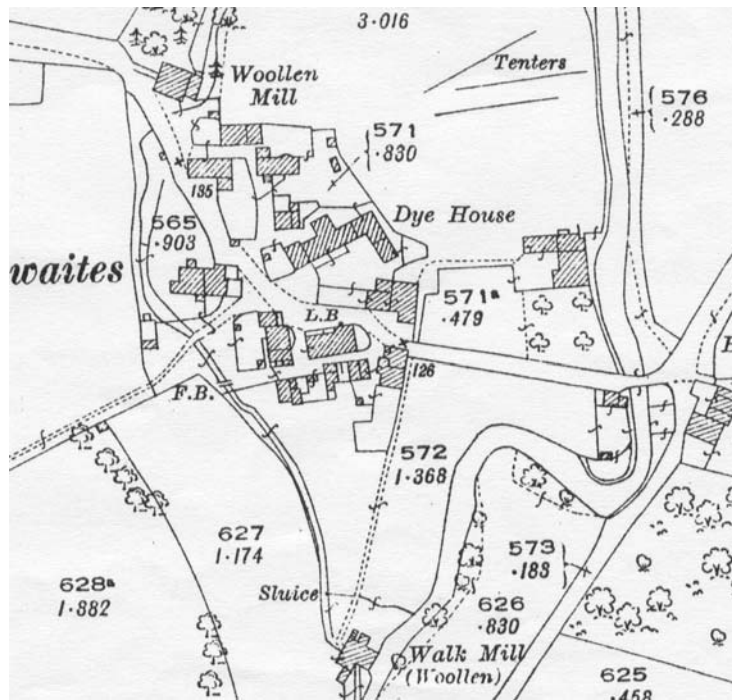


Plate 3: Part of the Ordnance Survey map of 1924 showing the Dye House and related buildings



Plate 4: West end of Elevation 1



Plate 5: East end of Elevation 1



Plate 6: North-west-facing view of Elevation 3



Plate 7: North-west-facing view of Elevation 4



Plate 8: East-facing view of Elevation 5



Plate 9: East-facing view of Elevation 7



Plate 10: North-facing view of Elevation 8



Plate 11: East-facing view of Elevation 9



Plate 12: North-facing view of Room 1



Plate 13: North-facing view of Room 2



Plate 14: East-facing view of Room 3



Plate 15: North-facing view of Room 4



Plate 16: East-facing view of Room 5



Plate 17: South-facing view of Room 6



Plate 18: West-facing view of Room 7



Plate 19: Detail of the flues within Elevation 16



Plate 20: 1872 Photograph of JB Moore staff sitting outside the carding mill (Marshall & Davies-Shiel 1976) The possible matching quoins are highlighted.

APPENDIX 1: PROJECT BRIEF

SITE DESCRIPTION AND SUMMARY

Site Name:	The Dye House, Hallthwaites, Millom
Grid Reference:	SD 1820 8539
Planning Application Reference No.:	N/A
County SMR No.:	12294

Detailed specifications are invited from appropriately resourced, qualified and experienced archaeological or architectural contractors to undertake the archaeological project outlined by this Brief and to produce a report on that work. The project team must be led by a member of the Institute of Field Archaeologists or the Institute of Historic Building Conservation or equivalent. No fieldwork may commence until approval of a specification has been issued by the County Archaeology Service.

1. BACKGROUND

- 1.1 Cumbria County Council's Archaeology Service (CCCAS) has been consulted by DEFRA regarding a building restoration project, grant aided through the ESA scheme, at the Dye House, Hallthwaites, Millom.
- 1.2 The scheme affects a former dye house of archaeological interest, and recorded on the County Sites and Monuments Record (reference 12294). Consequently, a programme of archaeological building recording is required prior to the proposed works taking place.
- 1.3 This advice is given in accordance with guidance given in Planning Policy Guidance note 15 (Planning and the Historic Environment) and Planning Policy Guidance note 16 (Archaeology and Planning) as well as with section 18 of the Agricultural Act 1986.

2. ARCHAEOLOGICAL BACKGROUND

- 2.1 The dye house is a partially roofed and largely ruinous structure at the east end of the small hamlet of Hallthwaites. It appears to date to at least the early nineteenth century. It is one of a number of buildings in the settlement that relate to the former production of woollen textiles. Hallthwaites appears to have grown in the eighteenth century as an industrial hamlet, though the settlement is medieval in origin and there may have been woollen textiles made there from at least the sixteenth century. Woollens were still made at the mill at the west of the settlement into the 1930s.
- 2.2 The proposed restoration may lead to the loss of some historic fabric. It will also benefit from being fully informed as to the nature, history and development of the structure. Consequently a full 'as is' record should be made of the structure prior to any restoration works.

3. SCOPE OF THE PROJECT

3.1 Objectives

- 3.1.1 To make an accurate photographic and measured drawn record of the historic structure prior to alteration.

3.2 Work Required

3.2.1 Before any on site work commences a *desk-based survey* of the existing resource should be undertaken to set the dyehouse in its historic context. This should include an assessment of those primary and secondary sources (particularly cartographic) referenced in the County Records Office. Reference should be made to any general works on the Cumbrian woolen cloth industry and the use of water-power in the county. The building should be set within the context of surviving water-powered textile industry remains, especially dyehouses, within the North West.

3.2.2 To carry out a *measured survey of the building*. The survey should include the requirements of a 'Level 3' Survey as described by the Royal Commission on the Historic Monuments of England *Recording Historic Buildings, A Descriptive Specification, 3rd edition, 1996*.

3.2.3 The requirements of the survey are:

- ❖ The precise location of the building, providing an address and National Grid Reference.
- ❖ A date when the project was undertaken and by whom.
- ❖ A description of the building's plan, form, function, age, development sequence and construction materials. Where known, the building's architects, builders, patrons and owners should be provided.
- ❖ A description of the building's landscape and historic context, for example it's relationship with nearby buildings in architectural and functional terms, it's relationship to water-power systems, settlement patterns and other man-made features.
- ❖ A measured accurate ground plan of the building at an appropriate scale.
- ❖ An annotated ground plan for archival purposes showing the location of each recorded elevation and photographed and drawn features of architectural or archaeological interest.
- ❖ Where appropriate, section drawings of the building showing it's vertical relationships.
- ❖ A general photographic record, in black and white print and colour digital formats, including: photographs of the building in its landscape context; detailed photographs of the buildings external appearance; internal photographs of the main features of the building (especially those related to liturgical practices); scaled detailed photographs of features of architectural or archaeological significance.
- ❖ The recording of the ground plan should be implemented through a total station instrument survey.
- ❖ Elevations should be produced using two primary techniques, the production of outline elevations through the use of an electronic distance measurer and data logger, and the recording of fabric and detail by the use of rectified photography (either digital or print).

4. PROJECT DESIGN

4.1 Before the project commences a project proposal must be submitted to and approved by the County Archaeologist.

4.2 Proposals to meet this Brief should take the form of a detailed project design prepared in accordance with the recommendations of *The Management of Archaeological Projects, 2nd ed. 1991*, and must include:

- ❖ A description of the building recording system to be used
- ❖ Details of key project staff, including the names of the project manager any other specialist sub-contractors to be employed
- ❖ Details of on site staffing, e.g. the number of people to be employed on site per day
- ❖ A projected timetable for all site work through to the publication of results

4.3 Any significant variations to the proposal must be agreed by the County Archaeologist in advance.

5. REPORTING AND PUBLICATION

5.1 The archaeological work should result in a report, this should include as a minimum:

- ❖ A site location plan, related to the national grid.
- ❖ A front cover/frontispiece which includes the national grid reference of the site.
- ❖ A concise, non-technical summary of the results.
- ❖ A ground plan of the building to be restored.
- ❖ Drawings of each major elevation at an appropriate scale.
- ❖ Sections and photographs at an appropriate scale.
- ❖ The dates on which the project was undertaken.
- ❖ A description of the methodology employed, work undertaken and the results obtained.
- ❖ An interpretation of the buildings technical function.
- ❖ A consideration of its overall significance and its most important elements.
- ❖ Recommendations for further work necessary during restoration.

5.2 Three copies of the report should be deposited with the County Sites and Monuments Record within two months of completion of fieldwork. This will be on the understanding that the report will be made available as a public document through the County Sites and Monuments Record.

5.3 A brief project summary must be submitted in the appropriate format to *Post-medieval Archaeology* for publication in their annual review of projects and a short publication report with illustrations prepared for the *Industrial Archaeology Review*.

5.3 Cumbria SMR is taking part in the pilot study for the *Online Access to Index of Archaeological Investigations* (OASIS) project. The online OASIS form at <http://ads.ahds.ac.uk/project/oasis> must therefore also be completed as part of the project. Information on projects undertaken in Cumbria will be made available through the above website, unless otherwise agreed.

6. THE ARCHIVE

6.1 An archive must be prepared in accordance with the recommendations of *The Management of Archaeological Projects*, 2nd ed. 1991, and arrangements made for its deposit with an appropriate repository. A copy shall also be offered to the National Monuments Record.

6.2 The County Archaeology Service must be notified of the arrangements made.

7. PROJECT MONITORING

7.1 One weeks notice must be given to the County Archaeology Service prior to the commencement of fieldwork.

7.2 Fieldwork will be monitored by the Assistant Archaeologist on behalf of the local planning authority. Monitoring notes will be recorded on a standardised form, which will be completed following receipt of the final project report. Copies of the form will be forwarded to the contractor and their clients.

8. FURTHER REQUIREMENTS

- 8.1 It is the archaeological contractor's responsibility to establish safe working practices in terms of current health and safety legislation, to ensure site access and to obtain notification of hazards (eg. services, contaminated ground, etc.). **The County Archaeology Service bears no responsibility for the inclusion or exclusion of such information within this Brief or subsequent specification.**
- 8.2 The involvement of the County Archaeology Service should be acknowledged in any report or publication generated by this project.

9. FURTHER INFORMATION

For further information regarding this brief, contact

Dr Richard Newman
County Archaeologist
Cumbria County Council
County Offices
Kendal
Cumbria LA9 4RQ
Tel: 01539 773431
Email: richard.newman@cumbriacc.gov.uk

For further information regarding the County Sites and Monuments Record, contact

Jo MacKintosh
Historic Environment Records Officer
Cumbria County Council
County Offices
Kendal
Cumbria LA9 4RQ
Tel: 01539 773432
Email: jo.mackintosh@cumbriacc.gov.uk

As part of our desire to provide a quality service to all our clients we would welcome any comments you may have on the content or presentation of this design brief. Please address them to the Assistant Archaeologist at the above address.

APPENDIX 2: PROJECT DESIGN

1 INTRODUCTION

- 1.1 This project design has been compiled for Mr P Metcalf with reference to the brief issued by Cumbria County Archaeology Service (CCAS) for an archaeological building investigation of the Dye House, Hallthwaites, Millom, Cumbria (SD 1820 8539). Section 2 of this document states the objectives of the project, Section 3 deals with OA North's methodology. Section 4 addresses other pertinent issues including details of staff to be involved, and project costs are presented in Section 5.
- 1.2 OA North has considerable experience of the assessment and investigation of historic buildings of all periods and a range of types, having undertaken a great number of small and large-scale projects during the past 20 years. Building investigations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables.
- 1.3 OA North has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OA North is an Institute of Field Archaeologists (IFA) registered organisation, **registration number 17**, and all its members of staff operate subject to the IFA Code of Conduct.

2 OBJECTIVES

- 2.1 The objectives of the building investigation are to provide an outline analysis of the plan, form, function, age and development of the Dye House. The following specific aims have been designed to facilitate the evaluation of the archaeological and historic resource of the Dye House.
- (i) A rapid desk-based assessment will precede a programme of fieldwork to place any findings that are made in context;
 - (ii) To provide a drawn and textual record of the buildings to RCHME Level III-type survey;
 - (iii) To produce a report and archive in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991).

3 METHOD STATEMENT

3.1 RAPID DESK-BASED ASSESSMENT

- 3.1.1 The scope of the assessment will not extend beyond the provision of an historical background relating to the Dye House and its immediate environs.
- 3.1.2 **Documentary and Cartographic Material:** this work will comprise a rapid desk-based assessment of the existing resource. It will include an appraisal of the data in the SMR, appropriate sections of County histories, early maps (printed and manuscript), and such primary documentation (tithe and estate plans etc.) as may be reasonably available. All available published and

unpublished documentary sources will also be examined and assessed. The County Record Office will also be consulted.

3.1.3 Reference will be made to the Cumbrian Woollen cloth industry and the use of water-power in the County. The building will also be put into the context of Dye houses within the NorthWest.

3.1.4 **Physical Environment:** a rapid desk-based compilation of geological (both solid and drift), pedological, topographical and palaeoenvironmental information will be undertaken in order to set the archaeological features in context. Any engineering and/or borehole data relating to the site will also be examined.

3.2 BUILDING INVESTIGATION

3.2.1 **Photographic Archive:** a photographic archive will be produced utilising a 35mm camera to produce monochrome prints and a high-resolution digital camera (4 megapixels) for a colour record. The archive will comprise general shots of the building (both internal and external) and its surroundings, and detailed coverage of architectural/industrial features, which illustrate both function and phasing. All photographs will include a photographic scale. A full photographic index will be produced.

3.2.2 **Instrument survey:** the proposed plans and elevations of the buildings will be surveyed by means of a reflectorless electronic distance measurer (REDM). The REDM is capable of measuring distances to a point of detail by reflection from the wall surface, and does not need a prism to be placed. The instrument to be used will be a Leica T1010 theodolite coupled to a Disto electronic distance meter (EDM). The disto emits a viable laser beam, which can be visually guided around points of detail. The digital survey data will be captured within a portable computer running TheoLT software, which allows the survey to be directly inserted into AutoCAD software for the production of final drawings.

3.2.3 Detail captured by the instrument survey will include such features as window and door openings, an indication of ground and roof level, and changes in building material.

3.2.4 Elevation detail will be captured by rectified photography. The rectified photography will be undertaken by in-house survey specialists and will be produced in black and white using a medium format camera. The photography will be output at an appropriate scale; it will be scanned into a computer and presented as a raster backdrop within AutoCAD. Where there is any distortion within the photographic base, the digital image will be subject to digital correction using Archis software to convert the images to fully rectified images. The elevation drawings will be drawn up as a vector drawings from the rectified base.

3.2.4 **Site Drawings:** the following drawings will be produced for the buildings:

- (i) Floor plans annotated to show form and location of any structural features of historic significance and recording the form and location of

- any significant structural details (1:50 scale). A copy of the ground plan will also be annotated for archival purposes to show the location of each recorded elevation, photograph and drawn features of particular interest;
- (ii) One lateral section to show truss detail and one longitudinal section (1:50 scale);
 - (iii) Internal and external elevations showing detail of construction and phasing.
- 3.2.5 The drawings will be used to illustrate the phasing and development of the buildings.
- 3.2.6 **Interpretation and Analysis:** a visual inspection of the building will be undertaken utilising the OA North buildings proforma sheets. An outline description will be maintained to RCHME Level III-type survey. This level of survey is fully analytical and will provide a systematic account of the building's origins, development and use. It will include an account of the evidence on which the analysis has been based. The visual inspection will utilise OA North building *pro forma*. Feature numbers will be allocated where appropriate to architectural elements to enhance the recording, and act as an aid for interpretation and presentation. Group numbers will be allocated to common features repeated throughout the building. A feature list will be appended to the report.
- 3.2.7 The written record will include:
- (i) An analysis of the building's plan, form, fabric, function, age and development sequence and of the evidence supporting this analysis;
 - (ii) An account of the building's past and present use and of the uses of their parts, with the evidence for these interpretations;
 - (iii) An account of the fixtures, fittings associated with the buildings, and their purpose;
 - (iv) Any evidence for the former existence of demolished structures or processes associated with the building;
 - (v) Identify areas that are currently obscured or inaccessible which might hold key information to inform our understanding of the building's origin and development and where an archaeological watching brief should be undertaken during stripping out and demolition;
 - (vi) From historical research and physical evidence, identify areas that have a potential below ground archaeological interest;
 - (vii) A discussion of the structure in its local and wider context, comparing it with comparative buildings.
- 3.2.8 **Access and Attendances: the client will be required to arrange access to the building.**

3.3 ARCHIVE/REPORT

- 3.3.1 **Report:** two copies of the final report will be submitted to the client and three to the SMR. The report will include a copy of this project design, and indications of any agreed departure from that design. It will present, summarise, and interpret the results of the programme detailed above and will include a full index of archaeological/architectural features identified in the course of the project, with an assessment of the overall plan, form and function, together with appropriate illustrations, including detailed plans and sections indicating the locations of archaeological/architectural features. The report will also include a complete bibliography of sources from which data has been derived. Recommendations will be made for a watching brief during stripping out/demolition/refurbishment works as appropriate.
- 3.3.3 This report will identify areas of defined archaeology. An assessment and statement of the actual and potential archaeological significance of the identified archaeology within the broader context of regional and national archaeological priorities will be made. Illustrative material will include a location map, section/elevation drawings, and plans. This report will be in the same basic format as this project design; a copy of the report can be provided on CD-ROM, if required.
- 3.3.4 Provision will be made for a summary report to be submitted to a suitable regional or national archaeological journal within one year of completion of fieldwork, if relevant results are obtained. Suggested journals are *Post-Medieval Archaeology* and the *Industrial Archaeology Review*.
- 3.3.5 **Confidentiality:** all internal reports to the client are designed as documents for the specific use of the Client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.
- 3.3.6 **Archive:** the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). This archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the SMR (the index to the archive and a copy of the report). OA North practice is to deposit the original record archive of projects (paper, magnetic and plastic media) with the appropriate County Record Office, and a full copy of the record archive (microform or microfiche) together with the material archive (artefacts, ecofacts, and samples) with an appropriate museum. In this instance the archive will be submitted to the Cumbria Record office. Wherever possible, OA North recommends the deposition of such material in a local museum approved by the Museums and Galleries Commission, and would make appropriate arrangements with the designated museum at the outset of the project for the proper labelling, packaging, and accessioning of all material recovered.

4 PROJECT MONITORING

- 4.1 Monitoring of this project will be undertaken through the auspices of the CCAS Assistant Archaeologist, who will be informed of the start and end dates of the work.

5 WORK TIMETABLE

- 5.1 OA North could commence the desk-based assessment within two weeks of receipt of written notification from the client.
- 5.2 The desk-based assessment is expected to take in the region of five days to complete.
- 5.3 The building investigation will take approximately 15 days in the field.
- 5.4 The client report will be completed within eight weeks following receipt of comments on the draft report.

6 STAFFING

- 6.1 The project will be under the direct management of **Alison Plummer BSc (Hons)** (OA North Senior Project Manager) to whom all correspondence should be addressed.
- 6.2 The desk-based assessment will be undertaken by **Daniel Elsworth MA** (OA North Project Supervisor). Daniel has a great deal of experience in documentary research, and in particular for the north of the country. Daniel is also very experienced in the interpretation and analysis of historic buildings.
- 6.3 The building investigation will be undertaken by **Chris Wild BSc** (OA North project Officer) who is very OA Norths senior surveyor, having a wealth of experience in the recording and analysis of historic buildings.