

# LEVENS HALL, KENDAL, CUMBRIA

## Archaeological Watching Brief



Client: Mr CH Bagot

NGR: 349487 485081

Planning Application Refs:  
SL/2011/0207

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## Non-Technical Summary

An archaeological watching brief was carried out between 13<sup>th</sup> and 16<sup>th</sup> June 2011 during the course of groundworks associated with the installation of two biomass boilers, storage hoppers and associated fittings at Levens Hall, Kendal, Cumbria. The watching brief monitored excavation within the courtyard and between the potting sheds and the greenhouse to the west of the main house.

The ground surface within the courtyard comprised a fairly level cobbled surface, which is criss-crossed by limestone gutters and lined with slate flags. A fairly straightforward sequence of deposits was exposed beneath the flags of the boiler house and across the courtyard and several stone culverts were revealed near the crossing points of the limestone gutters. The sequence of deposits across the courtyard comprised a sandy layer (presumably a bedding material for the cobbled surface) above variations within a sandy-silt deposit and an orangey clay 'natural'. Excavation in the north-east corner of the courtyard exposed a neatly constructed well which had been capped with slate. There was no direct dating material recovered to date the well, but it is likely to be medieval.

The earliest pottery from within the courtyard area dates to the late 12<sup>th</sup> to 14<sup>th</sup> century, which is consistent with the earliest known period of construction at the site, although this material is likely to be residual. Other finds from this area included clay tobacco pipe fragments, roof tile, shell and animal bone, and post-medieval pottery dating from the 17<sup>th</sup> to 20<sup>th</sup> century. Most of the finds were probably late 17<sup>th</sup> to early 18<sup>th</sup> century in date, so it therefore be postulated that the roof tiles were broken around this time also. The tiles are of interest because they are relatively unusual in the area and not previously recorded as having been used at Levens Hall, and this date of deposition is of interest because there is known to have been fire damage to the kitchen-wing at the east side of the courtyard in 1703; the tile fragments may relate to this damage to the Hall or the perhaps are associated with the repairs which were carried out to the Hall shortly thereafter. Overall, the assemblage is conducive with domestic activity associated with the Hall.

The area between the potting sheds and the greenhouse was very disturbed and contained a large quantity of modern rubbish, which was most likely associated with the construction of the potting sheds. The greenhouse directly overlay a layer of topsoil above the orangey clay natural. The topsoil layer contained various post-medieval finds.

## Acknowledgements

Greenlane Archaeology would like to thank Mr CH Bagot for commissioning the project, and Anne Schuberth at Levens Hall for her help. Additional thanks are due to Jeremy Parsons, Historic Environment Officer at Cumbria County Council for approving the project design. Thanks are also due to the Levens Hall staff and most especially Andrew Kitchen, Paul Walker, and Andrew Garnett for their assistance on site.

The watching brief was carried out by Tom Mace. The report was co-written by Dan Elsworth and Tom Mace and edited by Jo Dawson. Jo Dawson assessed the finds, with the exception of animal bone, clay tobacco pipe, and medieval pottery. The animal bone was assessed by Jane Richardson, Archaeological Services WYAS. The marked clay tobacco pipe bowl was examined by Peter Davey, Honorary Senior Fellow, School of Archaeology Classics and Egyptology, at the University of Liverpool. The medieval pottery was examined by Tom Mace who also produced the figures. Dan Elsworth managed the project.

# 1. Introduction

## 1.1 Circumstances of the Project

1.1.1 Following the submission of a planning application (Ref. SL/2011/0207) for the installation of two biomass boilers, storage hoppers and associated fittings at Levens Hall, Kendal, Cumbria, (NGR 349487 485081), planning permission was granted by South Lakeland District Council, with a condition requiring an archaeological watching brief to be undertaken during any groundwork. The watching brief was carried out between 13<sup>th</sup> and 16<sup>th</sup> June 2011.

1.1.2 Levens Hall is a Grade I Listed building with at least 14<sup>th</sup> century origins (Perriam and Robinson 1998, 354). Significant additions were made in the 16<sup>th</sup> to early 19<sup>th</sup> centuries and the former brew house, which is the subject of the present application, is thought to be of 16<sup>th</sup> century origin (*ibid*). Other archaeological remains are known from the local area, including prehistoric and later material found during excavations carried out in the 1960s in the park associated with the hall (Sturdy 1972; Turnbull 1994; Turnbull and Walsh 1996, Cherry and Cherry 2000).

## 1.2 Location, Geology, and Topography

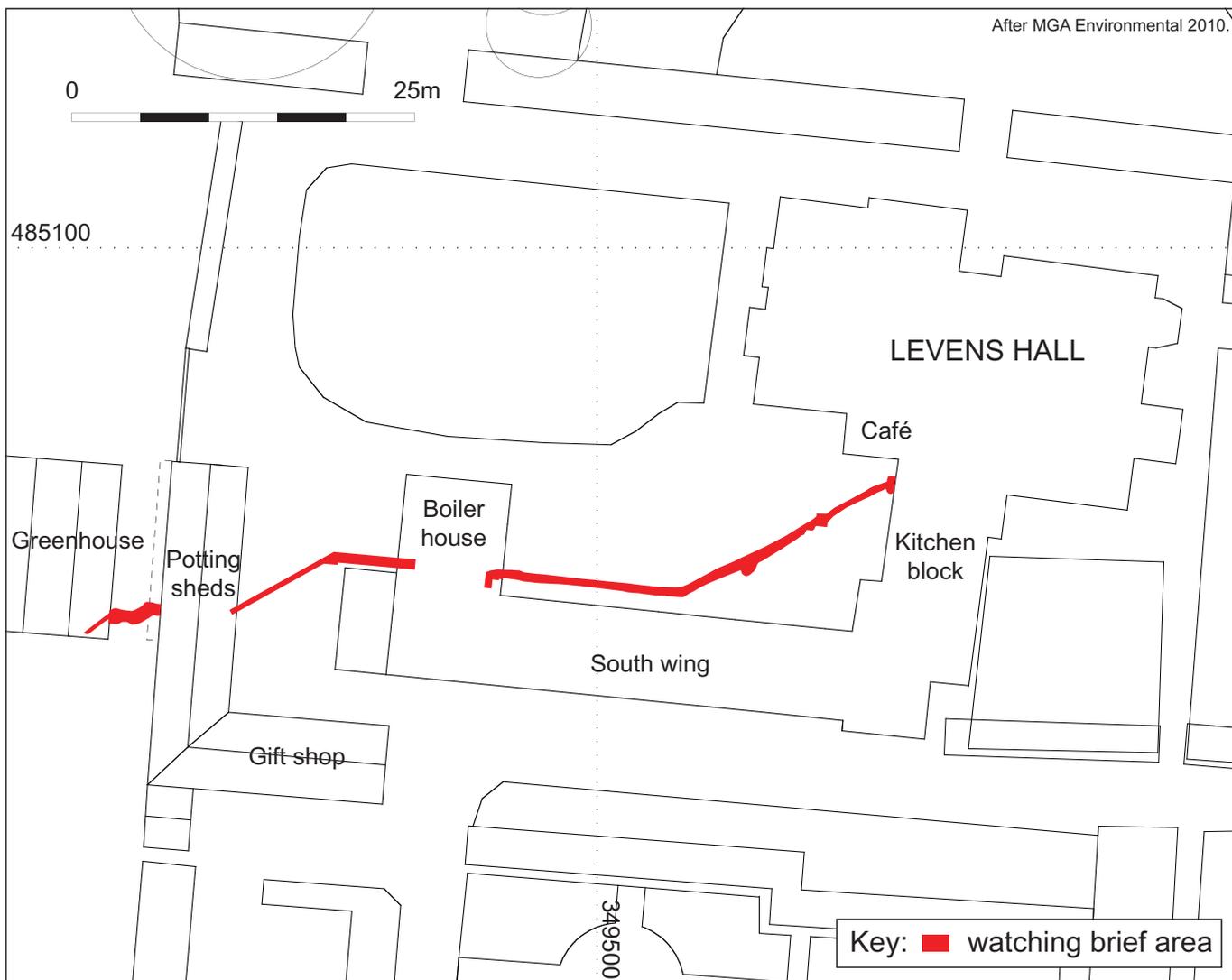
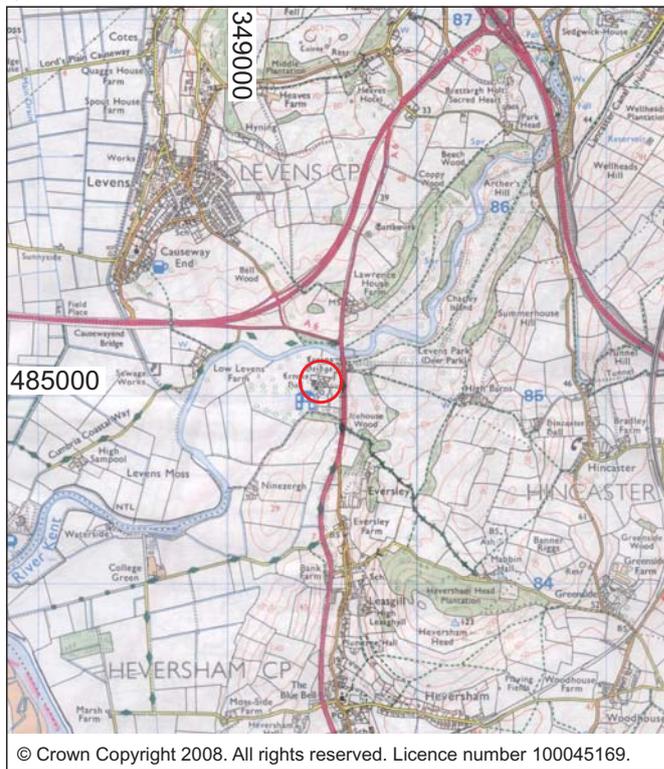
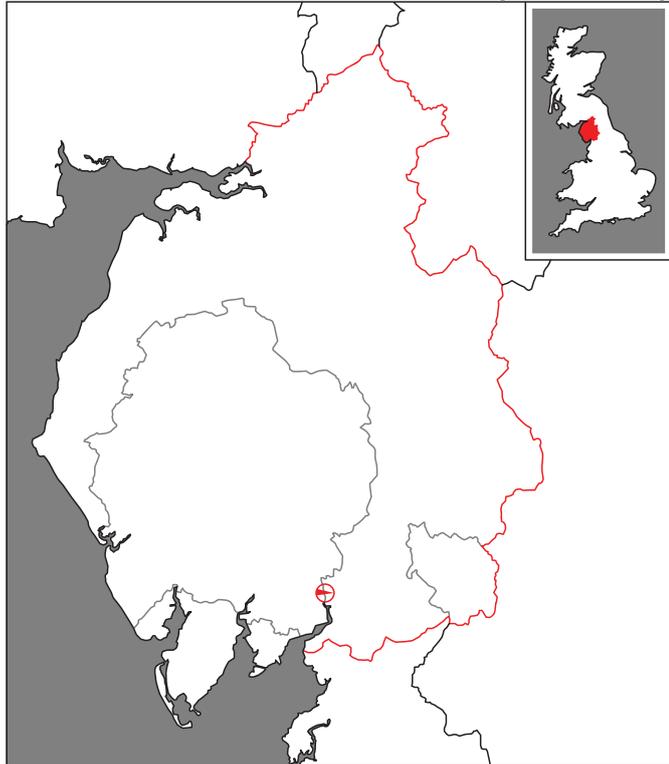
1.2.1 Levens Hall (Plate 1) is located in the Lake District on the south bank of the River Kent approximately 10 kilometres south-south-west of Kendal (Ordnance Survey 2008; see Figure 1). The excavation took place within the courtyard and across a small path to the side of the potting sheds and the greenhouses to the west of the main house. The courtyard has a fairly level cobbled surface, which is criss-crossed by limestone guttering, and has large slate flags to the outer edges (Plate 2). The gravel track between the potting sheds and the greenhouse has a gentle slope from east to west.

1.2.2 The underlying geology of the area comprises Dinantian Carboniferous limestone which outcrops in places but is covered by glacial tills (Moseley 1978, plate 1) in the vicinity of the site. The landscape is characterised by gently undulating pasture and conspicuous limestone hills and outcrops (Countryside Commission 1998, 64).



**Plate 1 (left): The north elevation of Levens Hall (the south wing and boiler house are visible to the right)**

**Plate 2 (right): The courtyard viewed from the north-east**



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Figure 1: Site location

## 2. Methodology

### 2.1 Desk-Based Assessment

2.1.1 A desk-based assessment was carried out in accordance with IfA guidelines (IfA 2008a). The intention of this element of the project was to assess the potential and nature of the deposits and finds that were likely to be encountered during the course of the groundworks and principally comprised an examination of early maps of the site, information from the Cumbria Historic Environment Record, and published secondary sources. The following sources of information were used during the desk-based assessment:

- **Cumbria County Council Historic Environment Record (HER):** this is a list of all the known sites of archaeological interest within the county, which is maintained by Cumbria County Council and is the primary source of information for an investigation of this kind. Unpublished reports of archaeological investigations in the vicinity of the site were examined;
- **Cumbria County Record Office, Kendal (CRO(K)):** this was visited in order to examine early maps and plans of the site, and local and regional histories;
- **Greenlane Archaeology Library:** additional secondary sources were examined to provide information for the site background.

### 2.2 Watching Brief

2.2.1 The pipe work associated with the biomass boilers will extend below ground from just inside the boiler house (at the west end of the south wing) to the kitchen block to the east and across the area in front of the shops and the potting sheds to the west. It then continues above ground across the potting sheds before continuing below ground across the small area to the greenhouse further to the west. The watching brief monitored the area of excavation within the courtyard (MGA Environmental reference: CIRC C) and between the potting sheds and the greenhouse (the dashed section of MGA Environmental reference: CIRC A), but unfortunately the area between the potting sheds and the boiler house was completed without being monitored (MGA Environmental reference: CIRC B). All aspects of the archaeological recording were carried out according to the standards and guidance of the Institute for Archaeologists (IfA 2008b). The trenched area comprised approximately 27m<sup>2</sup> which was excavated using a small size tracked mechanical excavator (Figure 1 and Figure 2). Features of interest were subsequently cleaned by hand and recorded relative to the known location of nearby buildings and other structures that were evident on the site plans and Ordnance Survey maps. 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, the surrounding landscape, 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:** drawings were produced on site as follows:
  - i. site and trench location plans were produced at scales of 1:200 and 1:50 as appropriate;
  - ii. detailed plans and cross-sections were produced of significant features at scales of 1:50 and 1:20 as appropriate;
  - iii. additional measured sketch plans and sections were produced on the watching brief record sheets.

## 2.3 Environmental Samples

2.3.1 No environmental samples were taken as no appropriate deposits were encountered.

## 2.4 Finds

2.4.1 **Processing:** all of the artefacts recovered from the watching brief were washed, with the exception of metal and glass, which were dry-brushed. They were 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 assessed and identified in the first instance by Jo Dawson. The finds were recorded on *pro forma* record sheets and a catalogue was produced (*Appendix 3*).

2.4.3 The medieval pottery finds were analysed following guidelines provided by the *Medieval Pottery Research Group* (2001) and fabric types were identified and described using the *Guidelines for the Processing and Publication of Medieval Pottery from Excavations* (Blake and Davey 1983) and *Pottery in Archaeology* (Orton *et al* 2008).

2.4.4 Given the small animal bone assemblage, all fragments were rapidly scanned and assigned to taxa wherever possible, although lower-order categories were also used (e.g. sheep/goat, cattle-size). Epiphyseal fusion and dental eruption and wear data were assessed. Bone condition, erosion and fragment size were noted in order to assess bone preservation, while gnawing, burning and butchery marks were recorded to determine bone treatment. Biometrical data were not recovered at this assessment stage, although a few measureable bones are present in the assemblage. No pathological bones were noted. Overall, however, the assemblage falls well below the minimum reliable sample size of around 500 (with reference to a number of statistical parameters after van der Veen and Fieller (1982, 296)).

2.4.5 The clay tobacco pipe was recorded and studied according to nationally agreed guidelines (Davey 1981; Davey and Higgins 1984). The stamp was recorded and an impression submitted to the National Stamp Catalogue held at the University of Liverpool.

## 2.5 Archive

2.5.1 A comprehensive archive of the project has been produced in accordance with the project design and current IfA and English Heritage guidelines (Brown 2007; English Heritage 1991). The paper and digital archive and a copy of this report will be deposited in the Cumbria Record Office in Kendal on completion of the project. Three copies of this report will be provided for Cumbria County Council Historic Environment Service, one with the client, a digital copy with the client's agent, and one will be retained by Greenlane Archaeology. In addition a digital record of the project will be made on the *Online Access to the Index of Archaeological Investigations* (OASIS) scheme.

### 3. Desk-Based Assessment

#### 3.1 Background History

3.1.1 **Prehistory and Early History** there is a considerable amount of evidence for activity in the area, from at least 6,000 years ago. Archaeological excavations in Levens Park to the south revealed a number of features including lithic artefacts dated to the late Mesolithic (Cherry and Cherry 2000). This were discovered below a low mound, interpreted as a prehistoric ring cairn that had been subsequently re-used (Sturdy 1976); Beaker pottery from the early Bronze Age was certainly recovered from it, although this was not published until some time later (Turnbull and Walsh 1996). Immediately to the west of Frosthwaite, on Sizergh Fell, excavation of burial mounds recorded prehistoric material (McKenny-Hughes 1904a; 1904b), some of which was later re-interpreted as also being of Beaker period (Fell 1953). More recent excavation on the same site failed to discover finds of similar date, or any further burials, but did identify evidence of earlier, Neolithic activity (Edmonds and Evans 2007), and remains of a similar date have also been found in the Levens area (Cherry and Cherry 1987). Recent work within Levens village has also recorded a crouched burial radiocarbon dated to the late Iron Age (OA North 2004), which is an extremely rare discovery within the North West (Hodgson and Brennand 2006, 55). Another burial, perhaps of a similar date, was also discovered on Sizergh Fell, however (McKenny-Hughes 1912a). Remains dating from the Roman period are not plentiful from the general area, although coins have been found in reasonable numbers (Shotter 2004). Evidence of immediately post-Roman activity is also not certain, although burials found near Levens in 1911 may be early Christian on account of their orientation (McKenny-Hughes 1912b).

3.1.2 **Levens Hall:** the Levens district belonged to *Tosti*, the great Earl of Northumberland, before being forfeit to Roger de Poitou after the Conquest (Curwen 1898, 2) and was granted to *Normannus de Hieland*, Yealand, later de Redman (d1184), by the baron of Kendal c1170 (Greenwood 1903, 272-3, 276). The Redmans (variously written Redmayne, Redmaine, or Redmain (Curwen 1898, 2)) probably commenced building Levens Hall in the early part of the 14<sup>th</sup> century '*in the fierce days of Border warfare, when a man's home was literally his castle*' (Greenwood 1903, 286); '*the first building... took the form of a border Pele tower... for the defence of their owners against the raiding Scots, and for a refuge and protection for their tenants and dependents*', which was annexed with an aula or great hall to the west side (Greenwood 1903, 285) and there are remains of a 14<sup>th</sup>-century house within the Hall as it stands today (RCHME 1936, 151), most notably in the basement level of the house which has features in 14<sup>th</sup> century style (Hyde and Pevsner 2010, 492).

3.1.3 The Park was enclosed by licence in 1360 (Curwen 1898, 39; Greenwood 1903, 286-7) and the Redmans held unbroken possession of the estate until 1489 when Levens was sold to Alan Bellingham (Curwen 1898, 4). The Bellinghams had bought the rest of the property which formed the estate by 1550 (Beckett 1985, 132).

3.1.4 The Hall is considered a '*little altered example of the Elizabethan age [and] is largely a reconstruction of Sir James Bellingham*' (1577-1641) (RCHME 1936, 151), who is attributed with having '*built most of what makes it memorable*' (Hyde and Pevsner 2010, 492); the tower on the north and the staircase-wing on the south of the hall-block, the kitchen-wing, and the then detached brew house [latterly the boiler house] were built around the 16<sup>th</sup> century (RCHME 1936, 151; a 'new brew house' is also mentioned as being built in the late 17<sup>th</sup> century, which was presumably a separate structure (Bagot at Munby 1988, x)), although the one-step four-light window in its gable is as a rule a sign of the late 17<sup>th</sup> century, and the main block of the house faces across a 17<sup>th</sup> century entry court (Hyde and Pevsner 2010, 492).

3.1.5 Levens remained in the possession of the Bellinghams for two centuries but '*in a few years of indulgent living*' Alan Bellingham (d1693), the heir to the estate, amassed substantial debts which forced him first to mortgage and then sell the estate (Beckett 1985, 132; Munby 1998, 194). Tradition holds that he '*gambled his property bit by bit*' and that Levens passed either '*by game or purchase*' (Curwen 1898, 5), '*traditionally said to have been the result of a game of cards*' (Munby 1998, 200), to his cousin (Munby 1998, 194), Colonel James Grahme or Graham (of the Netherby family) (Hyde and Pevsner 2010, 492) in 1689. The Graham family is thought to have been '*descended from the Earls of Monteith in*

Scotland' (Munby 1998, 183). *'The conveyance on 5 February 1689, was done by the straightforward method of "bargain and sale" and a breakdown of the costs in a paper at Levens can be summarized thus:*

*'Paid:*

*Mortgages and loans between May 1687 and July 1688 £17,870:00:00*

*(including £3200 for interest and some principals)*

*To be paid:*

*Debts and interest to various creditors £5,869:19: 3*

*Mr Pigeon and Mr Hilton to make up the purchase money £660:00: 9*

*(the Timber yet unvalued)*

*Total: £24,400:00:00' (Munby 1998, 194).*

The purchase of the estate seems to have been a bargain since it was thought to be worth £40,000 in 1711 (Beckett 1985, 132).

3.1.6 James Grahme (1650-1730) had a distinguished military career (Munby 1998, 183, 186-7) and his marriage to Dorothy Howard, one of the Maids of Honour to Catherine of Braganza, queen consort of Charles II, brought him within the ambit of the court (Curwen 1898, 6; Munby 1998, 186). In 1679 he was attached to the Duke of York's household, the future James II of England, and he was appointed privy purse to the Duchess of York, and shortly afterwards to the Duke (Munby 1998, 187). He was Keeper of the Privy Purse after the Duke ascended the throne in 1685 (Beckett 1985, 131; Munby 1998, 190). However, in the aftermath of the Revolution of 1688, which saw King James II deposed, *'his career seemed in ruins when he was tainted with Jacobitism'* (Beckett 1985, 131) and *'he and his brothers suffered for their loyalty to the house of Stuart'* (Munby 1998, 183) during the reign of William III of Orange (William III van Oranje). He was sought for high treason after his elder brother was arrested en route for France with treasonable papers in his possession and although he received a pardon in 1692 he was again imprisoned after a brief visit to James II in France and was imprisoned a further time after the discovery of the Fenwick conspiracy in 1696 (Beckett 1985, 131). After his release he retired to the Levens estate to concentrate again on regaining political respectability and *'we find him representing the City of Carlisle, as Member of Parliament in 1685, Appleby in 1702, and Westmorland during the Parliaments of 1708, 1710, 1713, 1714, and 1722'* (Curwen 1898, 6). *'Symbolic of his return to the political scene was Grahme's appointment as a deputy-lieutenant of Westmorland in 1715, the year of the Jacobite invasion, and by 1722 he was searching Catholic houses for non-jurors during the Atterbury plot crisis'* (Beckett 1985, 132).

3.1.7 During his time at the estate Grahme carried out further renovations and alterations to the Hall (RCHME 1936, 151), for instance, the building of the south wing, connecting the kitchen-wing with the brew-house, to provide extra accommodation for domestic offices and servants, is well-documented between 1692 and 1695 (see Bagot and Munby 1988) and can be seen as an investment by Grahme in his recently purchased estate (Munby 1986, 275; 1989, 233; 1998, 196; Hyde and Pevsner 2010, 492). The kitchen-wing was repaired following a fire in 1703 and the main staircase was added to the body of the house in 1717 (Munby 1986, 275; 1998 196). The fantastic gardens were also designed and laid out for Grahme by Monsieur Guillaume Beaumont, *'Gardener to James II and Col. James Grahme'*, c1690s (Hyde and Pevsner 2010 495; Munby 1998, 183).

3.1.8 When Colonel Grahme died in 1730 the estate passed to his eldest daughter and only surviving child, Catherine (Beckett 1985, 139), who was married to her first cousin, Henry Bowes Howard, 4<sup>th</sup> Earl of Berkshire, and the estate then *'became the inheritance of that noble family'* (Curwen 1898, 7). *'Her husband was created Earl of Suffolk in 1745'* (Beckett 1985, 139). His grandson, also called Henry (the fifth Earl of Berkshire and 12<sup>th</sup> Earl of Suffolk) became heir of the estates upon the death of his father, Viscount Andover, in 1757, but dying without issue, bequeathed the estates to his mother, Lady Andover, in 1779, and after her death, to his sister Frances (Curwen 1898, 7). Frances married Richard Bagot Esq. in 1783, who assumed by 'sign manual' the surname of Howard (*ibid*). Their daughter, Hon.

Mary Howard, married 'Colonel, the Honourable Fulke Greville Upton, second son of Clothworthy, first Baron of Templetown, who also assumed the name of Howard', and inherited the property after Frances Howard's death in 1818 (Curwen 1898, 8). Following his death the estates passed to his nephew who died without issue in 1883 and was succeeded by Josceline Fitzroy Bagot, the great great nephew of Richard and Frances Howard, by entail (*ibid*). The Hall saw further alterations during this time; the south wing of the courtyard was altered in the latter part of the 18<sup>th</sup> century and the Howard Tower at its east end is an early 19<sup>th</sup>-century addition (RCHME 1936, 151). The Bagots, to whom the house is now residence, 'are [also] a family of great antiquity' (*ibid*).

## 3.2 Map Regression

3.2.1 **Ordnance Survey map c1862:** the early editions of the Ordnance Survey mapping show open areas of the courtyard and between the courtyard and the potting sheds (see Plate 3 and Plate 4). The area to the west of the potting sheds (currently the site of the greenhouses) appears to be undeveloped.

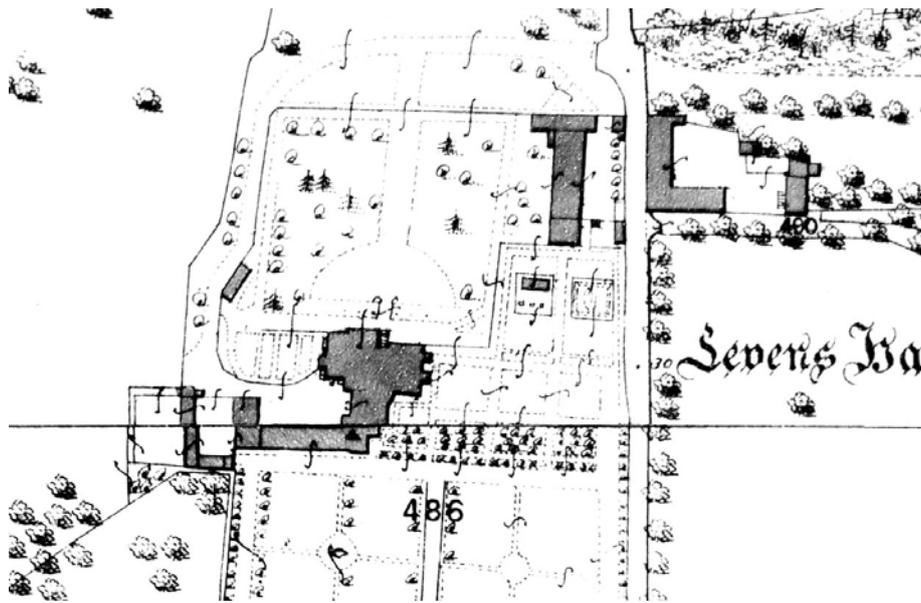


Plate 3: Ordnance Survey map c1862

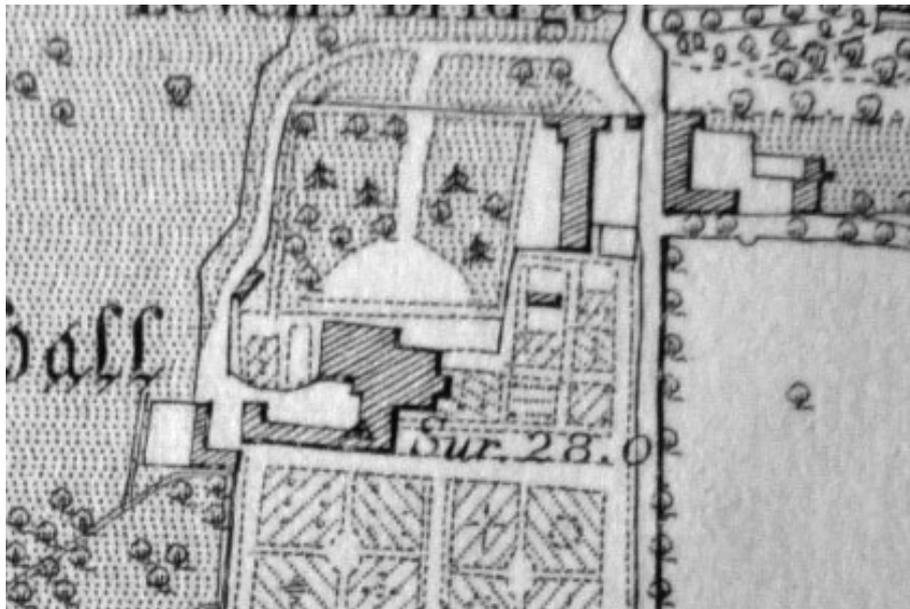
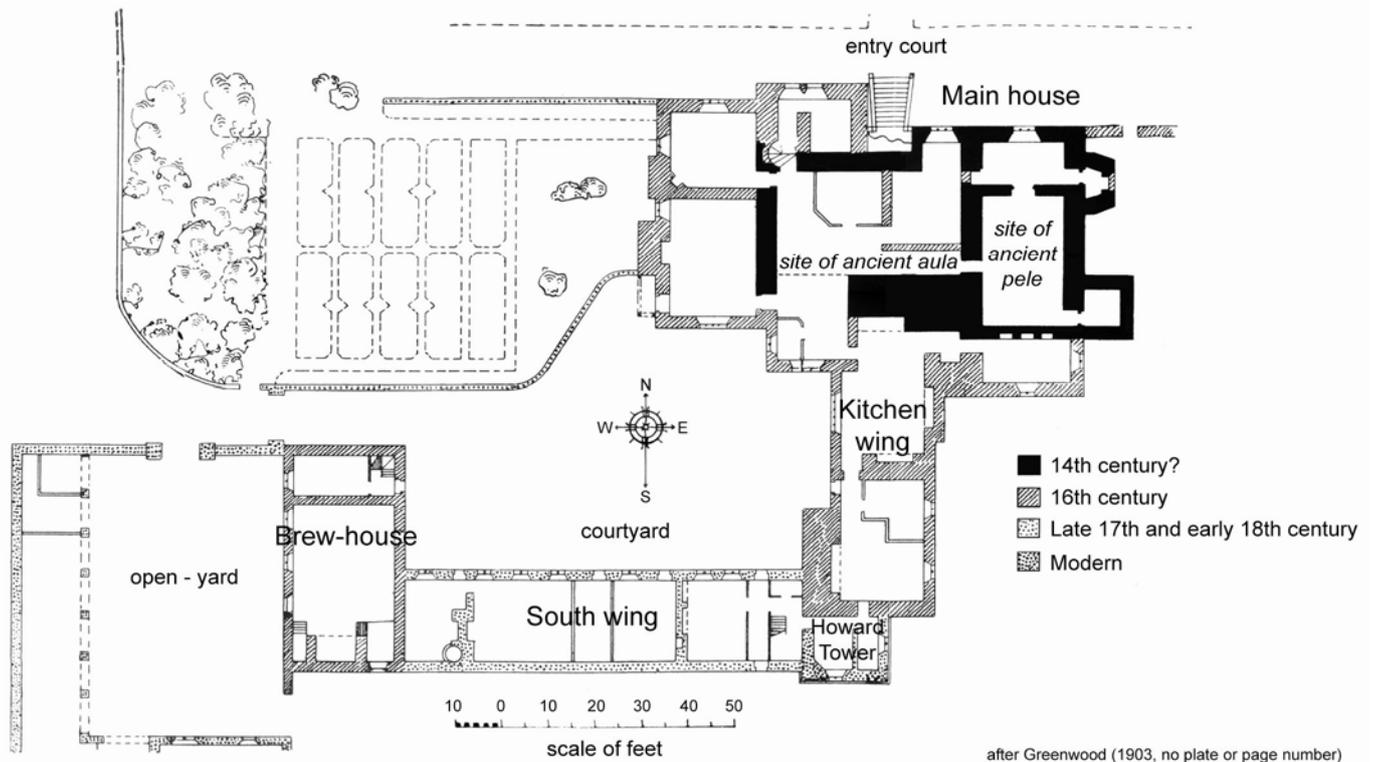


Plate 4: Ordnance Survey map 1862

3.2.2 **Phase plan of the Hall (after Greenwood 1903, no plate or page number):** a plan reproduced by Greenwood (1903) from an original drawing by Curwen shows the suggested phases of development

of the Hall to that point. At the time, the area to the west of the brew-house was marked as an open yard with a coal house to the west side. The phase plan has been simplified and re-oriented here, so that north is up the page (Plate 5). The suggested dates are based upon those given by Curwen in his *Historical Description of Levens Hall* (1898).



**Plate 5: Phase plan of Levens Hall**

3.2.3 **Plan of 1936**: the plan reproduced in *An Inventory of the Historical Monuments in Westmorland* (RCHME 1936, 154) shows that the arrangement of the house is mostly unchanged to this day and that the courtyard and areas to the west of the main house were still open at the time (Plate 6). The guttering and cobbled surface of the courtyard is shown in more detail.

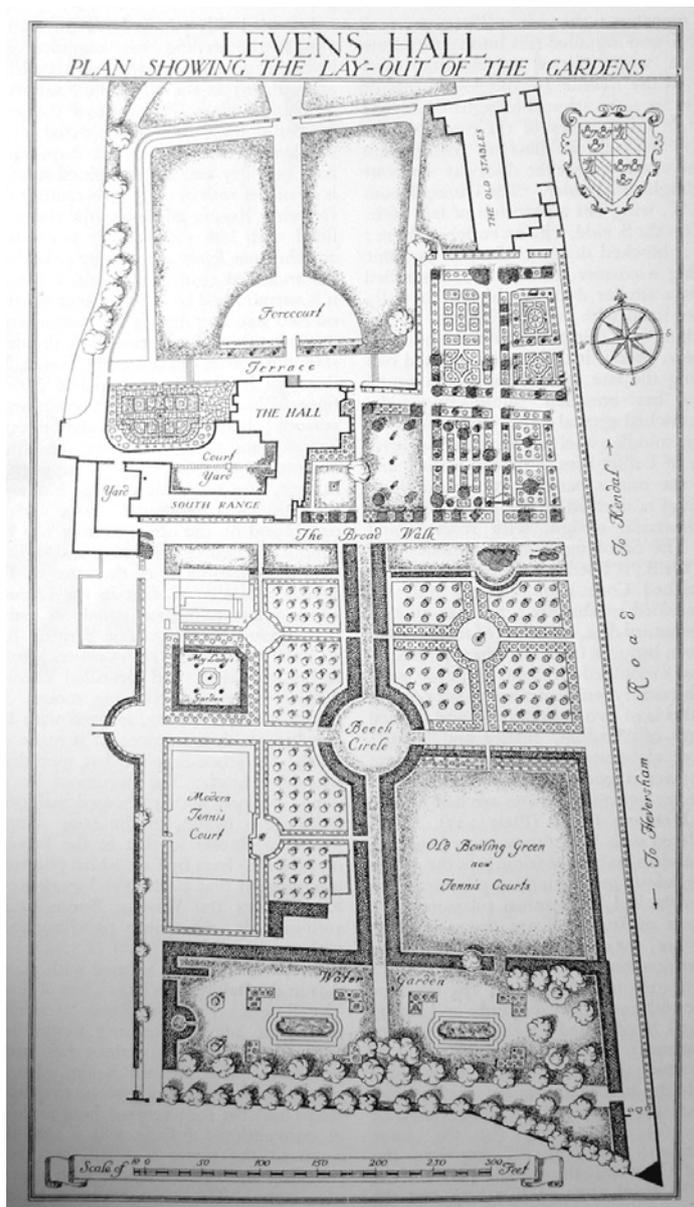


Plate 6: Plan of Levens Hall, showing the gardens c1936 (from RCHME 1936)

## 3.4 Conclusion

3.4.1 Levens Hall is thought to have its origins in the early part of the 14<sup>th</sup> century (Greenwood 1903, 285-286), although occupation shortly before that date is possible and there is evidence for much more ancient activity in the general area. Since that time the estate has been essentially in the possession of three families only; the Redmans, the Bellinghams, and the Grahmes with their successors (Curwen 1898, 9).

3.4.2 The appearance of the courtyard has changed little from its depiction on the earliest Ordnance Survey maps and the area to the west of the brew-house across the open yard to the potting sheds has also seemingly changed very little since then. The small open-yard to the west appears to have been enclosed briefly by a wall at the north-end and the structure to the west side is shown as open-sided on the plan reproduced by Greenwood (1903). It was presumably enclosed at some point in the 20<sup>th</sup> century and now forms the potting sheds and toilet block to the north and the gift shop is situated along the south range. The area to the west of the potting sheds, which is now occupied by greenhouses, also appears to have been an open yard previously.

## 4. Watching Brief

### 4.1 Introduction

4.1.1 The groundworks began in the area of the courtyard to the south-west of the main house, close to the north elevation of the south wing, and continued between the potting sheds and the greenhouse to the west of this area. The ground surface within the courtyard area, which is to be reinstated after the completion of the groundworks and comprised a fairly level cobbled surface, is cut across by limestone guttering and skirted by slate flags (see Plate 7 and Plate 8). The groundworks followed the edge of the slate flags along the west end of the south wing before turning approximately midway across the courtyard to take a more north-east/south-west route across the remainder of the area. The walls of the surrounding buildings were constructed from fairly regular courses of limestone and were sometimes finished in a concrete render. It was also necessary to lift a small area of the flagged floor within the boiler room for the installation of the pipes. The floor of the greenhouse was concrete and the area between the potting sheds and the greenhouse comprised a gravel track (Plate 9).



**Plate 7 (left): The south-west corner of the courtyard**



**Plate 8 (right): The east end of the courtyard**



**Plate 9: The area between the potting sheds and the greenhouse, looking south**

## 4.2 Results

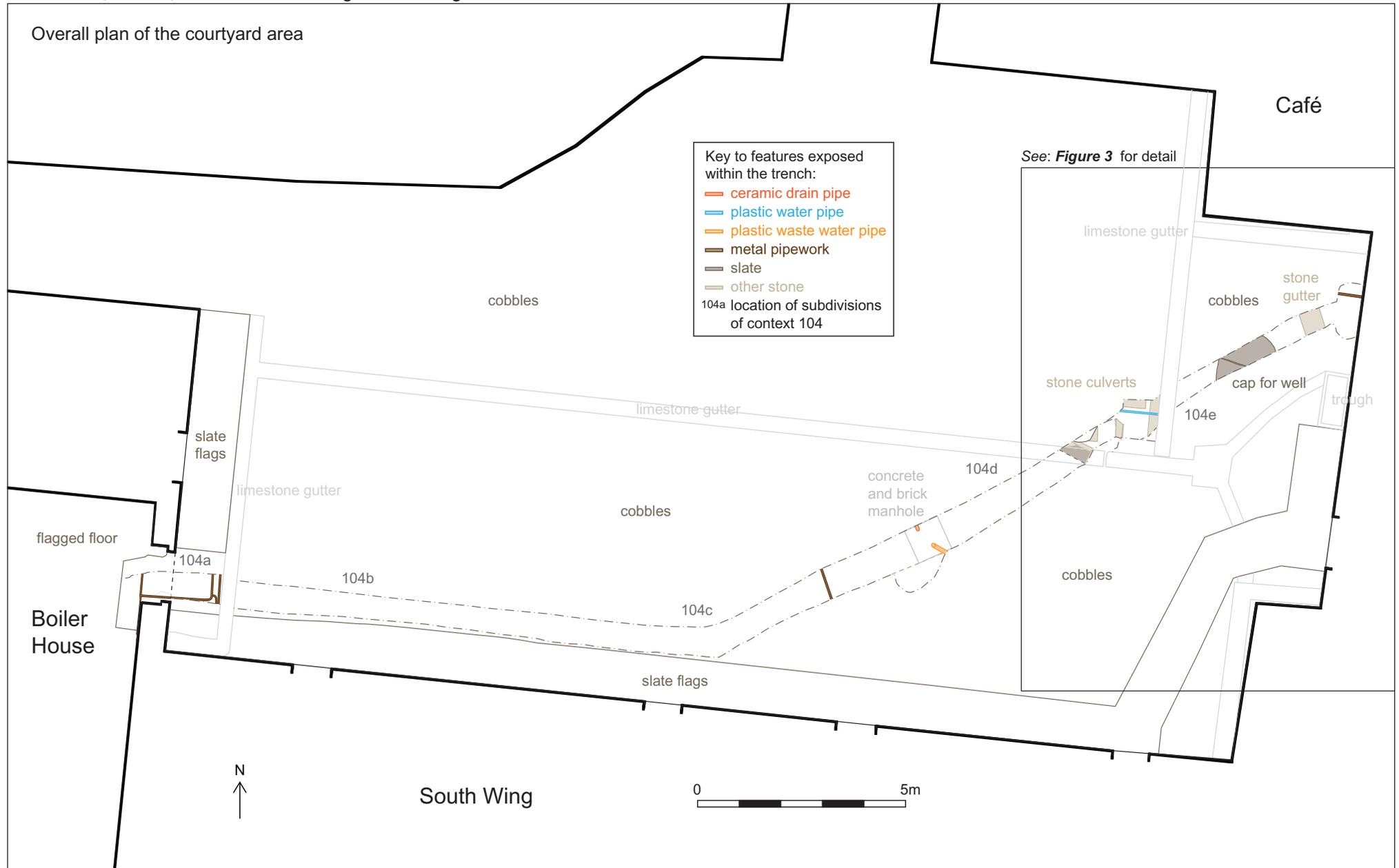
4.2.1 **Courtyard Area:** one of the flags at the west end of the courtyard area was lifted and found to sit on a loose bedding layer of fine dark grey gravel up to 0.07m thick (Plate 10). This in turn overlay a friable, mid greyish-brown sandy-silt deposit (**102**), which was above a soft mid to light slightly orangey-brown sandy-clay (**103**). In addition, a small section of the flagged floor of the boiler house had to be lifted for the installation of the pipes. Various metal pipes were observed to cut across the flagged area beneath the bedding material (within context **102**) and continue beneath the floor of the boiler house to the west (Plate 11). The flags were above a dark grey-brown sandy-silt layer, which had frequent small sub-angular stone pebble and gravel inclusions. This was above a gritty white mortar, which was in turn above light orange sand and another powdery white lime mortar with moderate angular stone inclusions. No finds were recovered from within the boiler room.



**Plate 10 (left): Removal of the flags at the west end of the courtyard**

**Plate 11 (right): Removal of the flags within the boiler house**

4.2.2 The uppermost layer (context **102**) beneath the bedding material for the slate flags appeared to continue to the east of the limestone guttering, which was left in place (Plate 12). Certainly, the uppermost deposit to the east of the guttering was a very similar greyish-brown sandy-silt (**104**), although it was covered in a loose sand bedding material up to 0.18m thick below the cobbled surface to the east. The cobbled surface was approximately 0.08 to 0.10m thick and extended across the area of the courtyard except for the areas of guttering and slate flags, which were generally towards the outer edge. Below this deposit, context **104**, was a softer, mid to dark grey-brown silty-clay deposit, context **105**, which might have been a variation within the same deposit or possibly represented an interface between this deposit and the underlying soft, orangey-brown sandy-clay (**103**). This clay was encountered at a depth of approximately 0.75m below the current ground surface and may have been an underlying geological layer (the 'natural'). This sequence of deposits continued along the east/west section of the trench and most of the courtyard (Plate 13).



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Figure 2: Overall plan of the courtyard area



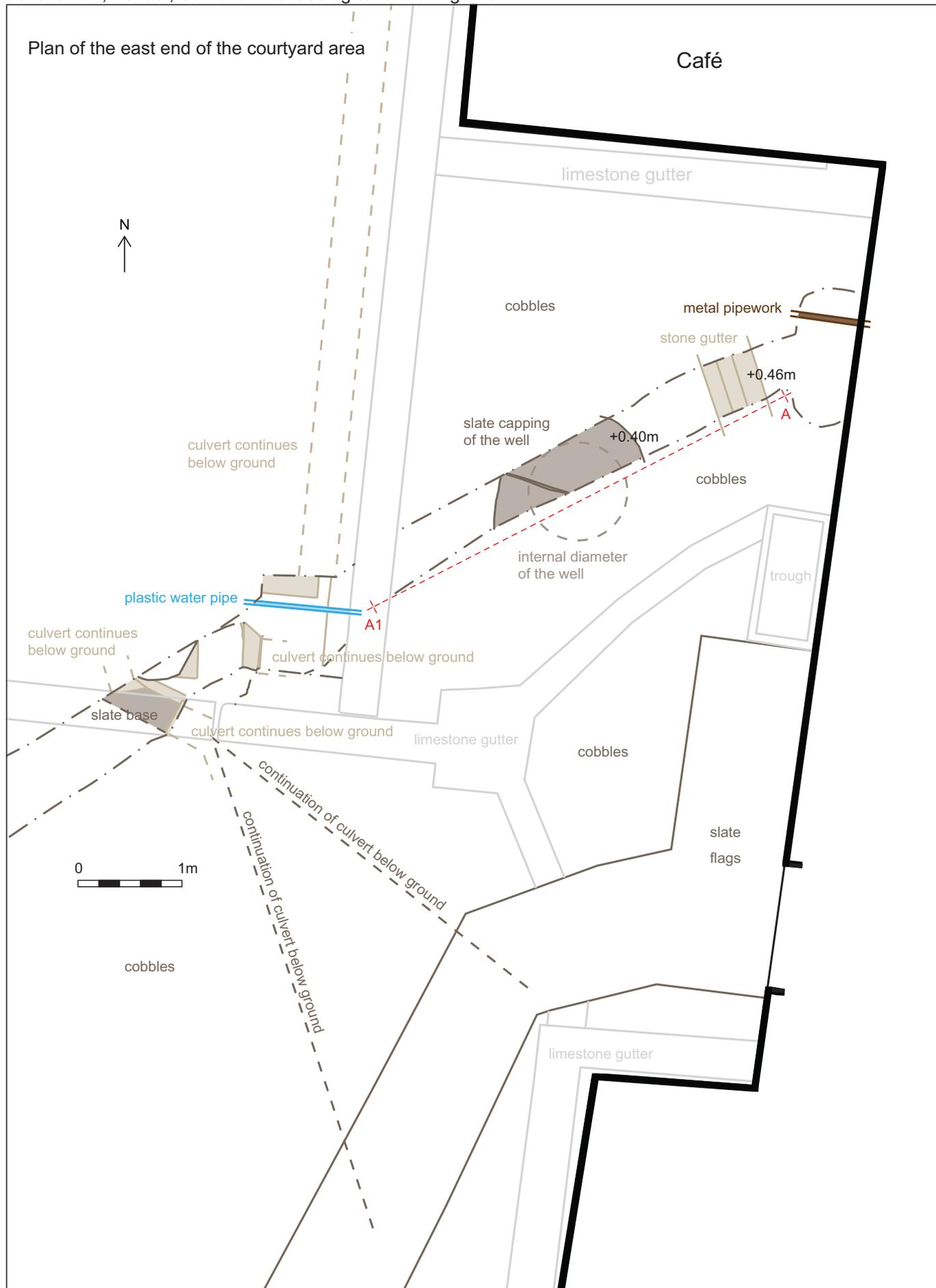
**Plate 12 (left): Trench section at the west end of the courtyard**

**Plate 13 (centre): Trench along the south wing**

**Plate 14 (right): Working shot, manhole exposed**

4.2.3 A further metal pipe was exposed beyond the realignment of the trench approximately midway across the courtyard and a modern brick-built and concrete coated manhole was removed to the north-east of this (Plate 14). Context **104** was noted to be slightly stonier and there was a small concentration of disarticulated animal bone in front of the doorway at the turning point of the trench (sub-context **104c** was issued for the assemblage of finds recovered from this area based on their location (see Figure 2)).

4.2.4 Several stone-lined culverts were observed within this deposit to the north-east of the manhole; their position was close to the junction of the limestone guttering which cuts across the cobbled surface at this point (Plate 15 and Plate 16; see Figure 3). The sides of the culverts appeared to be built from courses of angular limestone blocks with gritty yellowish-white cement with small gravel inclusions. The cement was up to 0.03m thick between the courses each of which was approximately 0.1m high. The open channel was approximately 0.33m wide and between 0.21 and 0.26m high, although sometimes the opening was blocked with angular limestone rubble with fragments that were approximately 0.1m long on a side. Each section of the culvert appeared to have a slate-lined base (Plate 15) and often very large angular sandstone blocks had been used to cap it. The limestone gutters across the area were approximately 0.18m deep and there was up to a further 0.13m of the greyish-brown sandy-silt, context **104**, below the base of the guttering to the top of the angular sandstone capping of the culvert, which was up to 0.13m thick. Some of the capping stone for the culverts had evidently been reused in their construction; a piece of a scooped limestone drain had been upturned and reused to cap one section of the culvert. Another section appeared to possibly have had minor repairs made to it using machine-made frogged red brick, stamped "CLAUGHTON MANOR BRICK C<sup>o</sup> CATON", which was incorporated into the side. This possible repair was noted to be close to the position of a modern cross-cutting plastic water pipe (Plate 17). It was also noted that context **104** contained a slight concentration of red earthenware (c17<sup>th</sup> to 20<sup>th</sup> century) and domestic refuse, including cockle shells, between the area of the culverts and the brick-built and concrete manhole to the south-east (sub-context **104d**).



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Figure 3: Plan of the east end of the courtyard area



**Plate 15 (left): Stone culvert (the slate base of which is visible at the point of the scale bar)**

**Plate 16 (centre): Stone culverts below the limestone gutter**

**Plate 17 (right): Modern plastic water pipe cutting across the trench**

4.2.5 A neatly constructed well was exposed a short distance to the north-east of the culverts in front of the windows in the south elevation of the café (Plate 18; Figure 3). It was constructed from regular courses of angular limestone blocks (Plate 20) and had an internal diameter of 0.95m (Plate 21). Up to 0.03m thick of firm, gritty, brownish-yellow clay packing material had been used between the courses of stone and it was capped with slate (Plate 19). It was approximately 5m deep and the bottom 1.5m was filled with water.



**Plate 18 (left): The well (located below the scale bar)**

**Plate 19 (right): Detail of the slate capping material of the well**



**Plate 20 (left): Internal construction detail of the well**

**Plate 21 (right): The base of the well**

4.2.6 Above the well was a light brownish-yellow clayey-sand deposit, context **106**, which appeared to extend some distance beyond the edge of the well to the north-east and to the limestone gutter to the south-west (Plate 22; Figure 4). Context **104** continued only a short distance to the north-east of the junction of the limestone gutters before apparently being replaced or cut across by this light yellowish clayey-sand deposit (**106**). This yellowish deposit apparently overlay context **104** to the west and a similar deposit, context **100**, to the east. The well itself apparently cut a yellowish deposit of a similar composition and consistency to context **106** (context **112**). The sandy bedding material present below the cobbles to the south-west of the junction of the limestone guttering was much softer and looser and was not considered to represent a continuation of context **106**.



**Plate 22: Composite photograph of the north-west facing section above the well**

North-west facing section A-A1 - above the well

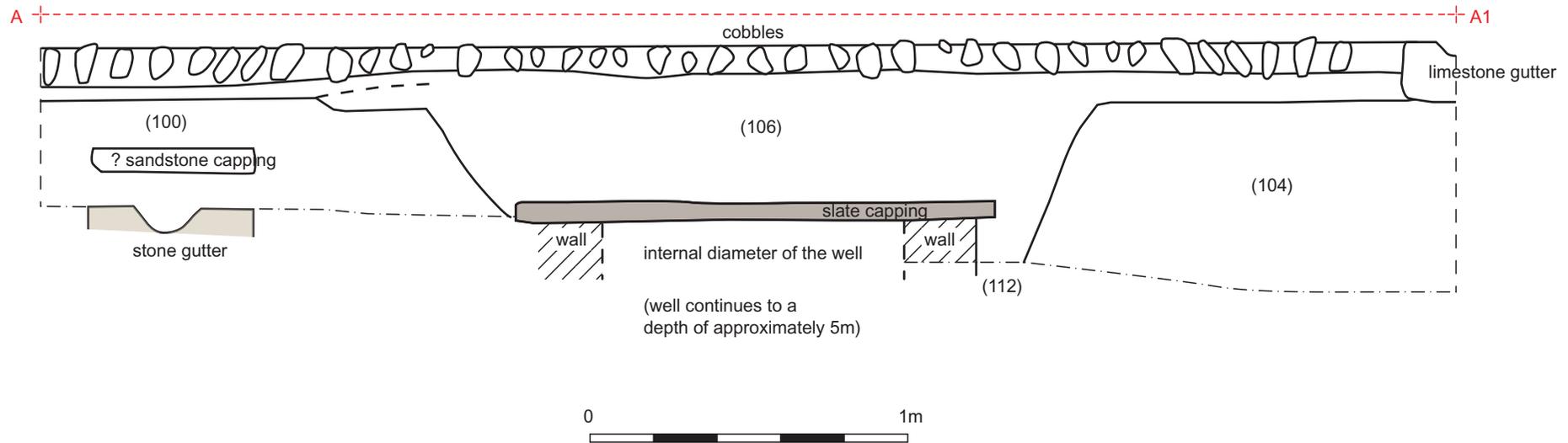


Figure 4: North-west facing section of the trench

4.2.7 A loose greyish-brown sandy-silt deposit, context **100**, was exposed below context **106** to the north-east of the well and continued to the wall of the kitchen-wing. Context **100** was below a compact sandy whitish-brown deposit to the east, which appears to have continued slightly above context **106** to the west. Context **100** was noted to be looser where it had been re-deposited above an oil pipe. The limestone boulders which formed the foundation of the kitchen-wing were exposed to a depth of approximately 0.4m below the current ground surface and a fine gravel deposit was exposed at a depth of 0.8m, which probably represented the underlying 'natural'.

4.2.8 A limestone drain was also exposed within context **100** not far from the well. It appeared to have sandstone capping similar to the other stone culverts, which was visible in the north-west facing section. It was located near to where there used to be a pump against the east wing of the courtyard (Hal Bagot pers. comm.) and may have related to this.

4.2.9 **Between the potting sheds and the greenhouse:** this area was very disturbed. For the most part the uppermost layer comprised whitish gravel, which formed the current pathway around the potting sheds, and the lower part comprised orange sand, but both deposits were very disturbed (together forming context **108**). Various very modern finds were noted in this area, including marker pens and refillable gas lighters, but none were retained, and were probably associated with the 20<sup>th</sup> construction of the potting sheds. Context **108** was above a gravel deposit (**109**) to the east, which might have represented another layer or surface, but it was only partially exposed at the base of the trench (at a depth of 0.9m) and was not investigated further. The mixed sand and gravel deposits, context **108**, extended as far as a concrete manhole to the west and two plastic wastewater pipes cut across the trench at this point (Plate 23; Figure 5). Part of the concrete floor of the greenhouse was also removed. The concrete floor was set on a gritty brownish-white gravel bedding material, below which was a layer of dark grey-brown, slightly clayey silt, context **110**, which was probably the old topsoil (Plate 24). This appeared to extend and may have been overlain by the disturbed deposits associated with the construction of the potting sheds to the east. This possible topsoil layer was above a soft mid orangey-brown clay, with few inclusions, which may have been the underlying 'natural' (context **111**) at a depth of approximately 0.46m.



Plate 23 (left): Area of excavation between the potting sheds and the greenhouse

Plate 24 (right): Area of excavation below the floor of the greenhouse

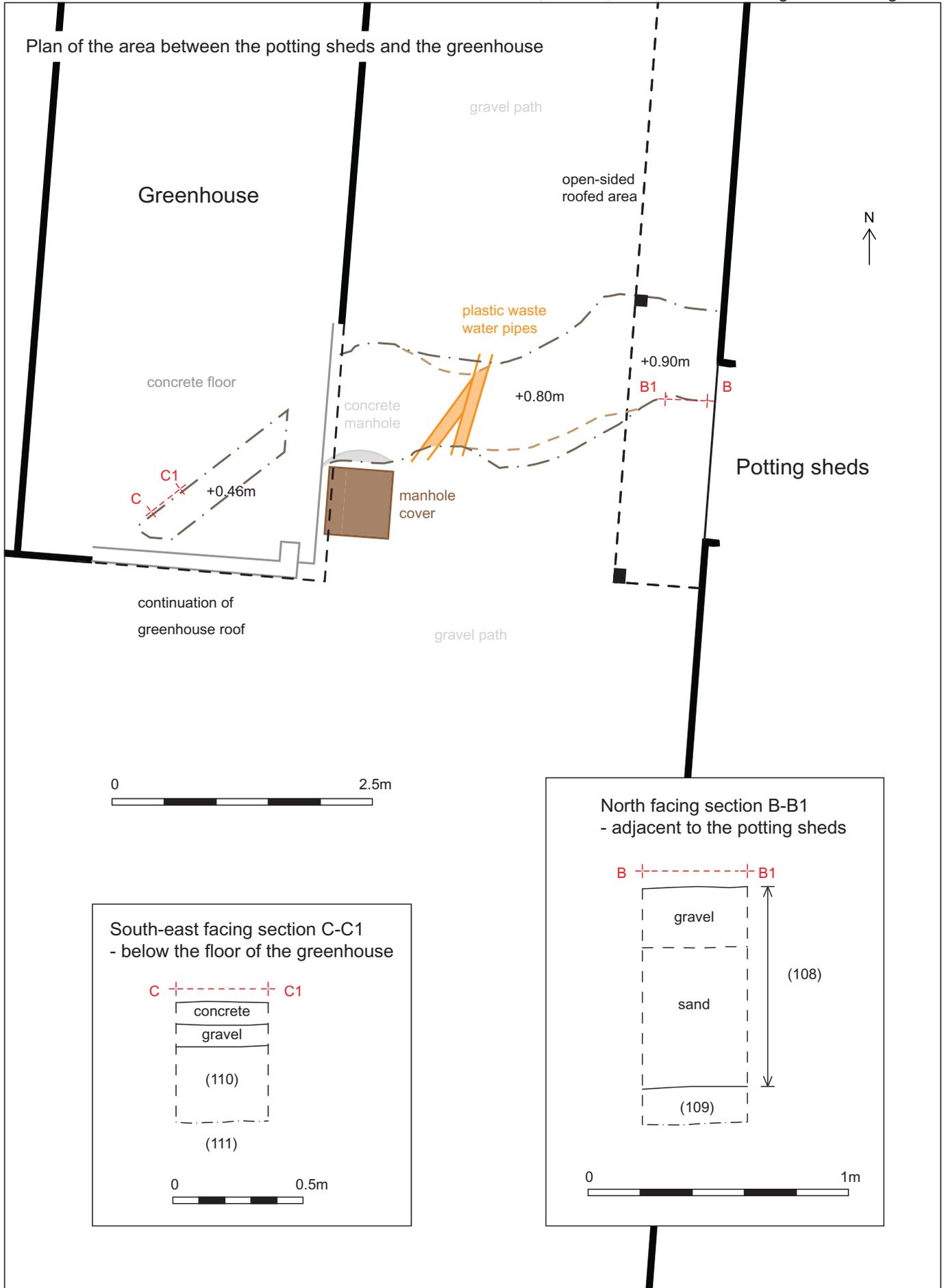


Figure 5: Plans and sections of the area between the potting sheds and the greenhouse

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## 4.3 Finds

4.3.1 **Introduction:** in total of 283 artefacts and ecofacts were recovered during the watching brief, comprising animal bones, ceramic building material, glass, iron and other metal, and industrial residue, fragments of marine shell, fragments of terrestrial shell, and fragments of pottery. The majority of these finds are post-medieval in date and potentially range in date from the late 17<sup>th</sup> to 20<sup>th</sup> century.

4.3.2 **Medieval pottery:** three fragments of medieval pottery were recovered from context **100**, near to the kitchen-wing; however, all of these fragments are thought to have been residual based on their size and level of abrasion. Two of the fragments were body fragments one of which was much abraded. These two fragments are lightly gritted/sandy wares, which were introduced in the late 12<sup>th</sup> century and persist to the 14<sup>th</sup> century; however, this date range is approximate and based on comparable material recovered from elsewhere in the region (McCarthy and Brooks 1992; Bradley and Miller 2009, 663-664; Brooks 1999, 103; 2000, 140; Newman *et al* 2000, 122). The remaining fragment was part of the sagging base and obtuse-angled side of a jug and is from a partially reduced ware vessel. Partially Reduced Grey wares were the dominant late 13<sup>th</sup> to 14<sup>th</sup> century ware in the region (McCarthy and Brooks 1992, 34; Brooks 2000, 140; Newman *et al* 2000, 122). Unfortunately, the suggested date ranges for many of these pottery types is very approximate because of the general lack of independent or absolute dating techniques to accompany the ceramic sequence.

4.3.3 **Animal bone:** animal bone was recovered from three contexts **100**, **104** and **110**, plus an additional five unstratified fragments. The assemblage was hand-retrieved (as opposed to bulk sieving), which affects the species present, however, despite the small size of the assemblage, bones of cattle, sheep, pig, dog, roe deer, and goose were noted. For cattle and sheep (the most commonly observed taxa), all body parts (head, meat-rich parts and limb extremities) are present. The animal bone assemblage is limited by its size and fragmented but otherwise is in reasonable condition with few eroded bone surfaces. Very few bones are burnt (1) or gnawed (<10). Butchery marks, restricted to cattle, sheep, pig and roe deer, reflect the use of domestic livestock for food and the utilisation of hunted or managed deer. Age data are limited due to the assemblage size. No neonatal or juvenile bones indicative of localised production are present, although sub-adult sheep were noted.

4.3.4 **Clay tobacco pipe:** three plain clay tobacco pipe stem fragments and a fragment with a shallow pedestal spur were recovered which probably date from the 17<sup>th</sup> to 18<sup>th</sup> century. A bowl fragment with a spur stamped 'IG' was also recovered, which was probably produced between 1650 and 1680.

4.3.5 **Post-medieval pottery:** the potential date range for many of these wares is very broad due to the persistence of the styles and fabrics. However, the pottery dating for context **104** seems to point to late 17<sup>th</sup> to early 18<sup>th</sup> century and this agrees with the clay pipe dating (see *Section 4.3.4* above). Context **110**, in contrast, is much later, probably 19<sup>th</sup> to 20<sup>th</sup> century.

4.3.6 **Red earthenware tiles:** fragments of red earthenware roof tiles were recovered within the courtyard from context **100**, **104** and **106**. Unfortunately, these finds are not closely dateable. The majority of the finds from context **104** are thought to be late 17<sup>th</sup> to early 18<sup>th</sup> century in date, and it is not inconceivable that the roof tiles were broken and deposited around this time.

## 5. Discussion and Conclusion

### 5.1 Discussion

5.1.1 A fairly straightforward sequence of deposits was exposed beneath the flags of the boiler house and below the cobbled surface of the courtyard. This sequence comprised a sandy layer (presumably a bedding material for the cobbled surface) above variations within a sandy-silt deposit (contexts **100**, **102**, **104**, and **105**) and an orangey clay 'natural' (**103**). Variations within the silty deposit were only very slight and the different context numbers assigned to this deposit relate to their geographical position within the courtyard more so than to their order of deposition; separate numbers were issued where there was a lack of clarity, for instance, where the deposit could not be said with certainty to be continuous across the area, and may represent the same context. It was not always clear if the same layer was continuous across the area due to the very limited area of the deposits being exposed within the confines of the trench. Finds from within this layer were consistent with a domestic assemblage and probably represent an accumulation of domestic refuse associated with the occupation of the Hall. Small concentrations of shell and animal bone were present, a small quantity of which showed butchery marks, which would be consistent with a kitchen midden, but no distinct features were apparent. The other finds from within this layer were generally post-medieval in date and included red earthenware, tin-glazed earthenware, mottled ware, clay tobacco pipe fragments, ceramic building material (including roof tiles), and glass. Although the broken roof tiles cannot closely be dated the context from which some of them were retrieved (context **104**) potentially dates them to the late 17<sup>th</sup> to early 18<sup>th</sup> century. This is of interest for two reasons: firstly, tiles are recorded as being purchased in 1692, during the period in which the new south wing was being built (Bagot and Munby 1988, 12n), which would fit the general date of the associated deposits, although the contract for this work and various other references indicate that slate was used for roofing (Bagot and Munby 1988). Secondly the date of the deposit in which they were discovered coincides with when the kitchen-wing of the Hall was damaged by fire in 1703 and was repaired shortly thereafter. Tile used for roofing is relatively rare in the region, and so this assemblage is of interest in its own right.

5.1.2 The well (**107**) at the north-east corner of the courtyard is potentially medieval in date, but since no finds were directly associated with it, its actual construction date is uncertain. The inside was left open after it went out of use but it was capped with slate and then seems to have been covered with a yellowish sandy-clay (**106**), which appears to extend above dark silty deposits to the east and west. The well itself cut a deposit with a similar colour, composition, and consistency to context **106**, context **112**, but its extent was not readily discernible within the confines of the trench and it could not readily be distinguished from the deposit overlying the capping material.

5.1.3 Unfortunately, the suggested date range for the pottery which was recovered from within the courtyard is fairly broad. The majority of the pottery ware types potentially range in date from the late 17<sup>th</sup> to 20<sup>th</sup> century. All that can be said about the pottery is that it likely predates the installation of the cobbled surface, which may have been put in place any time between the late 17<sup>th</sup> and 19<sup>th</sup> century, if not before. Dating these deposits is made more problematic because small areas of the cobbled surface had been lifted and reinstated various times with the installation of more recent pipes and services.

5.1.4 The earliest material from the site potentially dates from the late 12<sup>th</sup> to 14<sup>th</sup> century. This suggested date encompasses the earliest known period of construction at the site and potentially relates to the period of construction of the tower in the 14<sup>th</sup> century, although it could indicate that the area was occupied earlier in medieval period than previously thought. Unfortunately, none of this material was recovered from a cut feature but was instead retrieved from a fairly mixed deposit against the wall of the kitchen wing (context **100**) and judging from the small size of the fragments of pottery which were recovered it is likely they are residual.

5.1.5 The area between the potting sheds and the greenhouse was very disturbed and contained a large quantity of modern rubbish which was most likely associated with the construction of the potting sheds. The greenhouse directly overlay a layer of topsoil, which contained red and white earthenware dating from the late 17<sup>th</sup> to the 20<sup>th</sup> century, as well as glass, machine-made red brick, and flower pot fragments.

## 5.2 Conclusion

5.2.1 Unsurprisingly finds from within the area of the courtyard represented domestic refuse associated with the occupation of the Hall and generally dated from the late 17<sup>th</sup> to early 18<sup>th</sup> century. This coincides with the date of construction of the south wing and repairs made to the kitchen-wing when the house was owned by Colonel James Grahme. The earliest finds from this area date back to the earliest known phase of construction at the site, which is believed to have been in the 14<sup>th</sup> century, although they potentially date from as early as the late 12<sup>th</sup> century. The discovery of a well in the courtyard is another interesting addition to the history of the Hall and is also possibly medieval in origin.

5.2.2 The area between the potting sheds and the greenhouse was on less interest archaeologically; it had been very disturbed and contained 19<sup>th</sup> to 20<sup>th</sup> century finds.

5.2.3 It is recommended that the assemblage of finds recovered during the watching brief be deposited in Kendal Museum so that they are available for future reference. The medieval pottery, animal bone, and possible roof tile are of particular interest and would be worthy of further consideration should more work be carried out at the site.

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## Appendix 1: Project Design

# LEVENS HALL, KENDAL, CUMBRIA

Archaeological Watching Brief Project Design



Client: Mr CH Bagot

June 2011

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Client: Mr CH Bagot

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# 1. Introduction

## 1.1 Project Background

1.1.1 Following the submission of a planning application (Ref. SL/2011/0207) for the installation of two biomass boilers, storage hoppers and associated fittings at Levens Hall, Kendal, Cumbria, (NGR 349487 485081), planning permission was granted by South Lakeland District Council, with a condition requiring an archaeological watching brief to be undertaken during any groundwork. This project design has been produced in response to that condition in order to outline the methodology that would be used to carry out the archaeological work.

1.1.2 Levens Hall is a Grade I Listed building with at least 14<sup>th</sup> century origins (Perriam and Robinson 1998, 354). Significant additions were made in the 16<sup>th</sup> to early 19<sup>th</sup> centuries and the former brew house, which is the subject of the present application, is thought to be of 16<sup>th</sup> century origin (*ibid*). Other archaeological remains are known from the local area, including prehistoric and later material found during excavations carried out in the 1960s in the park associated with the house (Sturdy 1972; Turnbull 1994; Turnbull and Walsh 1996, Cherry and Cherry 2000).

## 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, MAAIS)**, 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 Scott Timpany of Headland Archaeology Ltd, and faunal remains by Auli Tourunen, also at Headland Archaeology. 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 Rapid Desk-Based Assessment

2.1.1 To examine available published and unpublished information relating to the historical development of the site and its archaeology and consult the Cumbria Historic Environment Record (HER) in order to better understand the development of the site, and set the results of the watching brief in context.

### 2.2 Watching Brief

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

### 2.3 Report

2.3.1 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.

### 2.4 Archive

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

## 3. Methodology

### 3.1 Rapid Desk-Based Assessment

3.1.1 Published and unpublished sources relating to the history and archaeology of the site will be examined in order to place the results of the watching brief in context. It is envisaged that this will involve consultation of the following sources:

- **Cumbria Historic Environment Record (HER):** this is a list of all of the recorded sites of archaeological interest recorded in the county, and is the primary source of information for a study of this kind. The details of sites recorded in the HER from a suitably sized study area around the development site will be obtained. Each HER site is recorded with any relevant references, a brief description, and location related to the National Grid. All of the references relating to sites identified in the HER will be examined in order to verify them and add any necessary background information. In addition, relevant secondary sources, particularly details of previous archaeological investigations in the immediate area and relevant aerial photographs, will also be examined;
- **Greenlane Archaeology:** a number of copies of maps, local histories, unpublished reports, and journals are held in Greenlane Archaeology's library. These will be consulted in order to provide further information about the development of the site, and any other elements of archaeological interest.

### 3.2 Watching Brief

3.2.1 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.

3.2.2 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 client 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.

### 3.3 Report

3.3.1 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.

## 3.4 Archive

3.4.1 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 Kendal. 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, a digital copy will be supplied to the client's agent, and within six months of the completion of fieldwork three copies will be provided for the Cumbria 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.

3.4.3 The client will be encouraged to transfer ownership of the finds to a suitable museum. Any finds recovered during the watching brief will be offered to 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 on **13<sup>th</sup> June 2011**, 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 **£500,000**. 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.

## 6. Bibliography

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Cherry, PJ, and Cherry, J, 2000 A Late Mesolithic Assemblage from Levens Park, *Trans Cumberland Westmorland Antiq Archaeol Soc*, 2<sup>nd</sup> ser, **100**, 25-32

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- Turnbull, P, 1994 Two Objects of Silver from the Levens Park Cairn, *Trans Cumberland Westmorland Antiq Archaeol Soc*, 2<sup>nd</sup> ser, **94**, 295
- Turnbull, P, and Walsh, D, 1996 A Beaker Burial in Levens Park, *Trans Cumberland Westmorland Antiq Archaeol Soc*, 2<sup>nd</sup> ser, **96**, 13-26

## Appendix 2: Summary Context List

Context	Type	Description	Interpretation
<b>100</b>	Deposit	Friable to loose, greyish-brown, sandy-silt, up to 0.64m thick, with frequent sub-rounded limestone and angular sandstone pebbles and cobbles. This deposit was located immediately adjacent to the kitchen block and was noted to be looser where it had been re-deposited above an existing oil pipe	Possible kitchen-midden within the courtyard above <b>101</b>
<b>101</b>	Deposit	Loose, mid grey-brown sandy-silt with very fine gravel inclusions	Very fine gravel underlying <b>100</b> within the courtyard towards the kitchen area; possibly the underlying geological layer (natural)
<b>102</b>	Deposit	Friable, mid-greyish-brown, sandy-silt, up to 0.26m thick, with infrequent limestone and sandstone pebbles and cobbles	This deposit was located immediately adjacent to the boiler house. It was similar to <b>104</b> , which probably represents a continuation of this deposit beyond the limestone guttering to the east, and <b>100</b> , although it was not continuous with context <b>100</b>
<b>103</b>	Deposit	Soft, mid to light (slightly orangey) brown sandy-clay (>0.47m thick) below <b>102</b> towards the boiler room / brewhouse. This underlying (sandy) clay layer in the courtyard was below <b>102</b> and <b>105</b>	Possibly geological (natural) layer
<b>104</b>	Deposit	Mid to dark grey-brown sandy-silt with infrequent limestone pebbles and cobbles. The finds from this deposit were subdivided according to their location along the length of the trench. At various points it was unclear if the deposit was continuous along the length of the trench but there was no visible difference within the deposit in the trench section. It was assumed that the context was continuous; however, it was thought that the finds might reveal otherwise, for instance, the finds might reveal areas of concentration of certain find types or period or areas of modern disturbance. The finds were bagged separately for the following areas:  <b>104a</b> west end of the courtyard to the west of the limestone guttering, near to the brew house;  <b>104b</b> west end of the courtyard;  <b>104c</b> near the door second from the west on the south wing;  <b>104d</b> east of the manhole to the gutter;  <b>104e</b> east end of the courtyard.	Probably a continuation of deposit <b>102</b>
<b>105</b>	Deposit	Soft, mid greyish-brown silty-clay, with moderate pebble and cobble inclusions	Possible variation of <b>104</b> , within the courtyard, or possibly an interface between <b>104</b> and <b>103</b>

Context	Type	Description	Interpretation
<b>106</b>	Deposit	Firm, light brownish-yellow clayey-sand, with small gravel inclusions, apparently overlying deposit <b>104</b> to the west and <b>100</b> to the east	Deposit above the capping material of the well ( <b>107</b> ) and below the cobbled surface of the courtyard
<b>107</b>	Structure	A round structure with an internal diameter of 0.95m, built from regular courses of angular limestone blocks with hard, gritty light brownish-yellow clay between courses. It was capped with a large flat piece of slate and another cut piece of a softer slate material. The well was recorded as being approximately 5m deep and the bottom 15m was filled with water	A slate capped well within the courtyard, covered by deposit <b>106</b> and presumably cut into deposit <b>112</b> , which had a very similar appearance to <b>106</b>
<b>108</b>	Deposit	A single context was issued for the loose and very disturbed deposits which extend from the potting shed to the edge of the manhole located near to the greenhouse. Mostly the upper part was whitish gravel in a sandy matrix and the lower part comprised orange sand. These mixed deposits contained plastic pipe, marker pens, a refillable gas lighter, roofing slates, frogged brick, and modern tiles none of which were retained	Very disturbed deposits to the west of the potting sheds that contained 20 <sup>th</sup> century finds probably associated with the construction of the potting sheds
<b>109</b>	Deposit	This dark brown silt and gravel matrix was only partially exposed below <b>108</b> towards the greenhouse	Possible gravel layer near to the west side of the potting sheds
<b>110</b>	Deposit	Soft, dark grey-brown (clayey) silt with very infrequent sub-rounded pebble inclusions	Relict topsoil layer below the greenhouse
<b>111</b>	Deposit	Pliable, mid orangey-brown clay with no obvious inclusions	Probably the underlying geological layer (natural) exposed below <b>110</b> underneath the concrete floor of the greenhouse
<b>112</b>	Deposit	This deposit has the same description as <b>106</b>	Structure <b>107</b> (the well) must be cut into this deposit within the area of the courtyard, but the extent of this deposit could not be distinguished from context <b>106</b> which overlies the capping material of <b>107</b>

## Appendix 3: Summary Finds List

Context	Type	Qty	Description	Date range
<b>UIS</b>	Fe	1	Thick corroded sheet – possibly part of small drain/manhole cover.	19 <sup>th</sup> – 20 <sup>th</sup> century
<b>UIS</b>	Ceramic building material	2	Red earthenware peg tile rim fragments.	Not closely dateable
<b>UIS</b>	Cu alloy	1	Brass bullet casing marked 'R'.	Late 19 <sup>th</sup> – 20 <sup>th</sup> century
<b>UIS</b>	Animal bone*	5	A fragment of sheep humerus, a canid tooth, a piece of cattle-sized vertebra, a fragment of bird coracoid (?chicken) and a chip of undiagnostic burnt bone.	Not closely dateable
<b>100</b>	Animal bone	29	Predominantly fragments of cattle-sized vertebrae, although a cattle-sized long bone fragment is also present. Fragments of sheep/goat radius, pelvis and femur are included.	Not closely dateable
<b>100</b>	Ceramic building material	7	Small red earthenware fragments.	Not closely dateable
<b>100</b>	Ceramic building material	15	Red earthenware roof(?) tile fragments, hand made but not sand-formed. Including square-holed peg tile rim and at least one other roof tile fragment.	Not closely dateable
<b>100</b>	Ceramic building material	1	High-fired red earthenware curved roof tile(?) with reduced core – ridge tile fragment?	Not closely dateable
<b>100</b>	Glass	2	Light turquoise window pane fragments, probably from single pane.	18 <sup>th</sup> – 20 <sup>th</sup> century
<b>100</b>	Pottery	1	Fragment of an obtuse-angled, possibly sagging base of a partially reduced fabric jug or jar. The inner margin and surface of this slightly gritty sandy fabric is oxidised to a buff colour and the outer margin and surface is a dark grey, with patches of green glaze present externally.	Late 12 <sup>th</sup> to 14 <sup>th</sup> century
<b>100</b>	Pottery	1	Body fragment of a sandy fabric with very fine inclusions, which has been oxidised to a light orange brown. No glaze was apparent.	Late 12 <sup>th</sup> to 14 <sup>th</sup> century
<b>100</b>	Pottery	1	Much abraded fragment of gritty light buff-coloured fabric with a light yellowy-orange glaze present externally.	Late 12 <sup>th</sup> to 14 <sup>th</sup> century
<b>100</b>	Marine shell	1	Cockle valve rim.	Not closely dateable
<b>104a</b>	Ceramic building material	6	Red earthenware roof tile fragments plus 4 small fragments. Largest roof tile has some white mortar with dark grey grit content adhering to it.	Not closely dateable
<b>104b</b>	Animal bone	17	Consists of cattle-sized ribs and long bone fragments, a cattle tooth and metatarsal (fused distally), as well as a sheep tibia (distal fused), sheep/goat scapula (fused, gnawed), a loose tooth and a dog ulna.	Not closely dateable
<b>104b</b>	Ceramic building material	4	Red earthenware roof (?) tile rim plus 3 small red earthenware fragments.	Not closely dateable
<b>104b</b>	Marine shell	1	Oyster valve fragment.	Not closely dateable

Context	Type	Qty	Description	Date range
<b>104c</b>	Animal bone	65	Consists of cattle-sized ribs, vertebrae and long bone fragments, and a cattle mandible fragment, scapula (gnawed), patella, carpals and a calcaneus. Sheep-sized ribs, vertebrae and long bone fragments are also present, as well as a sheep/goat mandible (c4-6 years based on wear). A dog humerus (fused proximally) and radius were noted, along with a loose pig tooth and a goose carpometacarpal.	Not closely dateable
<b>104c</b>	Ceramic building material	4	Roof (?) tile fragments x 3 plus small fragment.	Not closely dateable
<b>104c</b>	Ceramic building material	2	Sand-formed brick fragment and machine-made brick (?) fragment.	18 <sup>th</sup> – 20 <sup>th</sup> century?
<b>104c</b>	Ceramic	2	Flower pot fragments.	Mid 18 <sup>th</sup> – 20 <sup>th</sup> century
<b>104c</b>	Pottery	2	Refitting high-fired black-glazed red earthenware body fragments, metallic blotches/streaking on glaze. Thrown vessel, but type unclear as side is thinnish-sectioned but fairly flat.	Late 17 <sup>th</sup> – early 18 <sup>th</sup> century or earlier?
<b>104c</b>	Ceramic building material	1	Brown-glazed fireclay (?) drain pipe chip.	Late 19 <sup>th</sup> – 20 <sup>th</sup> century
<b>104c</b>	Marine shell	4 valves + 3 fragments	Cockle.	Not closely dateable
<b>104c</b>	Terrestrial shell	2	Large complete land snails.	Not closely dateable
<b>104d</b>	Marine shell	13 valves + 19 fragments	Cockle.	Not closely dateable
<b>104d</b>	Ceramic building material	6	Red earthenware roof (?) tile fragments x 3 (including 1 with edge of square peg hole), plus 3 fragments.	Not closely dateable
<b>104d</b>	Pottery	3	Mottledware (manganese speckled, non-streaked) coarseware fragments (orange earthenware body): dish rim, base fragment, close-to-rim to close-to-base dish body fragment.	Late 17 <sup>th</sup> – early 18 <sup>th</sup> century?
<b>104d</b>	Pottery	2	Black-glazed red earthenware coarseware dish rim and base, probably same vessel. Low-sided, high-fired.	Late 17 <sup>th</sup> – early 19 <sup>th</sup> century?
<b>104d</b>	Pottery	3	Tin-glazed earthenware. Blue painted decoration on exterior of bowl (?) body fragments. 2 possibly from same vessel.	18 <sup>th</sup> century?
<b>104d</b>	Terrestrial shell	1	Small complete snail shell.	Not closely dateable
<b>104d</b>	Animal bone	29	Includes cattle-sized vertebrae and long bone fragments, and cattle mandible and skull fragments including a heavily butchered mandibular hinge, metatarsals (one with cut marks) and pelvis. A sheep metacarpal, sheep/goat radius and loose teeth are also present. A dog ulna and a butchered pig humerus were noted. Fragments of roe deer metapodials (one butchered) are also present.	Not closely dateable

Context	Type	Qty	Description	Date range
106	Ceramic building material	1	Red earthenware roof tile fragment.	Not closely dateable
110	Animal bone	2	A sub-adult sheep/goat humerus (unfused proximally) that has been butchered and a sheep/goat scapula.	Not closely dateable
110	Ceramic	7	Flower pot. Rims x 4 from 3 vessels (2 refitting). Pierced base fragment from very large vessel.	Mid 18 <sup>th</sup> – 20 <sup>th</sup> century
110	Ceramic building material	1	Machine-made brick fragment.	Mid 19 <sup>th</sup> – 20 <sup>th</sup> century
110	Ceramic	2	Red earthenware fragments – flower pots?	Mid 18 <sup>th</sup> – 20 <sup>th</sup> century?
110	Pottery	1	Water-worn brown-glazed red earthenware body fragment – inclusion in whitish mortar with dark grey grit.	Late 17 <sup>th</sup> – early 20 <sup>th</sup> century
110	Ceramic building material	1	White earthenware tile base fragment.	Late 19 <sup>th</sup> – 20 <sup>th</sup> century
110	Pottery	3	White earthenware. One fragment blue transfer-printed.	19 <sup>th</sup> – 20 <sup>th</sup> century
110	Glass	2	Very light turquoise window pane (?) fragments.	19 <sup>th</sup> – 20 <sup>th</sup> century
110	Glass	1	Dark green bottle fragment.	19 <sup>th</sup> – 20 <sup>th</sup> century
110	Industrial residue	1	Undiagnostic slag lump.	Not closely dateable

*\*Note: the separation of sheep and goat bones was routinely attempted, but in the apparent absence of goat, the sheep/goat bones are assumed to be of sheep.*

## Appendix 4: Clay Tobacco Pipe Catalogue

Site Code	Cxt <sup>1</sup>	B <sup>2</sup>	S <sup>3</sup>	M <sup>4</sup>	H/S <sup>5</sup>	64 <sup>6</sup>	Decoration	Fig <sup>7</sup>	Illustration number	Comments	Date range
LH11	U/S		1			8				Thick stem fragment with wide off-centre borehole	17 <sup>th</sup> century
LH11	104d		1			8				Thickish stem fragment with wide off-centre borehole	17 <sup>th</sup> century
LH11	104d		1			6				Long thin stem fragment	18 <sup>th</sup> century
LH11	104e	1				7 <sup>8</sup>				Bowl with spur stamped 'IG'; possibly from Yorkshire	1650-80
LH11	110				1	6				Stem / bowl junction with shallow pedestal spur	18 <sup>th</sup> century

**Notes:** 1. Context; 2. Bowl; 3. Stem; 4. Mouthpiece; 5. Stem / bowl junction; 6. Bore hole diameter in sixty-fourths of an inch; 7. Figure (reference to original sketch record by Peter Davey); 8. Bore diameter was either not applicable or could not be recorded (e.g., for a bowl fragment)