

# PRIORY GARDENS, PRIEST LANE, CARTMEL, CUMBRIA

## Archaeological Watching Brief



Client:  
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SMC consent refs.:  
S00079474 and S00082496

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## Non-Technical Summary

An archaeological watching brief was carried out during groundworks associated with the construction of a new garage/workshop and glasshouse at Priory Gardens, Cartmel. Priory Gardens is included as part of the Scheduled Monument comprising a number of elements within the precinct of Cartmel Priory, which was established in the late 12<sup>th</sup> century. The watching brief was carried out over six days, one or two days at a time, between the 17<sup>th</sup> June 2014 and the 24<sup>th</sup> April 2015. Excavation within the footprint of the new glasshouse and garage/workshop was monitored as was the later removal of a disused fuel tank and excavation of service trenches to the north and east of the new garage. It was also noted that various detailed stonework elements were incorporated into the section of the boundary wall which was taken down along Priest Lane ahead of the construction of the new glasshouse. This included a *voussoir* from a Gothic window arch, possibly of 12<sup>th</sup> to 14<sup>th</sup> century date, which was presumably reused from the Priory. It is not uncommon for structural elements to be reused in this way, especially in some of the older buildings around Cartmel, and this fragment was reinstated into the wall when it was rebuilt.

Excavation within the footprint of the new glasshouse and along Priest Lane recovered fragments of industrial residue relating to medieval ironworking or smithing tentatively dated to the 13<sup>th</sup> to 14<sup>th</sup> century on the basis of associated pottery finds. Ironworking debris was also found during the evaluation and small scale excavation carried out at the site in 1998 (Wild and Howard-Davis 2000) and these latest finds further suggest that a bloomery operated on the site within what would have been the outer court of the medieval priory.

The medieval pottery assemblage comprises gritty and sandy wares and, to a lesser extent, more fully reduced wares of the Reduced Grey ware tradition. The relatively low occurrence of these later medieval reduced wares and the absence of early post-medieval pottery again perhaps hints at a relative '*lull in activity*' at the site from around the 15<sup>th</sup> century onwards (Wild and Howard-Davis 2000, 176). Post-medieval pottery and glass finds from the site generally dated from the 19<sup>th</sup> century onwards.

Excavation within the footprint of the garage/workshop revealed a blackish silty layer, which dated to the medieval period and contained abundant animal bone, much of which had been split longitudinally, presumably to extract the marrow. The deposit also contained a relatively significant amount of fish bones, primarily marine species, but also perch. The south side of the area revealed a large stone-built structure, which is thought to have been a post-medieval sawpit, which corresponds to some extent to structures shown in the area on 19<sup>th</sup> and early 20<sup>th</sup> century mapping. From the finds contained within a backfilled deposit from inside the sawpit it seems that it was backfilled in the late 19<sup>th</sup> or early 20<sup>th</sup> century before being built over.

The watching brief provided a further opportunity to examine the site, which is of considerable archaeological and historical interest and has already been the focus of an archaeological evaluation and small scale excavation. This report reconfirms many of the original findings of that earlier work but adds important additional information regarding the scale of iron working in the area and the degree to which it became used for dumping rubbish. This rubbish in part comprised the presence of midden material, which provided important evidence for the nature of the diet of the inmates of the priory.

## Acknowledgements

Greenlane Archaeology would like to thank Stephen Roe for commissioning the project. Additional thanks are due to Andrew Davison, Principal Inspector of Ancient Monuments, Peter McCrone, and Stephen Boyle, all at English Heritage (now Historic England), for their comments on the project and help with the Scheduled Monument Consent. Thanks are also due to Bert Boardley, Kelly Durnall, and colleagues for their assistance on site.

The watching brief was carried out by Tom Mace and Daniel Elsworth, who compiled this report and produced the illustrations. The finds were processed and examined in-house by staff at Greenlane Archaeology, apart from the fish bone, which were assessed by Ruby Ceron-Carrasco. The sample was processed and the retent assessed by staff at Greenlane Archaeology and the flot assessed by Laura Bailey and Tim Holden at Headland Archaeology Ltd. Jo Dawson edited the report and the project was managed by Dan Elsworth.

# 1. Introduction

## 1.1 Circumstances of the Project

1.1.1 Following the submission of a planning application (ref. SL/2013/1135) and application for Scheduled Monument Consent (refs. S00079474 and S00082496) for the construction of a number of new structures, demolition of existing structures, and rebuilding of the boundary wall, Priory Gardens, Priest Lane, Cartmel, Cumbria (NGR 337909 478839), a condition requiring an archaeological watching brief was placed on the Scheduled Monument Consent. Greenlane Archaeology produced a project design for this work (*Appendix 1*), which follows on from an earlier desk-based assessment of the site (Greenlane Archaeology 2012), and after its approval by English Heritage (now Historic England) the watching brief was carried out on 17<sup>th</sup> June and 16<sup>th</sup> and 17<sup>th</sup> October 2014 and 1<sup>st</sup>, 22<sup>nd</sup> and 24<sup>th</sup> April 2015.

1.1.2 Priory Gardens comprises an area of land situated in the heart of the village of Cartmel, and within the precinct of Cartmel Priory, which was established in the late 12<sup>th</sup> century. As a result of a previous planning application on the site an archaeological evaluation and subsequent excavation were carried out, which revealed structural and other remains of medieval date, thought to comprise ancillary buildings relating to the priory, with some evidence of ironworking and possibly temporary structures set up in the initial stages of the construction of the priory. The site is of considerable archaeological and historical interest and is included as part of the Scheduled Monument (ref. 34976) comprising a number of elements within the precinct of Cartmel Priory.

## 1.2 Location, Geology, and Topography

1.2.1 The site is located to the north side of the village of Cartmel c.25m north-west of the Priory (Figure 1). The Priory, which is visually prominent in the landscape, formed the hub around which Cartmel developed and the village, which is described as 'exceptional' and 'largely unspoilt', is now protected by Conservation Area status (Countryside Commission 1998, 73). Cartmel is situated approximately 3.5km north-west of Grange-over-Sands to the south of the South Cumbria Low Fells on the northern side of Morecambe Bay (Countryside Commission 1998, 69; Ordnance Survey 2008).

1.2.2 Cartmel is situated on the junction of a complex series of solid geology comprising Bannisdale Slates of Silurian age and carboniferous limestone, covered by thick glacial debris, including deposits of cobbles, pebbles and sandy material (Mitchell 1990, 43; Moseley 1978, plate 1). The site is located to the east of the River Eea and gently undulates between approximately 18m and 21m above sea level (Ordnance Survey 2008); the underlying solid geology in the catchment area to the west of the River is mainly slate, but to the east the deposits are mostly limestone, and deposits of alluvium (soft peaty and clayey soils) are likely to be present closer to the River (Mitchell 1990, figure 2; 1992, figure 1). The River itself was doubtless an important influence on the sourcing of construction material in the area most notably that used in the construction of the Priory (Mitchell 1992, 72-73).

1.2.3 The site at present can be divided into two areas: the southern part, which makes up the bulk of the area and comprises a large area of lawn with trees, contained within a moderately-sized boundary wall, and the northern part, which is smaller and covered with the remains of several buildings or building platforms, including a small summerhouse, which is a Grade II Listed building, and is situated against a tall boundary wall running along Priest Lane. The east side of the site is bounded by Priory House and associated properties, including a detached brick-built garage, and the west side is bounded by the River Eea.

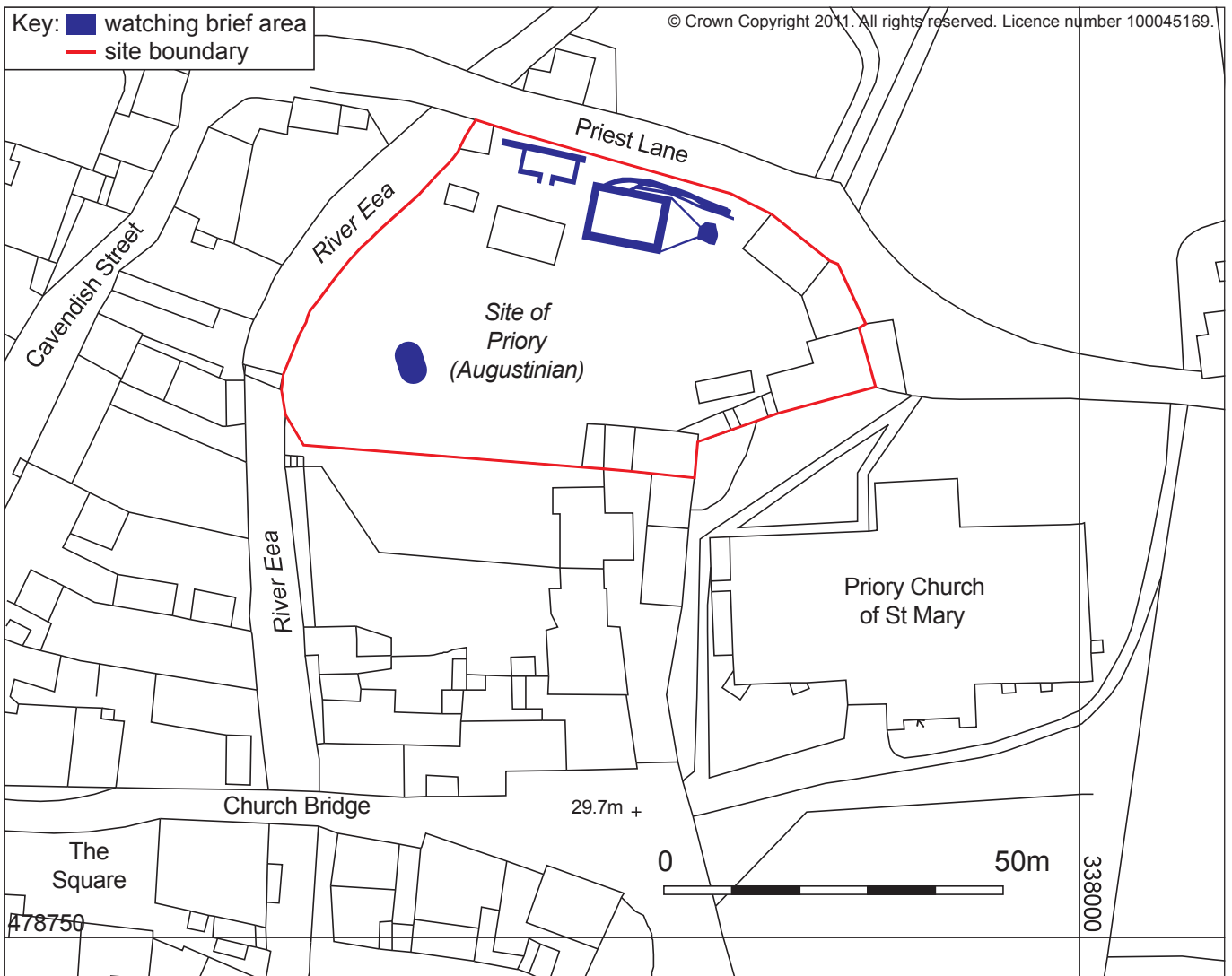
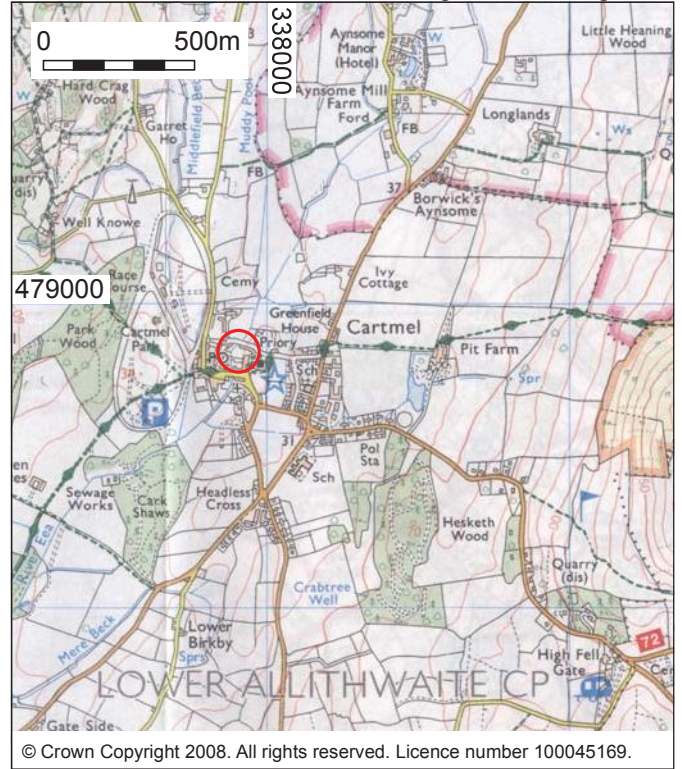
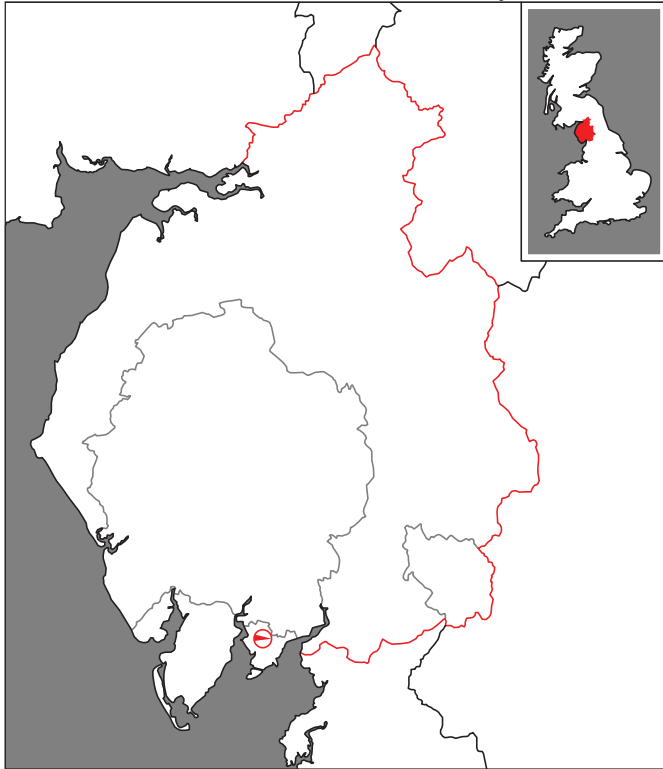


Figure 1: Site location

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## 2. Methodology

### 2.1 Desk-Based Assessment

2.1.1 The historical background to the site is taken from an earlier desk-based assessment carried out as part of a previous phase of work at the site (Greenlane Archaeology 2012). This principally comprised an examination of early maps of the site and published secondary sources.

### 2.2 Watching Brief

2.2.1 On 17<sup>th</sup> June 2014 the watching brief monitored excavation of footings for the new glasshouse. Approximately 12.5m of the boundary wall along Priest Lane had been removed and a trench approximately 1.0-1.1m wide by 1.0m deep (below the level of the road) was excavated below that. To the south of that, the area of the former greenhouse (now demolished) had been reduced by c.0.4m and the footings of the new glasshouse were excavated inside the confines of the former greenhouse. The footings for the new glasshouse were reduced to approximately the same level as the trench along the south side of Priest Lane below the former boundary wall.

2.2.2 The footings for a new garage/workshop to the east of the new glasshouse were excavated on the 16<sup>th</sup> and 17<sup>th</sup> October 2014. The new building is a long rectangle, c7.5m wide by 11m long, aligned broadly east/west. The footings were excavated using a toothed bucket, starting at the west side, then the north side, then the south side and finally the east side. Each section was approximately 1.3m wide.

2.2.3 On the 1<sup>st</sup> April 2015 a service trench approximately 0.7m-0.8m wide was excavated to the north side of the new garage/workshop. A disused fuel tank was removed to the east of the new garage on the 22<sup>nd</sup> April and two narrow drainage trenches, 0.3m-0.4m wide, were extended from that to the east corners of the new garage. On the 24<sup>th</sup> April another narrow drainage channel was excavated along the wall to the north side of the new garage to the main entrance.

2.2.4 The trenching was carried out using a mid-size tracked mechanical excavator and totalled approximately 100m<sup>2</sup>.

2.2.5 All aspects of the archaeological recording were carried out according to the standards and guidance of the Institute for Archaeologists (CIfA 2014) and Greenlane Archaeology's own excavation manual (2007). The underlying deposits and features were recorded in the following manner:

- **Written record:** descriptive records were made using Greenlane Archaeology *pro forma* record sheets;
- **Photographs:** photographs in both colour print and colour digital format were taken of all archaeological features uncovered during the groundworks, as well as general views of the site and working shots. A selection of the colour digital photographs is included in this report. A written record of all of the photographs was also made using Greenlane Archaeology *pro forma* record sheets;
- **Drawings:** a location plan showing the area of excavation was produced at a scale of 1:100 and additional measured sketches were produced at a scale of 1:10 and 1:20 as appropriate.

### 2.3 Environmental Samples

2.3.1 A single approximately 10L environmental sample (Sample 1) was taken from layer **108**, which is considered to be medieval in date. The sample was subjected to flotation and wet sieving. The floating debris (the flot) was collected in a 250µm sieve and, once dry, scanned using a binocular microscope. Any material remaining in the flotation tank (retent) was wet-sieved through a 1mm mesh and air-dried. The flot from the sample was scanned using a stereomicroscope at magnifications of x10 and up to x100. Identifications, where provided, were confirmed using modern reference material and seed atlases including Cappers *et al.* (2006). Charcoal was identified as oak/non-oak wherever possible.

## 2.4 Finds

2.4.1 **Processing:** all of the artefacts recovered by hand during the watching brief were washed (or dried and dry brushed in the case of glass and metal) then naturally air-dried and packaged appropriately in self-seal bags with white write-on panels.

2.4.2 **Assessment and recording:** the finds were identified and catalogued (*Appendix 3*).

2.4.3 **Medieval pottery:** the medieval pottery is described in generic terms (e.g. *gritty ware*) with no attempt to link to specific fabrics or specific sources. Brief descriptions of the sherds are given in *Appendix 3* following *Guidelines for the Processing and Publication of Medieval Pottery from Excavations* (Blake and Davey 1983) and *Pottery in Archaeology* (Orton *et al* 2008). Vessel forms are classified using terminology provided by the *Medieval Pottery Research Group* (1998).

2.4.4 **Industrial residue and slags:** the industrial residues and slags were recorded following guidelines issued by English Heritage (Anon 2001, 7). The material was visually examined and classified based solely on morphology.

2.4.5 **Animal bone:** animal bone was identified using Schmid's *Atlas of Animal Bones* (1972), quantified and catalogued (*Appendix 3*). The condition, erosion and fragment size was noted, as were any signs of gnawing and butchery marks. None of the bone had been burnt.

2.4.6 All the fish and marine shell remains were examined and identified, where possible, to species level or to family group; this was done using a modern fish bone reference collection and standard guides for mollusks (Campbell & Nicholls 1989). Fish skeletal nomenclature follows Wheeler and Jones (1989, 122-123) and taxonomical information of the species identified, derived from Wheeler (1969 and 1978). The sizes of the cod-fish species (Gadidae) were given an approximate size range. This was done by matching the archaeological material to modern fish skeletons of known size based on 'total body length'. Therefore, the elements recovered were categorized as 'small' (25-30cm). The size of non-Gadoid species was also calculated by comparing the elements with modern specimens of known size, these were then given the category 'juvenile' or 'adult'.

## 2.5 Archive

2.5.1 A comprehensive archive of the project has been produced in accordance with the project design (*Appendix 1*) and current ClfA and English Heritage guidelines (English Heritage 1991; Brown 2007). The archive, which comprises the drawn, written, and photographic record, will be deposited with the Cumbria Archive Centre in Kendal (CAC(K)). A copy of the report will be provided to the client, Greenlane Archaeology will retain a copy, a copy will also be provided for the Cumbria County Council Historic Environment Record (HER), and a digital copy will form part of the OASIS scheme.

2.5.2 The client will ultimately be encouraged to transfer ownership of the finds to a suitable museum, which in this case is Kendal Museum; however, as it is currently at full capacity it is unlikely that it would be willing to take anything unless it is of exceptional importance. If no suitable repository can be found the finds may have to be discarded, and in this case as full a record as possible would be made of them beforehand.

### 3. Site Archaeology and History

#### 3.1 Map Regression

3.1.1 **Introduction:** the earliest useful maps of the area date from the mid-19<sup>th</sup> century onwards (Greenlane Archaeology 2012).

3.1.2 **Ordnance Survey, 1851:** the site is located to the north-west of the priory church and east of the River Eea, which runs north-east/south-west through the centre of the village (Plate 1). The site has been built over along the south-east side as well as along the east side of Priest Lane (to the north), but the rest of the site is undeveloped.

3.1.3 **Ffoliot's map, 1854:** this map shows the divisions between the buildings along the east side of the site in a similar arrangement to the earlier Ordnance Survey mapping (Plate 2; cf. Plate 1). A small square building is shown in the north-west corner of the site adjacent to the River and other small structures might have been added.

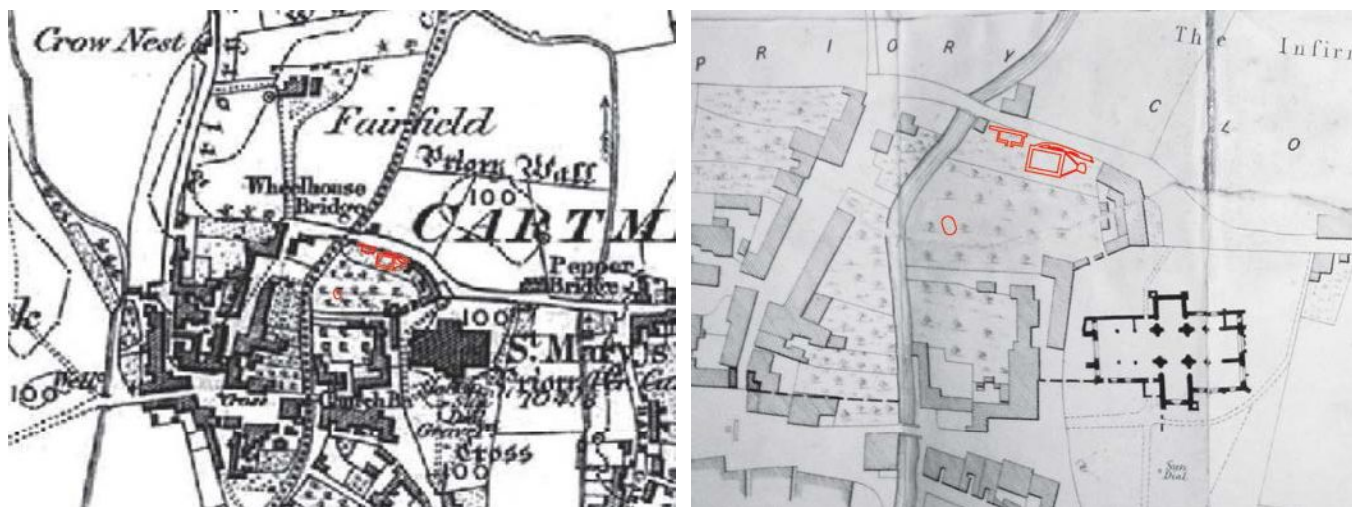


Plate 1 (left): Extract from the Ordnance Survey map of 1851

Plate 2 (right): Extract from Ffoliot's plan of 1854

3.1.4 **Ordnance Survey, 1890:** the open area along the north side of the site has been subdivided laterally and a large rectangular structure has been built on the south side of the eastern block (Plate 3). The arrangement of the rest of the site is largely unchanged.



Plate 3: Extract from the Ordnance Survey map of 1890

3.1.5 **Ordnance Survey, 1913:** the layout of buildings along the east side of the site has not changed. Another part of the area covered in trees has been subdivided behind these structures to the east and a structure has been added to the north of the site, fronting onto Priest Lane (Plate 4). The large rectangular building to the south of this, which is first shown on the 1890 Ordnance Survey mapping, is shown as subdivided into four sections.

3.1.6 **Ordnance Survey, 1933:** the arrangement of buildings on the site remains largely the same, although some of the smaller structures have been removed (Plate 5). Two of the previously existing structures are now filled with a crosshatched pattern, which indicates they were glass structures (i.e. greenhouses), and part of the rectangular block towards the centre of the site is also shown as being made from glass.

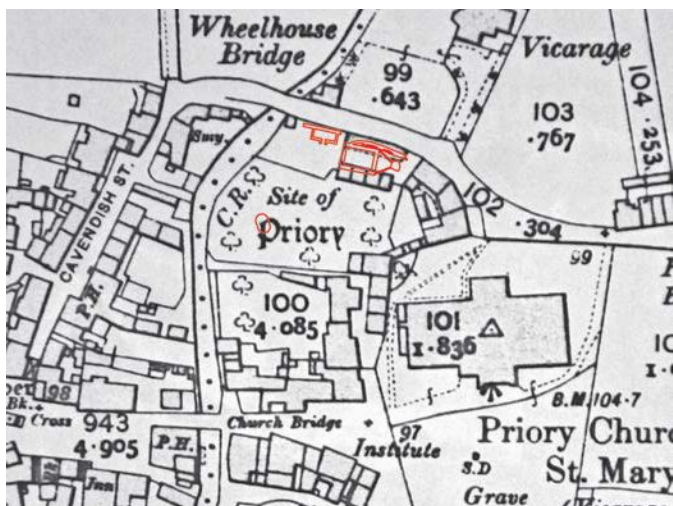


Plate 4 (left): Extract from the Ordnance Survey map of 1913

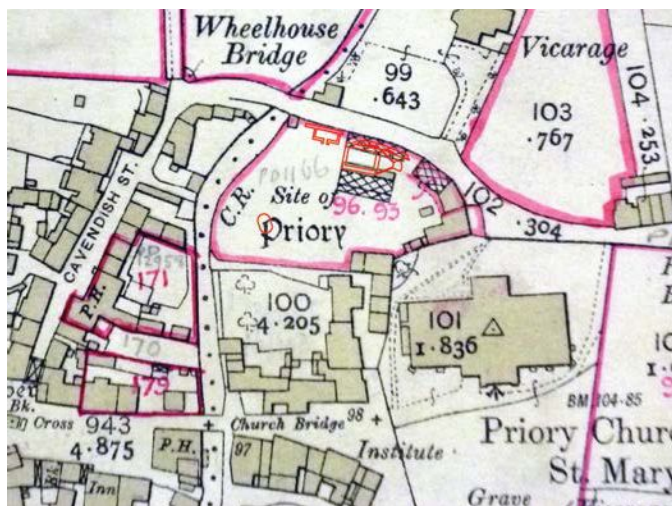


Plate 5 (right): Extract from the Ordnance Survey map of 1933

3.1.7 **Aerial photograph, 1970:** this photograph, apparently taken in 1970 (Cambridge University 1970), shows the arrangement of buildings along the east side of the site (to the north of the Priory) and two rows of greenhouses to the south side of Priest Lane (Plate 6). At this time the greenhouses appear to be glazed along their length and the greenhouse or houses to the north extend almost the full length of Priest Lane along this side of the site. The footings of these greenhouses correspond with low standing garden walls at the site.



Plate 6: Aerial photograph, 1970 (north is to the top left)

3.1.8 **Aerial photographs, 1989:** there are two aerial photographs taken 1989 (Plate 7 and Plate 8; CCC 1989). They are very dark but some detail is discernable: the northern row of greenhouses has at least been partially removed and the glazing has been removed on the eastern one on the southern row leaving the footings.



Plate 7 (left): Aerial photograph, 1989 (north is to the left)

Plate 8 (right): Aerial photograph, 1989 (north is to the bottom)

## 3.2 Site History

3.2.1 **Prehistoric Period (c11,000 BC – 1<sup>st</sup> century AD):** while there is limited evidence for activity in the county in the period immediately following the last Ice Age, this is typically found in the southernmost part on the north side of Morecambe Bay. Excavations of a small number of cave sites have found artefacts of Late Upper Palaeolithic type and the remains of animal species common at the time but now extinct in this country (Young 2002). The county was also clearly inhabited during the following period, the Mesolithic (c8,000 – 4,000 BC), as large numbers of artefacts of this date have been discovered during field walking and eroding from sand dunes along the coast, but these are typically concentrated in the west coast area and on the uplands around the Eden Valley (Cherry and Cherry 2002). Slightly closer to the site, however, a large number of finds of this date were discovered during excavations carried out in the 1970s in the park belonging to Levens Hall, and, although largely ignored at the time, they were subsequently published (Cherry and Cherry 2000). In addition, a small amount of Mesolithic material has been found at the north end of Windermere during excavations on the Roman fort site (see for example Finlayson 2004). These discoveries, particularly those at Levens, demonstrate that further remains of similar date are likely to exist in the local area and that river valley, lakesides, and coastal areas are a common place for such remains to be discovered (Middleton *et al* 1995, 202; Hodgkinson *et al* 2000, 151-152).

3.2.2 In the following period, the Neolithic (c4,000 – 2,500 BC), large scale monuments such as burial mounds and stone circles begin to appear in the region and one of the most recognisable tool types of this period, the polished stone axe, is found in large numbers across the county, having been manufactured at Langdale (Hodgson and Brennand 2006, 45). During the Bronze Age (c2,500 – 600 BC) monuments, particularly those thought to be ceremonial in nature, become more common still, and it is likely that settlement sites thought to belong to the Iron Age have their origins in this period. These are not well represented in the area around the site, although an enclosure on Hoad Hill near Ulverston perhaps has its origins in this period (Elsworth 2005), as might another one at Skelmore Heads near Urswick, although this was also associated with evidence for activity in the Neolithic (Powell 1963). Stray

finds of Bronze Age date are found throughout the county. Sites that can be specifically dated to the Iron Age (c600 BC – 1<sup>st</sup> century AD) are very rare; the enclosures at Ulverston and Urswick may represent hillforts, a typical site of this period, but they have not been dated. Closer to the site, immediately to the east of Cartmel on Hampsfell, a group of over 50 structures identified as hut circles was reported in the late 19<sup>th</sup> century (Rigge 1885); no further details relating to these are known but it is possible that they represent the remains of a later prehistoric settlement or even a hillfort. At Levens, burials radiocarbon dated to the Iron Age have been discovered (OA North 2004), but these remain a rarity both regionally and nationally.

3.2.3 A stone axe hammer was found in Cartmel before 1909 at an unknown location. This is perhaps the same as one said to be at Aynsome, although the find spot of this was also not known (Rigge 1885, 266).

3.2.4 **Romano-British to Early Medieval Period (1<sup>st</sup> century AD – 11<sup>th</sup> century AD):** late 18<sup>th</sup> and 19<sup>th</sup> century antiquarians considered a Roman military presence in the Furness area, which, by extension included the Cartmel peninsula, beyond question, but by the 20<sup>th</sup> century there was a complete reversal of opinion (summarised in Elsworth 2007, 31-37). It is evident that in this part of the country, initially at least, the Roman invasion had a minimal impact on the native population in rural areas (Philpott 2006, 73-74), but ultimately the evidence suggests a strong Roman influence or “background” presence throughout the Roman period, which doubtless would have been attractive for its rich iron reserves (Shotter 1995, 74; Elsworth 2007, 37, 41-43). Traditionally, a Roman camp is thought to have been located across the River Eea less than 70m from the current site in an area known as ‘Castle Meadows’ (Stockdale 1872, 253), although at the present time there is scant evidence to support this theory (Castle Meadows is marked some distance to the north on the Ordnance Survey map of 1851, see Plate 1). That said, Stockdale recalls having the suspected *agger* [cambered embankment of a Roman road] of this *castellum* [small fort] pointed out to him by an acquaintance (Stockdale 1872, 253). The site was held to stretch along the side of the River, “*It was then not very traceable, but he said it had been levelled down and much of it taken away*” (*ibid.*). Elsewhere, in Stockdale’s unpublished manuscript notes, it is recalled that an ‘*oblong (parallelogram) mound in the meadows at Cartmel called Castle Meadows exactly in the shape of a Roman Camp – [was] destroyed partly by the encroachment of [the] River – the formation of the present road and chiefly [sic] by Mr Fell when he was building his house [at Fairfield] and improving his meadow*’ (CAC(B) DDHJ/4/2/1/8 1860s-1872). Unfortunately, the location of “Castle Meadows” is now slightly ambiguous; the extent of the Scheduled Monument area would suggest that the fort lay to the west of the River, which corresponds with Stockdale’s recollection, whereas Mitchell identifies the field north of the east end of the Priory wall to The Beck as Castle Meadows (Mitchell 1990, figure 1). The issue is clouded somewhat by Stockdale who implies that both fields may have been called “Castle Meadows” (Stockdale 1872, 253), while the first edition of the Ordnance Survey labels a large general area much further to the north as ‘Castle Meadows’ (Ordnance Survey 1851). A later account states that Castle Meadows was “a field on the right hand side of the road which goes up to Green Bank from Cartmel” (Women’s Institute Cartmel Branch 1928, 2). Intriguingly this field is said to have been where the bells for the priory were cast; local legend has it that the people of Cartmel put their gold and silver into the melting pot for it (*ibid*) but this is unlikely given that church bells were typically made from copper alloy (77% copper and 23% tin; Jennings 1992, 12).

3.2.5 A coin of Constantine I, Roman Emperor from AD 306-337, was found in Cartmel, but the exact location is unknown. The HER lists it as a silver coin but both references describe it as copper alloy, such as bronze (Shotter 1986, 257; 1989, 43). Various other Roman coins, including three hoards, have been found in or around Cartmel dating from the first to the fourth centuries AD (Shotter 1989) and may point to the contemporary importance of the south Cumbrian coast and its integration into the economics of the Roman north-west, with links to other Roman centres such as Lancaster and Ravenglass (Shotter 1995). Further Roman sites may yet be discovered in the areas of Barrow and Cartmel, but firm evidence for a Roman military presence, however, remains elusive (Shotter 1995, 77; 2004, 67). A recent evaluation at Fairfield (Greenlane Archaeology 2011) recovered three sherds of what may be Roman pottery from a road surface, but these were not dated with certainty and may be medieval.

3.2.6 The *Historia de Sancto Cuthberto* records that “the land which is called Cartmel” and all its British population, which also incidentally suggests a well-established community there, was given to Saint

Cuthbert around c688 AD by Ecgrith, who was King of Northumbria from 670 to 685 (Crowe 1984, 63-65; Dickinson 1991, 9). The Domesday Book of 1086 calls it "*Cherchebi*", deriving from the Old English for church, rather than the Norse form "*kirk*", which implies that a Northumbrian church existed on the site ahead of the Conquest, at which time it belonged to one Duann (Crowe 1984, 61, 65).

**3.2.7 Medieval Period (11<sup>th</sup> century AD – 16<sup>th</sup> century AD):** the earliest forms of the place-name 'Cartmel', which are largely recorded from the 12<sup>th</sup> century onward, probably derive from the Old English "*ceart*" and "*mel*" from the Old Norse word "*melr*" (Crowe 1984, 61) and broadly mean "sand bank by rocky ground" (Dickinson 1991, 9) and may originally have applied to the Grange area (Dickinson 1980, 7). That a parish church existed there is attested in *The Furness Abbey Charters* by 'Willelmus, clericus de Kertmel' c1135 and by 'Uccheman, persona de Chertmel' c1155 (Curwen 1920, 107). By 1168 the parish of Cartmel was a royal estate and in 1186 it was granted to the Marshall family, the Earls of Pembroke, by Henry II (Crowe 1984, 65). Much of the present village of Cartmel lies within the precinct of the Priory, which was founded with the legal permission of the future King John (who was at the time Count of Mortain) between August 1190 and 1196 by William Marshall, a wealthy and important Norman baron and Earl of Pembroke from 1189 to 1219, although the monastery may not have been established until 1202 (Dickinson 1980, 98; 1991, 10-11). The charter endowed the Priory "all my land of Cartmel" and a list of rights and privileges, which unusually included rights to iron mines (Dickinson 1980, 97; 1991, 10-11).

**3.2.8** Unfortunately, it is not possible to get a detailed view of the possessions acquired by the Priory due to the loss of its archives, although it evidently received a number of further grants in the 13<sup>th</sup> and 14<sup>th</sup> century and eventually acquired a number of comparatively large farms (Dickinson 1991, 14-19). Its ecclesiastical wealth was valued at £46. 13s. 4d. in 1291 in the *Taxation of Pope Nicholas* (Dickinson 1980, 15). However, like much of the north of England, it was subject to raids by the Scots throughout the 14<sup>th</sup> century (Dickinson 1991, 29-30); the raids of 1316 and 1322 'wrought immense damage in the area' and on the latter occasion the *Lanercost Chronicle* records that the Scottish raiders "*burnt the lands around the priory... and took away cattle and booty*" (Dickinson 1980, 13). The Priory was also affected by the Black Death, which may explain why, probably like many English monasteries, it is recorded as having fewer brethren than normal in 1381 (Dickinson 1980, 16). The defensive potential of the priory should not be overlooked (Hyde and Pevsner 2010, 268); the main priory gatehouse leading into the precinct was built around this time, between 1330 and 1340, and land surrounding the Priory was also enclosed by a precinct wall during the 14<sup>th</sup> century (Curwen 1920, 111). The gatehouse is the only remaining building associated with Cartmel Priory, although vestiges of other buildings are incorporated in later structures. Elements of the precinct wall evidently survived in reasonable condition into the early 19<sup>th</sup> century. Probably the earliest plan showing the presumed and known elements of the priory and its precinct wall was produced by Ffoliott in 1854 (Plate 2). This map seems to have formed the basis for tentatively locating various features associated with the Priory in later accounts (e.g., Dickinson 1981, 83).

**3.2.9** In 1390 a papal mandate to the archbishop of York ordered an investigation of the prior of Cartmel, William, accused of simony in admitting canons to profession and of 'too frequent visits to taverns', to the extent that the monastery was falling into disrepair (Dickinson 1980, 13). This may have been the catalyst for a period of reputedly much needed reconstruction and restoration of the Priory, possibly begun in the final years of the 14<sup>th</sup> century (*ibid.*, 19); Hyde and Pevsner state, somewhat enigmatically, that '*something drastic* [emphasis added] made it necessary for the canons to rebuild their monastic precinct on the [north] side' in approximately the mid-15<sup>th</sup> century (Hyde and Pevsner 2010, 267) and the surrounding lofty precinct wall is also suggested to have been largely rebuilt and partly re-sited in the 15<sup>th</sup> century (Dickinson 1980, 18). It has elsewhere been suggested that rebuilding was needed as a result of the devastation wrought by the Scottish raids, which perhaps burnt the Priory buildings to the ground (Curwen 1920, 111-112), or else the relocation of the cloistral buildings became necessary out of consideration for the underlying geological properties of the respective sides of the church (Mitchell 1990, 45-46).

**3.2.10** The small field to the north side of Priest Lane (immediately to the north of the Priory Church) is called "farmery" field, which Dickinson interprets as a reference to the old word for infirmary, which in this case would have provided treatment for the sick and infirm brethren (Dickinson 1980, 21; 1991, 109).

Another suggestion for the origins of its name is that it derived from being near the Monastic Dairy (Women's Institute Cartmel Branch 1928, 2). In either case, its layout can allegedly be determined from aerial photographs, which show that its main structure, most likely a large hall, with twin aisles and an open area at one end, ran north/south and it had a subsidiary block on its eastern side (Dickinson 1991, 109). The walling of the monastic precinct continues to the east and the area to the north, towards the beck, is low-lying and prone to flooding (Dickinson 1991, 109-110). The land between Farmery field and the beck to the west may have been gardens and orchards with fields to the north (Dickinson 1980, 21). The field immediately to the south-east of Fairfield Lodge formed part of the priory's outer court, which would have housed the agricultural and industrial buildings essential to the priory's economy, which potentially included barns, granaries, brewhouse, bakehouse, guesthouse, woolhouse, swinehouse, stables, mills, dovecots, tannery, and blacksmiths etcetera, and nowadays forms part of the Scheduled Monument area associated with the Priory (Scheduled Monument Number: 34796).

3.2.11 The value of the site of the Priory appears greatly diminished by 1535 when it was valued at £8. 16s. 8d. in a survey of English ecclesiastical revenue, the so-called *Valor Ecclesiasticus*, although it still received rents and similar income estimated at £91. 6s. 3d. net (Dickinson 1980, 15-16). Besides, Frith Hall grange was erected in the 16<sup>th</sup> century on the Leven Estuary where the Priory held fishing rights (Dickinson 1991, 16-17) and the valuation was raised to £212. 12s. 10½d., following protests by the priory that it had been undervalued, perhaps to avoid falling foul of the Act for the Suppression of the smaller English monasteries of 1536 (Curwen 1920, 113-114; Dickinson 1980, 21-22). It was to no avail - this Act began the Dissolution of the monasteries, which, despite violent protest, led to the Priory being dissolved between 1536-7 (Curwen 1920, 114; Wild and Howard-Davis 1999, 31); however, following the unusual decision ordered by Mr. Chancellor of the Duchy that it should 'stand still' as it served a *parochial* as well as monastic purpose, the Priory church was preserved as being the only place of worship available for its parishioners (Curwen 1920, 114; Dickinson 1980, 24). After the Dissolution the Priory's assets became Crown property and ultimately became part of the Holker Hall Estate (Dickinson 1991, 40), some of which now forms part of the Scheduled Monument area associated with the Priory.

3.2.12 The HER records additional medieval sites located nearby, including the cross, obelisk, and fish stones located in the Square some 90m to the south-west of the site and a deer park 100m immediately to the west of the site used to occupy the area of the modern racecourse and Cartmel Park and Cartmel Wood. A set of stocks was located at the main entrance to the churchyard, approximately 120m to the east of the cross, but no trace now remains.

3.2.13 **Post-medieval Period (16<sup>th</sup> century AD – present):** by the early 17<sup>th</sup> century the Preston family then at Holker owned much of the land formerly owned by the Priory and the church was further improved and refurbished under their benefaction (Curwen 1920, 115; Dickinson 1980, 25). Cromwellian soldiers stayed in the village on 1<sup>st</sup> October 1643, stabling their horses in the church after a minor battle in Furness (Dickinson 1985, 115). In 1660 came the re-establishment of Anglicanism and the church bells were re-cast in 1661 (Dickinson 1980, 25).

3.2.14 A large Bellarmine-type (or *Bartmann*) jug was dug up in the garden of May Cottage, Cartmel, in the early 1960s. Such vessels were imported in the 16<sup>th</sup> and 17<sup>th</sup> centuries from the Low Countries and were soon copied by London potters. In the South they were often buried with associated objects to ward off evil spirits, so-called 'witch bottles', but the Cartmel specimen was empty.

3.2.15 A smithy operated near to the current site at the north-east corner of Cavendish Street which can be seen on the 1890 Ordnance Survey map to the south of Wheelhouse Bridge (Plate 3).

3.2.16 **Priory Gardens:** some history specific to the site can be ascertained, in part though information contained in the deeds provided by the client, but also through its connection to Priory House (immediately to the east), for which it originally formed the garden. Priory House is considered to be of 18<sup>th</sup> century origin (English Heritage 2007), although it is thought likely to have originally related to the medieval priory, perhaps serving as the prior's lodgings (Stephen Roe pers comm.). The available history of Priory Gardens only begins in the late 19<sup>th</sup> century, when it was conveyed, in 1897, from Thomas Orr and others to James Peddar (CAC(B) BDHJ/290/49 1897), following its sale at auction on May 4<sup>th</sup> of that year (CAC(B) BDHJ/290/48 1897). At this time Priory Gardens still formed the gardens for Priory House; the same document describes it as comprising '*Freehold messuage or dwelling house*



*known as Priory House with the stable coach house yard and outbuildings... and the gardens and orchards behind* (CAC(B) BDHJ/290/49 1897), and the auction sales particular marks the site. An undated document of late 19<sup>th</sup> or early 20<sup>th</sup> century date (CAC(B) BDHJ/290/51 n.d.) relates to attempts to sell or let the property, which is described as comprising '*Priory House, Cartmel, Grange over Sands. Containing Dining, Drawing and Morning Rooms, 4 Bedrooms, Dressing Room, good attics, Bathroom H & C., W.C., good kitchen, Scullery, Larder and the usual out offices, stable, Loose Boxes, Coach House, Garage, Orchard and Garden (3/4 of an acre).*'

3.2.17 There were three proposed alterations to the site in the 1930s: an outside toilet to the west of Priory House in 1932 (CAC(B) BSRDNL/3/899 1932) and two separate proposals for a petrol pump in 1938, immediately to the east of the greenhouses (CAC(B) BSRDNL/3/1529 1938; CAC(B) BSRDNL/3/1569 1938). Further proposed modifications were also made to the house at this time, including the addition of an oriel window (CAC(B) Z/889 1933) and the conversion of a former barn into a shop and work room (CAC(B) Z/888 1932). It is evident that by this time the former garden was being used as a market garden, Priory House is described as a house, office and shop on the plans of 1938, and the range of greenhouses and a potting shed are shown. This coincides with the conveyance in 1929 to Arther Futer, a nurseryman or market gardener.

### 3.3 Previous Archaeological Work

3.3.1 Little is known about the precincts of smaller priories due to the limited number of excavations within their confines and the past concentration on cloistral buildings (Wild and Howard-Davis 1999, 34; 2000, 179). An archaeological evaluation carried out in April 1998 at Priory Gardens produced significant evidence of probably monastic activity at the site during the medieval period (LUAU 1998a) and the subsequent targeted excavation, which was carried out in August and September of the same year, revealed seven phases of activity from the site, including well-preserved multi-phase stonewalled structures; the earliest phases dated from the late 12<sup>th</sup> to late 14<sup>th</sup> centuries, with a lull in activity in the c.15<sup>th</sup> century, and post-monastic features dating to the late post-medieval and modern usage of the site (LUAU 1998b; both the evaluation and excavation are summarised in Wild and Howard-Davis 1999, 31-32; 2000, 163, 177). A large amount of ironworking debris was recorded, suggesting local iron ore deposits were being worked at a bloomery within the precinct, and evidence for copper alloy artefact production was also recovered, which would be typical of the sort of industrial activities carried out within the outer court of the Priory, i.e., beyond the area occupied solely by the canons (Wild and Howard-Davis 1999, 33-34; 2000, 177-179). Burials had already been discovered during the excavation of a 29.6m pipe trench in "Farmery Field" c.30m to the east of Priory Gardens in 1983, which may have formed part of the lay cemetery, which it is suggested was in use until the mid-15<sup>th</sup> century (Wilson and Clare 1990; Dickinson 1980, 21).

### 3.4 Other Relevant Information

3.4.1 The undeveloped southern part of the site was thought likely to have had relatively well-preserved below-ground archaeological remains as demonstrated by the previous excavation. Large trees in the garden, however, were likely to have had a significant impact on below-ground remains. The effect of the buildings on the north side was likely to be more varied; whereas the earlier buildings probably had fairly substantial footings, the low walls or greenhouse bases were presumably fairly light-weight structures and will have had less impact on any below-ground remains. It is worth noting, however, that '*medieval drains may have been exposed during excavations under the greenhouses... during the 1930s*' (Wild and Howard-Davies 2000, 179) and that buried remains in that area may be shallower than elsewhere, although the depth of excavation carried out at that time is not known, and the possibility of pipes having been excavated for heating systems must also be taken into consideration. A sewage pipe, served by two manholes, is recorded along the west side of the site, parallel to the River Eea, on a plan provided for the client by United Utilities. Its impact on any archaeological remains was uncertain, but its installation may have caused considerable damage. In addition, an electrical cable and water pipe are known to be present in the area adjacent to the gate from Priest Lane (Stephen Roe pers comm.).

## 4. Results

### 4.1 Watching Brief

4.1.1 **Excavation within the area of the greenhouse and along the south side of Priest Lane:** excavation below the property boundary wall along the south side of Priest Lane exposed a concrete drain to the west end of the trench and revealed that the footings of the wall continued approximately 0.7m below the height of the road surface (Plate 9 and Plate 10). The area to the south of this had been stripped to reveal the footings of the low garden walls (formerly the base for a greenhouse) and the outline of the greenhouse walls was still apparent (each wall being c. 0.3m thick) (Plate 11; Figure 2). Roughly 0.4m depth of a dark, friable topsoil / garden soil (context **100**) was apparent to the south side (external to the former greenhouse).



**Plate 9 (left): Excavation below the boundary wall along Priest Lane, looking west**

**Plate 10 (centre): Excavation below the boundary wall along Priest Lane, looking east**

**Plate 11 (right): Foundations of the former greenhouse exposed along Priest Lane**

4.1.2 Footings for the new greenhouse were cut into similar mid-to-dark brown silt (**101**) within the footprint of the former greenhouse (Plate 12 to Plate 17). This deposit was c.0.5m thick and contained fragments of frogged (marked 'Furness') red brick and post-medieval pottery. A soft black silty deposit (**102**), several centimetres thick at least, with abundant iron slag and charcoal (ash) inclusions, was exposed below this (at the base of the trench) towards the south-west corner of the area of the new greenhouse (Plate 12 and Plate 13; Figure 2). Medieval pottery was recovered from this apparently burnt deposit. It appeared to continue to the east, below context **101**, but it was not further excavated as it was only exposed at the level required for the foundations of the new glasshouse.



**Plate 12 (left): Black deposit 102 to the west side of the new glasshouse, viewed from the east**

**Plate 13 (right): Black deposit 102 to the west side of the new glasshouse, viewed from the west**

4.1.3 A stony area was observed at the base of the trench to the west side of the footings for the new glasshouse (Plate 14) and patches of pale/light grey clay (103) were exposed in places at the base of the trench to the east (Plate 15 and Plate 16). This clay layer may have been the underlying geological 'natural' layer, but it was not investigated further as it was only exposed at the limit of excavation and its thickness was not determined.



**Plate 14 (left): Stony area exposed (in the foreground) to the west side of the new glasshouse**

**Plate 15 (centre): Patches of light grey clay exposed to the east side of the new glasshouse**

**Plate 16 (right): Patches of light grey clay exposed to the south side of the new glasshouse**



**Plate 17: Garden soil to the south of the area of the new glasshouse**

4.1.4 **Excavation within the area of the garage/workshop:** the area to the east of the new greenhouse was cleared of any above ground standing structures prior to excavation of the foundations of the proposed garage/workshop (Plate 18 and Plate 19).



**Plate 18 (left): Area of the new garage/workshop prior to excavation, viewed from east**

**Plate 19 (right): Area of the new garage/workshop prior to excavation, viewed from the south-west**

4.1.5 Excavation of the footings began at the south-west corner and a wall (part of structure **106**; see below) was immediately exposed at the south end of the west trench, apparently cut into the underlying natural (**105**) (Plate 20; Figure 2). The topsoil (**104**) had apparently either been cut through or built up against its west side. To the west of the wall the topsoil was up to 0.7m thick and was noted to be silty towards the surface and a silty-clay towards the base of the trench. No distinct edge could be determined. Below this layer was the underlying natural (Plate 21 and Plate 22), which was similar to that encountered below the new greenhouse. The natural was overcut by approximately 0.15m. The wall continued along the edge of the trench and was approximately 0.6m thick.



**Plate 20 (left):** Cross-section of wall exposed at the west end of the south side of the trench

**Plate 21 (centre):** The west side of the trenched area

**Plate 22 (right):** Trench section viewed from the west side of the area

4.1.6 The area inside the new garage/workshop was also reduced. This area mostly comprised a modern make-up layer of fine grey gravel and sand (**107**), with concrete and brick features and modern disturbance such as ceramic drains relating to the former buildings on site which were demolished ahead of the current phase of work. This layer was approximately 0.5m deep. Below that, certainly to the north side of the area, was a very dark grey-blackish silt layer (**108**) c.0.3m thick (Plate 23 and Plate 24), which contained a lot of animal bone and some small fragments of medieval pottery. This probably related to medieval activity at the site, perhaps relict topsoil or a large midden. In the north section this appeared to form a continuous layer and was overlain by the shallow foundations of another wall at the west end of the area (Plate 25).



**Plate 23 (left):** Trench section viewed from the north-west corner of the area

**Plate 24 (centre):** Section showing the dark midden deposit (**108**)

**Plate 25 (right):** Cross-section of the wall at the west end of the north side of the area

4.1.7 The wall exposed in the south-west corner of the area formed the west elevation of a much larger rectangular structure (**106**) along the south side of the area (Plate 26 and Plate 27), thought to be a sawpit, which measured c.1.3m wide by c.9m long internally (Figure 3). A variety of sub-rounded cobblesized and larger stones had been used to face the structure internally, which were bonded in a gritty and

slightly crumbly off-white mortar. The more angular stones exposed in cross-section perhaps formed a rubble core. There were three small alcoves in the south elevation (Plate 28; Plate 32 to Plate 34) and one of a similar size in the north side (Plate 29 (unfortunately in shadow); Plate 35), which did not appear to be facing one on the other side, and there were two or perhaps three steep steps at the east end (Plate 30 and Plate 31) (Figure 3). The sawpit may have had an earth floor or possibly a timber floor which had either rotted or been removed; no slate or cobble floor was apparent, but the base filled very rapidly with water.



**Plate 26 (left): West elevation of the sawpit**

**Plate 27 (centre): View of the sawpit from the west end**

**Plate 28 (right): View of the south elevation of the sawpit**



**Plate 29 (left): North elevation of the sawpit**

**Plate 30 (centre): Steps at the east end of the sawpit**

**Plate 31 (right): Steps and alcove at the east end**



**Plate 32 (far left): Alcove at the west end of the south elevation of the sawpit**

**Plate 33 (centre left): Alcove at the centre of the south elevation of the sawpit**

**Plate 34 (centre right): Alcove at the east end of the south elevation of the sawpit**

**Plate 35 (far right): Alcove at the west end of the north elevation of the sawpit**

4.1.8 The majority of the structure had been backfilled with a soft dark grey silty matrix (**112**) which contained several complete post-medieval glass and ceramic vessels. The east end of the structure was filled with larger boulder-sized angular stone fragments (**109**) within a cut (**110**) which apparently truncated the sawpit (visible on the south side at the far end in Plate 28). A concrete structure (**111**) also partially intruded at an angle into the north side of the sawpit at the east end (Plate 36). It was apparently filled by these larger boulders but was not fully exposed during the groundworks (Plate 37). Those elements which intruded into the interior of the sawpit were removed once it was determined that the sawpit continued beyond them to the south and east and it was concluded that the concrete structure was of a later date. The rubble backfill at the east end appeared to be overlain by the garden topsoil (**104**).



**Plate 36 (left): Sawpit viewed from the east**

**Plate 37 (right): Concrete structure partially truncating the north side of the sawpit at the east end**

4.1.9 **Excavation within the area of the new pond:** the new pond is a long oval in shape and stepped in approximately 0.15m around its edge (Plate 38; Figure 4). From there it sloped down approximately 0.6m to the base (Plate 39). The topsoil (**113**) was similar to that at the north end of the garden (**103** and **105**), c.0.2m thick above the subsoil (**114**), which was noticeably lighter, perhaps 0.3-0.4m thick. A small, oval-shaped pit with a shallow concave base (**115**) was cut into the natural (**117**) at the north end of the pond (Plate 40). It was filled with a dark reddish-brown clayey-silt (**116**) and its base comprised large fragments of iron slag (Plate 41). A small rusted nail was also recovered from its fill.



**Plate 38 (left): Area of the new pond**



**Plate 39 (right): Area of the pond post-excitation**



**Plate 40 (left): Pit 116 pre-excitation**



**Plate 41 (right): Pit 116 half-sectioned**



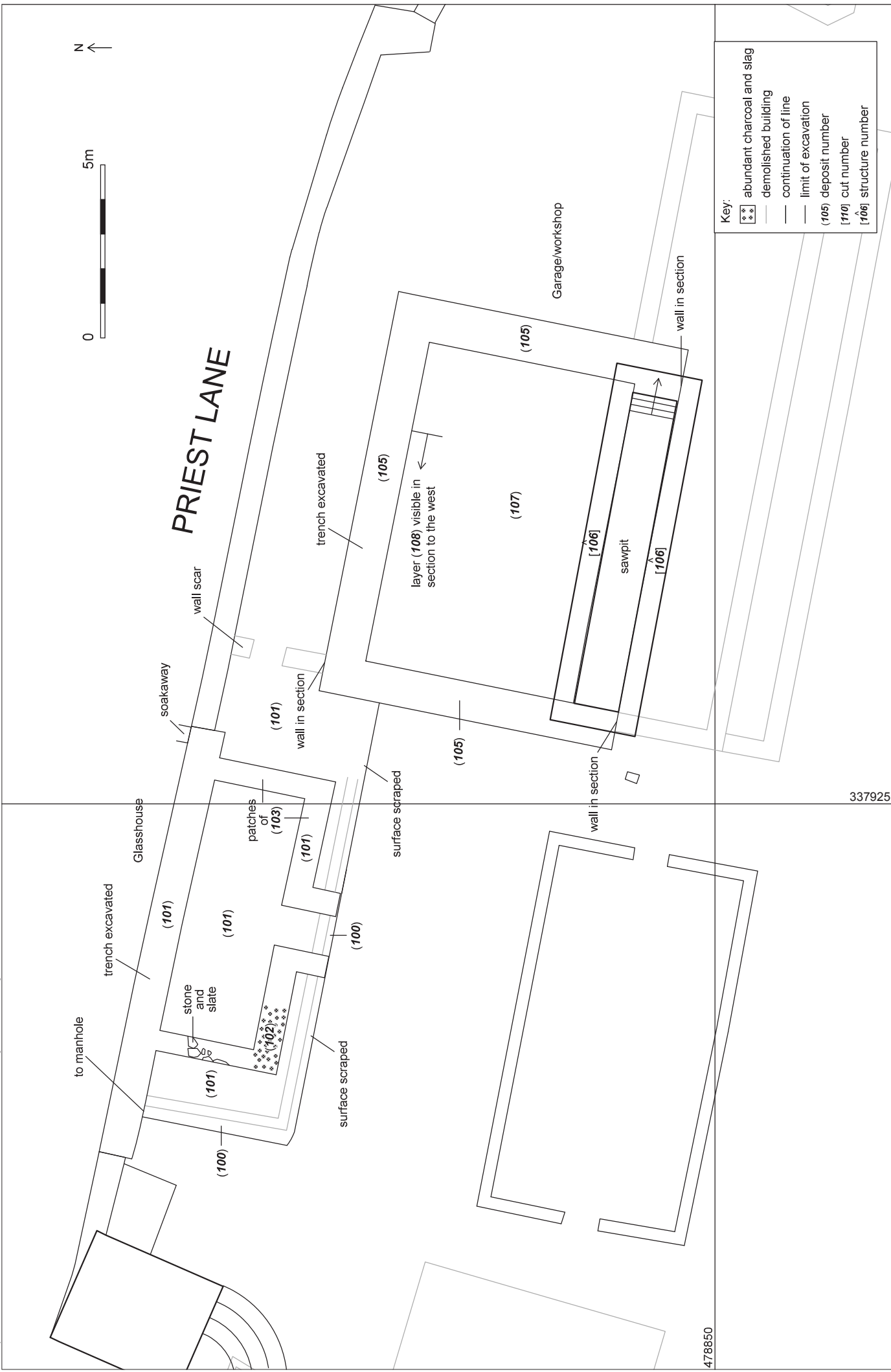
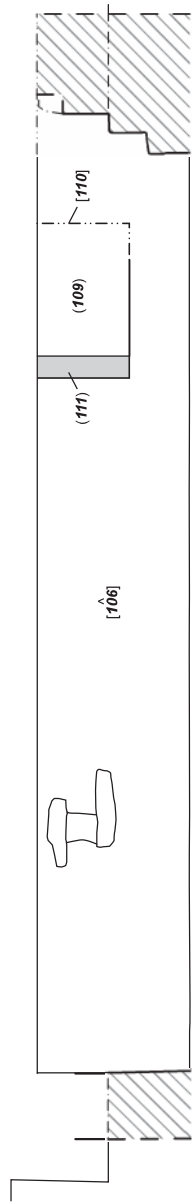
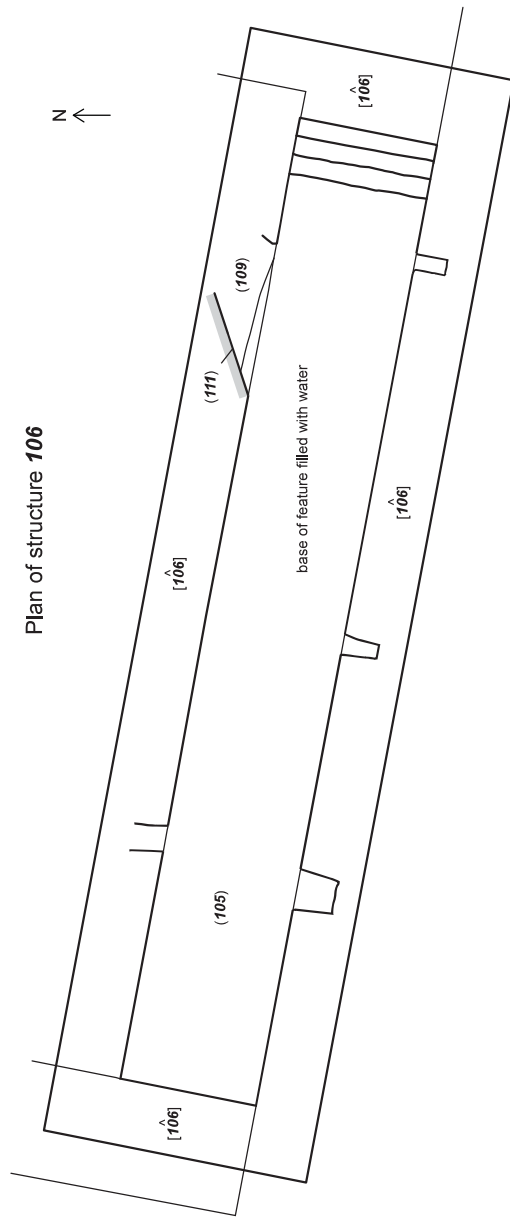


Figure 2: Plan of excavation within the area of the greenhouse and garage/workshop and along the south side of Priest Lane

North internal elevation of structure 106

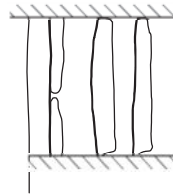


Plan of structure 106



Key:
concrete
cross-sectional wall
continuation of line
limit of excavation
modern truncation
(105) deposit number
[110] cut number
[106] structure number

East internal elevation of structure 106



South internal elevation of structure 106

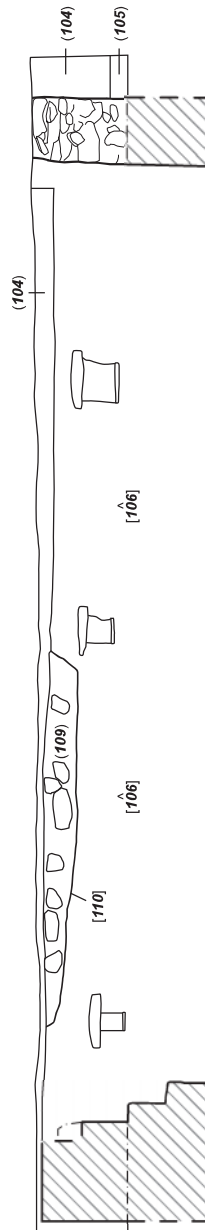


Figure 3: Plan and internal elevations of Structure 106

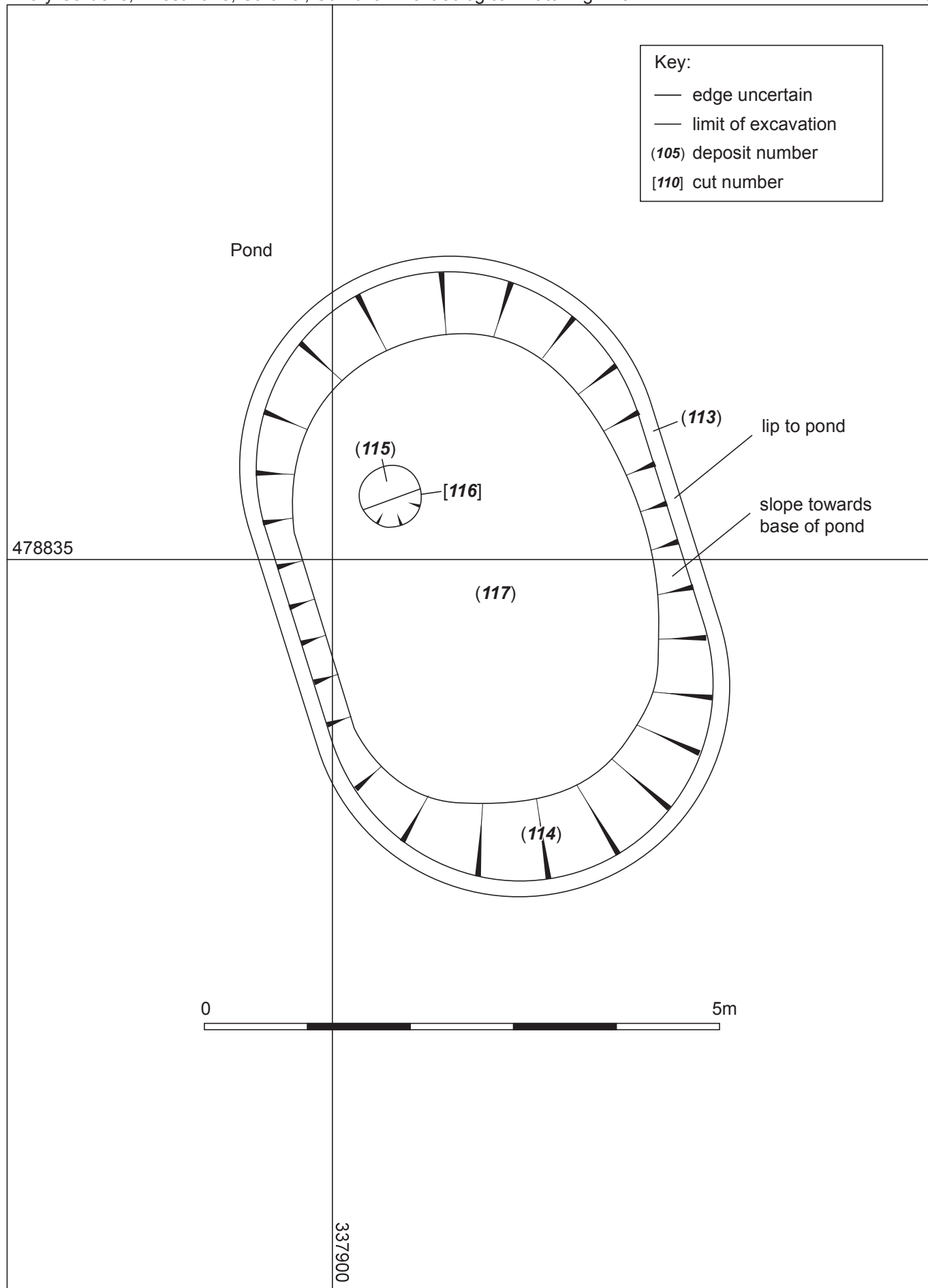


Figure 4: Plan of area excavated for the pond

4.1.10 **Excavation to the north and east of the new garage:** a wide service trench was excavated along the north side of the new garage against the boundary wall along Priest Lane (Plate 42 to Plate 44; Figure 5). The upper deposit was a mix of rounded cobbles and gravel (**118**), typically c.0.1-0.2m thick. Below that was a buried topsoil (**119**), 0.2-0.3m thick, and patches of pale brown sandy-clay subsoil (**120**), less than 0.1m thick. The natural in this area was a firm, pale brownish-yellow, gravelly clay (**121**). The trench was typically 0.7-0.8m wide and 0.45-0.50m deep.



**Plate 42 (left):** Excavation of service trench to the north of the new garage

**Plate 43 (centre):** East end of the service trench to the north of the new garage

**Plate 44 (right):** Service trench to the north of the new garage viewed from the west

4.1.11 A disused fuel tank (Plate 45) was removed approximately 6m to the east side of the new garage (Figure 6). The tank aligned approximately with the central pillar of the new garage, between the two garage doors, and was buried c.0.3m deep beneath a compacted layer of overburden (context **122**) (Plate 46). The tank was c.1.65m long, east/west, and c.1.2m diameter. Above it were a few red bricks, possibly boxed round the main valve in a wall, one brick thick. The tank itself was set within a looser grey gravel (context **123**), the original cut for which (**124**) extended approximately 0.2-0.3m around the edges of the tank on all sides.



**Plate 45 (left):** Disused fuel tank

**Plate 46 (right):** Fuel tank in relation to the front of the new garage

4.1.12 The hole excavated to remove the tank, which will subsequently be used as a soak-away, was roughly 3m by 3m. It was dug to a maximum depth of c.1.5m, which is close to the level of the water table at this point (Plate 48). A modern duct was observed in the north side, apparently cut into the overburden (**122**). The overburden generally overlay a possible subsoil or buried soil (**125**), which was about 0.3m thick above the natural (**128**). The natural in this area varied from a yellowy clay to a grey clay at about 1m deep.

4.1.13 A stony deposit (**126**) was observed in section in the south side of the hole dug to remove the tank (Plate 47; Figure 6). It was overlain by the overburden (**122**) and was possibly within a vertical cut (context **127**), which may have cut the underlying subsoil layer (**125**) and was certainly cut into the natural (**128**). It was probably truncated by the later cut for the fuel tank (**124**). The nature of this stony deposit was undetermined, it may have been a soak-away or possibly foundation for an earlier structure, although it does not appear to be aligned with any known features. The stony deposit (**126**) was c.1.6m wide from the south-east corner and continued to a depth of c.1.2m. Its uppermost extent merged with the gravel of the overburden and was obscured.



**Plate 47 (left): Stony deposit (126) visible in section (to the left hand side) near the disused fuel tank**

**Plate 48 (right): Area excavated to remove the disused fuel tank**

4.1.14 Two narrow drainage ditches were excavated from the west side of the area of the fuel tank to the corners of the new garage (Plate 49 and Plate 50; Figure 6). They were separated by roughly 1.5m where they met the edge of the area excavated to remove the disused fuel tank. Both ditches were of similar lengths and depths to each other. Each ditch was c0.3m to 0.4m wide at most and was c0.55m-0.60m deep where it met the soak-away and rose closer to the surface at the west end, near the corners of the garage (Plate 51 to Plate 53). This depth of excavation remained within the layer of overburden (**122**) towards the garage (to the north and east) and cut into the underlying buried topsoil or subsoil layer (**125**) to the south and east.



Plate 49 (left): Narrow drainage ditches feeding into the area excavated to remove the fuel tank

Plate 50 (right): Drainage ditches and area of fuel tank in relation to main entrance



Plate 51 (left): South drainage ditch

Plate 52 (centre): North drainage ditch

Plate 53 (right): North drainage ditch section

4.1.15 A further drainage channel was excavated from the north side of the new garage to just in front of the main entrance (Figure 6). A continuation of the layers encountered in the wider service trench was observed. To around 1m from the east end of the new garage, the overburden (**118**; probably the same as **122**) and topsoil/subsoil layers (**119/120**) overlay the natural (as **128**), at which point the layers were cut by what may have been a low wall (Plate 54). The overburden (**118/122**) at this point was a compacted light grey-brown gravel in a silty matrix, c.0.3m thick. The cut for what may have been a wall was 0.3-0.4m deep below the overburden and had near vertical sides (context **131**). It was filled with large stones or boulders, possibly forming a wall, in a mid grey-brown sandy-silt (**130**). The overburden (**118/122**) continued to the east of this but the layering of deposits beyond that became less apparent, the deposits below were generally more disturbed and it was difficult to distinguish the stratigraphy within the narrow confines of the trench (Plate 54 to Plate 58). It had possibly also been disturbed by the wider service trench. The natural (**128**) varied to finer gravel in an orange-brown silty-clay matrix within the entrance/gateway at the east end of the trench. Here the trench was closer to 1.1m deep but it rose to 0.5m deep at the north-east corner of the new garage. A layer of dark grey-brown clayey-silt, up to 0.6m thick (**129**), was observed on top of the yellow clay natural at the east end.

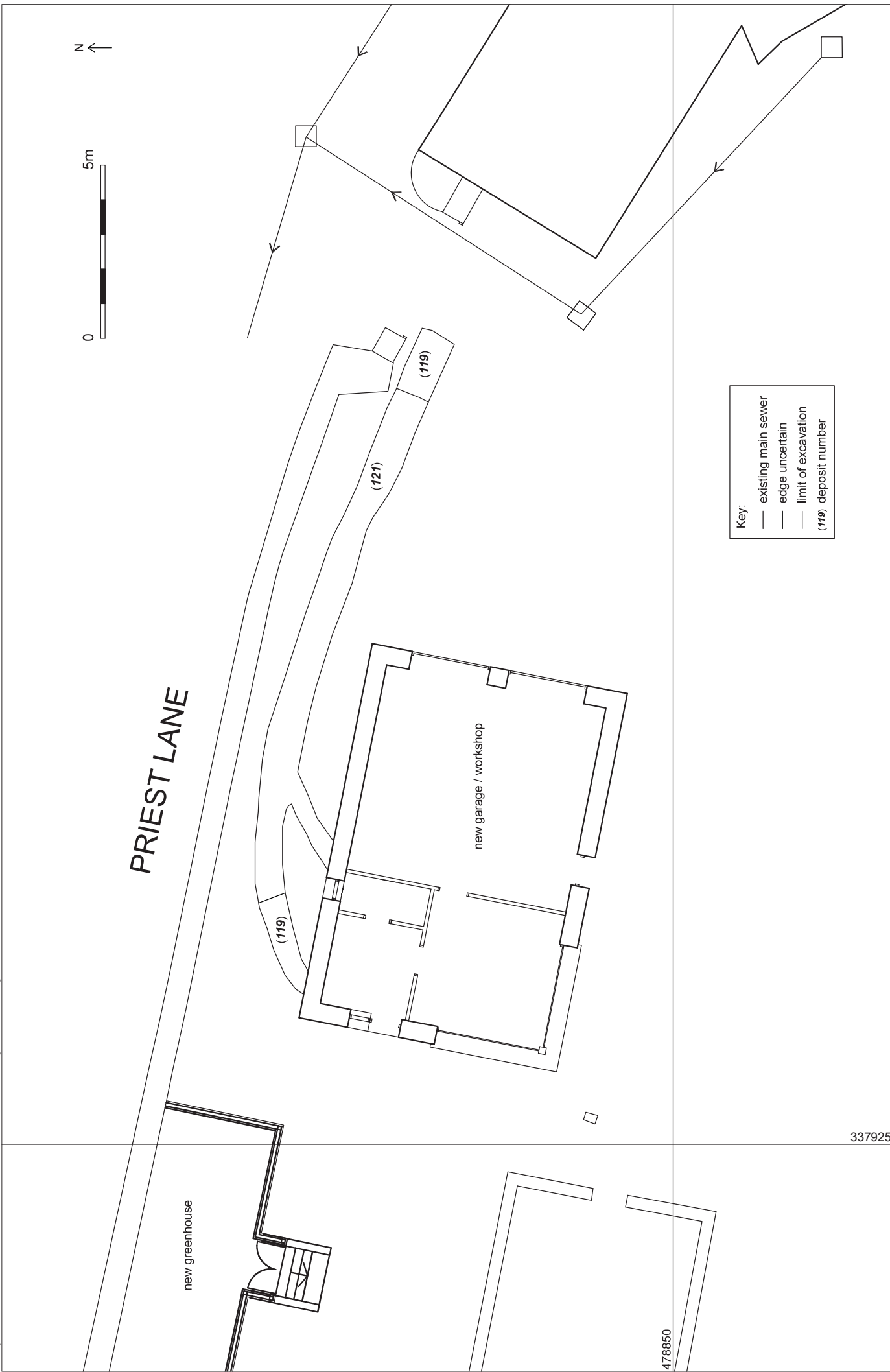


Figure 5: Plans of wide service trench to the north of the new garage/workshop

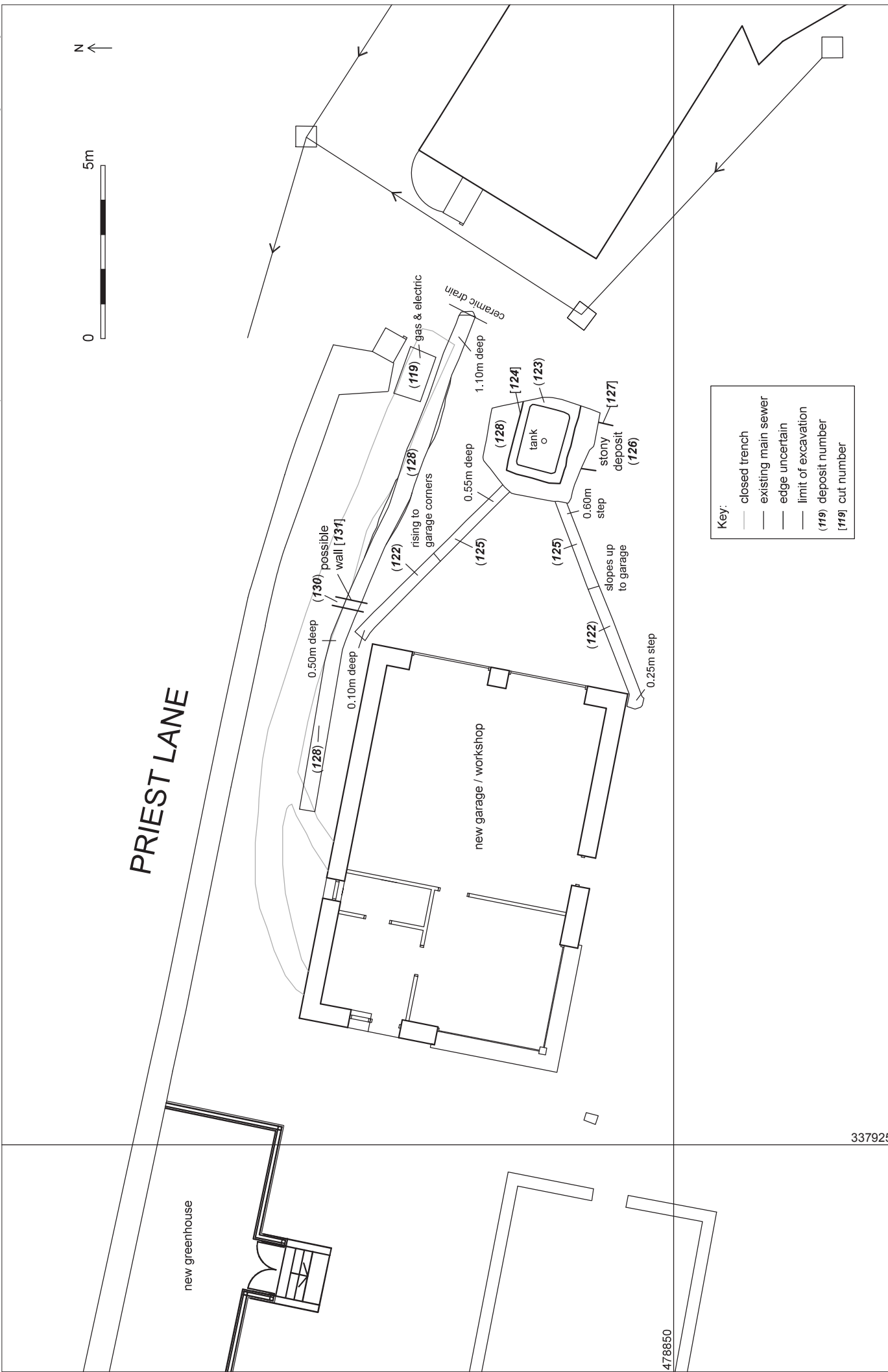


Figure 6: Plan of the area excavated for further drainage channels and to remove the disused fuel tank





**Plate 54 (left): Possible wall in the narrow service trench north of the new garage/workshop**



**Plate 55 (centre): East end of the narrow service trench north of the new garage/workshop towards the main entrance**



**Plate 56 (right): Narrow service trench north of the new garage/workshop**



**Plate 57 (left): East end of the narrow service trench north - section**

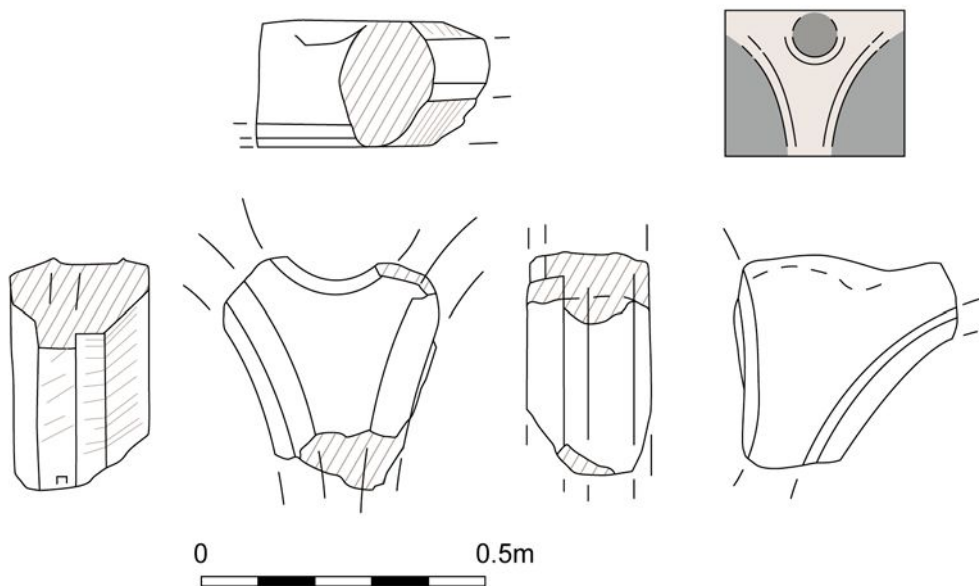


**Plate 58 (right): East end of the narrow service trench north**

## 4.2 Finds

4.2.1 **Introduction:** in total, 262 artefacts were recovered by hand during the watching brief, comprising medieval and post-medieval pottery, glass, metal, composite items, industrial residues, and animal bone. A complete catalogue of the finds is presented in *Appendix 3*.

4.2.2 **Stone artefacts:** the boundary wall along Priest Lane incorporated various worked pieces of stone, which were presumably reused from the Priory. An example of one of the more finely worked pieces of plate tracery is shown in Plate 59. This neatly dressed *vousoir* from a Gothic window arch perhaps dates from the 12<sup>th</sup> to 14<sup>th</sup> century, based on similarities in appearance between this piece of stonework and a fragment recovered from a site in Lancaster (Greenlane Archaeology 2010) and what is known historically about the site.



**Plate 59: Measured sketch of fragment of stonework recovered from the boundary wall along Priest Lane**

4.2.3 **Medieval pottery:** the 12 fragments of medieval pottery are broadly similar to excavated material recovered from elsewhere in the region (e.g. McCarthy and Brooks 1992; Mace 2011; Mace and Dawson 2013). Unfortunately, it has not been possible to identify fabrics (based on the written descriptions) within the series established for the Priory Gardens site by Wild and Howard-Davis (2000, 171-175). Some of the fragments may appropriately be placed within the broadly *gritty* and *sandy ware* fabrics within the series, but there is a definite lack of 'pinkish-red' or 'cream' fabrics as described by Howard-Davis (*ibid.*).

4.2.4 The material represents a number of different fabrics that broadly comprise *gritty* and *sandy* wares and to a lesser extent, more fully reduced material of the '*Reduced Grey ware*' tradition. The two reduced grey ware fragments are at the top in Plate 60 and Plate 61 (from context **120** and **108** from left to right), the sandy and lightly gritted sandy wares are on the next row down (contexts **119**, **102**, **U/S**, and **108** from left to right), and the remaining fragments are gritty ware (two from context **120**, one from **102**, **119**, **U/S** and another from **102** from left to right). Generally, gritty wares date to the mid-11<sup>th</sup> to mid-13<sup>th</sup> century and sandy wares dominate 12<sup>th</sup> and early 13<sup>th</sup> century assemblages in the region and persist into the 14<sup>th</sup> century (see Mace 2011, 8). The Reduced Grey ware tradition became the dominant ware type throughout the region during the 15<sup>th</sup> and 16<sup>th</sup> century, with a broad date range for the tradition from the late 13<sup>th</sup> to the early 17<sup>th</sup> century (Mace and Dawson 2013, 74).



**Plate 60 (left): Internal surfaces of the medieval pottery fragments**

**Plate 61 (right): External surfaces of the medieval pottery fragments**

4.2.5 The material was fairly equally split between hard and soft firing, usually under oxidising conditions, although several fragments were noted to have a reduced, grey core, and some fabrics were noted to be more fully-reduced. Glazes were only applied externally to some, but not all, of the sandy wares and more fully-reduced fragments (the centre and top rows of Plate 60 and Plate 61), and varied from light green, to olive green to brown. Decoration was uncommon: only one fragment of sandy ware had a combed wave pattern incised externally (second from right on the second row down on Plate 61).

4.2.6 Overall the material was very fragmentary and vessel forms could rarely be identified. Most of the material was body fragments of thin-walled vessels, possibly jugs and jars, and two squared/everted rim fragments of wide-mouthed and thin-walled vessels were recovered, one of sandy ware and one gritty ware (first left on the third row from the top and first right on the second row from the top respectively on Plate 61), perhaps akin to the cooking pots described from the earlier excavations (Wild and Howard-Davis 2000, 176).

4.2.7 The material from context **102** comprises material which is similar to wares which dominate 12<sup>th</sup> and early 13<sup>th</sup> century assemblages in the region and persist into the 14<sup>th</sup> century. As noted above, the earliest material potentially dates from the mid-11<sup>th</sup>/12<sup>th</sup> to 14<sup>th</sup> century; however, fragments of what are sometimes considered to be slightly later reduced fabrics were often recovered from the same context as in the case of contexts **108** and **120**. The period of overlap would be c. late 13<sup>th</sup> to 14<sup>th</sup> century. A similar date range, from the mid-12<sup>th</sup> to mid-14<sup>th</sup> century, was suggested for material recovered during the 1998 evaluation and excavation (Wild and Howard-Davis 2000, 176). The material from context **119** must be residual given the much later material recovered from the same context.

4.2.8 An absence of later medieval reduced wares and early post-medieval pottery at the site was noted by Wild and Howard-Davis, suggesting 'a lull in activity' from around the 15<sup>th</sup> century onwards (Wild and Howard-Davis 2000, 176). This is to some extent borne out by the latest finds from the site: early post-medieval wares, such as non-factory-produced stoneware, early brown-glazed red earthenware, and Blackwares (including Cistercian ware) are again absent, and, although not absent, the later medieval material (e.g. the reduced grey ware) is certainly less well represented.

4.2.9 **Post-medieval pottery:** the pottery assemblage comprises: fragments of black-, brown- and unglazed red earthenware; porcelain; brown-glazed grey-bodied, buff-coloured, and white salt-glazed stoneware; pearlware; bone china; and white earthenware, and included coarse- and fineware and flat and hollow-ware (see *Appendix 3*). Some of the material potentially ranges in date from the late 17<sup>th</sup> to 20<sup>th</sup> century; however, of the material which can be more closely dated, there is a noticeable concentration of material which dates from the 19<sup>th</sup> century onwards. Significant quantities of post-medieval pottery were recovered from context **112** including a number of complete vessels (Plate 62 and Plate 63), some of which had dried paint or window putty in the bases.



**Plate 62: Complete but chipped white earthenware factory-produced slipware banded mocha mug with sprig applied to the side from context 112**



**Plate 63: Complete but cracked white earthenware Broseley transfer-printed mug from context 112**

4.2.10 **Post-medieval glass:** 29 pieces of glass were recovered in total. The base of a dark green glass wine or beer bottle was recovered from the overburden (**122**) (or immediately below it (uppermost extent of context **125**)) from the northernmost of the two narrow drainage ditches to the east side of the new garage and two refitting dark green bottle neck fragments were recovered from context **129**, which was also to the east side of the new garage. The rest of the material was recovered from context **112**, the backfill of the probable sawpit, and comprised several complete bottles some of which were embossed (see *Appendix 3*). The embossed material included bottles manufactured by Cannington, Shaw & Co, St Helens, Holbrook & Co, Birmingham, and possibly Redfearn Bros Ltd, Barnsley. All of the material dates from the mid- to late-19<sup>th</sup> century onwards.

4.2.11 **Post-medieval metal:** part of a copper alloy lamp shade, part of a small shovel, a hinge, and a pull door bell handle and fitting were recovered from context **112** and a hollowed out nail-like object with a flared end, which may also be post-medieval, was recovered from context **115**.

4.2.12 **Industrial residue:** large fragments of industrial residue were recovered from context **102**, within the footprint of the new glasshouse. This material includes smelting slag likely to have derived from a bloomery, probable smithing slag, and a smithing hearth base. On the basis of the pottery finds this context can be dated to the medieval period (see *Appendix 3*).

4.2.13 A small piece of possible bloomery tap slag was also recovered from the buried topsoil to the north side of the garage (context **119**). The type suggests that this too is medieval, something probably confirmed by the presence of medieval pottery in this context (see *Appendix 3*).

4.2.14 A large quantity of bloomery tap slag, other types of less diagnostic ironworking slag, and pieces of smithing hearth base were also recovered from unstratified deposits but are generally also indicative of ironworking likely to be of medieval date on the site. A single unstratified lump of haematite iron ore was also recovered, again indicating that iron smelting was taking place nearby.

4.2.15 The base of pit **116** (filled by context **115**) also contained large lumps of slag (pieces of what appears to be a smithing hearth base), but this context could not be dated.

4.2.16 **Animal bone:** 125 fragments of bone were recovered by hand during the course of the watching brief. Further fish bones were recovered from the sample taken from context **108**.

4.2.17 Context **108** contained a large quantity of hand retrieved animal bone. A random sample of 110 fragments was recovered by hand from this layer during the course of the watching brief. Overall the condition of the bone was fairly good but very fragmented, including many fresh breaks. Of the 110 fragments around half were very small and were not identified. Slightly over half of the bone recovered was from large mammals, most likely cattle, although one fragment was identified as possibly deer (a phalange). Among the cattle bone were two humerus fragments, several unidentified long bone (15 fragments) and rib fragments (more than four), two teeth, and several metacarpal and metatarsal fragments (10 fragments altogether). Given the very fragmented state of much of the bone no minimum number of individuals has been calculated as this is unlikely to be either accurate or particularly informative.

4.2.18 Around a third of the large mammal bone from context **108** comprised long bone fragments, around three-quarters of which were from the main or midsection of the bone. Despite the fresh breaks to many of these, nearly all of them had been split longitudinally in antiquity (with relatively straight breaks), presumably to extract the bone marrow. The shafts of long bones contain the largest and most readily obtainable quantities of bone marrow, which is a readily consumable source of dietary fat (Karr *et al* 2010, 217, 221). The relative smoothness of some of the split edges perhaps also suggests that the specimens were relatively fresh (Outram 2002, 54), although this is not clear. There was evidence on two additional fragments of butchery (possible sawing) and one fragment appeared to have a helical fracture, again probably indicative of the extraction of marrow from a relatively fresh bone (Outram 2002, 53).

4.2.19 The sawn fragment from context **112** was from an unidentified large mammal, again probably cow.

4.2.20 11 fragments were also recovered from context **119**. Most of these could not be identified, due to the fragmentary nature of the material, however, it included one tooth, with limited wear, possibly from an immature or sub-adult cow, and the end of a metapodial, probably also from a cow.

4.2.21 A further three unidentified fragments were recovered from context **129**.

### 4.3 Environmental Sample

4.3.1 A 10L sample was taken from the 'medieval layer' within the footprint of the new garage/workshop (Sample 1; context **108**). While the retent from the sample contained a considerable amount of fragments of animal bone as well as evidence for iron working (see *Appendix 4*), the flot was restricted to fragments of wood charcoal and offered little further insight into site activity (*Appendix 4* and *5*).

4.3.2 Remains of fish and marine molluscs were also recovered from the environmental sample taken from context **108** (*Appendix 6*). Fish represented in this context were mainly marine species: ray, probably the thornback ray (cf. *Raja clavata*), gadid (cod family) probably Pollack (cf. *Pollachius pollachius*), flatfish possibly plaice (cf. *Plurenectes platessa*), and from freshwater fish: perch (*Perca fluviatilis*). The only freshwater fish present was perch, this was a common fish kept in fish ponds in abbeys and monasteries in Medieval England therefore the remains may be indicative of the presence of fish ponds or a freshwater source near the site.

4.3.3 Marine mollusca remains from the sample were only fragmentary shell of mussel and a few of oyster. Both these species were an important food during the medieval period. It is surprising that other molluscs with stronger shells were not present, as gastropods, such as periwinkles and whelks, would also have been a popular choice. This may reflect a lack of preference for marine molluscs.

4.3.4 The environmental sample from context **108** also contained abundant fragmentary animal bone. Few fragments could be identified but the assemblage certainly included cattle teeth and bone, some of which again showed signs of butchery and bone marrow extraction. The teeth were noted to be in wear,

suggesting the animal was at least subadult (rather than immature or juvenile) (Grant 1982). Other animal teeth were also recovered, but these would require specialist identification.

## 5. Discussion and Conclusion

### 5.1 Discussion

5.1.1 While no features were observed within the footprint of the new glasshouse, the retrieval of further evidence for iron smelting or smithing of a medieval date (c. late 13<sup>th</sup> to 14<sup>th</sup> century) is significant as it seemingly corroborates the earlier suggestion that iron ore was being worked at a bloomery within the outer precinct of the Priory (see Wild and Howard-Davis 1999, 33-34; 2000, 177-179). The deposit from which this material was recovered (**102**) was sealed below later post-medieval deposits and can be securely dated to the medieval period on the basis of the associated pottery finds, broadly c. 12<sup>th</sup> to 14<sup>th</sup> century. A small piece of probably medieval bloomery tap slag was also recovered from the buried topsoil to the north side of the garage (context **119**) and larger quantities of unstratified bloomery slag were also recovered further indicating that iron smelting was taking place in the local vicinity. In addition, evidence for iron smithing was also recovered from a small oval-shaped pit inside the area of the new pond (filled by context **115**), although this could not be dated, it is thought likely to be medieval. Medieval ceramic vessel fragments were also recovered from a dark silty layer to the east (**108**), which also contained abundant animal bone fragments, mostly cattle, but also fish, and seems to comprise a dump (midden) of food refuse.

5.1.2 The medieval pottery assemblage is also interesting in its own right. It comprises gritty and sandy wares of perhaps mid-11<sup>th</sup> to 14<sup>th</sup> century date (see Mace 2011, 8) and variants of the 'Reduced Grey ware' tradition of the late 13<sup>th</sup> to the early 17<sup>th</sup> century (Mace and Dawson 2013, 74). The reduced grey ware is less well represented and the bulk of the material is considered to be of a similar date to material recovered during the 1998 evaluation and excavation (Wild and Howard-Davis 2000, 176), which was estimated to date from the mid-12<sup>th</sup> to mid-14<sup>th</sup> century. Few vessel forms could be discerned: fragments of thin-walled vessels, possibly jugs or jars, and two rim sherds of possible cooking pots were recovered. The low occurrence of later medieval reduced wares and the absence of early post-medieval pottery at the site is apparent once again as noted previously by Wild and Howard-Davis (2000, 176). This was previously thought to be the result of 'a lull in activity' at the site from around the 15<sup>th</sup> century onwards (*ibid*). The post-medieval pottery and glass finds are generally of 19<sup>th</sup> century and later date.

5.1.3 Slightly over half of the animal bone recovered by hand was from large mammals, most likely cattle, and a significant amount had been split longitudinally, presumably to extract the marrow. The 'usual range of domesticates' (sheep, pig and cow) were also found during the earlier phases of work, 'with sheep and cow often bearing marks of butchery' (Wild and Howard-Davis 2000, 177). The fish bone, although not as plentiful, represents an important element of the material recovered from context **108**. This deposit provides some useful information about the diet of the inmates of Cartmel Priory in the medieval period, and the presence of fish bone fits with the existing historical evidence of fisheries controlled by Cartmel Priory (see Section 3.2.11) and also the dating of at least part of a series of fish traps on nearby Cowp Scar (Manning 2011). The nature of the fish species present is very similar to a recently reported medieval midden, primarily comprising shell fish but also including cod and thornback ray, excavated at nearby Aldingham (Appley 2015).

5.1.4 A probable sawpit was located to the south side of the area of the new garage/workshop at the north-west corner of a number of buildings marked at the site from the 1890s onwards. It most closely matches up with the west end of a long thin structure shown on the Ordnance Survey map of 1933, which was internally divided in line with the steps up to the east, however, internal divisions of earlier structures are not always shown. Finds recovered from a deposit internal to the structure indicate it was probably backfilled in the late 19<sup>th</sup> or early 20<sup>th</sup> century before being built over.

5.1.5 The layering of deposits north of the new garage/workshop and towards the main entrance/gateway was less clear. This was in part due to the narrow confines of the trench but may also be on account of disturbance caused by 'excavations under the greenhouses [presumably including those along the south side of Priest Lane]... during the 1930s' (Wild and Howard-Davis 2000, 179).

## 5.2 Conclusion

5.2.1 The watching brief at Priory Gardens provided a further opportunity to examine the site, which has already been the focus of an archaeological evaluation and small scale excavation (LUAU 1998a; 1998b). The results of this latest piece of work seemingly reconfirm that a bloomery operated within the outer court of the medieval priory (see Wild and Howard-Davis 1999, 33-34; 2000, 177-179) and again hint at 'a lull in activity' at the site from around the 15<sup>th</sup> century onwards based on the relative scarcity of later medieval and early post-medieval wares (Wild and Howard-Davis 2000, 176). The site at this time also appears to have been utilised for the dumping of rubbish during the later medieval date. That rubbish of this type would apparently be allowed to accumulate in the inner precinct of the priory also fits to some extent with the historical evidence that indicates a period of decline and neglect at Cartmel by the end of the 14<sup>th</sup> century (Wild and Howard-Davies 2000, 178).

5.2.2 The excavation of the probable sawpit, located to the south side of the area of the new garage/workshop, was unexpected. Its extent appears to be recorded on the Ordnance Survey map of 1933, an internal division apparently marking the steps at the east end, but the internal divisions of various structures in the area since the 1890s onwards are not always recorded. The structure was probably backfilled in the late 19<sup>th</sup> or early 20<sup>th</sup> century. The details of who used it, when it was established, and what it was used for are not clear, but the presence of paint and window putty in some of the vessels recovered from the backfill might suggest it was used by a joiner or even only for a short time during building work nearby. Further research would be necessary to establish this, although nothing apparently relating to this was revealed during the initial desk-based assessment (Greenlane Archaeology 2012).



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### 6.3 Aerial Photographs

Cambridge University, 1970 **SD 3778/D**

CCC (Cumbria County Council), 1989 **SD 3778/A** and **SD 3778/B**

## Appendix 1: Project Design

# PRIORY GARDENS, PRIEST LANE, CARTMEL, CUMBRIA

Archaeological Watching Brief Project Design



Client: Stephen Roe

May 2014

## 1. Introduction

### 1.1 Project Background

1.1.1 Following the submission of a planning application (ref. SL/2013/1135) and application for Scheduled Monument Consent for the construction of a number of new structures, demolition of existing structures, and rebuilding of the boundary wall, Priory Gardens, Priest Lane, Cartmel, Cumbria (NGR 337909 478839) a condition requiring an archaeological watching brief was placed on the Scheduled Monument Consent. This project design has been produced in response and outlines the methodology that would be used to carry out the archaeological work, and follows on from an earlier desk-based assessment of the site (Greenlane Archaeology 2012).

1.1.2 Priory Gardens comprises an area of land situated in the heart of the village of Cartmel, and within the precinct of Cartmel Priory, which was established in the late 12<sup>th</sup> century. As a result of a previous planning application on the site an archaeological evaluation and subsequent excavation were carried out, which revealed structural and other remains of medieval date, thought to comprise ancillary buildings relating to the priory, with some evidence of iron working and possibly temporary structures set up in the initial stages of the construction of the priory. The site is of considerable archaeological and historical interest and is included as part of the Scheduled Monument (ref. 34976) comprising a number of elements within the precinct of Cartmel Priory.

### 1.2 Greenlane Archaeology

1.2.1 Greenlane Archaeology is a private limited company based in Ulverston, Cumbria, and was established in 2005 (Company No. 05580819). Its directors, Jo Dawson and Daniel Elsworth, have a combined total of over 18 years continuous professional experience working in commercial archaeology, principally in the north of England and Scotland. Greenlane Archaeology is committed to a high standard of work, and abides by the Institute for Archaeologists' (IfA) Code of Conduct. The watching brief will be carried out according to the Standards and Guidance of the Institute for Archaeologists (IfA 2008).

### 1.3 Project Staffing

1.3.1 The project will be managed by **Dan Elsworth (MA (Hons), AIfA)**. Daniel graduated from the University of Edinburgh in 1998 with an honours degree in Archaeology, and began working for the Lancaster University Archaeological Unit, which became Oxford Archaeology North (OA North) in 2001. Daniel ultimately became a project officer, and for over six and a half years worked on excavations and surveys, building investigations, desk-based assessments, and conservation and management plans. These have principally taken place in the North West, and Daniel has a particular interest in the archaeology of the area. He has recently managed a wide variety of projects including building recordings of various sizes, watching briefs, and excavations in the region, including an excavation and evaluation in the centre of medieval Kendal (Greenlane Archaeology 2009a; 2010a), evaluation in the Roman *vicus* at Stanwix (Greenlane Archaeology 2010b), evaluation of a Scheduled post-medieval gunpowder works (Greenlane Archaeology 2010c), and watching briefs in Preston (Greenlane Archaeology 2009b; 2010d).

1.3.2 The watching brief will be carried out by **Tom Mace (BA (Hons), MA, MifA)** or another suitably qualified member of staff, depending on scheduling constraints. Tom has extensive experience of working on a variety of archaeological projects, especially watching briefs, but also excavations, evaluations, and building recordings, as well as report writing and illustration production. He joined Greenlane Archaeology in 2008 having worked for several previous companies including Archaeological Solutions and Oxford Archaeology North.

1.3.3 All artefacts will be processed by Greenlane Archaeology, and it is envisaged that they will initially be assessed by Jo Dawson, who will fully assess any of post-medieval date. Medieval pottery will be assessed by Tom Mace, and other finds will be assessed by specialist sub-contractors as appropriate. The client will be notified of any other specialists, other than those named, whom Greenlane Archaeology wishes to engage.

1.3.4 Environmental samples and faunal remains, should significant deposits of these be recovered, will be processed by Greenlane Archaeology. It is envisaged that charred plant remains will be assessed by staff at Headland Archaeology Ltd, and faunal remains by Jane Richardson at ASWYAS. Should any human remains be recovered for assessment it is envisaged that these will be examined by Malin Horst at York Osteoarchaeology, following appropriate advice on initial processing.

## 2. Objectives

### 2.1 Watching Brief

2.1.1 To identify any surviving archaeological remains and to investigate and record any revealed archaeological remains or deposits.

### 2.2 Report

2.2.1 To produce a report detailing the results of the watching brief, which will outline the nature, form, extent, and date of any archaeological remains discovered.

### 2.3 Archive

2.3.1 Produce a full archive of the results of the watching brief.

## 3. Methodology

### 3.1 Watching Brief

3.1.1 The groundworks are to be monitored, with one archaeologist on site. If there are multiple machines operating on site it may be considered necessary to have more than one archaeologist on site.

3.1.2 The watching brief methodology will be as follows:

- Foundation trenches and/or trenches for services and any areas of ground reduction will be excavated under supervision by staff from Greenlane Archaeology;
- All deposits of archaeological significance will be examined by hand if possible in a stratigraphic manner, using shovels, mattocks, or trowels as appropriate for the scale;
- The position of any features, such as ditches, pits, or walls, will be recorded and where necessary these will be investigated in order to establish their full extent, date, and relationship to any other features. If possible, negative features such as ditches or pits will be examined by sample excavation, typically half of a pit or similar feature and approximately 10% of a linear feature;
- All recording of features will include detailed plans and sections at a scale of 1:20 or 1:10 where practicable or sketches where it is not, and photographs in both colour print and colour digital format;
- All deposits, drawings and photographs will be recorded on Greenlane Archaeology *pro forma* record sheets;
- All finds will be recovered during the watching brief for further assessment as far as is practically and safely possible. Should significant amounts of finds be encountered an appropriate sampling strategy will be devised;
- All faunal remains will also be recovered by hand during the watching brief as far as is practically and safely possible, but where it is considered likely that there is potential for the bones of fish or small mammals to be present appropriate volumes of samples will be taken for sieving;
- Deposits that are considered likely to have, for example, preserved environmental remains, industrial residues, and/or material suitable for scientific dating will be sampled. Bulk samples of between 20 and 60 litres in volume (or 100% of smaller features) where possible, depending on the size and potential of the deposit, will be collected from stratified undisturbed deposits and will particularly target negative features (e.g. gullies, pits and ditches) and occupation deposits such as hearths and floors. An assessment of the environmental potential of the site will be undertaken through the examination of samples of suitable deposits by specialist sub-contractors (see *Section 1.3.4* above), who will examine the potential for further analysis. All samples will be processed using methods appropriate to the preservation conditions and the remains present;
- Any articulated human remains discovered during the watching brief will be left *in situ*, and, if possible, covered. The client will be immediately informed as will the local coroner. Should it be considered necessary to remove the remains this will require a Home Office licence, under Section 25 of the Burial Act of 1857, which will be applied for should the need arise;

- Any objects defined as 'treasure' by the Treasure Act of 1996 (HMSO 1996) will be immediately reported to the local coroner and secured stored off-site, or covered and protected on site if immediate removal is not possible;
- Should any significant archaeological deposits be encountered during the watching brief these will immediately be brought to the attention of the Cumbria County Historic Environment Service (CCHES) and ground works in that area halted so that the need for further work can be determined. Any additional work and ensuing costs will be agreed with the client, and subject to a variation to this project design.

## 3.2 Report

3.2.1 The results of the watching brief will be compiled into a report, which will contain the following sections as necessary:

- A front cover including the appropriate national grid reference (NGR);
- A concise non-technical summary of results, including the date the project was undertaken and by whom;
- Acknowledgements;
- Project Background;
- Methodology, including a description of the work undertaken;
- Results of the watching brief including descriptions of any deposits identified, their extent, form and potential date, and an assessment of any finds or environmental remains recovered during the watching brief;
- Discussion of the results;
- Illustrations at appropriate scales including:
  - a plan showing the location of the ground works;
  - plans and sections of the watching brief ground works, as appropriate, showing any features of archaeological interest;
  - photographs of the watching brief, including both detailed and general shots of features of archaeological interest and the trenches;
  - photographs of individual artefacts as appropriate.

## 3.3 Archive

3.3.1 The archive, comprising the drawn, written, and photographic record of the watching brief, formed during the project, will be stored by Greenlane Archaeology until it is completed. Upon completion it will be deposited with the Cumbria Record Office in Carlisle. The archive will be compiled according to the standards and guidelines of the IFA (Brown 2007), and in accordance with English Heritage guidelines (English Heritage 1991). In addition details of the project will be submitted to the Online Access to the Index of archaeological investigations (OASIS) scheme. This is an internet-based project intended to improve the flow of information between contractors, local authority heritage managers and the general public.

3.3.2 A copy of the report will be supplied to the client and within six months of the completion of fieldwork one copy will be provided for the Cumbria County Council Historic Environment Record (HER). In addition, Greenlane Archaeology Ltd will retain one copy, and a digital copy will be deposited with the OASIS scheme as required.

3.3.3 The client will be encouraged to transfer ownership of the finds to a suitable museum, most likely Kendal Museum. If no suitable repository can be found the finds may have to be discarded, and in this case as full a record as possible and necessary would be made of them beforehand.

## 4. Work timetable

4.1 Greenlane Archaeology will be available to commence the project from **16<sup>th</sup> June 2014**, or at another date convenient to the client. It is envisaged that the project will involve tasks in the following order:

- **Task 1:** watching brief;
- **Task 2:** post-excavation work on archaeological watching brief, including processing of finds and production of draft report and illustrations;



- **Task 3:** feedback, editing and production of final report, completion of archive.

## 5. Other matters

### 5.1 Access

5.1.1 Access to the site will be organised through co-ordination with the client and/or their agent(s).

### 5.2 Health and Safety

5.2.1 Greenlane Archaeology carries out risk assessments for all of its projects and abides by its internal health and safety policy and relevant legislation. Health and safety is always the foremost consideration in any decision-making process.

### 5.3 Insurance

5.3.1 Greenlane Archaeology has professional indemnity insurance to the value of **£1,000,000**. Details of this can be supplied if requested.

### 5.4 Environmental and Ethical Policy

5.4.1 Greenlane Archaeology has a strong commitment to environmentally- and ethically-sound working practices. Its office is supplied with 100% renewable energy by Good Energy, uses ethical telephone and internet services supplied by the Phone Co-op, is even decorated with organic paint, and has floors finished with recycled vinyl tiles. In addition, the company uses the services of The Co-operative Bank for ethical banking, Naturesave for environmentally-conscious insurance, and utilises public transport wherever possible. Greenlane Archaeology is also committed to using local businesses for services and materials, thus benefiting the local economy, reducing unnecessary transportation, and improving the sustainability of small and rural businesses.

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## Appendix 2: Summary Context List

Context	Type	Description	Interpretation
<b>100</b>	Deposit	Friable, dark brown silt with very infrequent small, sub-angular pebbles; >0.4m thick across site to the south side of the area of the greenhouse along Priest Lane	Topsoil / garden soil
<b>101</b>	Deposit	Friable, mid-to-dark brown (slightly clayey) silt, with some large boulders and angular slate; c. 0.5m thick below ( <b>100</b> ); contained post-medieval and some frogged 'Furness' brick	Upper deposit within the footprint of the greenhouse along Priest Lane; scarcely distinguishable from ( <b>100</b> )
<b>102</b>	Deposit	Soft, black silty deposit with abundant iron slag and charcoal (ash?); exposed at the base of the trench within the footprint of the greenhouse towards the south-west corner; contained fragments of medieval pottery	Burnt deposit, containing slag and medieval pottery, below (101) within the footprint of the greenhouse
<b>103</b>	Deposit	Firm, pale/light grey clay partially exposed at the base of the trench below ( <b>101</b> ) and ( <b>102</b> ); not investigated further	Geological 'natural' layer?
<b>104</b>	Deposit	Friable, very dark, grey-blackish silt with infrequent sub-angular and sub-rounded small pebble stones and gravel (<1%)	Topsoil layer
<b>105</b>	Deposit	Fairly soft, creamy/whitish-grey to light yellow, sandy-clay to clay layer	Natural clay layer [same as <b>103</b> ]
<b>106</b>	Structure	Large, rectangular, stone built structure, internally approximately 1.3m wide by 9.1m long. It was aligned east/west approximately (parallel to the north boundary wall) and had three alcoves on the south side and one remained on the north. It was truncated across the mid-section and at the north side at the east end. The stone was irregular: where it was exposed in section it comprised angular slate c.0.1m thick by 0.3m approximately, although some was much larger. This may have been a rubble core; some sub-rounded cobbles and larger stone faced inside, which was finished with a crumbly white mortar and vertically sided. There were three or perhaps four steep steps at the east end. The walls were each c.0.6m thick.	Sawpit
<b>107</b>	Deposit	Compacted, light grey, gravel and sand with concrete, ceramic drains and red brick inclusions, up to 0.5m thick. Internal to post-medieval and modern structures formerly on site and below area of concrete to the north.	Gritty gravel and fine sand/make-up layer; post-medieval
<b>108</b>	Deposit	Soft, very dark-blackish silt, containing a lot of bone and infrequent small sub-rounded stone pebbles; up to 0.3m thick; 6-7m was exposed in section but it was truncated to the east; contained medieval pottery fragments and abundant animal bone fragments	Medieval horizon
<b>109</b>	Deposit	Friable, very dark, grey-blackish silt with abundant large sub-angular and sub-rounded boulders up to c.0.4m.	Large boulder fill of late truncation of structure <b>106</b>

Context	Type	Description	Interpretation
<b>110</b>	Cut	Broadly north/south aligned cut/truncation of structure <b>106</b> ; filled by <b>109</b>	Truncation of structure <b>106</b>
<b>111</b>	Deposit	Light grey concrete with orangey surface covering irregular stone wall [note: its concrete surface was more solid than the crumblier mortar of structure <b>106</b> and elements of <b>111</b> extended across <b>106</b> to its south side; these sections were removed during excavation when it was determined that <b>111</b> was a later feature than <b>106</b> which continued beyond the limits of <b>111</b> to the south and east]	Apparently later concrete feature cutting the north side of structure <b>106</b> and possibly extending into it; it may have been filled with boulders from <b>110</b> but it was not fully exposed during the groundworks
<b>112</b>	Deposit	Soft/loose, dark grey, silty matrix with abundant glass and post-medieval pottery fragments; fill of structure <b>106</b> ; many of the vessels were complete, presumably suggesting it was rapidly backfilled, perhaps all at once	Backfill internal to structure <b>106</b>
<b>113</b>	Deposit	Friable, very dark, grey-brown silt, with very few small stone pebble inclusions, up to 0.2m thick	Topsoil in the area of the new pond
<b>114</b>	Deposit	Friable, grey-brown silty-clay, noticeably lighter than the overlying topsoil <b>113</b> ; 0.3-0.4m thick	Subsoil in the area of the new pond
<b>115</b>	Deposit	Friable, dark, reddish-brown clayey-silt matrix with abundant iron slag or industrial residue forming the base	Fill of pit <b>116</b>
<b>116</b>	Cut	Small, oval-shaped, pit aligned north-west/south-east, measuring 0.56x0.66m by 0.06m deep, with a concave base; filled by <b>115</b>	Small, oval-shaped pit, possibly relating to iron smelting at the site
<b>117</b>	Deposit	Fairly soft, creamy/whitish-grey to light yellow, sandy-clay to clay layer	Natural encountered at the base of the new pond [same as <b>105</b> ]
<b>118</b>	Deposit	A mix of rounded cobbles and gravel, typically 0.1-0.2m thick; thickest at the west end of the service trench to the north of the new garage close to the boundary wall	Upper deposit of dumped overburden
<b>119</b>	Deposit	Dark, greyish-brown, silty-clay, 0.2-0.3m thick, with 20% rounded pebbles; some patches of cobble at the east end of the service trench to the north side of the new garage, below the tarmac area/drive surface	Buried topsoil
<b>120</b>	Deposit	Thin, pale brown sandy-clay, less than 0.1m thick, with some rounded gravel	Patchy subsoil
<b>121</b>	Deposit	Firm, pale brownish-yellow, gravelly clay	Natural
<b>122</b>	Deposit	Compacted gravel and larger stones; contained some post-medieval pottery and broken glass; in places noted to be a compacted light grey-brown gravel in a silty matrix	Overburden [probably the same as <b>118</b> ]
<b>123</b>	Deposit	Disused fuel tank, c.1.65m long by 1.2m diameter, within a loose, light, grey gravel, c.0.3m wide, surrounding the tank; fill of cut <b>124</b>	Fill of cut <b>124</b>
<b>124</b>	Cut	Cut for disused fuel tank (for extent see Figure 6)	Cut for disused fuel tank
<b>125</b>	Deposit	Mid to pale brown silty layer, c.0.3m thick	Possible subsoil or buried soil [possibly same as <b>120</b> ]

Context	Type	Description	Interpretation
<b>126</b>	Deposit	High concentration of large angular stones in north facing section of the area excavated to remove the disused fuel tank; stony deposit extending 1.6m from the south-east corner of the area; it may have been within a vertical cut ( <b>127</b> ); its nature could not be determined - it was only observed in section and its upper extent was obscured /merged with the overburden	Stony deposit within what may have been a cut ( <b>127</b> )
<b>127</b>	Cut	Possible vertical-sided cut, c.1.6m wide by 1.2m deep, filled by context <b>126</b> ; it appeared to cut context <b>125</b> and certainly cut context <b>128</b> ; only observed in section	Possibly an old soak-away or possibly related to the foundation for a wall (not shown on any of the mapping)
<b>128</b>	Deposit	The natural in this area varied from a yellowy clay to a grey clay at about 1m deep	Natural to the east of the new garage [probably a variation of <b>103</b> , <b>105</b> and <b>117</b> ]
<b>129</b>	Deposit	Friable, mid to dark grey-brown, clayey-silt, up to 0.6m thick on top of natural to the east end of the trench in front of the entrance/gateway	
<b>130</b>	Deposit	Large stones and boulders in a fairly loose, mid grey-brown, sandy-silt matrix; fill of possible cut <b>131</b>	Possible rubble wall fill of context <b>131</b>
<b>131</b>	Cut	0.3-0.4m deep cut with near vertical sides, below the overburden and apparently cutting subsoil and topsoil layers; filled by <b>130</b>	Possible foundation cut for wall

## Appendix 3: Summary Finds List

Context	Type	Qty	Description	Date range
101	Pottery	4	Red earthenware flower pot fragments	19 <sup>th</sup> - 20 <sup>th</sup> century
101	Pottery	5	White earthenware transfer-printed fragments: Willow plate fragments x 4, including 2 refitting, and Broseley hollow-ware body fragment	19 <sup>th</sup> – early 20 <sup>th</sup> century
102	Industrial residue	7	Several large and small fragments of ironworking and smelting slag, probably from a bloomery, and a possible small smithing hearth bottom, diagnostic of iron smithing and smelting	Medieval
102	Pottery	1	Fragment of a soft (it will mark paper), lightly gritted sandy fabric with an oxidised light orange core, inner margin, and surface and pale buff outer margin. The outer surface is a light orange-brown colour and has voids from organic (grass temper?) inclusions. It is probably a gritty ware, in which case it may be earlier (mid-11 <sup>th</sup> to mid-13 <sup>th</sup> century) than the date suggested here, but similar wares dominate 12 <sup>th</sup> and early 13 <sup>th</sup> century assemblages in the region and persist into the 14 <sup>th</sup> century (see Mace 2011, 8)	c12 <sup>th</sup> – 14 <sup>th</sup> century
102	Pottery	1	Body fragment of a fine, thin-walled vessel, made from a soft, pale orange, sandy fabric, with infrequent small quartz inclusions. One surface has a reddish slip(?) applied and there are traces of a light olive green glaze applied to the other. Sandy ware	12 <sup>th</sup> – 14 <sup>th</sup> century
102	Pottery	1	Body fragment, probably from a jug or jar in a hard, reduced dark grey, gritty fabric with some large, angular quartz inclusions and a thin, light orange outer margin and outer surface. It is thought to be a variant of gritty ware	c12 <sup>th</sup> – 14 <sup>th</sup> century
108	Pottery	1	Everted, squared/clubbed rim (flattened along the top but with slightly ribbed outer edge where it thickens) fragment from a wide-mouthed vessel of a soft (it will mark paper), lightly gritted sandy fabric, with infrequent small quartz inclusions (generally less than 1mm but up to 1.5mm) and voids. The colour of its fabric varies: it is reduced to a light grey round the rim (where it thickens), but it tends to be oxidised to a light brown colour (especially along the inner margin), with a patch of light orange, and the inner surface varies from a light, oxidised orange to a darker reddish-brown towards the top. It has a thin, shiny, green khaki coloured glaze applied externally. Sandy ware	12 <sup>th</sup> – 14 <sup>th</sup> century
108	Pottery	1	'Reduced Grey ware' body fragment, probably from a jug or jar in a hard, very fine, uniform, very smooth, mid to light grey, sandy fabric, with a dull, thin, drab, mottled olive green to brown glaze applied externally and with very, very few visible inclusions	Late 13 <sup>th</sup> – early 17 <sup>th</sup> century

Context	Type	Qty	Description	Date range
108	Animal bone	110	The bone is overall in good condition but very fragmented, including many fresh breaks. The assemblage mostly comprises large mammal bone fragments, primarily cattle. Of the fragments which were identified as being probably cow were two humerus fragments, several other long bone (15 fragments) and rib fragments (more than four), two teeth, and metacarpal and metatarsal fragments (10 fragments altogether). The assemblage included another tooth and cranium and jaw fragments and a fragment of vertebra from unidentified species. One bone has tentatively been identified as deer (a phalange). Much of the cattle bone had been split longitudinally in antiquity (especially the long bone shafts), presumably for the extraction of bone marrow and two fragments had possibly been sawn	Uncertain
112	Glass	4	Window pane fragments	19 <sup>th</sup> – 20 <sup>th</sup> century
112	Glass	8	Milk glass lamp shade fragments, one with copper alloy fitting still attached	19 <sup>th</sup> – 20 <sup>th</sup> century
112	Glass	1	Very light turquoise complete bottle, punt marked '1254 / C.S & Co Ld', manufactured by Cannington, Shaw & Co, St Helens, c1875 – 1913 (Toulouse 1971, 147)	c1875 – 1913
112	Glass	2	Very light turquoise complete bottles, both punt marked '1314 / C.S & Co Ld', manufactured by Cannington, Shaw & Co, St Helens, c1875 – 1913 (Toulouse 1971, 147)	c1875 – 1913
112	Glass	1	Very light turquoise complete bottle, with 'HOLBROOK & Co' embossed on side and punt marked 'P'; Holbrook's sauce manufacturers, Birmingham, was established in 1870 (Grace's Guide 2007). The bottle has a cork seat to hold club sauce type stopper (Lindsey 2014)	1870 onwards
112	Glass	1	Very light turquoise complete bottle, with 'HOLBROOK & Co' embossed on side and punt marked 'J' in a circle; Holbrook's sauce manufacturers, Birmingham, was established in 1870 (Grace's Guide 2007) The bottle has a cork seat to hold club sauce type stopper (Lindsey 2014)	1870 onwards
112	Glass	1	Dark green complete bottle, with 'HARTLEY'S / ULVERSTON' embossed on side, and put marked '3315 / C.S & Co Ld', manufactured by Cannington, Shaw & Co, St Helens, c1875 – 1913 (Toulouse 1971, 147). Hartleys took over the brewery in Ulverston in 1896 (North Western Evening Mail 2011)	1896 – 1913
112	Glass	1	Dark blue complete bottle, punt marked '509 / 95' with a picture of an anchor below	Late 19 <sup>th</sup> century?
112	Glass	1	Dark green complete bottle, no punt mark	19 <sup>th</sup> – early 20 <sup>th</sup> century
112	Glass	1	Dark green complete large bottle with high kick	19 <sup>th</sup> century
112	Glass	1	Very light turquoise complete bottle with 'NEALS / MORECAMBE' embossed on the sides, punt marked 'R / B / 8 (?)'. Possibly Redfearn Bros Ltd, Barnsley, 1862 onwards (Toulouse 1971, 438).	1862 onwards
112	Glass	1	Very light turquoise oval cross-section bottle base	19 <sup>th</sup> century
112	Glass	1	Very light turquoise bottle body fragment	19 <sup>th</sup> century
112	Glass	1	Very light turquoise bottle body with remains of printed paper label on sides	19 <sup>th</sup> century
112	Glass	1	Very light bluish turquoise bottle base with punt mark 'W & HJ'	19 <sup>th</sup> century
112	Pottery	2	Brown-glazed grey-bodied stoneware ink bottles: one complete and one with rim missing	19 <sup>th</sup> – early 20 <sup>th</sup> century
112	Pottery	2	Brown-glazed grey-bodied stoneware blacking bottle base to shoulder and rim from same bottle	19 <sup>th</sup> – early 20 <sup>th</sup> century

Context	Type	Qty	Description	Date range
112	Pottery	1	Black-glazed red earthenware pancheon rim	Late 17 <sup>th</sup> – early 20 <sup>th</sup> century
112	Pottery	1	Brown-glazed red earthenware pancheon rim with white slip-coated interior	19 <sup>th</sup> – early 20 <sup>th</sup> century
112	Pottery	1	Red earthenware flower pot (?) body fragment	19 <sup>th</sup> – 20 <sup>th</sup> century
112	Pottery	4	Bone china cup rim-to-base fragments, with Broseley transfer-printed pattern in cobalt blue, and two gilded lines, with end of lower handle terminal, single plain footrim	19 <sup>th</sup> – early 20 <sup>th</sup> century
112	Pottery	1	White earthenware side plate rim to base with purple transfer-printed pattern, with edge of printed garter pattern mark on reverse, and impressed registered patent mark: parcel number 7, dated 26 <sup>th</sup> October 1863, registered by The Old Hall Earthenware Co. Ltd (Kowalsky and Kowalsky 1999, 583), registering the shape with relief moulded edge decoration, and the edge of an impressed maker's mark 'OHECL.', dating it to 1862-1886 ( <i>op cit</i> , 297)	1863 – 1886
112	Pottery	4	White earthenware: complete cup with single plain footrim with dark greenish-blue paint dried into base, jam/marmalade pot rim to base with groove for tie-on lid, pie dish base, and jug (?) base with relief-moulded bands	19 <sup>th</sup> – early 20 <sup>th</sup> century
112	Pottery	2	White earthenware saucer rim and base fragments, with relief-moulded basket weave pattern, navy blue transfer-printed floral pattern, and recessed base	Late 19 <sup>th</sup> – early 20 <sup>th</sup> century
112	Pottery	1	White earthenware Broseley transfer-printed cup rim to base	Mid – late 19 <sup>th</sup> century
112	Pottery	1	Pearlware Willow transfer-printed plate rim	19 <sup>th</sup> century
112	Pottery	1	Bone china Broseley transfer-printed saucer rim-to-base	19 <sup>th</sup> – early 20 <sup>th</sup> century
112	Pottery	1	Black-glazed red earthenware tea pot body fragment with gilded stripes and stars	19 <sup>th</sup> – early 20 <sup>th</sup> century
112	Pottery	1	Complete but cracked white earthenware Broseley transfer-printed mug with white paint(?) dried into base	19 <sup>th</sup> century
112	Pottery	1	Complete but chipped white earthenware factory-produced slipware banded mocha mug with sprig applied to side: crown, thistle, rose (?), and banner with 'IMPERIAL' on and with set window putty in base. In 1826 the Imperial Standard was introduced for volume capacities for mugs etc (The Pewter Society 2014)	1826 – late 19 <sup>th</sup> century
112	Cu alloy	1	Circular dish with hole through base and raised outer rim, presumably part of a lamp shade	Late 19 <sup>th</sup> – 20 <sup>th</sup> century
112	Lead(?)	1	Round handle with iron fitting from base and small hole in side. Too heavy for drawer or door handler, perhaps for pull door bell?	19 <sup>th</sup> – 20 <sup>th</sup> century
112	Ind. residue	1	Undiagnostic slag, presumably smithing slag	Not closely dateable
112	Fe	2	Part of blade and handle of small shovel, and L-shaped flat bar with holes at end(s) and corner, perhaps a large hinge	Post-medieval
112	Animal bone	1	Sawn fragment of a large mammal bone, probably cow	Post-medieval?
113	Pottery	1	Porcelain bowl base with blue painted Chinoiserie pattern	Late 18 <sup>th</sup> century
113	Pottery	1	White salt-glazed stoneware coffee pot (?) lid fragment with rouletted	18 <sup>th</sup> century
113	Pottery	1	Pearlware Willow transfer-printed body fragment	Early 19 <sup>th</sup> century
113	Pottery	1	White earthenware body fragment	19 <sup>th</sup> – early 20 <sup>th</sup> century
113	Pottery	1	Red earthenware flower pot fragment	19 <sup>th</sup> – 20 <sup>th</sup> century

Context	Type	Qty	Description	Date range
115	Ind. residue	3	Large block of iron slag (in two pieces) with charcoal embedded into underside and flowing slag sandwiched between it and upper layer of more amorphous material – probably an early smithing hearth base. Also small fragment of vitrified slaggy material – probably furnace lining	Medieval
115	Fe	1	Heavily corroded nail-like object, but apparently hollow down the middle to form a tube with a flared end	Not closely datable
119	Pottery	1	Small body fragment of a soft, lightly gritted, sandy fabric with a reduced/medium grey core, brownish-orange outer margin and surface and paler, light orange-brown inner margin and surface with some voids in the surfaces. Apparently unglazed.	c12 <sup>th</sup> – 14 <sup>th</sup> century
119	Pottery	1	Small body fragment of a fine, thin-walled, sandy ware vessel of a uniform, fine, hard, sandy fabric with moderate very fine inclusions, with light orange (oxidised) margins and surfaces and a thin grey core (splitting the section approximately into thirds).	12 <sup>th</sup> – 14 <sup>th</sup> century
119	Animal bone	11	Mostly fragmentary, unidentified fragments; one tooth, with limited wear, possibly from an immature or sub-adult cow, and the end of a metapodial, probably also from a cow	Uncertain
119	Ind. residue	1	Small piece of bloomery tap slag	Medieval
119	Pottery	6	Red earthenware flower pot fragments	Late 18 <sup>th</sup> – 20 <sup>th</sup> century
119	Pottery	5	Black-glazed red earthenware coarseware fragments	Late 17 <sup>th</sup> – early 20 <sup>th</sup> century
119	Pottery	2	Buff-coloured stoneware coarseware jar fragments, glazed internally	19 <sup>th</sup> – mid 20 <sup>th</sup> century
120	Pottery	2	Two fragments of unglazed, gritty ware: this hard, gritty fabric has frequent small stone inclusions, including quartz (up to 2mm in size); the margins and surfaces are oxidised light orange and it has a reduced light grey core. One fragment is an everted, squared rim fragment from a wide-mouthed, thin-walled vessel, possibly a pancheon. The other small, very thin, body fragment is of a very similar fabric and could conceivably be from the same vessel.	Mid-11 <sup>th</sup> – mid-13 <sup>th</sup> /14 <sup>th</sup> century
120	Pottery	1	'Reduced Grey ware' body fragment, probably from a jug or jar in a soft (it will mark paper), grey, sandy fabric. The core is a mid to dark grey colour and the margins (2mm) are a light, whitish grey. It has a thin, fairly light green glaze applied both internally and externally and few, very fine inclusions.	Late 13 <sup>th</sup> – early 17 <sup>th</sup> century
122	Pottery	5	Buff-coloured stoneware coarseware jar fragments, glazed internally	Late 18 <sup>th</sup> – 20 <sup>th</sup> century
122	Pottery	1	Brown-glazed red earthenware with white slip coated interior, coarseware body fragment	19 <sup>th</sup> – early 20 <sup>th</sup> century
122	Pottery	1	Brown-glazed red earthenware, coarseware body fragment	Late 17 <sup>th</sup> – early 20 <sup>th</sup> century
122	Glass	1	Dark green wine or beer bottle base	19 <sup>th</sup> century
129	Animal bone	3	Unidentified fragments	Uncertain
129	Pottery	1	White earthenware, lid rim	19 <sup>th</sup> – early 20 <sup>th</sup> century
129	Pottery	1	Black-glazed red earthenware, coarseware	Late 17 <sup>th</sup> – early 20 <sup>th</sup> century
129	Glass	2	Dark green bottle neck fragments, refitting, probably of late 'onion' style bottle (Morgan nd, 24)	1700-1800
U/S	Ind. residue	18	Large pieces of bloomery tap slag and iron working slag	Medieval?



Context	Type	Qty	Description	Date range
U/S	Ind. residue	1	Small lump of haematite	Not closely datable
U/S	Pottery	1	Apparently unglazed body fragment (9mm thick) of a lightly gritted sandy fabric, with moderate small inclusions including quartz up to 2mm; it has a hard, reduced (mid to dark grey) core and very thin, oxidised margins – the outer margin and surface is a mid orange brown and the inner margin and surface is pale/light orange. The surfaces are notably softer than the core of the fabric. It is probably a gritty ware, in which case it may be earlier (mid-11 <sup>th</sup> to mid-13 <sup>th</sup> century) than the date suggested here, but similar wares dominate 12 <sup>th</sup> and early 13 <sup>th</sup> century assemblages in the region and persist into the 14 <sup>th</sup> century (see Mace 2011, 8)	c12 <sup>th</sup> – 14 <sup>th</sup> century
U/S	Pottery	1	Slightly abraded fragment of a thin-walled vessel in a soft, sandy fabric, with few small inclusions; incised/combed (wavy?) decoration and thin olive green glaze applied externally; the section varies from a light orange (generally to the inner surface and margin) to a reduced light grey (generally from the core to the outer surface, although there are oxidised patches to the outer edge and below some patches of glaze)	12 <sup>th</sup> – 14 <sup>th</sup> century

## Appendix 4: Contents of Environmental Samples

Sample No.	Context	Description	Sample size
1	108	Medieval midden deposit	10L

Table 1: Summary sample list

Sample number	1
Charred organic	++++
Marine shell	++++
Animal bone (incl. fish)	++++
Medieval pottery	+
Iron slag	++
Hammerscale	+
Prill	+
Haematite	+
Lime mortar	+++
Fe object	+
Flint	+

Table 2: Contents of retent from Sample 1

(Key: + = 1-9, ++ = 10-20, +++ = 21-50, ++++ = >51)

Sample Number	1
Context Number	108
Total flot volume (ml)	50
Feature	Medieval midden deposit
Other charred plant remains	-
Charcoal Quantity	+++
Charcoal Max size (mm)	10
Material available for AMS	Yes

Table 3: Volume and contents of flot from Sample 1

(Key: + = 1-9, ++ = 10-20, +++ = 21-50, ++++ = >51)

## Appendix 5: Environmental Assessment Report

*Laura Bailey and Tim Holden*

One sample recovered during a watching brief at Priory Gardens, Cartmel, Cumbria, was received for palaeoenvironmental assessment. The watching brief was connected with small-scale building within part of the Scheduled Monument of Cartmel Priory. The sample was from a possible medieval midden deposit, and contained frequent animal bone. The aims of the assessment were to assess the presence, preservation and abundance of any environmental remains in the samples. The environmental remains are quantified in Table 3.

### Method

The samples were subjected to flotation and wet sieving. The floating debris (the flot) was collected in a 250 µm sieve and, once dry, scanned using a binocular microscope. Any material remaining in the flotation tank (retent) was wet-sieved through a 1mm mesh and air-dried. The samples were scanned using a stereomicroscope at magnifications of x10 and up to x100. Identifications, where provided, were confirmed using modern reference material and seed atlases including Cappers *et al.* (2006). Charcoal was identified as oak/non-oak wherever possible.

### Results

Results of the assessment are presented in Table 3. Material suitable for AMS (Accelerated Mass Spectrometry) radiocarbon dating is shown in the table.

### Charcoal

A small amount of wood charcoal measuring up to 10mm was present in the sample.

### Discussion

The environmental assemblage was restricted to fragments of wood charcoal. It is unlikely that the material recovered relates to the primary function of the feature and on its own offers little insight into site activity.

## Appendix 6: Assessment of Fish and Mollusca Remains

### *Ruby Ceron-Carrasco*

A small amount of the remains of fish and marine molluscs were recovered from context **108**. These were examined to determine the species present and possible provenance of the material.

Fish represented in this context were marine species: from ray, probably the thornback ray (cf. *Raja clavata*), gadid (cod family) probably Pollack (cf. *Pollachius pollachius*), flatfish possibly plaice (cf. *Pleuronectes platessa*) and from freshwater fish: perch (*Perca fluviatilis*).

The remains of thornback ray consisted of 'bucklers'. The thornback ray is a ray distinguished by dense prickles over the entire back, and larger thorns in the mid-line from mid-disc to the dorsal fins. In sexually mature specimens these thorns are very large, with button-like bases (known as 'bucklers'). The thornback ray, may attain a length of 85 cm and a width of 61 cm. This is the most common ray in shallow waters and is found in a variety of substrates and may have been caught inshore from boats by line. The rays are cartilaginous fish and elements of the skeleton disintegrate rapidly in buried conditions; usually only the buckles survive; their presence also indicates that the fish was brought to the site whole.

Gadidae family group are marine cod-family fishes, in the British Isles this group includes some of the well-known species including cod, haddock, Pollack, saithe etc. The vertebra remains of a small gadid appear to be from pollack. Pollack is mainly an inshore fish, notably found in the proximity of rocks or rough ground and swimming in small shoals in mid-water as well as near the sea bottom and may grow up to 130 cm in length but are usually now found at about 50 cm; the remains recovered at Cartmel were from a juvenile of less than 30 cm in total length.

Remains of flatfish, probably from plaice a right-eyed flatfish (Pleuronectidae), were also recovered. This is a widespread flatfish in northern European waters. It is found in a variety of substrates, from sand and gravel to rocky grounds and is mainly found during spring and summer. It attains a length of 60 cm; vertebrae from this species recovered at Cartmel were from a juvenile of less than 30 cm total length.

The species described above are marine species.

The only freshwater fish present was perch, this was a common fish kept in fish ponds in abbeys and monasteries in Medieval England therefore the remains may be indicative of the presence of fish ponds unless there is a freshwater source near the site.

Marine mollusca remains were only fragmentary shell of mussel and a few of oyster. Both these species were an important food during the medieval period. Their shell is lamellar and disintegrates rapidly in acidic soils, both are also bivalves and it is surprising that other molluscs with stronger shells were not present, as gastropods, such as periwinkles and whelks, would also have been a popular choice. This may reflect a lack of preference for marine molluscs.