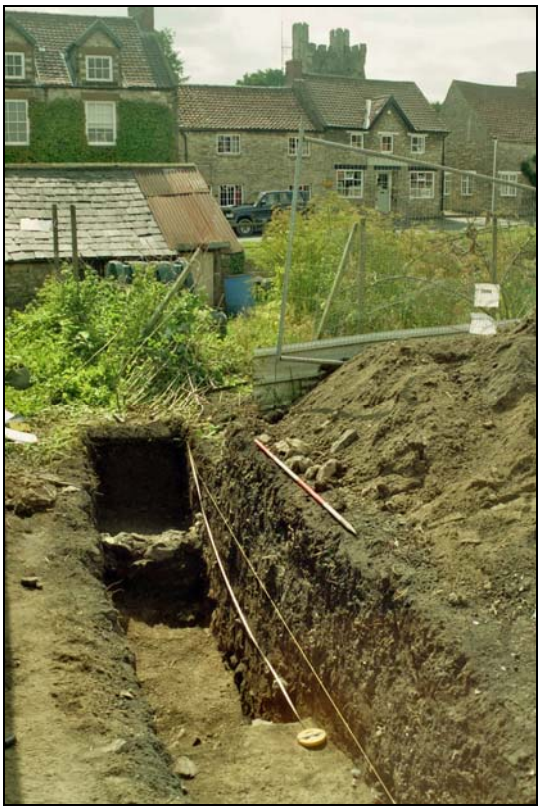
THE OLD STABLES, BARKER'S YARD, BOROGATE, HELMSLEY, NORTH YORKSHIRE: AN ARCHAEOLOGICAL BUILDING RECORD AND EVALUATION



On behalf of
The Duncome Park Estate

CS Archaeology
September 2010

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SUMMARY

This report has been written in response to a condition on planning consent, which was set by the North York Moors National Park (App. No. NYM/2009/0104/FL, Cond. 5). This requested further archaeological mitigation in the form of an archaeological building record and evaluation.

Barker's Yard is situated south of Helmsley's market place. The Yard consists of a series of stables which date to the late 18th and early 19th centuries. The stables are first recorded in the early 19th century when they are thought to have been associated with an adjacent farmhouse and may even then have been a commercial stable.

A number of minor alterations and extensions to the stables were made during the later 19th and early 20th centuries and these are still evident. In the 1960s the northwest range (Building C) was demolished and a modern timber stables was built.

The evaluation revealed substantial deposits dating to the early medieval period. These deposits were truncated by the construction of a medieval water channel and this channels projected alignment bisects the present Barker's Yard. The water channel probably dates to the 14th century and was in-filled by a 15th century deposit. The post excavation assessments have confirmed that during the medieval period the PDA was open wet grassland prone to flooding, which was situated close to a smithy/iron working forge.

1 INTRODUCTION

1.1 This report has been commissioned by the Duncombe Park Estate in order to satisfy an archaeological condition placed on planning consent (App. No. NYM/2009/0104/FL, Condition 5). The redevelopment of the Old Stables, Borogate, Helmsley will involve alterations and extensions of the former stables to create 6 shop units.

1.2 Helmsley lies 17kms east of Thirsk and 41 kms west of Scarborough (**Figure 1**). The Proposed Development Area (PDA) of Barker's Yard lies to the south of the town's market place between Borogate and Castlegate, within the town's historic core (SE 61613 83689).

2 AIMS AND OBJECTIVES

2.1 The objectives of these archaeological works are to record all of the historic buildings within their local context and to gather sufficient information to establish presence/absence, character, extent, state of preservation and date of any archaeological deposits within PDA subject to the proposed new buildings.

3 METHODOLOGY

3.1 The methodology for this report is in accord with the project design (Appendix 1).

3.2 In the building record 81 photographic positions have been recorded, and are denoted next to the plate numbers, in italics e.g. Plate 1, *4,* and depicted in **Figures 5, 7-9**. Both plate and photographic positions are cross referenced in the archive index (Appendix 2).

3.3 32 photographic positions have been taken of the evaluations, these are also recorded in the report but are not depicted in the Figures.

3.3 Architectural features are labeled in the Figures, or if of particular note are numbered 1-8.

3.4 Archaeological deposits or layers are numbered throughout the report and are denoted with square brackets.

4 GEOLOGY, TOPOGRAPHY AND DRAINAGE

4.1 Introduction

4.1.1 Geological formations, natural topography and flora and fauna have always influenced the pattern of human settlement. These factors can never be assumed to be constant and therefore to have had a predictable influence at all times in the past. The influence of these factors on land use is a major element in determining the nature of the archaeological deposits (stratification) that have accumulated across archaeological sites.

4.2 Geology

4.2.1 The solid underlying geology consists of Corallian Limestone, which was laid down in shallow seas during the Jurassic Period (205-142 MYA). The limestone is overlain by glacial and alluvial drift deposits of sand and gravel.

4.3 Topography and Drainage

4.3.1 Helmsley is situated on a gradual south facing slope, north of the River Rye. Barker's Yard is situated across south sloping ground which has been modified by the formation of yard and building platforms. The PDA lies between the 54m and 55m AOD contour lines.

4.3.2 Ground water across the PDA flows south and southwest into the Borough Beck which today forms a confluence with the River Rye 100m south of the PDA.

5 HISTORICAL BACKGROUND

5.1 Helmsley lies adjacent to a natural crossing point of the meandering River Rye which was bisected by prehistoric route ways which utilised the high ground of the Howardian Hills and the North Yorkshire Moors. The prehistoric landscape is still evident in the form of burial monuments at Link Foot Lane (1km east of the town centre).

5.2 Helmsley has been an important local centre since pre-Conquest times, and lies within a rich archaeological landscape that dates from the prehistoric period right through to the 20th century AD.

5.3 During the 11th century Helmsley is recorded as *Elmeslac* meaning *Helm's* woodland. It was a manor and supported four ploughs. A church and a priest are also noted. The manor was taxed at 32 shillings at the time of the conquest but was subsequently devalued to 10 shillings, evidencing a sharp economic and political upheaval. The 12th century saw renewed investment in the form of a defensive rectangular ringwork with outer rampart that would have been crowned by a timber pallisade. The stone castle was constructed after 1186 by Robert de Roos Fursan and featured an array of 'modern' defence features such as sally ports, corner towers and curtain walls. The 14th century saw substantial rebuilding of the castle with improved accommodation. The castle remained with the Roos family until 1478 when it was sold to the Duke of Gloucester (later Richard III). On Richard's death the castle reverted to the Roos family and then passed down to the Manners family until 1632 when it passed to the Duke of Buckingham and in 1688 was sold to Charles Duncombe. The Duncombe family abandoned the confines of the castle and constructed a new house and estate, Duncombe Park, 1km east of the castle.

5.4 By 1190 the town had been granted borough status. Burgage plots, long strips of land fronting onto the principal streets, were established on the east side of Bridge Street. To the west of Bridge Street, south of the church the market place was laid out. The present market square is a small remnant of the former marketplace.

5.5 It is therefore supposed that Barker's Yard which features on a plan of Helmsley dated 1792, was annexed from the medieval marketplace to form an open stable yard. The yard features traditional stone buildings to three sides with a later (20th century) timber stable, aligned southwest to northeast, effectively bisecting the PDA. The stable can be accurately dated to the 1960s and was built by Mr Anthony Barker who owned the Royal Oak and rented the stables from the Duncombe Park Estate.

5.6 Little archaeological work has been undertaken in Helmsley and the development of the town is relatively poorly understood. Barker's Yard represents one of the last relatively underdeveloped areas within the town's historic core.

5.7 Environmental work has been carried out in the wider area by Dr Wheeler and conclusions from this work have been drawn into this report. In 2008 ArcheType prepared a Desk-Based Assessment of Barkers Yard and this has provided a basis for this report.

6 BUILDING RECORD

6.1 General Background

6.1.1 At the time of the fieldwork for this building survey, Building A had been extensively renovated and some of the original features were represented by wall consolidation works. Although the buildings are not designated heritage assets, drawings and descriptions of their historic appearance were obtained. Although undated this information probably dates to the 1980s and was supplied by the Duncome Park Estate. It provides an invaluable insight into the former stables and is referenced below and the drawings incorporated into **Figure 7**.

6.1.2 The introductory paragraph states '*A group of agricultural buildings of late 18th and early 19th century date built between the beck and Bridge Street on a plot probably created by the closing of the market place with infill. It is difficult to determine the original use of most of the buildings because of subsequent rebuilding (apart from the stable block whose function is still obvious)'.*

6.1.3 Map evidence researched by ArcheType (2008) shows an 1822 plan of Helmsley. The house (9 Castle View) and *"stable were given a single plot number. This may indicate that this was a farm house with agricultural buildings. Though it is probable that by this date it was a commercial stable. The tenant was Thomas Barker carrier, later coach builder of Bond Gate, who had married Anne Pope landlady of the Royal Oak at the north end of the block. The buildings along the Beck are marked on the survey map of 1822 (NYCRO ZEW M35) though are probably earlier… they appear to be shown on the less accurate map of 1792 (***Figure 4***). The stable block itself is not marked on the 1822 map but a building to the south and another to the east are marked – both have since been rebuilt. However the stable block is marked on the 1848 OS map thereby dating it to the second quarter of the 19th century".*

6.1.4 Building A is referred to as the stable. *'A three stall stable with two loose boxes and loft over in squared coursed rubble. The doors to the NW have stone lintels with separate key blocks with plain marging and rough herring-bone tooling The window to the stable has plain stone lintel and sill. The small windows to the boxes have rough wooden lintels which at first look like insertions, though it is difficult to see how, because of their size, this would be done without more structural disturbance than is evident. Vents inserted into the back wall of the stable. Cross walls rise to the ridges with a single truss over the stable end. Roof has tusk-tenoned purlins and loft is lit by windows on the south east side (away from the yard) Pitching eye over the stable door and feeding drop over the stalls.*

6.1.5 Building B is referred to as *'Building Adjoining the Beck, a single storey range in a mixture of squared and rough rubble. Perhaps originally a barn and byre but much rebuilt and patched with modern interior walls and modern openings to the stable yard. A series of openings (now blocked) towards the stream. in 1920s the range* (was*) extended to south incorporating older boundary wall'* (English Heritage nd).

6.1.6 Barker's Yard was, until recently, used as a commercial riding stable. Historical photographs, kindly provided by Mr Anthony Barker of Castle View, Helmsley these have provided some valuable insights into the Barker's Yard and its most recent use as a riding stables. Mr. Barker's father, Kit Barker, is depicted in Plate 1 in front of the

stables (Building A). Plate 2, shows the earlier building replaced by the modern timber stables (Building C). The earlier stable building was a single storey construction with a clay pan tile roof with sandstone ridge pieces, supported along the front south elevation by brick piers. Plate 3, shows the worn, possibly rubbed limestone setts to the yard. These setts would appear to have been removed and replaced with concrete during the later 20th century. Plate 3, also depicts the earlier stables (pre-Building C).

6.2 The Stable, Building A, External (Figure 6)

6.2.1 The external elevations were largely obscured by scaffolding and in some areas were being rebuilt.

6.2.2 It is a 4 bay one and a half storey building that faces northwest directly onto the enclosed yard area. The front *Northwest Elevation* (Plates **5**, *5* & **6**, *6*) features at 3 doorways with 3 adjacent windows at ground floor level. The two smaller windows are later insertions but the larger window, which featured a stone lintel and sill, may be an early or original opening. At first floor level the only opening is the former pitching hole, above the main stable door. The rear elevation did feature two windows [3] below the eaves and a series of ventilators [1] three of which are still visible. The coursed rubble walls are of a mix of limestone and sandy limestone and are subject to differential weathering. The roof has been renewed and the old red clay pan tiles and sandstone ridge pieces replaced. To the southeast a cart shed was at some point built onto the stable's gable wall. Its roof line was set below the main stable building probably so that the gable dovecote could be retained. This cart shed probably replaced the original internal cart shed as evidenced by the timber lintel [4] which has been interrupted and truncated by the insertion of the two doorways when loose boxes were created. NB the decorative lintels which had been used (**Figure 7**) date to this remodeling of the original stable building.

6.2.3 Abutting the *Northwest Elevation* of the pre-existing building is a brick lean-to. This has a slate roof and was built approximately at the turn of the last century. Internally there is a single room (Room 1, *l*.3.8m x *w*.2.2m x *h*.2.17m). It originally featured a boarded inclined ceiling with protruding purlin. About 6 years ago (pers. comm. Mr W Saggers) fire resulted in extensive damage and the ceiling height was reduced. The room has been heated and there is an inserted cast iron fire abutting the centre of the northeast wall (Plate 7, *38*). The decorative fireplace features a horizontally symmetrical semi-circular grate and ash opening with associated curved mouldings and a central rosette. The fireplace is at least 18th century in date and is believed to have been relocated from the Royal Oak public house. There is a single-light window to the northwest wall. The door is plank and battened which has had a window inserted which provides additional light. The walls have been boarded but in places lime washed and painted walls are exposed. The room appears to have functioned, most recently, as the stable's principle accommodation/office.

6.2.4 Today the yard area is concreted but as the historical photographs demonstrate the northeast yard featured limestone setts (Plates 1 & 3) until at least 1948. These setts have probably been removed.

6.3 The Stables, Building A, Internal

6.3.1 Room 2 (*l*.10.63m x *w*.4.9m x *h*.2.17m) occupies the ground floor; this was divided into a three stall stable with two adjacent loose boxes (**Figure 7**), but probably originally consisted of an integrated stable and cartshed. Few in situ features survive but evidence for them does exist and corroborates the detailed building description above (section 7.1). Recent renovation work has resulted in the removal of the cross walls. These have been replaced with concrete block work. The floors have also been renewed, replacing an earlier concrete floor. The walls are solid masonry featuring roughly hewn and coursed sandy limestone and limestone blocks. The northeast end of the room features two blocked ventilators to the southeast wall (Plate 8, *23*) and a doorway with splayed reveals to the northwest wall. The opposing northeast wall has been partially rebuilt but still features a vertical building line (Plate 9, 27) to the lower wall. This building line evidences an organic building succession with the stables utilising an earlier gable wall and resulting in a wider building possibly to facilitate cart storage. The building line extends to first floor level (Room 3) where it is represented by a series of vertical quoinstones. The central section features a blocked ventilator to the southeast wall and a doorway to the northwest wall adjacent to a small square headed window. This window has been positioned directly below an oak lintel [4] one of a pair that extended across the northwest wall of the 4th bay. The stable doorways have truncated the lintel [4] (Plate 10, *65*). The lintel would have extended at least 4.43m right to the end of the *Northwest Elevation.* Evidence of this truncated lintel [4] is consistent with an original cartdoor and therefore cartshed. This cartshed was repositioned to the southwest, abutting the stable's former gable wall. The southwest end of the room features a partially open ventilator [1] to the southeast wall (Plate 11, *20*). This room originally served a cartshed and stable with the cartshed at some stage being rebuilt (Room 4).

6.3.2 Room 3 (*l*.4.42m x *w*.4.9m x *h*.2.17m) represents an appended carriage/cartshed which probably replaced the cart shed within the main stable block. The single storey room abutts the stable's southeast gable wall, as evidenced by the inserted roof purlins (Plate 12, *12*). The masonry of the northeast wall is also consistent with originally being an external wall and features well-coursed rubble walls. No other internal features were evident during the survey.

6.3.3 Room 4 (*l*.10.63m x *w*.4.9m x *h*.1.2m to eaves) occupies the first floor and represented the former, and original hayloft. It now features a new roof but the truss over the former stable has been retained and a tie-beam and associated purlins inserted (Plate 13, *36*). Two blocked windows [3] are still evident along the southeast wall (Plates 14, *29 &* 15, *32*) and to the northeast wall the vertical building line with associated quoinstones can be discerned (Plate 16, *28*) together with two inclined roof lines, showing that the stable roof was raised on three occasions. This room originally functioned as a hayloft with a pitching hole to the front northwest wall and two, now blocked, windows/ventilators [3] to the southeast wall.

6.3.4 ***Interpretation*****,** The stables Building A was originally built as an agricultural stable and cartshed with hay loft above. Documentary evidence also indicates that the stables which in 1822 were tenanted by Thomas Barker, originally were associated with the adjacent farmhouse and therefore represented a farmstead very close to the town centre. English Heritage have been able to date Building A to the second quarter of the 19th century, based upon the survey map of 1822 (NYCRO ZEW M35) and the 1st

edition Ordnance Survey map of 1848/56 (**Figure 4**). The present roof line was raised at least three times as evidenced by the internal inclined roof lines (Room 3). This gradually increased the hay storage capacity of the building. In addition the stables were enlarged by the construction of a cartshed onto the gable representing a period of investment and a logical expansion of the stables. It is unusual for a stable to survive relatively unchanged and on farms, and as Brunskill (2000, 164) points out, on farms it is often difficult to distinguish the former stable. The Barker's yard stable has offered a rare opportunity to record a 19th century stable.

6.4 The Cartshed and Loose Boxes (Building B: Figures 8 & 9)

6.4.1 This building is effectively in three parts and forms a rather eclectic mix of agricultural buildings which together consist of 5 bays. It is a single storey construction under a slate roof with sandstone ridge pieces. Sections of cast iron guttering remain in situ. The southern end of the building (Plate 17, *8)*, comprises of two loose boxes (Rooms 5 & 6), which abutt the earlier central section as evidenced by vertical building lines to the front and upper back walls (Plate 18, *68*). The south extension (*max. l.* 4.1m x *w*.4.4m was built early in the 20th century (c. 1910 pers. comm. Mr A Barker). The earlier central section (rooms 7, 8 & 9) was most recently used as a 2-bay cartshed and there is a characteristic rounded brick pier to the centre of the *Northeast Elevation*. The two roomed extension to the northwest end of Building B is currently used as garden storerooms (Plate 19, *79*).

6.4.2 Room 5 (*max. l.* 3.4m x *w*.3.72m) recently and originally functioned as a *Loose Box*. It is accessed via a stable door through the front *Northeast Elevation*. It functioned as a loose box with a hay rack in the western corner. The floor features early 20th century brick pavers with twin chamfered raises. The rubble walls are lime plastered and white washed, the ceiling is exposed and underdrawn with laths, the plaster is no longer in situ.

6.4.3 Room 6 (*max. l.* 2.7m x *w*.3.72m) recently and originally functioned as a *Loose Box* with a hay rack in the western corner (Plate 20, *118*) and adjacent feeder in the northern corner (Plate 21, *42*. There is a timber partition between rooms 5 and 6. The partition has an obscured beam and two inclined (non original) struts that support the roof purlins (Plate 22, *45*).

6.4.4 Room 7 (*max. l.* 2.57m x *w*.4.4m) is a c*artshed*, one of two cartsheds. It consists of an earth floor, and rubble walls. The ceiling is exposed to the roof. In the southwest wall is a blocked door opening [5] which carries through to the *Southwest Elevation* (**Figure 9**). Both rooms (7 and 8) have been divided by a timber partition of vertical boards beneath the roof truss [7]. The truss [7] is an amalgamation of reused timbers and features a tie-beam which is consistent with a collar from a roof truss which has been fitted with pitch pine principal rafters (Plate 23, *49*).

6.4.5 Room 8 (*max. l.* 4.1m x *w*.4.4m) is a c*arriage/cartshed* and features rubbed stone sets to the floor (Plate 24, 53) limestone rubble walls. The ceiling is exposed to the roof and features an inserted rudimentary beam with posts supporting the purlins, effectively an inserted truss. To the southwest wall is the blocked doorway which is reflected in the *Southwest Elevation* (**Figure 9**). Modern fittings include the hayrack to the entire southwest wall and corner feeder (Plate 25, *50*). The two cartsheds featured a brick pier to the front *Northwest Elevation*. The pier dates to the early 20th century and

replaced an earlier timber post, evidence for which was revealed in the floor next to the pier (Plate 25a*, 66)*.

6.4.6 Room 9, (*max. l.* 4.62m x *w*.2.52m x *h.* 2.4m) was most recently used as a loose box. It has solid limestone walls (0.5m width) and an inserted brick wall which supports the roof via two sets of purlins and a ridge purlin. The northeast wall has a timber lintel that spans the northeast wall and evidences the room's use as an open cartshed. A modern stable door has been fitted and represents a reduced opening from 2.52m to 0.93m.

6.4.7 The two store rooms (10 and 11) represent a northwest extension of the central section, as evidenced by vertical building lines to the northeast and southwest elevations. The walls are traditional solid limestone walls up to 0.5m wide. The roof is exposed and features two sets of half round purlins. The joists have been in-filled with laths. The entire roof was lime-washed (Plate 26, *81*). The floors to both rooms were uneven earth floors. Room 11 is used as a garden store. Room 10 most recently housed animals (chickens/dogs). To the southwest wall of room 10 is a stone and brick blocked doorway (Plate 27, 75). The function of this doorway is unknown but at some point room 10 may have served as a pig sty as evidenced by the lowered doorway.

6.4.8 ***Interpretation*** Building B is in 3 phases. The earlier central section consisted of a pair of cartsheds probably with a timber partition and an external post supporting the roof. An extension of the building (Rooms 10 & 11) abutting the cartshed's southwest gable occurred. Historically this area was probably outside Barker's Yard which was defined along the northwest by earlier stables which were replaced by Building C. The last building phase consists of the two loose boxes (Rooms 5 & 6) and were built during the early 20th century for an expansion of the riding school which was then run by Mr Kit Barker.

6.5 The Modern Stables, Building C

6.5.1 This represented the modern stable block, which consists of a series of 5 loose boxes. The stable block is timber superstructure on top of a concrete base and concrete shuttered lower walls (Plate 28,117). Internally all the boxes are very similar with a stable door to the southeast wall, corner feed troughs, and hay racks along the northwest walls. The hayracks had been removed prior to survey, but originally came from the Duncombe Park Stables (pers. comm. Mr A Barker). The northeastern loose box's northeast wall (Plate 29, *64*) still features the pitched roof lines of the former stable's gabled roof (Plate 2). The modern stables were built c.1960 (pers. comm. Mr A Barker).

6.5.2 The earlier stable, on the site of the present Building C featured clay pan-tile roof over brick supporting piers to its open sided southeast elevation (Plate 2). Map evidence (**Figure 4**) indicates that the earlier stables date to the period between 1856 and 1910. Architecturally the earlier stable was consistent in both style and materials to the early twentieth century extension to Building B.

7 The Evaluation of the Proposed New Buildings

7.3 The location and dimensions of the trench plan as set out in the Project Design (Appendix 1) were generally adhered to with minor changes e.g. Trench 1 was located 2m to the northeast and all trenches were 1m wide. The change in width was agreed with monitor Mr G Lee (NYMNP) during the excavation.

7.4 Land use across the evaluation was waste ground which had formerly been used as a small holding (Plate 30, *82*).

7.5 Trench 1 measured 6m in length by c. 1m in width, with a maximum depth of 2.1m below the modern ground surface. It was positioned behind Building C, and it revealed detailed stratigraphy relating to a former water course and earlier truncated deposits. This feature bisected the trench at 90º (**Figure 10**: Plate 31, *97*).

7.6 The channel was first revealed by the truncation of the rather loose upper wall [104] by the excavating machine. On close examinations wall [104] continued down vertically and was marked by substantial lower stone course. Coupled with the presence of medieval pottery within deposit [103], acted as a break to the mechanical excavations. The machine was then used to remove the apparent buried soils [102 & 107] down onto what thought to be natural sand [109], environmental sample <1> was taken from [107]. The lower wall was characterised by large rounded boulders and a deposit of stones [116], which were inclined 40-60 degree angle to the west representing a loose imbricated deposit. This layer of stones {116], was initially thought to represent the collapsed upper wall, but it seems more probable that it acted to reinforce wall [104] along the western side of the channel (Plate 32, *112*). Wall [104] was earth-fast, the upper wall featured medium sized rounded boulders/stones, some of which were dislodged during the initial mechanical excavation (Plate 33, *102*). The lower wall was characterised by substantial rounded boulders.

7.7 The stone layer [116] also contained two complete cattle leg bones and interestingly two limestone roof tiles (SF1 & SF2: **Figure 13**). The tiles were competently knapped and bored with circular peg-holes (12 and 10mm respectively). The larger tile (SF1) was made from oolitic limestone and the smaller thinner tile (SF2) was hewn from a finely bedded sandy limestone. The tiles (SF1 & 2) were probably selected from different quarries or deposits within a quarry and this could suggest the proximity of a graduated stone roof that pre-dates the 13th/14th centuries (Appendix4).

7.8 A remnant section of a revetment wall/bank [123] was also revealed to the east bank it was partially in situ and part collapsed into the former water channel. This was more ephemeral construction consisting of four horizontal courses, which appeared to have been pressed into the sides of the channel cut [124]. The upper water channel was filled and overlain by a deep layer (1.75m) of buried soil [102 & 107]. Below the buried soil was a relatively thin deposit of silt [108]. This silt overlay what was assumed to be naturally deposited sands and gravels [109] that featured abraded pottery, and was associated with high energy water erosion. With hindsight these sands and gravels [109] represented further deposits of the channel bed and not natural stratigraphy as was initially thought.

7.9 Once it was realised that trench 1 was actually evaluating a possible water channel, the remaining channel deposits were left in situ., and the mechanical excavations continued but at a higher level hoping to find an eastern bank to the channel.

7.10 The east bank was revealed, marked by a pronounced colour and texture change, i.e. context [106]. The presence of sandy gravel [105] down the northern side of the trench suggested that 'natural' had been reached. Machine excavation was then stopped and the remaining deposits were hand excavated. Once the channel deposits had been removed, the channels revetment wall [123] and cut [124] were revealed. The eastern bank which had thought to be natural [105] was then found to consist of a series deposits [106, 111, 112, 113, 114 & 115] which had been truncated by the construction of the water channel [122 & 124], and environmental sample <2> was taken from [111}. These deposits dipped northwards as if to level or even revett a possible medieval flood bank of the River Rye (Plates **34**, *106* & **35**, *109*). Artefacts from these leveling/revetment deposits to the east bank of the channel, contained early medieval pottery, in particular context [115], the earliest stratigraphic deposit, contained pottery from possibly the 12th century (?12th/13th centuries). Generally throughout these early medieval deposits the pottery was un-abraded appeared freshly broken, indicating an absence of post depositional erosion, and is consistent with the tipping of leveling deposits to raise the ground level. Shellfish and butchered animal bones (cattle, sheep and pig) were also recovered from these early medieval deposits. Further artefacts include slag and round-wood charcoal which suggests the proximity of iron smithing to the PDA. The recovery of shellfish in the lower deposits, close to the water table, indicates food preparation/waste deposition was also taking place in the vicinity during the early medieval period. These organic remains were in a poor condition but were able to be preserved by the ground conditions.

7.11 The slag assessment (Appendix 3) has confirmed that some of the *'evidence appears to relate to iron smithing'* in vicinity of Trench 1 and goes on to note that, '*until relatively recently, a working blacksmiths forge was located within a 30 metre radius of the excavated area. If the nearby forge was in use during the medieval period, this would seem the most likely source of the slag and associated material found in the excavated area'.*

7.12 All deposits from trench 1 contained a range of diagnostic medieval pottery. The pottery assessment (Appendix 4) notes that the *'overall impression given by the assemblage from Trench 1 is of later medieval activity in the area of the trench'*. This is 'represented by the deposition of pottery dating to the period between the mid 13th and 15th centuries'. In addition there is an *'unusually small residual element and a surprising absence of post-medieval and later wares'*. Specific dating of the water channel [122 & 124] has been obtained from the primary deposits [116 & 117]. Both of these deposits have broadly similar date range from the middle of the 13th to the middle of the 14th centuries, and therefore provides a broads post 14th century date for the water channel's construction. De-commissioning of the channel can also be suggested by the infilling of the deep loam deposit [107], which contained 15th century pottery (Appendix 4). The leveling/revetment deposits, are stratigraphically earlier, and contains typologically earlier pottery, with the primary deposit, [115] dating to the 13th century, and possibly to the 12th century.

7.13 **Trench 2** measured 6m in length and 1m in width, with a maximum depth of 2.3m (**Figure 11**)*:* although it was located close to trench 1, its excavated profile and inclination of its deposits were notably different. The underlying natural [207] and

interleaved deposits sloped to the southeast. The upper deposits were similar to trench 1 and consisted of a mixed and redeposited context [200] which overlaid a buried soil [201] with underlying silts and gravels [208, 202, 203, 205 & 206]. The natural profile consistent with a river gravel terrace was almost completely revealed (Plate 36, *90)*. Unfortunately at the southeast end of the trench the edge of the gravel continued below the safe excavation depth. At the southern end of the trench the natural slope extended beneath the evaluation trench in excess of 2.4m below the surface (Plate 37, *91*). In the northeast section 2 (**Figure 11**) the lower deposits of trench 2 featured a pronounced dip to the southeast. This was consistent with either a large pit or, as seems more likely, a filled-in water (river) channel. A range of medieval pottery was recovered, and the trench 2 assemblage is similar to trench 1. The pottery assessment (Appendix 4) notes at the some of the pottery was high quality suggesting a *date 'in the 13th or early 14th century'* and pottery, dating to possibly the 12th century, was revealed in context [202].

7.14 Because of the proximity of trench 1 and 2, continuation of the stratigraphy had been expected. The natural in trench 1 appears to slope to the southwest towards the present course of the Borough Beck. In trench two there is a pronounced southeast slope towards the present and historic course of the River Rye. The trench profiles of the natural sands and gravel [120 & 207] appear to be so at odds that one would expect the trenches to be positioned much further apart. The evidence therefore suggests the presence of a dynamic medieval landscape.

7.15 Trench 3 measured 4m in length and 1m in width, with a maximum depth of 0.9m (**Figure 12**) was located at the northern side of the PDA in order to sample the proposed building 8. No structures were revealed by the evaluation, just an undulating sequence of horizontal deposits (Plate 38, *84)* punctuated by a late post-medieval pit towards the northeast end of the trench. After superficial deposits of modern/post medieval material [300, 301, 302 & 303] were removed, a brown sandy silt [302] containing medieval pottery was revealed. In a layer to the western end of the trench, a reddish brown layer of heat affected sandy gravel was also revealed (Plate 38, *86)*. No evidence for burning in the adjacent deposits was detected, which indicates that it was not in situ burning, but does evidence possible furnace or smithing activity close to the PDA. The increase in height of the natural profile demonstrates the marked increase in height, of 2.35m between the south end of trench 2 and the northern end of trench 3.

7.16 This marked drop off of the natural together with its disappearance at the southeastern end of trench 2 suggests that the PDA occupies the southeast slope of a gravel terrace of the River Rye, and trench 1 suggests a former river bank and channel.

7.17 Results of the pottery assessment have confirmed that the trench 3 assemblage is later than Trench 1 and 2, and has a date range between the late 13th–15th centuries.

8 Conclusions

8.1 The Building Record has been able to largely reconstruct the development of a series of vernacular agricultural buildings. These buildings make a positive contribution to Helmsley's urban and historical landscape. The stable (Building A) was built as an extension to the existing building which fronts onto Borogate. All of the identified features indicate that the stable (Building A) functioned as a combined stable and cartshed, which was then extended by the construction of a replacement cartshed (Room 3) and the original one converted into loose boxes. A detached double carriage/cartshed lay at the southwest end of Barker's Yard (Building B). The stables at Barker's Yard (Buildings A-C) were historically linked to the Royal Oak Inn and served as a series of stables and carriage/cart sheds. By the early 20th century the stables had been adapted into riding stables for the general public. This saw building B extended to the southeast via two large loose boxes which still feature the original corner hayracks and feeder troughs. The modern timber stables (Building C) replaced the original stable range during the 1960s, which was the last substantial change made within the PDA.

8.2 The evaluation trenches have revealed a small part of medieval Helmsley including its topography. Trench 1 was sited over a revetted water course [122 & 124]. The water course was 2.5m wide and >2m deep. Defining the water course was a substantial revetment wall [104] to the west bank and the excavation of a series of earlier deposits. These earlier deposits were able to be differentiated on colour and soil types which were probably introduced to the PDA as leveling or revetment deposits along the east bank of the River Rye. These deposits contained diagnostic ecofacts and artefacts reflecting surrounding activities of the town such as smelting and food preparation. The nature of this water channel and proximity of today's course of the Borough Beck suggests that the water channel represents a man-made water channel which was in use between the 14th and 15th centuries.

8.3 Evidence from the slag from Trench 1 suggests that smithing had been carried out within the vicinity of the PDA from as early as the 13th century. Smithing on one site over such a considerable period of time is very unusual. There are only another couple of sites where iron working had continued for hundreds of years and it is rare to find the physical evidence to back up or add to the historical record (pers. comm. Dr R MacKenzie). The environmental assessment (Appendix 5) has revealed a 'snapshot' in terms of the town's development. It found evidence of localised intensive burning represented by charcoal. In addition, tantalizing evidence for animals, wattle and daub walling and heather thatched roofing was also suggested. The medieval environment was also revealed, confirming that the PDA was open wet grassland, prone to flooding. Trenches 2 and 3 have revealed the natural ground profile and document the formation of the medieval and post medieval soil across the PDA.

8.4 The exact function of the water channel is at the moment unknown. The channel could have been constructed as a mill race, but its lifetime appears to have been relatively short lived. Based on relatively dating from the pottery this was between 14th and 15th centuries. The proximity of Low or Nether mill is recorded at the south end of Helmsley in the early 16th century (pers. comm. Mr G Lee) so quite feasibly there may yet prove to be a link between these two sites. Whether or not water diverted from Borough Beck was able to power a mill is debatable, and it may have operated in tandem with other water sources, or as seems more likely, the mill was powered via the River Rye. Although largely unexcavated, brief investigations of the lower channel fills indicate alternating channel silts and sands, which suggest seasonal sedimentation during high and low water flows. This high/low energy water feature is characteristic of natural stream flows, suggesting that the channel served as a diversion of the Borough Beck, possibly in the form of a water race for a hammer forge – smithy or mill wheel.

8.5 Subsequent infilling of the medieval water channel, probably during the 15th century, indicates that no further development took place across the northwestern half of the PDA. As the 1792 plan of Helmsley confirms, the northern half of the PDA formed the southeast end of a 'coffin' shaped plot of land which was apparently entirely enclosed by a series of building ranges. The development of such a deep and fertile soil together with an absence of any Post Medieval structures, indicates that allotment gardening has probably taken place for the last 500 years.

9 RECOMMENDATIONS

9.1 Because of the nature and extent of the archaeological deposits encountered during the evaluation works, any further ground investigation will require an archaeological watching brief. The archaeological watching brief will enable any further archaeology to be appropriately recorded and sampled if required.

9.2 Larger areas of site reduction will be archaeologically sensitive and should be subject to a fuller recording brief during the watching brief.

9.3 Regarding the proposed unit 9, further archaeological information may lie beneath the existing floor and could evidence the building's original and subsequent functions. Removal and internal site strip of the floor should also be subject to a watching brief.

9.4 It is not recommended that the proposed re-excavation of the main drain through Barker's Yard should be the subject to further archaeological mitigation. However if an archaeologist is on site and there is an opportunity to record any potential archaeological deposits should be taken.

10 REFERENCES

10.1 Bibliographic References,

For assessment bibliographies see each assessment report (Appendices 3-5)

ArcheType, 2008, *Proposed Development: The Old Stables, Borogate, Helmsley*, unpublished client report

Brunskill, 2000, *Vernacular Architecture: An Illustrated Handbook*, Frome

English Heritage, nd, data sheets on the range of agricultural buildings stables.

10.2 Cartographic References

1792 Map of Helmsley
1856 6 inch Ordnance Survey map
1910 25 inch Ordnance Survey map
2010 Ordnance Survey digital Map data (dxf)

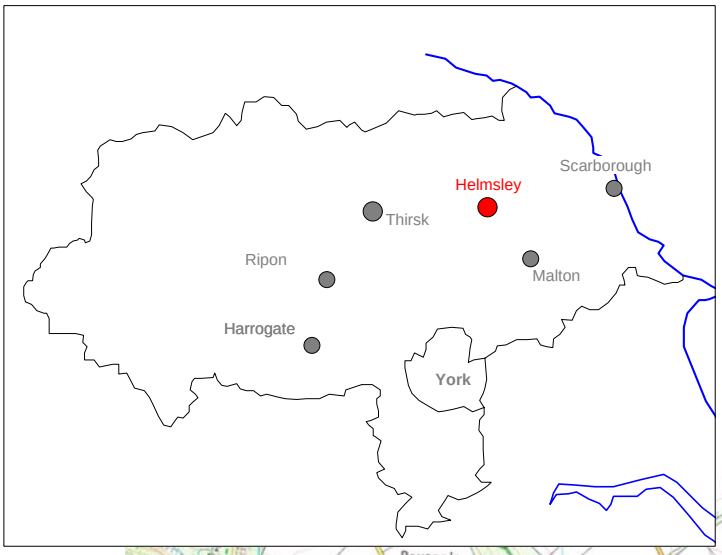
11 ACKNOWLEDGEMENTS

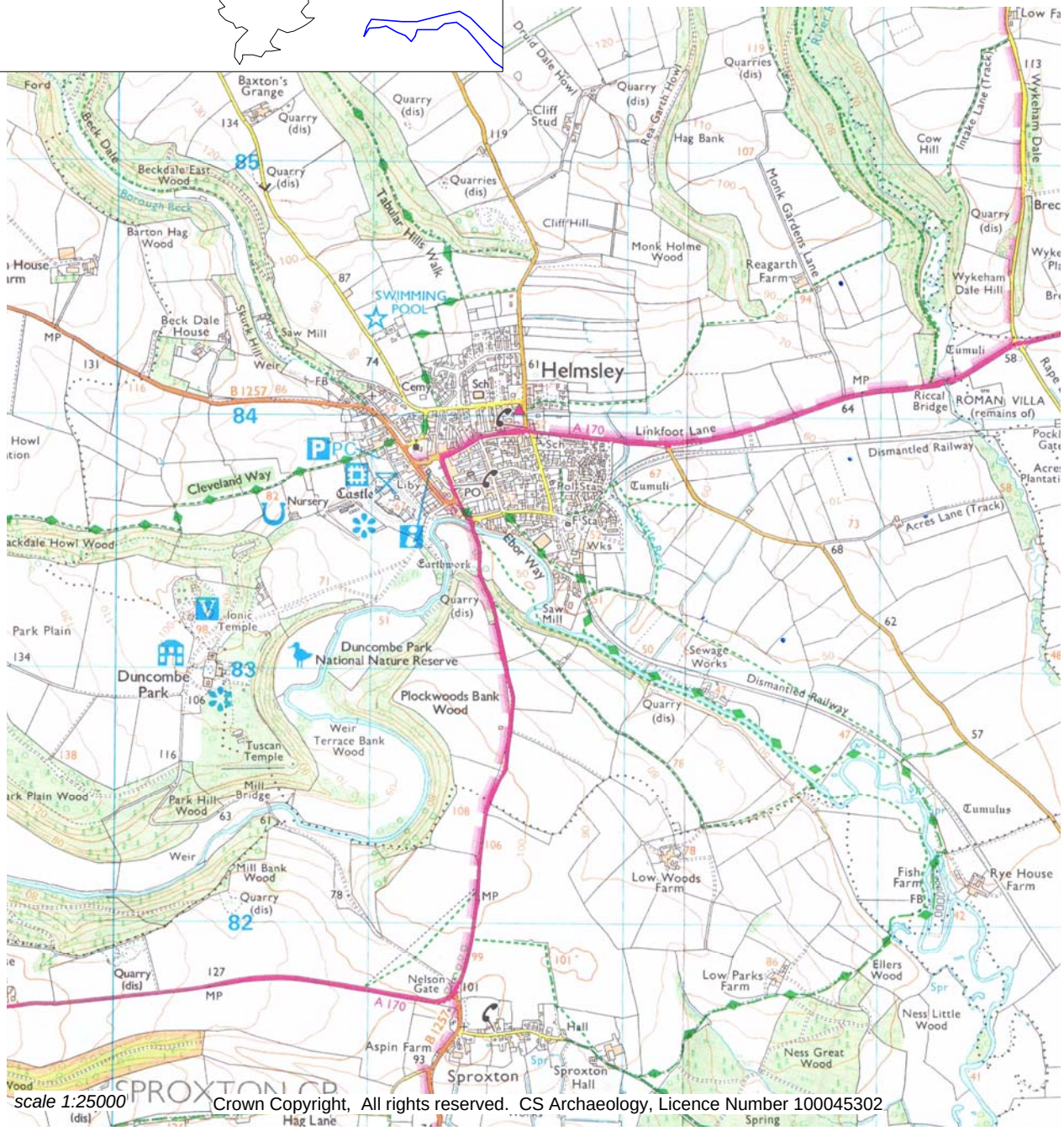
Many thanks go to Mr I Saggers (Duncombe Park Estate) for commissioning this work and to Mr G Lee (NYMNP) for his help and advice during the fieldwork and to Mr W Saggers and to Mr A Barker for their considerable local knowledge which has been an invaluable contribution to the report.

Considerable thanks go to the archaeological specialists: Dr Cumberpatch, Dr MacKenzie and Dr Wheeler for their help, advice and illuminating contributions which have contributed to our understanding of Helmsley.

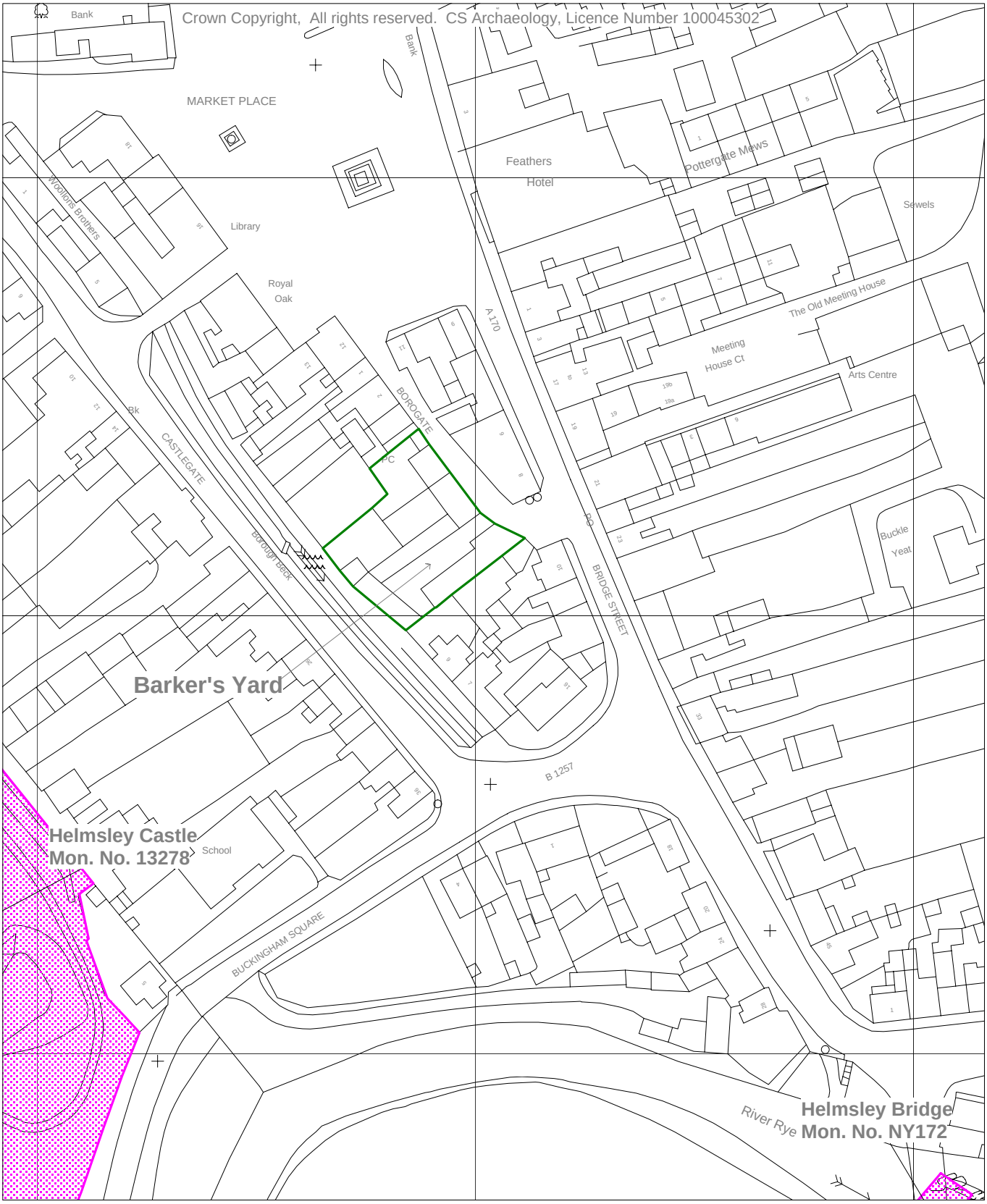
FIGURES

CS Archaeology
September 2010





Barker's Yard, Borogate, Helmsley, North Yorkshire: An Archaeological Evaluation and Building Record	Figure 1: Location Map	CS Archaeology September 2010

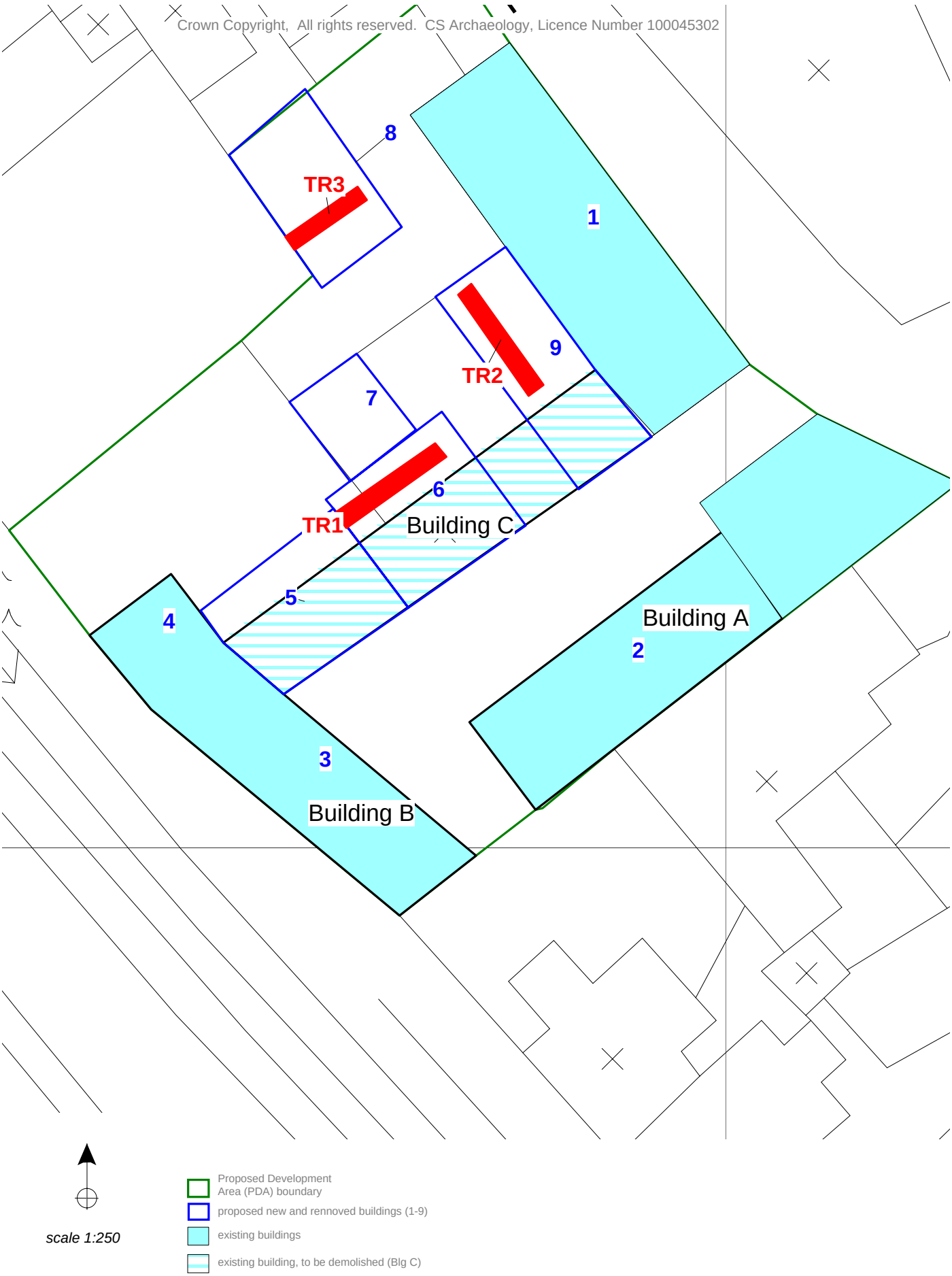


Scheduled Monument

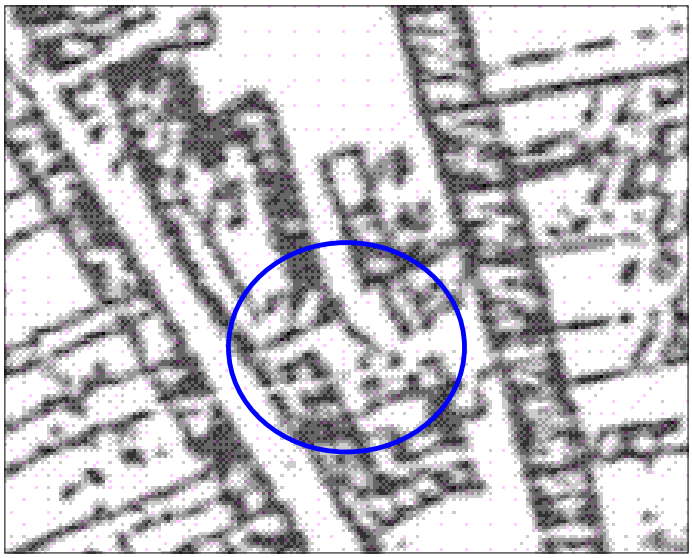
proposed development area (PDA) boundary

scale 1:1250

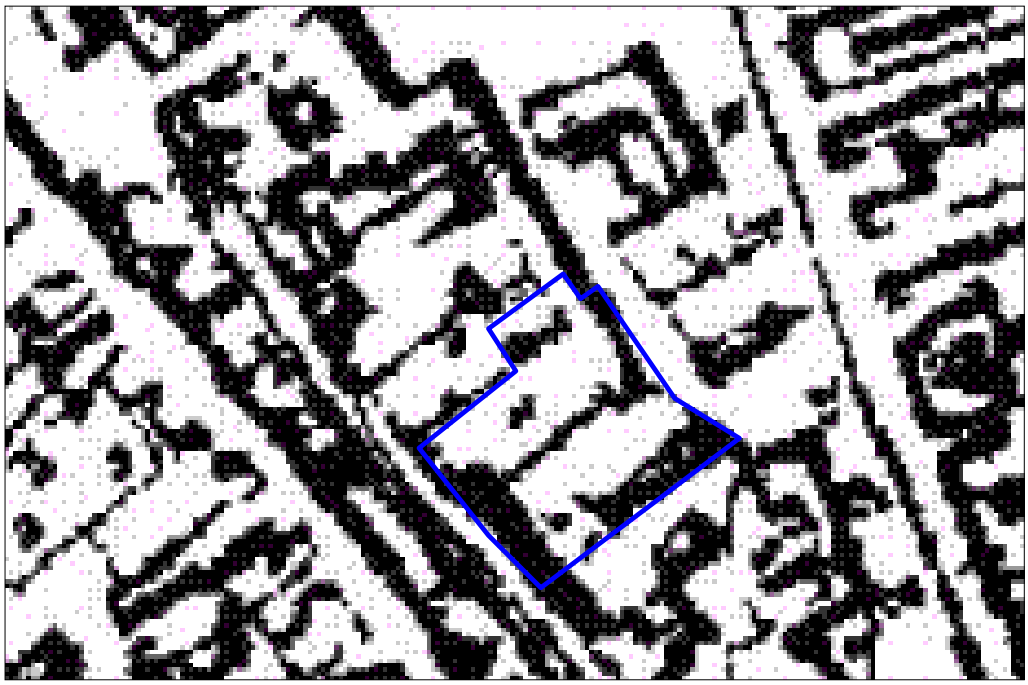
Barker's Yard, Borogate, Helmsley, North Yorkshire: An Archaeological Evaluation and Building Record	Figure 2: Location Map of the PDA	CS Archaeology September 2010



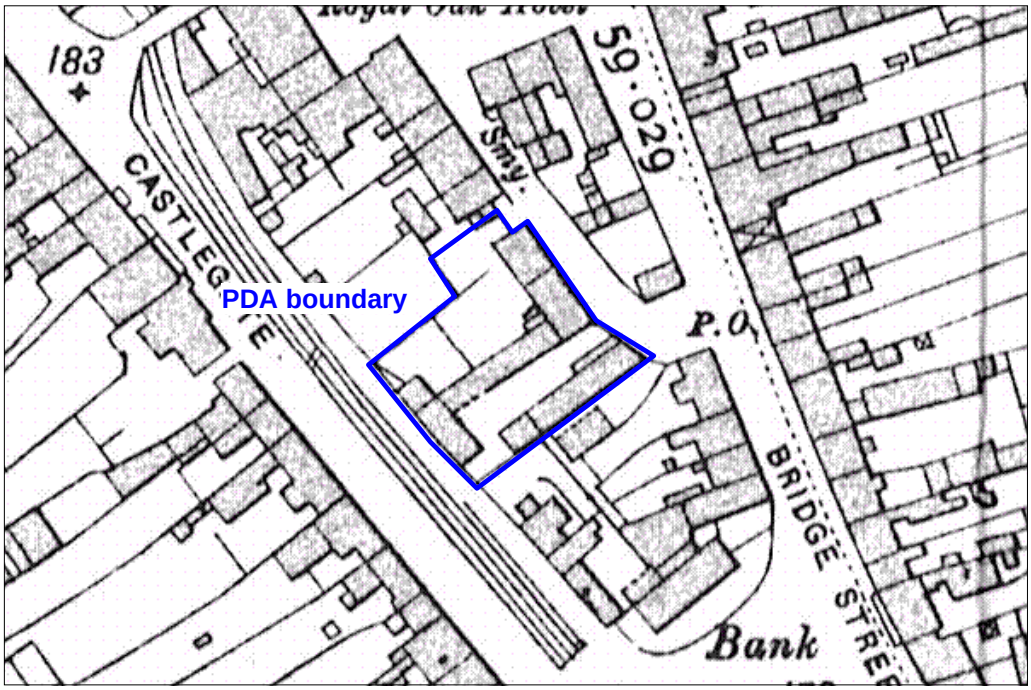
Barker's Yard, Borogate, Helmsley, North Yorkshire: An Archaeological Evaluation and Building Record	Figure 3: Trench and Building Location Plan	CS Archaeology September 2010



1792
Plan of Helmsley

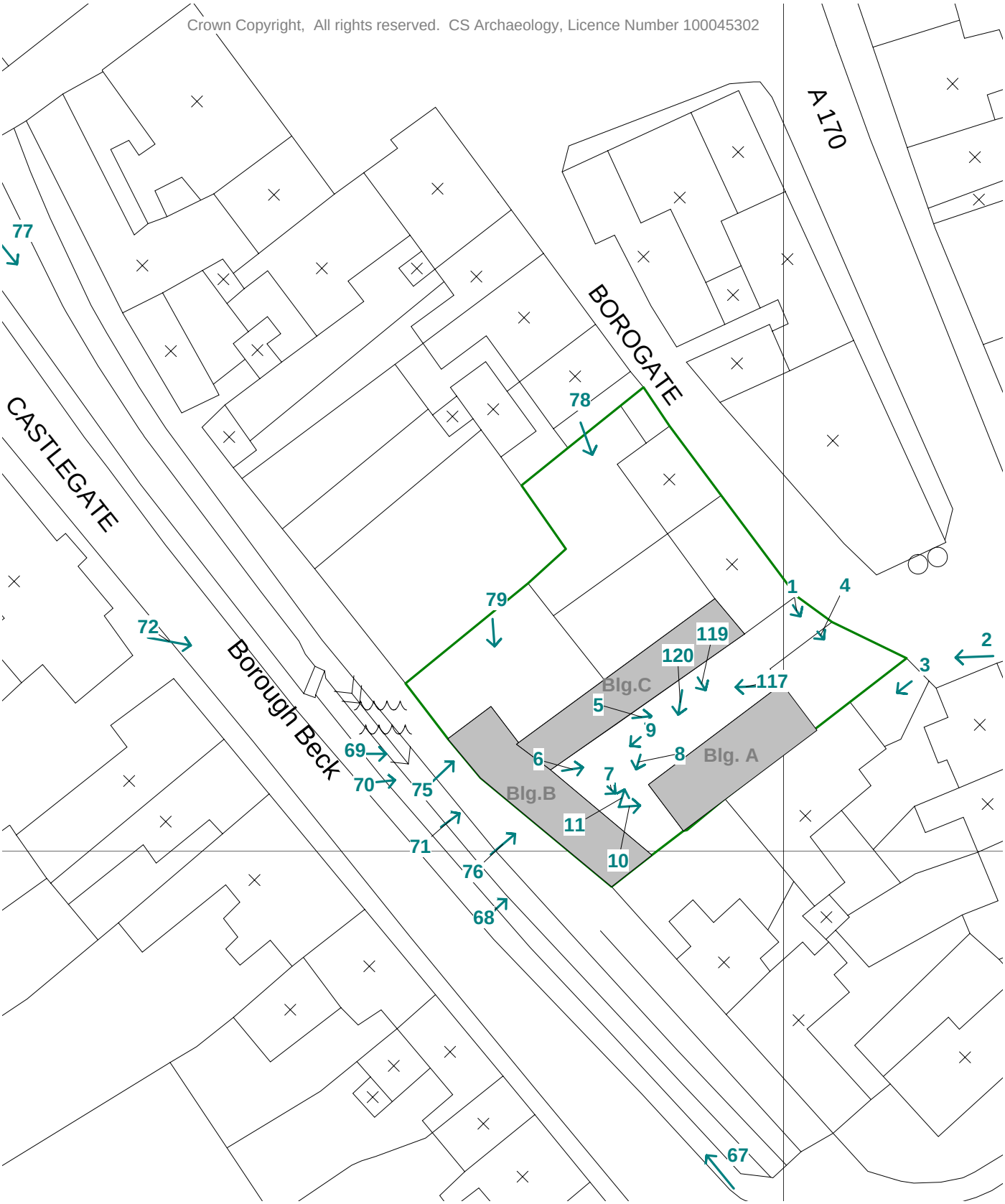


6 inch Ordanance
Survey Map of 1856

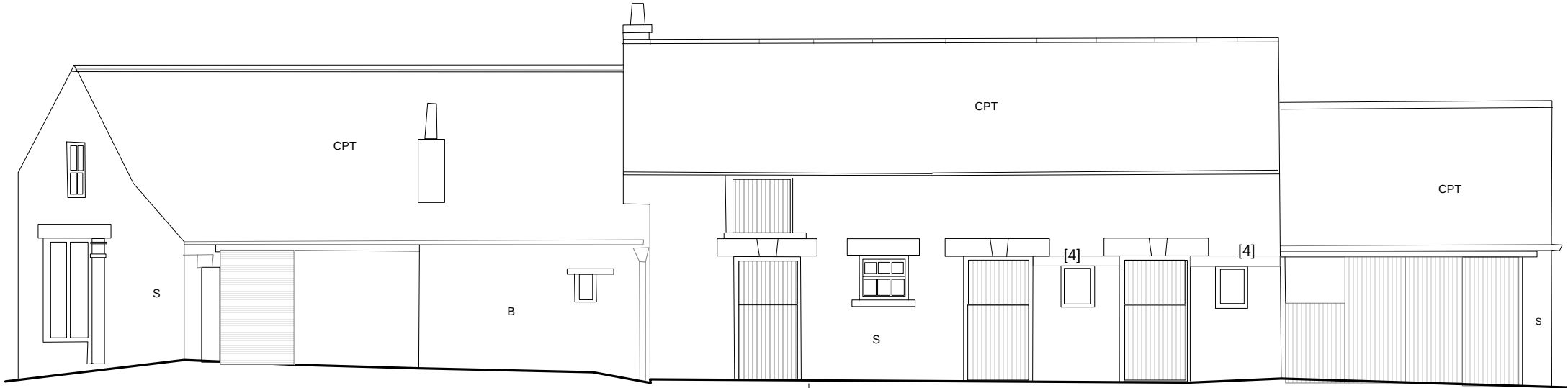


25 inch Ordnance
Survey Map of 1910

Barker's Yard, Borogate, Helmsley, North Yorkshire: An Archaeological Evaluation and Building Record	Figure 4: Historic Maps *not to scale*	CS Archaeology September 2010



Barker's Yard, Borogate, Helmsley, North Yorkshire: An Archaeological Evaluation and Building Record	Figure 5: External Photographic Building Positions	CS Archaeology September 2010

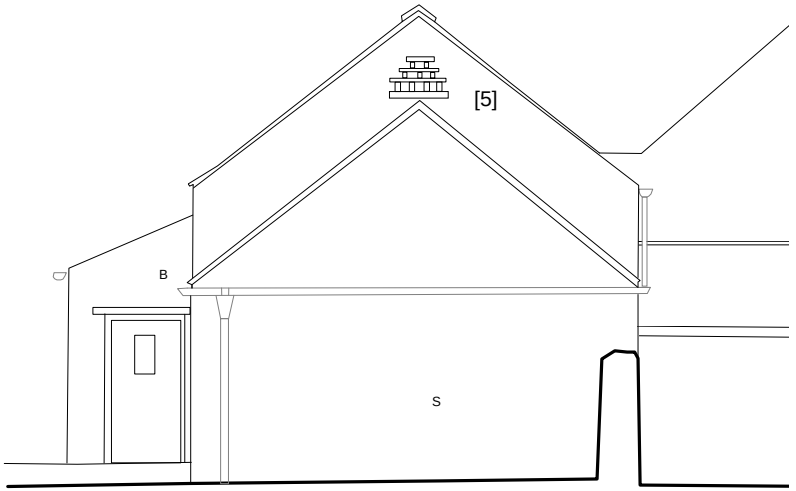


Northwest Elevation

Section A-A1

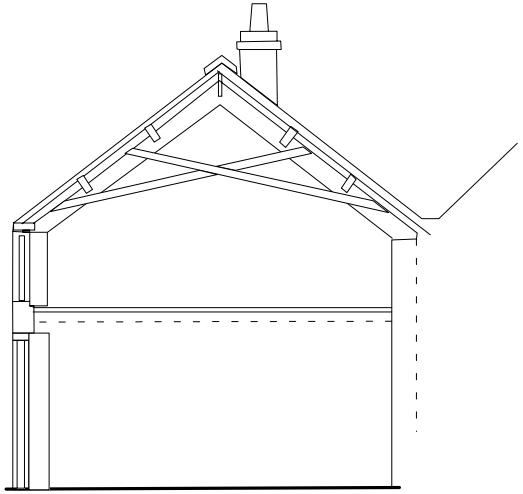
CPT - clay pan tiles
S - stone rubble walls
B - brick

Northeast Elevation

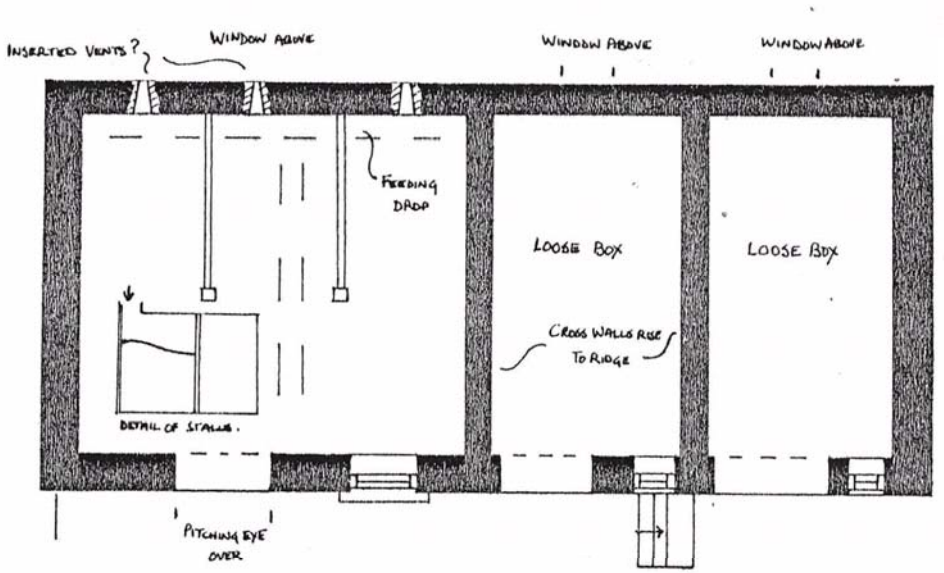


Southwest Elevation

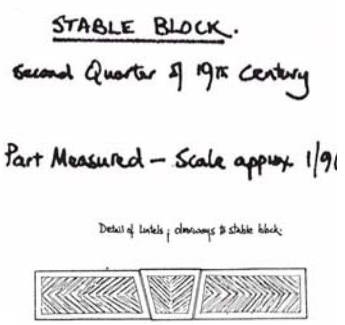
Barker's Yard, Borogate, Helmsley, North Yorkshire: An Archaeological Evaluation and Building Record	Figure 6: Building A: Elevations *scale 1:100*	CS Archaeology September 2010



Section A-A1

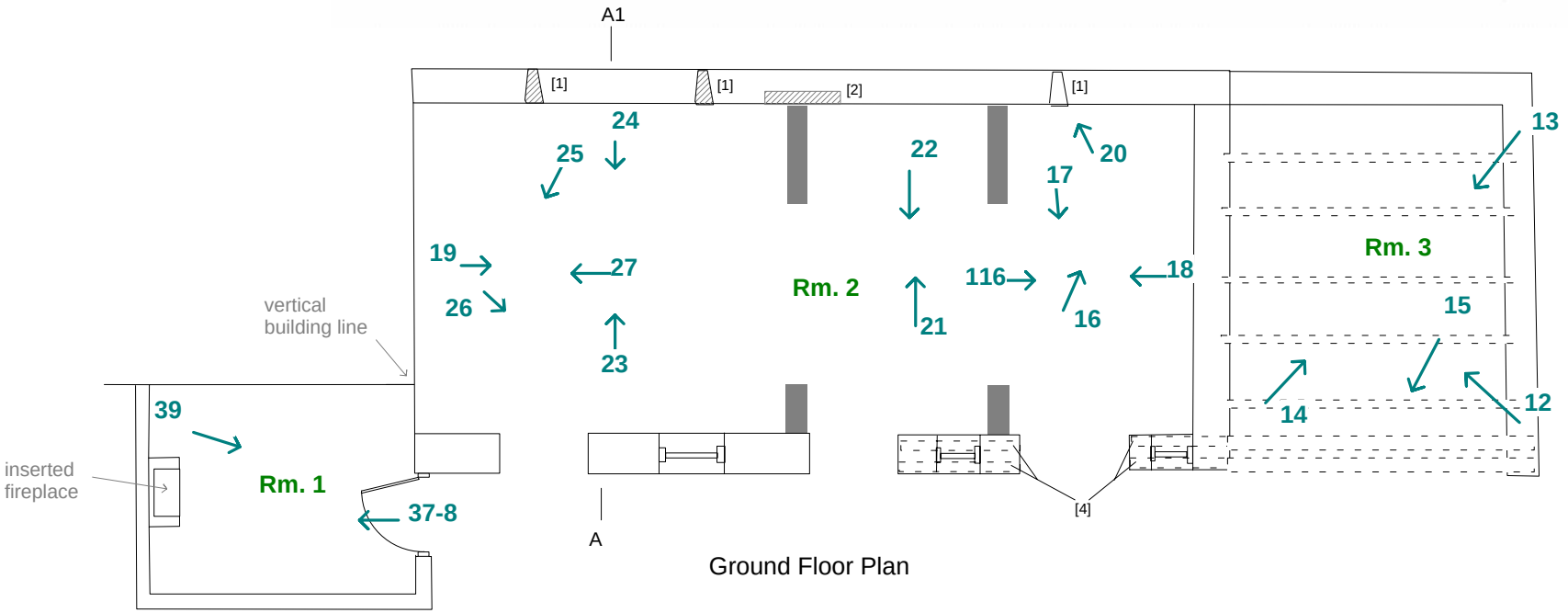


Historic Plan of the Stables with stall and lintel details



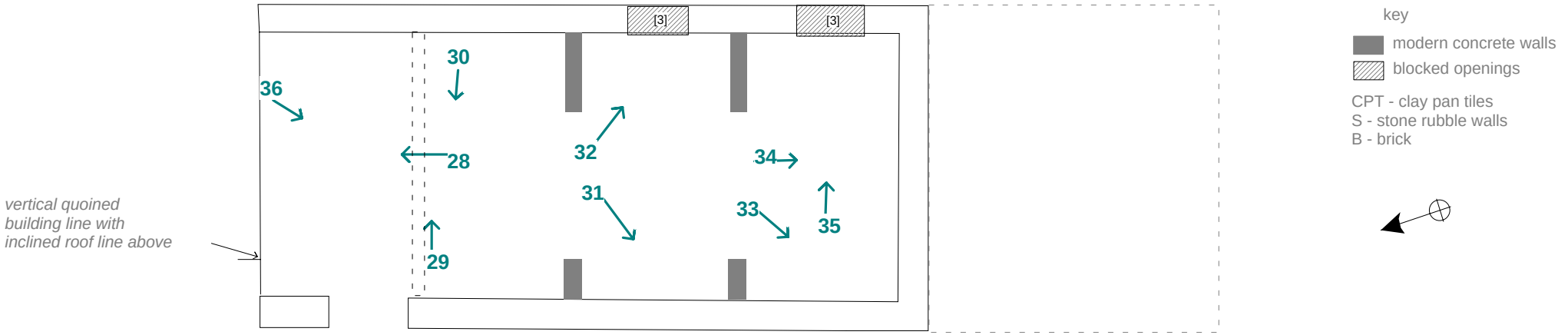
key
- modern concrete walls
- blocked openings

CPT - clay pan tiles
S - stone rubble walls
B - brick

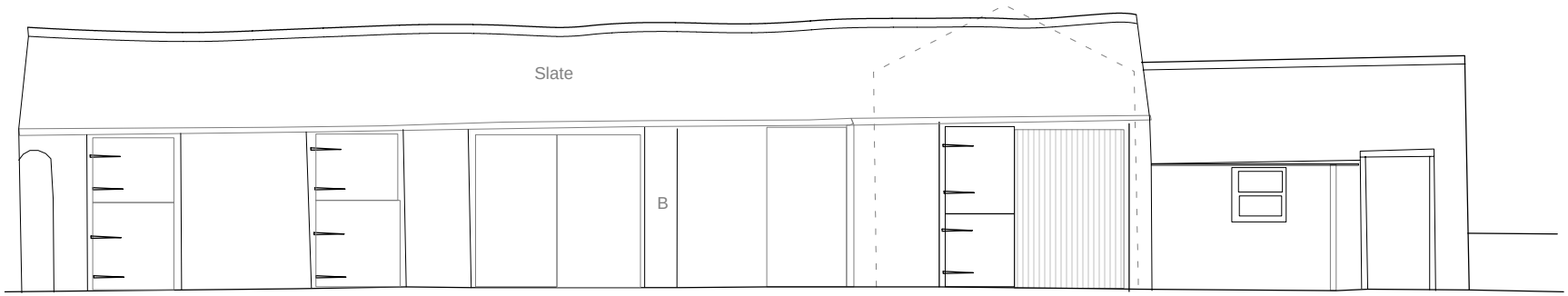


Ground Floor Plan

Barker's Yard, Borogate, Helmsley, North Yorkshire: An Archaeological Evaluation and Building Record	Figure 7: Building A: Plans and Cross Section *scale 1:100*	CS Archaeology September 2010



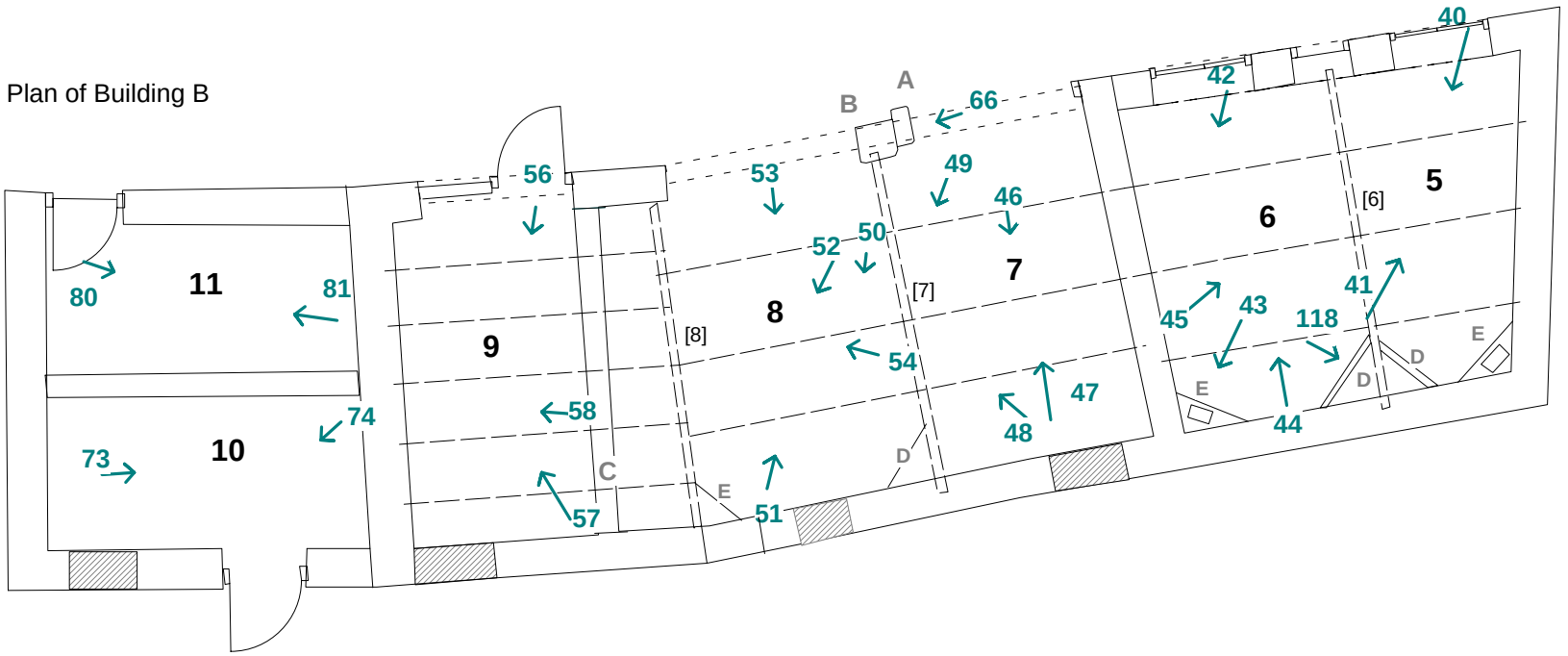
Building A: First Floor



Buuilding B: Northeast Elevation

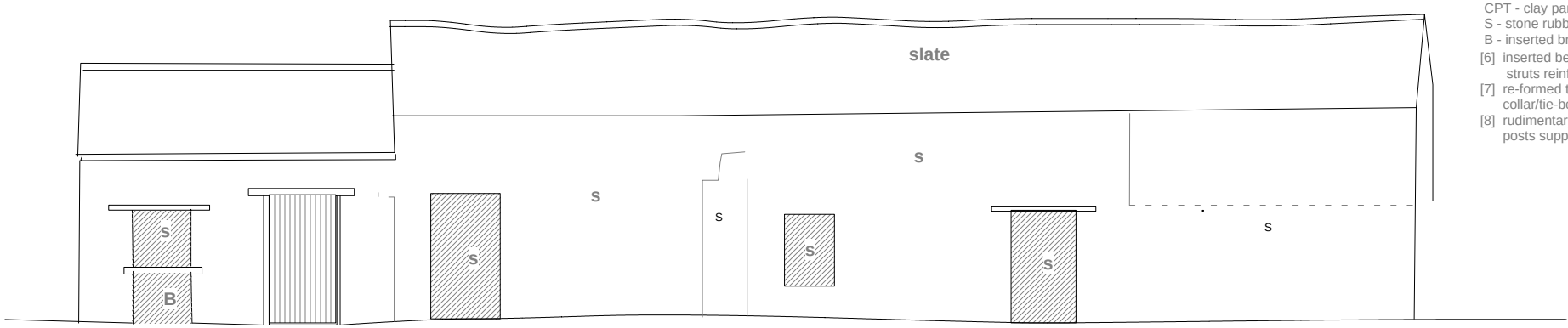
Barker's Yard, Borogate, Helmsley: An Archaeological Evaluation and Building Record	Figure 8: Building A (Plan) and B (Elevation) *scale 1:100*	CS Archaeology September 2010

Plan of Building B



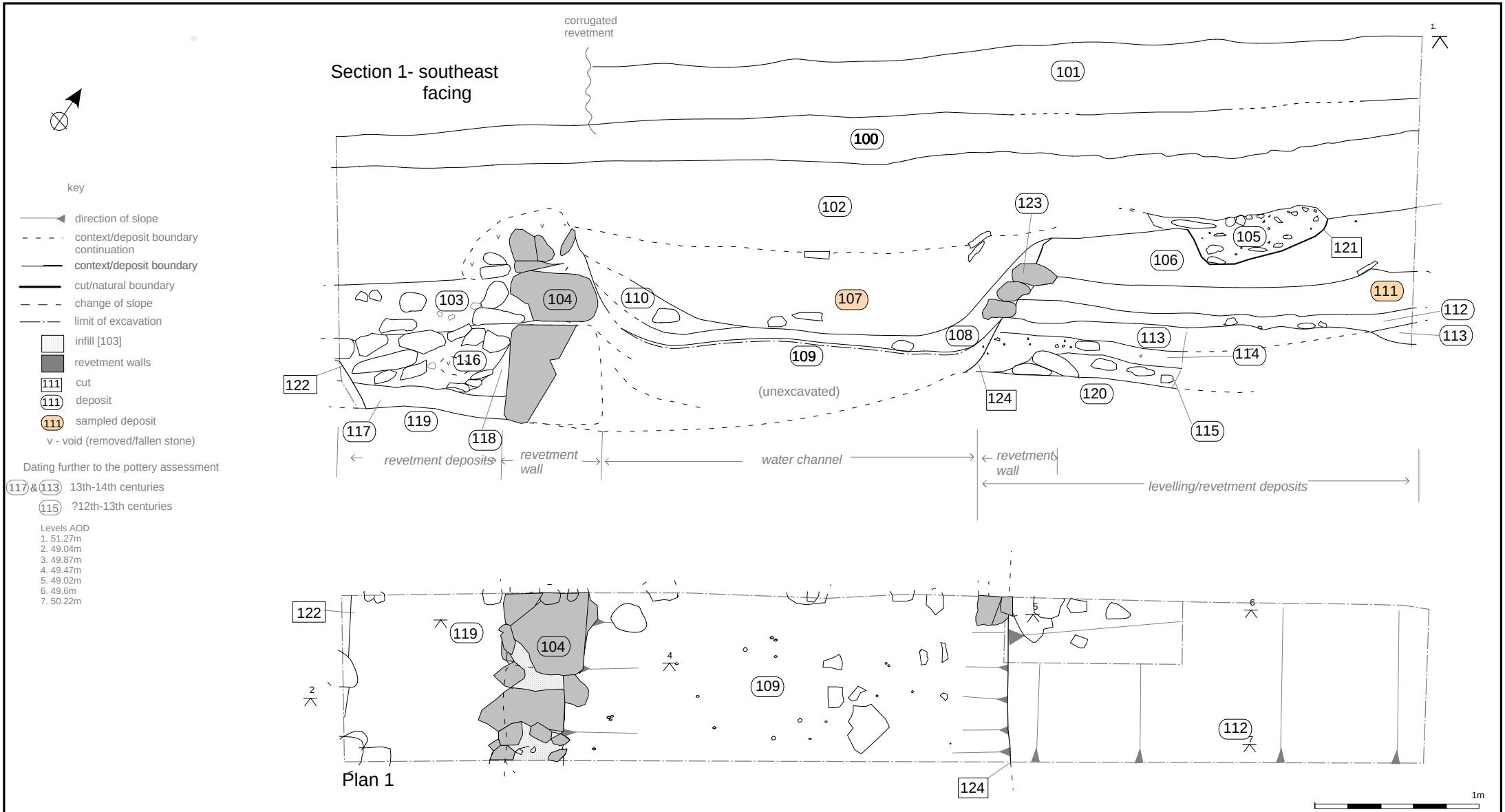
Key

A - sandstone post pad
B - brick peir with internally rounded corners
C - inserted oak tie beam with ad hoc post arrangement supporting the roof
blocked openings
D - hay rack (in situ)
E - feeder (in situ)
CPT - clay pan tiles
S - stone rubble walls
B - inserted brick wall
[6] inserted beam (obscured with struts reinforcing the purlins)
[7] re-formed truss from older oak collar/tie-beam and pine principle rafters
[8] rudimentary truss, a tie-beam with posts supporting 'floating' purlin



Southwest Elevation (Beck side)

Barker's Yard, Borogate, Helmsley, North Yorkshire: An Archaeological Evaluation and Building Record	Figure 9: Building B, Plan and Elevation *scale 1:100*	CS Archaeology September 2010



Barker's Yard, Borogate, Helmsley, North Yorkshire: An Archaeological Evaluation and Building Record

Figure 10: Trench 1, Plan and Section

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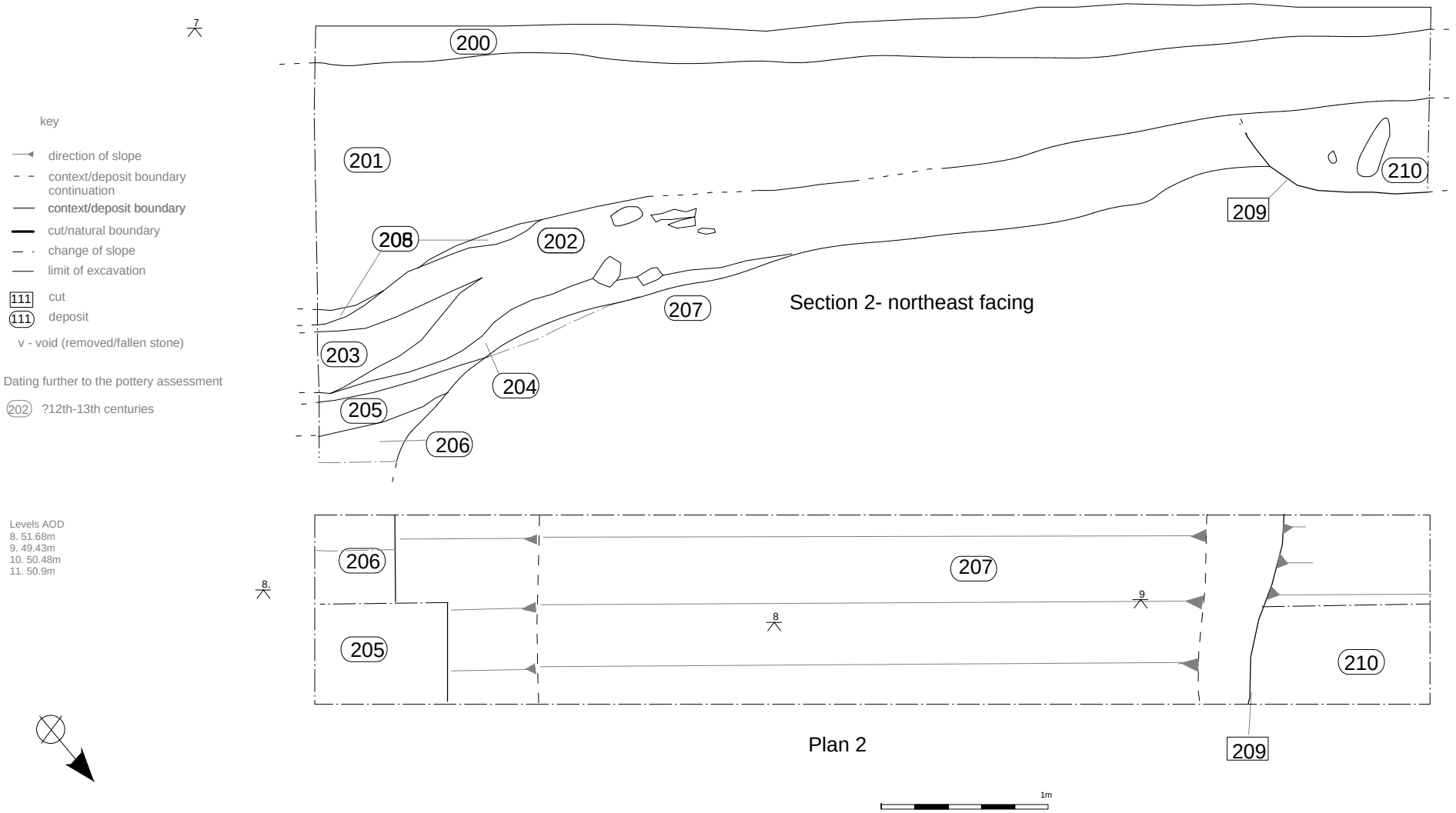
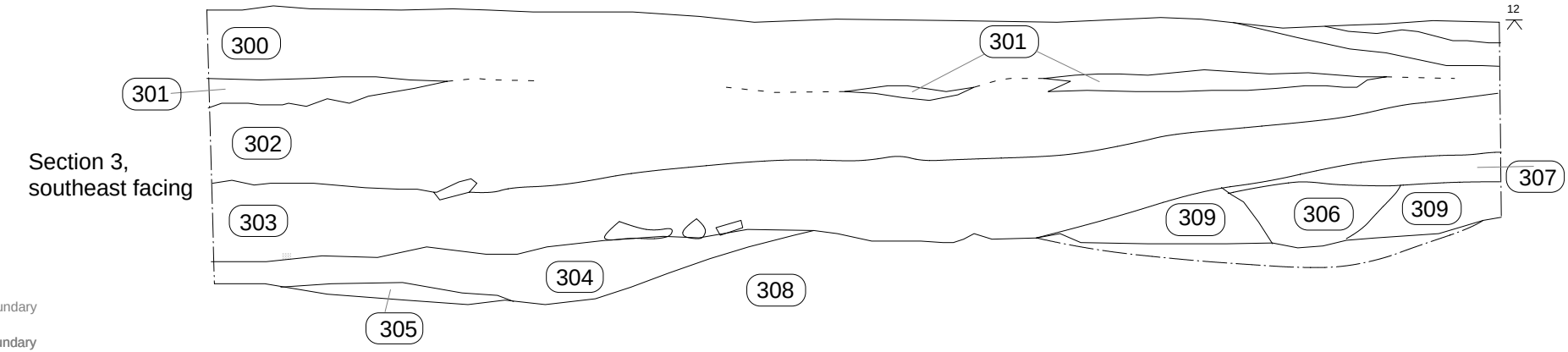


Barker's Yard, Borogate, Helmsley, North Yorkshire: An Archaeological Evaluation and Building Record	Figure 11: Trench 2, Plan and Section	CS Archaeology September 2010



key

direction of slope

context/deposit boundary continuation

context/deposit boundary

cut/natural boundary

change of slope

limit of excavation

111 cut

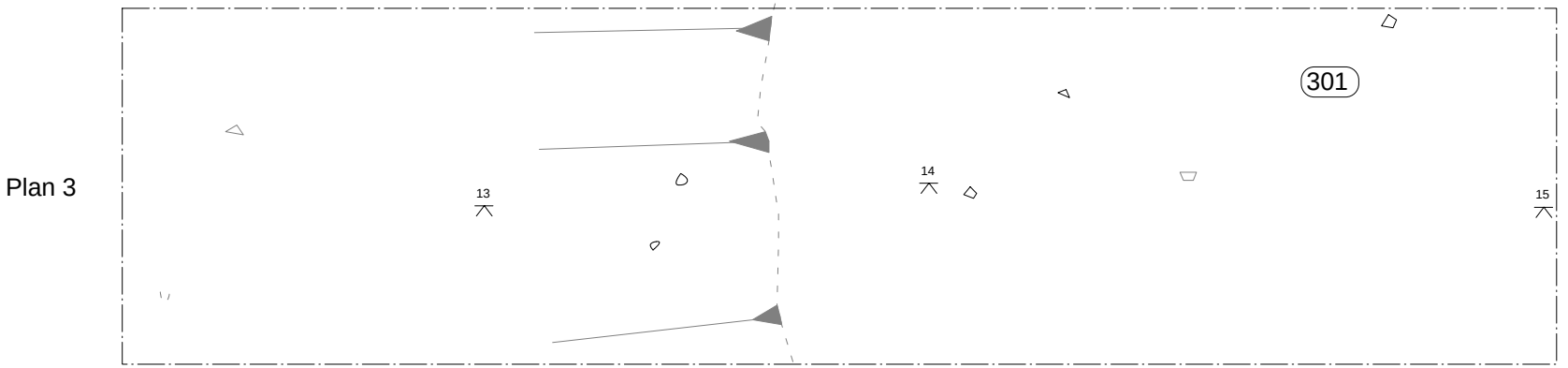
111 deposit

v - void (removed/fallen stone)

Dating further to the pottery assessment

304 Late 13th - 15th centuries

Levels AOD
12. 52.38m
13. 52.56m
14. 51.85m
15. 52.78m



Barker's Yard, Borogate, Helmsley, North Yorkshire: An Archaeological Evaluation and Building Record

Figure 12: Trench 3: Plan and Section

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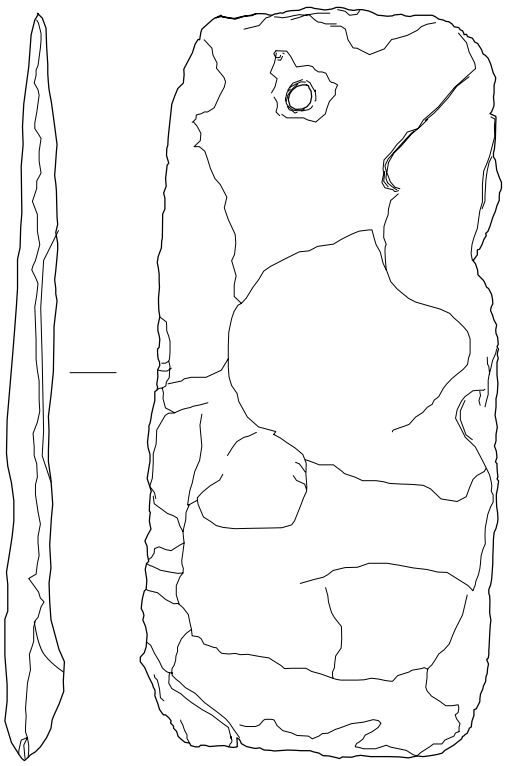

SF1
scale 1:4

SF2
scale 1:2

Barker's Yard, Borogate, Helmsley, North Yorkshire: An Archaeological Evaluation and Building Record	Figure 13: Small Find Drawings (SF1-2, Medieval tiles)	CS Archaeology September 2010

PLATES

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Plate 1, *b*uilding A with Mr Kit Barker and son Mr Anthony Barker (aged1) c. 1930

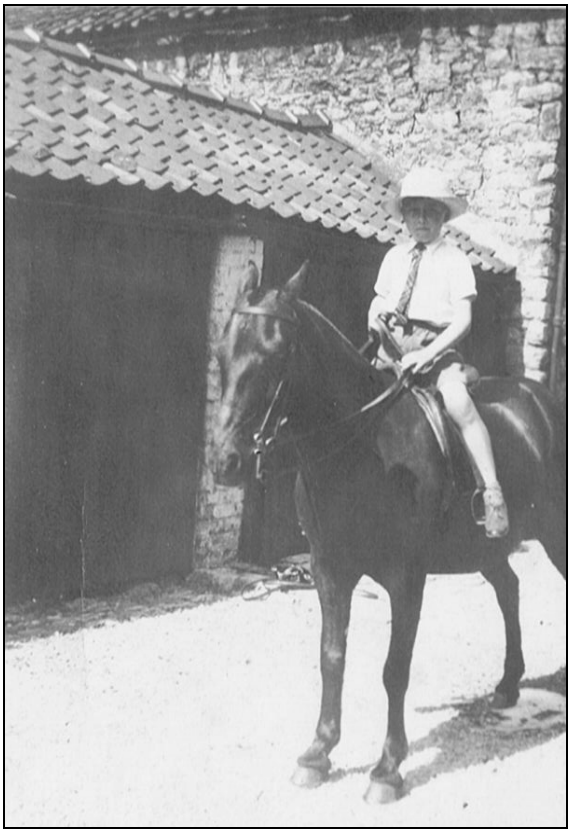

Plate 2, view of the former stables (Building C) with Mr Anthony Barker (aged 6) c. 1930s

Plate 3, Barker's Yard looking west, with the Worsley family from Hovingham, c. 1948

PLATE 4 view of building A, with Mr Anthony Barker, c. 1970

Plate 5, *5:* oblique view of the *NW Elevation* with scaffolding, from the west

Plate 6, *6*: general view of the south end of Building A, from the west

Plate 7, *38:* detail of the inserted cast iron fireplace, from the southwest

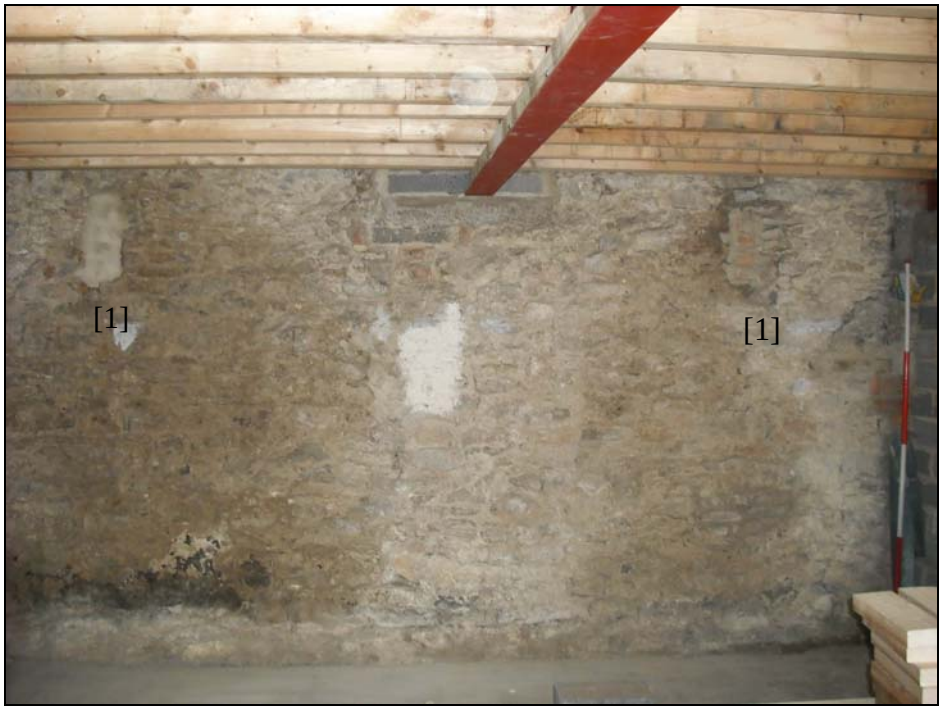

Plate 8, *23:* view of the southeast wall (northwest end) with 2 blocked slit ventilators [1] and blocked window [3] below the inserted 'I' beam, from the northwest

Plate 9, *27:* view of the northeast wall (ground floor level) with vertical building below the modern rebuilt wall, from the southwest

Plate 10, 65*:* detail of the truncated oak beams [4], from the southwest

Plate 11, 20: detail of the partially extant slit ventilator [1], from the northwest

Plate 12, *12: v*iew of the southwest wall with purlins removed, from the west

Plate 13, *36*: view of the repaired and modified roof truss, from the east

[3]

Plate 14, *29:* view of the southeast wall, from the northwest

Plate 15, *32: v*iew of the southeast wall with first floor blocked window [3], from the northwest

Plate 16, *28:* view of the northeast wall (first Floor level), from the southwest

Plate 17, *8:* general view of the southern end of the *Northeast Elevation,* from the north

Plate 18, *68:* oblique external view of building 2's rear *Southwest Elevation,* north end, from the southwest

Plate 19, *79: v*iew of building B's northern end (*Northwest Elevation), from the north*

Plate 20, *118:* building B, *room 6,* detail of the corner hay rack, from the north

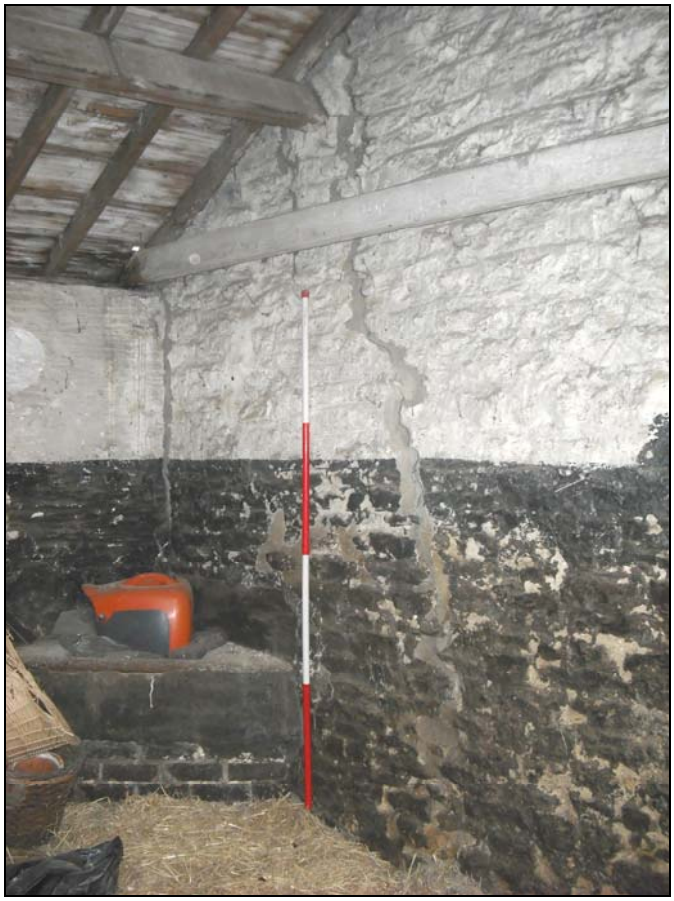

Plate 21, 42*:* building B, Room 6, view of the corner feeder trough, from the east

Plate 22, *45:* building B, *room 6, v*iew of the roof underdrawn with laths (no evidence for a plastered underdrawn finish), from the southeast

Plate 23, *49*: building B, *room 7, v*iew of the re-used oak collar from a roof truss, from the east

Plate 24, 53*:* Building B, room 7, view of the stone set floor, from the northeast

Plate 25, *50:* building B, *room 8,* view of the southwest wall, from the northeast

Plate 25a, *66:* building B, room *7,* detail of the stone post pad, from the southeast

Plate 26, *81:* building B, Room 11, general view from the southeast

Plate 27, 75*:* detail of the blocked door (internal location: Blg. B, Rm. 10)

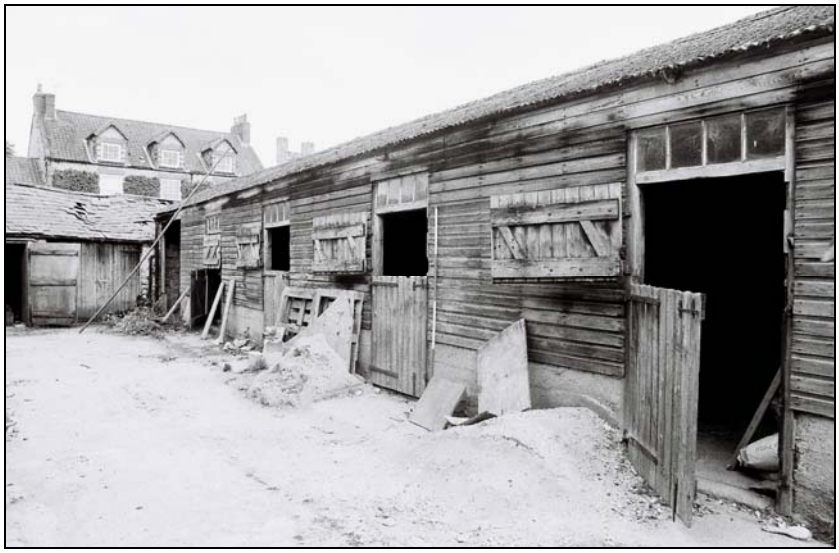

Plate 28, *117:* Building C, oblique view of the *Southeast Elevation*, from the east

***Plate 29**, 64:* Building C, view of the earlier northeast wall which Building C abuts, from the southwest

Plate 30, *82:* general pre-excavation view of the PDA, from the northwest

Plate 31, *97*: trench 1, oblique view of the NW facing section with the channel fills removed, from the north northeast

Plate 32, *112: p*ost-excavation view of the revetment wall [104], from the southwest

Plate 33 *102:* trench 1, view of the top of the revetment wall [104], from the southeast

Plate 34, *105:* view of the water channel side [124] with channel fills removed but with the in situ remains revetment wall [123], from the southwest

Plate 35, *109:* trench 1, general view of the baulk showing the northern inclination of the leveling/revetment deposits, from the northeast.

Plate 36, *90*: trench *2,* View of the northeast facing section, from the east

Plate 37, *91:* trench 2, detail of the northeast facing section (south end), from the northeast

Plate 38, *84:* trench 3, post excavation view of the southeast facing section, from the southeast

Plate 39, *86:* detail of the burnt sandy gravel onto the natural near the southeast end of the trench, from the southeast

APPENDICES

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September 2010

PROJECT DESIGN
FOR AN ARCHAEOLOGICAL BUILDING RECORD AND EVALUATION AT THE OLD STABLES, BARKER'S YARD, BOROGATE, HELMSLEY, NORTH YORKSHIRE

CS Archaeology

July 2010

0 SUMMARY

0.1 This Project Design (PD) is in response to a condition place on planning consent (App. No. NYM/2009/0104/FL) by the North York Moors National Park in respect to the redevelopment of the proposed development area (PDA) which is known as The Old Stables, Barker's Yard, Borogate, Helmsley.

0.2 A permanent record is required of the standing buildings and the assessment of the sub-surface archaeology which could be affected by the proposed development.

0.3 This PD proposes the recording of the PDA's historic buildings as identified in "The Old Stables, Borogate, Helmsley*: A Desk-based Assessment"* (Archetype 2008) and will evaluate areas of potential archaeological significance across the PDA in order to ascertain the nature and extent of the archaeological resource.

0.4 The results from the archaeological works will provide:

- An archaeological record of all the historic buildings within their local context and;
- provide a detailed assessment of the PDAs archaeological assets.

1 INTRODUCTION

1.1 Details

1.1.1 *Site Name:* *Barker's Yard,*

1.1.2 *Location:* *Borogate, Helmsley*, North Yorkshire (Figure 1).

1.1.3 *Grid reference:* SE 61613 83689

1.1.4 *Area of site (hectares):* c.0.1

1.1.5 *Purpose of Record:* To record the PDA's historic buildings and to gather sufficient information to establish the presence/absence, character, extent, state of preservation and date of any archaeological deposits within the PDA and sample any further archaeological assets present.

1.2 Archaeological Background

1.2.1 Helmsley lies adjacent to a natural crossing point of the meandering River Rye which was bisected by prehistoric route ways which utilised the high ground of the Howardian hills and the North Yorkshire Moors. The prehistoric landscape is still evident, in the form of burial monuments at Linkfoot Lane (1km east of the town centre).

1.2.2 Helmsley has been an important local centre since pre-Conquest times, and lies within a rich archaeological landscape that date from the prehistoric periods right through to the 20th century AD.

1.2.2 During the 11th century Helmsley is recorded as *Elmeslac* meaning *Helm's* woodland it was a manor and supported four ploughs. A church and a priest are also noted. The manor was taxed at 32 shillings at the time of the conquest but had been devalued to 10 shillings and evidences a sharp economic decline. The 12th century saw renewed investment in the form of a defensive rectangular ringwork with outer rampart that would have been crowned by a timber pallisade. The stone castle was constructed after 1186 by Robert de Roos Fursan and featured an array of 'modern' defence features such as sally ports, corner towers and curtain walls. The 14th century saw substantial rebuilding of the castle with improved accommodation. The castle remained with the Roos family until 1478 when it was sold to the Duke of Gloucester (later Richard III). On Richard's death the castle reverted to the Roos family and then passed down to the Manners family until 1632 when it passed to the Duke of Buckingham and in 1688 sold to Charles Duncombe. The Duncombe family abandoned the confines of the castle and constructed a new house and estate, Duncombe Park, 1km east of the castle.

1.2.3 By 1190 the town had been granted borough status. Burgage plots, long strips of land fronting onto the principle streets, were established on the east side of Bridge Street. To the west of Bridge Street, south of the church the market place was laid out. The present market square is a small remnant of the former market place.

1.2.4 It is therefore supposed that Barker's Yard which features on a plan of Helmsley dated 1792, was annexed from the medieval market place to form an open stable yard. The yard features traditional stone buildings to three sides with a later (20th century) timber stable, aligned southwest to northeast, effectively bisecting the PDA.

1.2.2 Little archaeological work has been undertaken in Helmsley and the development of the town is poorly understood. Barker's Yard represents one of the last relatively underdeveloped areas within the town's historic core. There is therefore a high potential for undisturbed archaeological assets to be revealed.

1.3 Planning Background

1.3.1 This PD represents a summary of the broad archaeological requirements to both mitigate and enable an assessment of the impact of development proposals on the archaeological resource of the PDA. This is in accordance with local plan policies and the national Planning Policy Guidance, PPS5 planning for the historic Environment 2010. This PD has been written in response to condition 5 of planning consent granted by The North York Moors National Park (App. No. App. No. NYM/2009/0104/FL) and the proposed archaeological mitigation recommended in the desk-based survey by ArchType (2008). The condition and recommendations require further archaeological work in respect of:

1. producing a detailed photographic record of the extant buildings within their local context and;

2. undertaking an archaeological evaluation by trial trenching.

1.3.2 The site lies within the National Park and NYMNP will act as the local planning authority, and North Yorkshire County Council the regional planning authority.

2 OBJECTIVES

2.1 The objectives of this programme of archaeological work are to record of all the historic buildings within their local context and to gather sufficient information to establish presence/absence, character, extent, state of preservation and date of any archaeological deposits within the areas of the PDA.

3 METHODOLOGY

3.1 Trial Trenching

3.1.1 It is proposed to carry out an evaluation of the PDA with strategically placed trenches in order to fully sample the archaeological resource (Figure 2). This will involve the opening up of three trenches:

- Trench 1 will examine the area beneath the proposed units 5 & 6 (6 x 2m);
- Trench 2 will examine the area beneath the proposed unit 9 (6 x 2m) and:
- Trench 3 will examine the area beneath the proposed unit 8 (4 x 2m);

3.1.2 The project will be undertaken in a manner consistent with the guidance of MAP2 (English Heritage 1991) and professional standards and guidance (IFA, 2001).

3.1.3 CS Archaeology will ensure that services are located prior to excavation by means of site plan examination and a hand held scanner.

3.1.4 The overburden such as turf, topsoil, made ground, rubble or other superficial fill materials will be removed by a mechanical excavator using a toothless or ditching bucket. Mechanical excavation will be used extremely judicially, under constant archaeological supervision down to the top of the archaeological deposits (if present) or the top of the sub-soil. The Topsoil will be kept separate from the subsoil. Thereafter, hand excavation of any archaeological deposits will be carried out.

3.1.5 Archaeological investigation will be carried out over the full area of each trench, either by area excavation or sectioning of features in order to fulfil the evaluation objectives. Sondages or slit trench will be used only to facilitate the recording of the trench. Where excavation below a safe working depth constrains investigation, consideration will be given to stepping back or shoring the excavation.

3.1.6 Should any human remains be revealed these will be initially left in situ. The coroner's office will be informed and they will probably engage the police who will be advised by an appropriate forensic/archaeological specialist, to ascertain if the remains are recent? If the remains prove to be archaeological and have to be removed, this will comply with the relevant Department of Constitutional Affairs and relevant regulations.

3.1.7 All deposits will be fully recorded on standard context sheets, photographs and conventionally-scale plans and sections. Each trench will be recorded to show the

horizontal and vertical distribution of contexts. All trenches will be planned at 1:20, with individual features being planned at 1:10 where additional detail is required. One representative long section will be produced, at an appropriate scale. All feature sections sampled will be drawn at 1:10 or 1:20 depending on the size of the feature. The elevation of the underlying natural where encountered will also be recorded. Even if no archaeology is recorded the stratigraphy will be recorded. The limits of excavation will be shown in all plans and sections, including where these limits are coterminous with context boundaries.

3.1.8 All anthropomorphic features will be investigated – discrete features will initially be half-sectioned; linear features will be excavated to 20% of their extent, not less than 1m in extent. Archaeological contexts at junctions or interruptions in linear features will be sufficiently excavated for the relationship between components to be established.

3.1.9 All finds that are 'treasure' will be reported to the coroner in accordance with the Treasure Act Code of Practice (1997).

3.1.10 Attention will be paid to artefact retrieval and conservation, ancient technology, dating of deposits and the assessment of potential for the scientific analysis of soil, sediments, biological remains, ceramics and stone.

3.1.11 All artefacts and ecofacts visible during the excavations will be collected and processed, unless variations to this are agreed by the archaeological monitor (NYMNP). In some cases sampling may be most appropriate.

3.1.12 Finds will be appropriately packaged and stored under optimum conditions, as detailed in First Aid for finds (Watkins and Neal, 1998). In accordance with the procedures of MAP2 (English Heritage 1991), all iron objects, a selection of non-ferrous artefacts (including all coins) and a sample of any industrial debris relating to metallurgy should be X-radiographed before assessment. Where there is evidence for industrial activity, large technological residues should be collated by hand, with separate samples collected for micro-slags. In these instances, the guidance of Bayley *et al* (2001) will be followed.

3.1.13 Analysis of the samples will be carried out by a suitably qualified subcontractor who will adhere to the sampling strategy fully outlined in Appendix 1.

3.2 Sampling Strategy

3.2.1 For palaeoenvironmental research different sampling strategies will be employed according to established research targets and the perceived importance of the strata under investigation. CS Archaeology conventionally recovers three main categories of sample;

i) Routine Soil Samples; a representative 500g sample from every excavated soil context on site. This sample is used in the characterisation of the sediment, potentially through pollen analysis, particle size analysis, pH analysis, phosphate analysis and loss-on-ignition;

ii) Standard Bulk Samples; a representative 50-60 litre sample from every excavated soil context on site, in accordance with English Heritage Guidelines (2002). This sample is used, through floatation sieving, to recover a sub-sample of charred macroplant material, faunal remains and artefacts;

iii) Purposive or Special Samples; a sample from a sediment which is determined, in field, to either have the potential for dating (wood charcoal for radiocarbon dating or in situ hearths for magnetic susceptibility dating) or for the recovery of enhanced palaeo-environmental information (waterlogged sediments, peat columns, etc).

3.2.2 Samples will be taken for scientific dating, principally radiocarbon (C14) and archaeomagnetic dating, where dating of artefacts is insecure and where dating is a significant issue for the development of subsequent mitigation strategies.

3.2.3 Environmental samples will be collected from primary and secondary contexts, where applicable, from a range of representative features, including pit and ditch fills, postholes, floor deposits, ring gullies and other negative features. Positive features should also be sampled. Sampling will also be considered for those features where dating by other methods (e.g. pottery and artefacts) in uncertain. Animal bones will be hand collected, and from bulk samples collected from contexts containing a high density of bones.

3.2.4 Standard Bulk Samples of 30-40 litres or more will be recovered from every archaeologically significant soil context as part of a comprehensive environmental sampling strategy.

3.2.5 Within each significant archaeological horizon a minimum number of features required to meet the aims of the project will be hand excavated. Pits and postholes normally will be sampled by half-sectioning although some features may require complete excavation. Linear features will be sectioned as appropriate. No deposits will be entirely removed unless this is unavoidable. As the objective is to define remains it will not necessarily be the intention to fully excavated all trenches to natural stratigraphy. However, the full depth of archaeological deposits across the entire site will be assessed. Even in the case where no remains have been located the stratigraphy of all evaluation trenches will be recorded.

3.2.6 Any excavation, whether by machine or by hand, will be undertaken with a view to avoiding damage to any archaeological features or deposits which appear to be demonstrably worthy of preservation in situ.

3.2.7 For full details of potential post-excavation analyses see Appendix 1.

3.3 Building Record

3.3.1 A general and detailed photographic record of the interior and exterior of the buildings will be made where Health and Safety considerations allow. This record will be consistent with a level 2 survey as described in Understanding Historic Buildings EH 2006 and will record features relating to the use and development of the buildings that would otherwise be lost during the proposed conversion works.

3.3.2 General and detailed photographs of the interior and exterior of the buildings will be taken with a 35mm camera. All photographs will be in black and white using an appropriate silver based film (Ilford HP5), this will form the primary photographic record.

3.3.3 This record will be supplemented by 35mm colour slides, especially where colour is an aspect that needs to be recorded, e.g. decoration. Digital photographs will also be taken to illustrate the report and to supplement the archive, copies will be included in the digital archive which will be supplied to NYMNP. All photographs will contain an appropriate graduated photographic scale. Digital photographs will also be taken to illustrate the report and to supplement the archive.

3.3.4 A photographic register detailing (as a minimum) location and direction of each shot will be completed and will form an appendix in the final report. The position and direction of each photograph will also be recorded on external and internal building plans and will be cross referenced with plate and film/frame numbers.

3.3.5 External and internal rooms will be described on a pro-forma sheets which will form part of the archive.

3.4 Site Monitoring

3.4.1 NYMNP will be responsible for monitoring the evaluation. A minimum of 10 days notice of the start of the field work will be given by CS Archaeology to the NYMNP so that arrangements for monitoring can be made.

3.4.2 Site inspections will be arranged so that the general site stratigraphy can be inspected when field work is near completion, but before any trenches have been backfilled.

3.5 Health and Safety

3.5.1 CS Archaeology will operate with due regard to health and safety and a copy of the risk assessment will be sent for approval to the archaeological monitor (NYMNP).

3.6 Post –Recording Work and Report Preparation

3.6.1 Once the field recording work has been completed, a full and appropriate programme of analysis and publication of the results of the evaluation will be completed, in the event that no further excavation takes place. The post-excavation assessment of material will be undertaken in accordance with the

guidance of MAP2 (English Heritage, 1991). The report will include: background information, methods, detailed results, grid references, conclusion and discussion.

3.6.2 The report will integrate and update the results of the desk-based assessment

3.6.3 The evaluation report will include a phased interpretation of the site, if possible.

3.6.4 The evaluation report will also consist of a detailed context index to the archive.

3.6.5 The results of the palate-environmental assessment by an appropriate specialist will outline the potential of the samples taken and will be included in the evaluation report.

3.6.6 The report will provide an interpretation of the results, placing them in local and regional context.

3.6.7 A copy of the PD will be included as an appendix to the final report.

3.7 Report Submission

3.7.1 Copies of the completed report both hard and digital formats will be submitted to:

- NYMNP Historic Environment Record;
- Mr I Saggers, Duncombe Park Estate.

3.8 Submission and Deposition of the Archive

3.8.1 The archive, including a copy of the report, will be compiled, indexed and then offered for deposition with York Museum, who will be consulted prior to commencement of the evaluation works.

3.9 Publicity

3.9.1 An OASIS form will be completed for the project.

3.9.2 CS Archaeology is aware that this work may lead to further archaeological dissemination.

3.10 References

ArcheType 2008, The Old Stables, Borogate, Helmsley: A Desk-based Assessment, unpublished client report

Bayley J, Dungworth D, and Paynter S 2001, *Archaeometalurgy*, Centre for Archaeology Guidelines, English Heritage

English Heritage 1991, *Management of Archaeological Projects* (MAP2)

English Heritage 2002, *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation* [2002/01]

Institute of Archaeologists 2001, *Standard and Guidance for Archaeological Field Evaluations*

Watkinson D. & Neal V., 1998, *First Aid for Finds* (3rd edition), RESCUE & the Archaeological Section of the United Kingdom Institute for Conservation

Treasure Act, 1996, Code of Practice

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FIGURES

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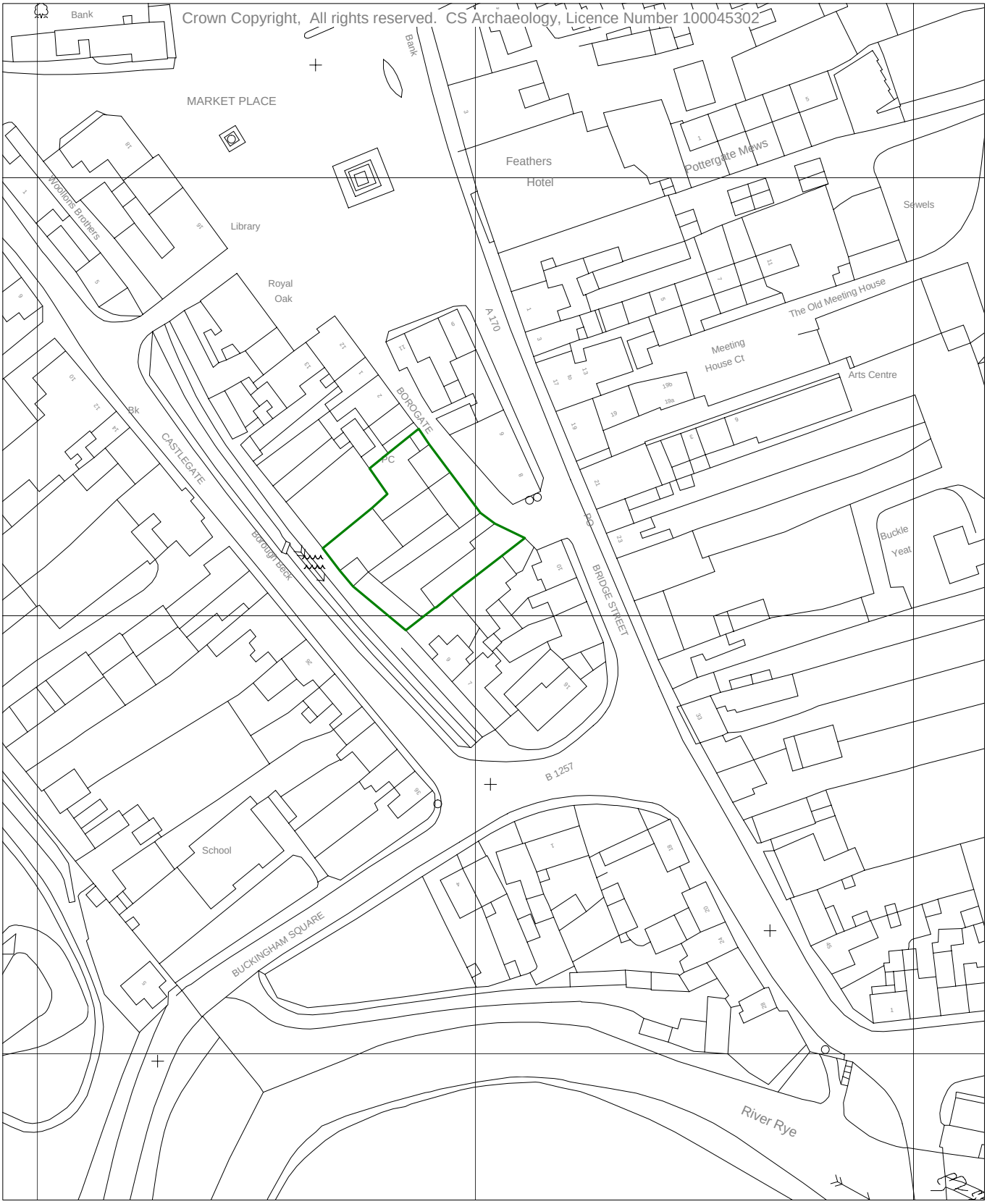

scale 1:1250

Scheduled Monument

proposed development area (PDA) boundary

The Old Stables, Barker's Yard, Borogate, Helmsley, North Yorkshire: An Archaeological Project Design	Figure 1: Location Map of the PDA	CS Archaeology July 2010

The Old Stables, Barker's Yard, Borogate, Helmsley, North Yorkshire: An Archaeological Project Design	Figure 2: Proposed Trench Location Plan	CS Archaeology July 2010

Appendix 1: Sampling Strategy

1. POST-EXCAVATION

1.1 *Sample Flotation*

Sample flotation is a water recovery technique designed to separate organic remains from the soil matrix. A Siraf style system of flotation and wet-sieving will be operated by the archaeological contractor. This system comprises an enclosed area of water into which the soil samples are deposited and agitated. Due to the difference in densities of organic and inorganic remains the light fractions will float, the heavy fractions will sink and the silt fraction will be washed away. The resulting floating material (flot) is collected in sieves of 0.3 mm and 1 mm, the non-floating residue (retent) is wet-sieved through a 1 mm mesh.

All flots and retents are air dried, bagged and labelled accordingly. Throughout this process all equipment is kept clean to prevent contamination of the samples. For each sample, a Sieving Assessment sheet is completed. This gives basic information about the sample, retent and flot. Prior to flotation and wet-sieving, the volume of each sample is measured by means of a graduated bucket.

If in a sample a high concentration of clay can be observed and therefore separation of the different fractions of the soil is difficult, an aqueous solution of defloculant 'Calgon' is added and the sample is left to soak overnight, before processing by flotation and wet-sieving.

Sample flotation will be carried out on site and/or at the premises of the archaeological contractor.

1.2 *Sample Wet sieving*

Sample wet sieving, also a water recovery technique, is carried out in laboratory conditions and is designed to recover waterlogged material. For the recovery of waterlogged botanical material, small soil samples (0.5 to 1.0 litre) are processed through a 0.3 mm sieve. The sediment is placed in a bucket with water and agitated before being washed through the 0.3 mm sieve. This process is repeated until the sample is totally disaggregated. The resulting material is stored in water or ethanol depending on the length of the storage period. Sample wet sieving can also be used to recover larger waterlogged material such as leather and wood in which case larger volumes of soil are processed.

1.3 *Sample Dry sieving*

Sample dry sieving is carried out to retrieve smaller artefacts that might be missed during normal excavation procedure, eg. small sherds of pottery and bone . Done in laboratory conditions, all samples are air dried in the first instance. Done in the field, the samples are processed with the sample in a field-moist state. In both cases the sample is passed through a 4 mm mesh and any items of interest are recovered and recorded.

1.4 *Residue sorting*

All residue (retent) sorting is carried out in laboratory conditions, and is designed to recover not only material that might be missed during normal excavation procedure (see dry sample sieving), but also material that would be impossible to recover during normal excavation procedure eg. charred and uncharred plant remains, insect remains and small fragments of charcoal.

The volume of the residue is recorded and then passed through a set of sieves (mesh sizes 8 mm, 4 mm, 2 mm and 1 mm). Each fraction is spread out onto a separate tray, is scanned with the naked eye and all items of interest are recovered. Under normal circumstances all identifiable material from all fractions is recovered. The only exception to this is burnt wood (charcoal) which is only retrieved from the > 4 mm fractions. All material recovered is bagged individually by material type and the material types and weights recorded on the Retent Sorting Sheet. Also recorded on this sheet are the project number, context number, area, sample number, the sorters initials, date, sample volume, retent volume and percent of the retent sorted. Under normal circumstances 100 % of all fractions are sorted. In those instances where this is not the case, this will be recorded. Where no material is recovered from a retent, the Retent Sorting Sheet will be filled out as usual, with the word sterile written across it.

1.5 *Flot sorting*

All flot sorting is carried out in laboratory conditions. The volume of each flot is measured. The flots are sorted by means of a low powered binocular microscope. The macro plant remains and other archaeological or ecological material are extracted from the flots and put into gelatine capsules or glass tubes. An estimate of the number of items recovered and the species represented are recorded. The charcoal larger than 4mm is extracted from the flots and weighed. All extracted items are bagged and labelled accordingly.

1.6 *Routine Soils Analysis*

All the samples taken on-site will have a routine partner. Four standard routine soil tests will be carried out by the archaeological contractor. These are pH analysis, Loss on Ignition, Calcium Carbonate content and Easily available phosphate content.

The pH value is the measure of the acidity (H+) or alkalinity (OH+) of the sample. Dissolving a portion of the soil in distilled water, then measuring the sample using pH meter carries this out. This is to allow us to estimate the potential for preservation within the sediment.

Loss on Ignition is the measure organic content of the sample. This is measured by burning a small amount of the sediment in a furnace at 400^0C for four hours. By measuring the weight before and after burning the organic content can be calculated. The organic content allows us to examine whether manuring or treatment of the natural soil has taken place.

Calcium Carbonate content can be measured by dissolving a few grains of the sample using Hydrochloric acid. If calcium carbonate is present then a small amount of Carbon Dioxide is given off, the greater the amount of CO_2 released the greater the amount of $CaCO_2$. The Calcium Carbonate content shows us if

there is any natural calcium carbonate within the sediment, or if not, any mortar or shell has been included artificially.

The amount of phosphate within a sample is examined at the same time as $CaCO_2$. After the CO_2 has been released Ascorbic acid is applied, if Phosphate is present a colour change will occur. The phosphate content may show the presence of animals or to a lesser degree indicate where animals were kept.

1.7 *Soil Micromorphological Analysis*

Micromorphology is the study of undisturbed soils and loose sediments and other materials at a microscopic scale. A 25-30 micron thick slice of soil or sediment is mounted on glass and studied using a petrographic microscope. The samples are prepared for thin section analyses at the Department of Environmental Science, University of Stirling using the methods outlined by Murphy (1986). The samples are analysed using the descriptive terminology of Bullock *et al* (1985) and FitzPatrick (1993).

2.8 *Charcoal ID*

Only charcoal retrieved from the 4mm sieve (see Sieving and Sorting procedures) is used for species identification, mainly because fragments below that threshold are too small to identify. If there is no charcoal larger than 4mm present then attempts will be made to identify the largest fragments present for the purpose of C14 samples.

Surfaces are prepared for identification by using a surgical blade to prise off flakes of charcoal revealing fresh surfaces on which diagnostic features can be identified. The charcoal fragment is bedded in sand for examination under a reflected-light microscope.

On average, up to 10 fragments of charcoal are identified per bulk sample. If a single species is present then identification can stop at 5 fragments. However, if a great variety of species is present, ie more than four, then identification should continue until the analyst is happy that a representative sample has been examined. Unusual or exotic species should be bagged and labelled separately within the bulk sample.

Other variables, such as whether the fragment is young roundwood, with sub-bark surfaces intact, whether it has come from a large piece of wood and whether it is fast or slow grown, should be noted. Species identification is undertaken with reference to Schweingruber (1982).

2.9 *Wood ID*

Waterlogged wood; Surfaces on waterlogged wood are prepared for identification by using a cut-throat razor or a double-sided razor blade to pare off thin-sections which are cell-thick and transparent so that diagnostic features can be identified. It is consequently difficult to identify fragments of waterlogged wood smaller than 10 mm^2. The thin-sections are temporarily mounted in water on slides for examination under a transmitted-light microscope.

Sampling for identification is carried out on the same basis as that for charcoal. Species identification is undertaken with reference to Schweingruber's (1982) *Microscopic Wood Anatomy* and the in-house reference collection of the archaeological contractor.

2.10 *Non-charcoal charred plant macrofossil analysis & waterlogged plant analysis*
Analysis of the charred plant macrofossils and waterlogged plants involves identification, quantification and interpretation. Identification of the macro plant remains is done using a low power binocular microscope with x10 and x40 magnifications. The modern reference collection of the archaeological contractor and various seed atlases (Beijerinck 1947, Berggren 1969 & 1981 and Anderberg 1994) will be used to ease identification. The botanical nomenclature follows Flora Europaea (Tutin *et al* 1964-1981). A standardised counting method is used for quantification. Habitat information for the plant species will be taken from Hanf (1983).

2.11 *Dendrochronological analysis*
Sample size and species type; Three conditions are necessary to ensure the successful dating of a building or archaeological site. The timber must be a species for which there are already dated chronologies which in the UK usually means oak. Cross-matching is a statistical process, and therefore a number of timbers are required, usually at least 8 per building or phase. Finally, and for the same reasons the ring-patterns must be over a certain length, usually 70 rings. With these conditions observed it can be relatively straightforward to obtain a date for a building.

On-site sampling; In situ timbers in a standing building are usually sampled using a corer, which is attached to a power-driven drill and removes a core leaving a hole in the timber 10 mm in diameter. The core must be taken so that the maximum radius from pith to bark is sampled, thus ensuring the maximum number of growth-rings for analysis. It is also important to select those timbers which have retained as full a ring sequence as possible, ie those where the outermost rings have not been trimmed off or destroyed by woodworm.

Coring is an intrusive method of sampling and it is occasionally impossible to use this method, as in the case of painting ceilings and carved panels. If the end-grain is exposed the ring sequence can be measured *in situ* using a hand lens. Silicone rubber casts can also be taken.

If structural timbers have been removed during the renovation of a building then slices, approximately 50 mm thick can be sampled by saw, usually a chainsaw, from a point along the timber where the maximum radius survives.

Timbers only survive below ground in waterlogged conditions. Waterlogged timbers are sampled as above, by the removal of a 50 mm slice by sawing.

2.12 *Sample preparation;*
Cores are mounted in angle moulding and then the surface is prepared by paring with a Stanley knife followed by fine sanding with Wet & Dry sandpaper until the ring-pattern is clear and measurable.

Slices (dry); The surface of the slice is sanded, usually with a power sander, using progressively finer sandpaper until the ring-pattern is clear and measurable. It is often necessary to finish off the surface with W&D sandpaper.
*Slices (wet); T*he slice is usually frozen for 24 hours and then the surface is planed flat using a Surform plane. This often achieves the necessary clarity of ring-pattern but where the wood is particularly hard it will be necessary to use a razor blade to pare the surface to achieve a clear ring-pattern.
Silicone rubber casts; These are fixed to battens of wood using silicone rubber, for ease of measurement.

2.13 *Measurement and analysis;* The samples are measured on a custom-made measuring table and the data logged onto the computer using DENDRO (Tyers 2000). Data graphing and statistical analysis are also carried out using the same package.

Appendix 2: Archive Index

Museum Accession Number: **YORYM: 2010. 661**

PHOTOGRAPHIC REGISTER A: *35mm Black and White Film (Ilford Delta 400 Professional) and digital photographs (indexed by photographic position No.)*

Photo. Position	Film/ Frame No.	Plate	Location, /Room	Description	From
1	1/29		Ext.,- Blg.A	View of the northern end of the *NW Elevation*	NNW
2	1/28		Ext.-	General view of the northeast elevation of the adjacent building	ENE
3	2/27		Ext.	General view of the northeast end of the adjacent building	ENE
4	1/26		Ext.	View of the removed stalls	NW
5	1/25	5	Ext., Blg.A	Oblique view of the *NW Elevation* with scaffolding	W
6	1/24	6	Ext., Blg.A	General view of the south end of Building A	W
7	1/23		Ext., Blg.A&2	General view	NNW
8	1/22	17	Ext., Blg.B	General view of the southern end of the *Northeast Elevation*	N
9	1/21		Ext., Blg.B	General view	NE
10	1/20		Ext., Blg.A	General view	W
11	1/19		Ext., Blg.3	General view of the *SE Elevation* of the modern stable block	SSW
11a	1/18		Ext., Blg.3	General view of the *SE Elevation* of the modern stable block	NE
12	1/17	12	Blg.A, Rm. 3	View of the southwest wall with purlins removed	W
13	1/16		Blg.A, Rm. 3	View of the southwest wall with purlins removed	S
14	1/15		Blg.A, Rm. 3	View of the northeast wall with a new window being inserted	N
15	1/14		Blg.A, Rm. 3	Obscured view of the in situ oak lintel	S
16	1/13		Blg.A, Rm. 2	View of the southern corner with extant slit ventilator [1]	N
17	1/12		Blg.A, Rm. 2	View of the remodelled northwest wall featuring splayed door reveals	SE
18	1/11		Blg.A, Rm. 2	General view down the centre of the room	SW
19	1/10		Blg.A, Rm. 2	General view down the centre of the room	NE
20	1/9	11	Blg.A, Rm. 2	Detail of the partially extant slit ventilator [1]	NW
21	1/8		Blg.A, Rm. 2	View of the southeast wall (central section) with blocked slit ventilator (higher wall) and feeder (lower wall)	NW
22	1/6-7		Blg.A, Rm. 2	View of the northwest wall (central section) with window and doorway with splayed reveals	SE

Photo. Position	Film/ Frame No.	Plate	Location, /Room	Description	From
23	1/5	8	Blg.A, Rm. 2	View of the southeast wall (northwest end) with 2 blocked slit ventilators and possible window [3] to the higher wall, with blocked to the feeder [2] to the lower,	NW
24	1/4		Blg.A, Rm. 2	View of the remodelled northwest wall (northwest end) with window and doorway featuring splayed reveals	SE
25	4/8		Blg.A, Rm. 2	View of the northern corner	E
26	4/7		Blg.A, Rm. 2	Oblique view of the remodelled northwest wall (northwest end)	E
27	1/3	9	Blg.A, Rm. 2	View of the northeast wall (ground floor level)	SW
28	1/2	16	Blg.A, Rm. 4	View of the northeast wall (first Floor level)	SW
29	1/1 & 2/36	14	Blg.A, Rm. 4	View of the southeast wall	NW
30	2/35		Blg.A, Rm. 4	Oblique view of the northwest wall with window with splayed reveals	SE
31	2/34		Blg.A, Rm. 4	Oblique view of the northwest wall	SE
32	2/33	15	Blg.A, Rm. 4	View of the southeast wall with first floor blocked window [3]	NW
33	4/5		Blg.A, Rm. 4	Oblique view of the northwest wall	SE
34	2/32		Blg.A, Rm. 4	View of the southwest wall	NE
35	2/30		Blg.A, Rm. 4	View of the southeast wall with modified window opening	NW
36	2/28-9	13	Blg.A, Rm. 4	View of the repaired and modified roof truss	E
37	2/27		Blg.A, Rm. 1	General view with the inserted cast iron fireplace [5] to the northeast wall	SW
38	2/26	7	Blg.A, Rm. 1	Detail of the inserted cast iron fireplace	SW
39	2/25		Blg.A, Rm. 1	General view	NE
40	2/23		Blg.B, Rm. 5	General view	ENE
41	2/22		Blg.B, Rm. 5	General view	WSW
42	2/21	21	Blg.B, Rm. 6	General view	ENE
43	2/20		Blg.B, Rm. 6	General view	WSW
44	2/19		Blg.B, Rm. 6	General view of the front NE wall	SW
45	2/18	22	Blg.B, Rm. 6	View of the roof underdrawn with laths (no evidence for a plastered underdrawn finish)	NW

Photo. Position	Film/ Frame No.	Plate No.	Location, /Room	Description	From
46	2/17		Blg.B, Rm. 7	View of the rear, southwest wall	NE
47	2/16		Blg.B, Rm. 7	General view of the front NE wall	SW
48	2/14-15		Blg.B, Rm. 7	View of the re-used oak tie-beam originally a collar possibly from a cruck truss	S
49	2/13	**23**	Blg.B, Rm. 7	View of the re-used oak collar from a roof truss	E
50	2/12	**25**	Blg.B, Rm. 8	View of the southwest wall	NE
51	2/11		Blg.B, Rm. 8	View of the northeast wall	WSW
52	2/10		Blg.B, Rm. 8	View of the improvised truss	ESE
53	2/9	**24**	Blg.B, Rm. 8	View of the stone set floor	NE
54	2/8		Blg.B, Rm. 8	General view of the stone set floor and pile with horse shoes	S
55	2/7		Ext.	View of the front northeast facing elevation	E
56	2/6		Blg.B, Rm. 9	General view	NE
57	2/5		Blg.B, Rm. 9	General view	SW
58	2/4		Blg.B, Rm. 9	View of the northeast wall and roof	S
59-63	2/2-1, 3/36-5		Blg. C	General record views of each stable	SE
64	3/34	**29**	Blg. C	View of the earlier northeast wall which Building C abuts	SW
65	3/33	**10**	Blg.A, Rm. 2	Detail of the truncated oak beams [4]	SW
66	3/32	**25a**	Blg.B, Rm. 7	Detail of the stone post pad	SE
67	3/31		Ext.	General view up Borough Beck with Building B on the right	SE
68	3/30	**18**	Ext.	External view of Building B's rear *Southwest Elevation* south end	SW
69	3/28		Ext.	Oblique external view of Building B's rear *Southwest Elevation,* north end	W
70	3/29		Ext.	External view of Building B's rear *Southwest Elevation,* central section with 3 building phases end	SW
71	3/23		Ext.	Detail of Building 2's rear *Southwest Elevation (Rooms 8-9)*	
72	3/27		Ext.	General view towards the PDA	NW
73	3/26		Blg.B, Rm. 10	General view	NW

Photo. Position	Film/ Frame No.	Plate No.	Location, /Room	Description	From
74	3/25		Blg.B, Rm. 10	General view	SE
75	3/24	**26**	Ext.	Detail of the blocked door (Blg. 2, Rm.10)	SW
76	3/22		Ext.	Oblique external view of Building 2's rear *Southwest Elevation, central section*	S
77	3/21		Ext.	General view from the foot bridge over Borough Beck	NNW
78	3/20		Ext.	View of the PDA (prior to and after de-vegetation)	NNW
79	3/18	**19**	Ext.	View of Building B's *Northeast Elevation*	N
80	3/17		Blg.B, Rm. 11	General view	NW
81	3/16-15	**25**	Blg.B, Rm. 11	General view	SE
82	3/14	**30**	Ext.	General pre-excavation view of the PDA	NW
83	3/19		Trench 1	General view of the mechanical excavation of the water channel	SW
84	3/13	**38**	TR3	Post excavation view of the southeast facing section	E
85	3/12		TR3	Post excavation view of the trench	NE
86	3/11	**39**	TR3	Detail of the burnt sandy gravel onto of the natural near the southeast end of the trench	SE
87	3/10-9		TR2	View of the northeast section	NNE
88	3//8		TR2	Post excavation view	NW
89	3/7		TR2	Post excavation view	SE
90	3/6	**36**	TR2	View of the northeast facing section	SE
91	3/5	**37**	TR2	Detail of the northeast facing section (south end)	NE
92	3/4		TR2	Post excavation view of the amorphous feature to the north end of the trench	SE
93	3/3-2		TR1	General view prior to removal of the levelling deposits	NW
94	3/1		TR1	Working view of the trench	NE
95	4/36-35		TR1	Working view with the channel deposits removed	SW
96	4/34-33		TR1	View with the channel deposits removed	NE
97	4/32		TR1	Oblique view of the NW facing section with the channel fills removed	NNE
98	4/31		TR1	Oblique view with the channel deposits removed	W
99	4/30-29		TR1	view of the northwest facing section with the channel deposits removed.	NW
100	4/28-27		TR1	Oblique view of the southeast facing section with the channel deposits removed.	E
101	4/26-25		TR1	Oblique view of the southeast facing (central) section	SW
102	4/24	**33**	TR1	View of the top of the revetment wall [104]	SE
103	4/32-22		TR1	View of the lower channel deposits	SE

Photo. Position	Film/ Frame No.	Plate No.	Location, /Room	Description	From
104	4/21		TR1	View of the revetment wall to the channels' right bank	NE
105	4/20-19	**34**	TR1	View of the water channel side [124] with channel fills removed but with the in situ remains revetment wall [112].	SW
106	4/18		TR1	Detail of the southwest facing section	SW
107	4/17		TR1	View of the northwest section (NE end) with residual bulk	SE
108	4/16		TR1	Oblique view of the northwest section (NE end) with residual bulk	E
109	4/16	**35**	TR1	General view of the baulk showing the northern inclination of the deposits	NE
110	4/14		TR1	View of the left hand side of the channel [124] with baulk removed	SW
111	4/13		TR1	View of the south west facing section with the north sloping deposits partially removed,	SW
112	4/12	**32**	TR1	Post-excavation view of the revetment wall [104]	SW
113	4/11		TR1	Detail of the southeast facing section (SW end of the trench)	SE
114	4/10		TR1	Detail of the northeast facing section	NE
115	4/9		TR1	Detail of the southeast section where the water channel cuts [124] earlier medieval deposits	SE
116	4/6		Blg. A, Rm. 2	View of the southwest wall	NE
117	4/4	**28**	Blg. C	Oblique view of the southeast elevation	E
118	4/3	**20**	Blg. B, Rm. 6	Detail of the corner hay rack	N
119	4/2		Blg. A	Detail of the front northwest elevation	NNW
120	4/1		Blg. A	Oblique view of the front northwest elevation	NE

PHOTOGRAPHIC REGISTER B: *35mm Colour Slide (Sensia 400: indexed by photographic position No.)*

Photo. Position	Slide No.	Location	Description	From
6	33	Ext., Blg.A	General view of the south end of Building A	W
8	32	Ext., Blg.B	General view of the southern end of the *Northeast Elevation*	N
67	34	Ext.	General view up Borough Beck with Building B on the right	SE
69	35	Ext.	Oblique external view of Building B's rear *Southwest Elevation,* north end	W
84	1	TR3	Post excavation view of the southeast section	E
85	2	TR3	Post excavation view of the trench	NE
86	3	TR3	Detail of in situ burning at the west end of the southeast section	SE
87	4	TR2	View of the northeast section	NNE
88	5	TR2	Post excavation view	NW
89	6	TR2	Post excavation view	SE
90	7	TR2	View of the northeast section	SE
91	8-9	TR2	Detail of the northeast section (south end)	NE
93	10	TR1	General view prior to removal of the levelling deposits	NW
95	11	TR1	View with the channel deposits removed	SW
96	12	TR1	Working view with the channel deposits removed	NE
97	13	TR1	Oblique view of the NW facing section with the channel fills removed	NNE
98	14	TR1	Oblique view with the channel deposits removed	W
99	15	TR1	view of the northwest facing section with the channel deposits removed.	NW
100	16-17	TR1	Oblique view of the southeast facing section with the channel deposits removed.	E
101	18	TR1	Oblique view of the southeast facing (central) section	SW
102	19	TR1	View of the partially reveal revetment wall [104]	SE
103	20	TR1	View of the lower channel deposits	SE
104	21	TR1	View of the revetment wall to the channels' right bank	NE
105	22-23	TR1	View of the water channel side [124] with channel fills removed but with the in situ remains revetment wall [112].	SW
106	24	TR1	Detail of the southwest facing section	SW
107	25	TR1	View of the northwest section (NE end) with residual bulk	SE
108	26	TR1	Oblique view of the northwest section (NE end) with residual bulk	E
109	27	TR1	General view of the bulk showing the northern slope of [112].	NE
110	28	TR1	View of the left hand side of the channel [124] with baulk removed	SW
111	29	TR1	View of the south west facing section with the north sloping deposits partially removed,	SW
112	30	TR1	Post-excavation view of the revetment wall [104]	SW
113	31	TR1	Detail of the southeast facing section (SW end of the trench)	SE

CONTEXT REGISTER C

No.	Location	Type	Description
100	TR1	Deposit	Dark brown sandy loam redeposited topsoil up to 0.45m deep. Overlies [101].
101	TR1	Deposit	Dark brown sandy loam. Underlies [100] overlies [102].
102	TR1	Deposit	Dark brown sandy loam (buried soil). Underlies [101] overlies [103, 107, 106 & 105]]. *Artefacts: medieval pottery and butchered animal bone*
103	TR1	Deposit	Brown sandy silt. Underlies 102, overlies and abuts the revetment wall [104]. *Artefacts: Late medieval pottery and butchered animal bone*
104	TR1	Structure	Stone revetment wall consisting of large boulders up to 0.6m diam. Earth-fast with no remaining evidence for bonding. Overlies [118 and 117], underlies
105	TR1	Deposit	Mid brown gravelly silt. Underlies [102] overlies [106 and 121(cut)]. Contains 15% sub-angular/rounded limestone up to 0.2m in length.
106	TR1	Deposit	Dark yellow/buff sand silt with biological disturbance (worm/root). Underlies [102 & 124 and 121] overlies [111] and represents the upper context of the levelling/revetment series of deposits.
107	TR1	Deposit	Mid-brown loam with 5-7% charcoal. Underlies [102] overlies [24 (cut), 110 & 108]. *Artefacts: medieval pottery and butchered animal bone*
108	TR1	Deposit	Brown silt. Underlies [107 & 110]. Underlies [110, 107], overlies [109]. *Artefacts :abraded medieval pottery, slag and butchered animal bone*
109	TR1	Deposit	Sand and gravel, rounded stone up to 0.02m diam.
110	TR1	Deposit	Light brown sandy silt with frequent rounded stone 5%. Underlies [107], overlies [108].
111	TR1	Deposit	Mid-brown grey silty loam with frequent 7% charcoal (sample 2: Appendix 5). inclusions of slag, CBM. Tested positive for hammerscale. Underlies [106, overlies [111]. *Artefacts: medieval pottery slag and butchered , burnt and unburnt animal bone*
112	TR1	Deposit	Brown sandy silt , 5% rounded stone up to 0.1m diam. Underlies [111, 106 & 124] overlies [113]
113	TR1	Deposit	Brown silt. Underlies [112, 124] overlies [114]
114	TR1	Deposit	Light brown gravel. Underlies [113], overlies [115].
115	TR1	Deposit	Brown silt with 40% large rounded stone up 0.3m diam. Underlies [114] overlies [120] (natural gravel*]*. This context *represents* the lower primary deposit of the levelling/revetment deposits. *Artefacts: early medieval pottery, bone (pelvis) and oyster shell.*
116	TR1	Deposit	Layer of stone with general dipping to the west, suggestive of deliberate reinforcement of the wall [104] or wall collapse. Underlies [103] overlies [118 & 117]. Artefacts: Pottery, tile and bone.
117	TR1	Deposit	Brown silt. Underlies 116 & 118], overlies [119](natural) with *Artefacts: medieval pottery and butchered animal bone oyster shell, muscle shell and roundwood charcoal*

No.	Location	Type	Description
118	TR1	Deposit	Redeposited gravel with silty lenses. Underlies [116], overlies [117]. Formation abutting wall suggests natural high energy flooding event.
119	TR1	Deposit	Orangey buff sandy gravel, natural deposit subject to iron panning. Lies below [117].
120	TR1	Deposit	Apparent natural sandy gravel but still features rounded stone up to 0.with
121	TR1	Deposit	Cut with a rounded base, containing deposit [105]. Underlies [105] overlies [106].
122	TR1	Deposit	A 60degree cut representing a possible foundation cut for the revetment wall [104]. Underlies [116], overlies [117].
123	TR1	Structure	Revetment wall (remains of) horizontally laid rounded limestone up to 0.15m diam.
124	TR1	Deposit	-
200	TR2	Deposit	Dark brown silty loam (topsoil) with modern rubbish: flower pots brick flagstone fragments
201	TR2	Deposit	Dark brown silty loam (consolidated buried soil) with brick and frequent sun-angular stone limestone; Underlies [200] Artefacts: Late Post medieval pottery , coke and butchered bone.
202	TR2	Deposit	Dark brown silty clay with frequent sub-angular and rounded stone. *Artefacts: medieval pottery, butchered bone , abraded tile and burnt limestone*
203	TR2	Deposit	Mid brown sandy silt forming a thin deposit overlies the natural sandy gravels [207]. Underlies [202], overlies [202]. *Artefacts: medieval pottery.*
204	TR2		Light brown sandy silt. Underlies [202, overlies [205].
205	TR2	Deposit	Brown silty clay with frequent charcoal
206	TR2	Deposit	Brown sandy clay. Underlies [205].
207	TR2	Deposit	Orangey/buff, natural sandy gravel
208	TR2	Deposit	Gravely silt redeposited river sediments
209	TR2	Cut	Cut for rubbish pit. Underlies [210]
210	TR2	Deposit	Dark brown silty loam. Overlies [209]
300	TR3	Deposit	Dark brown sandy silt up to 0.26m deep. Overlies [301] *Artefacts: Late PM /Modern pottery (discarded)*
301	TR3	Deposit	Mixed context containing slate, clay tile with lenses of lime mortar. Underlies [300], overlies [302]. *Artefacts: Late PM /Modern pottery (discarded)*
302	TR3	Deposit	Dark brown sandy loam (Buried soil) similar to [300]. Underlies [302], overlies [304 and [309].
303	TR3	Deposit	Brown sandy silt with frequent charcoal
304	TR3	Deposit	Light brown sandy silt. Artefacts: Medieval pottery
305	TR3	Deposit	Red sandy gravel, representing a layer of burnt material
306	TR3	Deposit	Brown gravel with rounded stone. Underlies [307], overlies [310].
307	TR3	Deposit	Dark grey , mixed clay and gravel with substantial angular stone, possible construction debris. Underlies [303], overlies [306& 309].
308	TR3	Deposit	Natural sandy gravel.
309	TR3	Deposit	Light brown sandy gravel. Underlies [303], overlies [308] (Natural}
310	TR3	Cut	Convex side with a rounded base. Possibly circular rubbish pit up to 0.6m diam. Underlies [306] overlies [309].

GENERAL FINDS REGISTER D

Pottery Abbreviations: BS – Body sherd, R- rim, B- base, H- Handle

No.	Context No.	Type	Description
1		BS	-
2		BS	-
3		BS	-
4	u/s	BS	Georgian 'Cartwheel penny' dated "1797"
5-16	304	BS, R & H	Late Medieval 'green glaze' pottery (12 sherds)
17-23 & 25	201	BS, R & B	Late Medieval 'green glaze' pottery (8 sherds)
24	201	Bone etc.	Butchered bones and coke fragments
26-28	203	BS, B	Pottery (3 sherds)
29-31	108	BS, B	Abraded pottery (3 sherds)
32	108	Bone etc.	A sample of butchered cattle, sheep bones
33	108	slag	(3 fragments)
34	108	Fe obj.	-
35-38	101	BS	Pottery (3 sherds)
39	101	BS	bone
40	101	BS	Pottery – modern transfer decorated 'china'
41-45	103	BS	Late Med Pottery (3 sherds)
46	103	Slag	1 fragment
47	103	Fe objs.	(x2)
48	103	BS	Butchered bones
49-57	107	BS, b	Late Med Pottery (9 sherds)
58	107	BONE	Butchered bone (x 28 fragments) inc. vertebrae ribs cranium and 1 burnt knuckle bone
59	107	BS	Burnt limestone (discarded)
60	107	Fe Obj.	Possible knife
61-69	202	BS, R, B	Pottery (9 sherds)
70	202	Tile	Abraded tile fragment
71	202	Bone	Butchered bone (x 12)
72	202	Stone	Burnt Limestone (0.2 kg)
73	u/s	BS	-
74	100	BS	Misc. transfer decorated pottery: willow pattern a clay pipe stem slag frags cream glazed handle(discarded)
75	100	BS	pottery
76-88	111	BS	Misc medieval pottery (13 frags.)
89	111	slag	3 frags
90	111	bone	Sheep's jaw
91	111	Charcoal	Round wood frag.
92-95	303	BS	Pottery (6 sherds)
96	303	Clay pipe	Pipe stem
97	303	glass	Sherd of modern glass
98-106	115	BS, R & H	Pottery (8 sherds)
107	115	Shell	Oyster shell
108	115	Bone	Cattle pelvis
109-112	117	BS	Pottery (3 sherds)
113	117	Tile	Abraded tile fragment
114	117	Shell	Oyster and mussel shell frags
115	117	Bone	-

No.	Context No.	Type	Description
116	117	Charcoal	Roundwood frag.
117-121	116	BS, H	Pottery (5 sherds)
122	116	Bone	-
123	116	Tile	Slightly abraded
124	113	Slag	(x 4)
125	113	Bone	-
126	113	Charcoal	Roundwood frag.
127	113	Charcoal	Lump wood
128	113	Tile	Abraded
129-132	113	(Pottery)	4 sherds
133	115	BS	Early medieval pottery (2 sherds)
134-5	116	Bone	Cattle leg bones

SPECIAL FINDS REGISTER E

No.	Context No.	Description
SF1	116	Limestone roof tile
SF2	116	Limestone roof tile

BULK SAMPLE REGISTER F

Context No.	Context No.	Description	Volume.
1	107	Mid-brown loam overlying the upper channel deposits	60L
2	111	Mid-brown grey silty loam with frequent charcoal	10L

DRAWING REGISTER G

Plan No.	Section No.	Description
1		Plan of Trench 1 with former water channel
2		Plan of Trench 2 with marked fall off of the natural [209] to the southwest
3		Plan of Trench 3
	1	South east facing section of Trench 1, with the former water channel
	2	Northeast facing section
	3	Southeast facing section

APPENDIX 3

Assessment of slag recovered during archaeological fieldwork at Helmsley, North Yorkshire.

by Dr Roderick Mackenzie

Introduction

The following report is an assessment of possible metalliferous residues recovered during archaeological fieldwork at Barker's Yard, Helmsley, North Yorkshire. The material in the assemblage is thought to date from the medieval period. A basic identification of the residues has been carried out and individual pieces have been assessed for their archaeological potential; the results of the assessment are summarised below in Table 1. It should be noted that no chemical or metallurgical analysis of the residues has been carried out at this stage.

General discussion of slag types

In some types of metal production, the slag and other by-products can be easily linked to a specific process. However, in other cases, it can be extremely difficult to identify the production source of slags based on their morphology. The difficulties of determining the process origin of slags from the Iron Age to Medieval period are discussed by McDonnell (2001, 163) and Bachmann (1982:31).

Pre-industrial iron smelting and smithing processes in particular both produced a high proportion of indistinct 'undiagnostic' slags. In general, iron smelting produced a much higher volume of diagnostic slags than iron smithing. However, as iron smithing was more common and geographically widespread than smelting, undiagnostic slags tend, archaeologically, to be the most common type.

In some cases, scientific analysis can help to determine the process origin of slags, although this is normally only justified where there is supporting archaeological or historical evidence, or the particular slag found is of an archaeometallurgically significant type.

Results

Context No.	Number of fragments	Type of material	Weight
103	1	Undiagnostic slag	15g
108	2	Probable iron smithing slag	88g
108	1	Undiagnostic slag	6g
111	1	Probable iron smithing slag	31g
111	2	Undiagnostic slag	7g
113	1	Fragment of slagged refractory stone - probable hearth lining material	75g
113	1	Probable iron smithing slag	26g
113	1	Possible fragment of 'smithing hearth bottom' slag	133g
113	1	Charcoal	<5g

Table 1: Summary of production residues recovered from archaeological fieldwork at Barker's Yard, Helmsley, North Yorkshire.

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Summary of assemblage

The assemblage contains fragments of slag and other materials that possibly relate to the smithing of iron; the most notable of these were all recovered from context 113. One piece is possibly a fragment of slag from the base of a smithing hearth, another piece appears to be a fragment of refractory stone, and this has a layer of slag attached to one side. The final piece of note is a fragment of charcoal, approximately 35mm long and 15mm diameter. It is worth noting that, during the medieval period blacksmiths would have used charcoal, rather than coke, as fuel. Unfortunately, the slag attached to the piece of refractory stone is undiagnostic, although the presence of the other materials in the same context suggests that it could have been part of the lining of a blacksmiths hearth.

Conclusion

The assemblage does contain a small amount of evidence that appears to relate to iron smithing, although there is not enough to suggest that smithing had been taking place within the area excavated. However, it is worth noting that, until relatively recently, a working blacksmiths forge was located within a 30 metre radius of the excavated area. If the nearby forge was in use during the medieval period, this would seem the most likely source of the slag and associated material found in the excavated area.

Recommendations

Although it lies outside the excavated area, it would be interesting to see whether historical records can confirm the presence of the nearby forge during the medieval period.

The material in the assemblage is of relatively low archaeometallurgical potential and, on its own, offers only limited scope for scientific analysis. Some of the residues may have some research potential as part of a wider study into medieval smithing; it is therefore recommended that its presence should be noted in case of future archaeological excavations and the pieces of smithing debris should be retained as part of the site archive.

The remaining residues can be disposed of in the usual manner.

Bibliography

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McDonnell J.G.	2001	*Dunadd, the site archive, Cardiff Studies in Archaeology Specialist Report No.19*. Cardiff: Cardiff University Available from - http://www.gla.ac.uk/archaeology/resources/dunadd/data/3_1.pdf

APPENDIX 4

Medieval and later pottery from an archaeological evaluation in Barker's Yard, Borogate, Helmsley, North Yorkshire

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Tables

Introduction

The pottery assemblage from Barker's Yard, Borogate, Helmsley, was examined by the author between the 19th and 21st August 2010. It consisted of 105 sherds of pottery weighing 3053 grams and represented a maximum of ninety-six vessels. One cross-context join was identified (contexts 201 and 202). The assemblage also included three flakes of roof tile and a piece of fine-grained sandstone. The data are summarised in Table 1.

The pottery

The medieval pottery assemblage consisted largely of local wares and identifiable imports, either European or regional, were notable by their absence. It is possible that some of the unidentified wares (discussed below) were of non-local origin, but as they did not belong to any of the well-known regional ware types this is less likely than a local origin.

Two types of pottery dominated the assemblage; *Brandsby type wares* and *Hambledon type wares*. Both are known to have been important local types and have been discussed extensively in the literature although the degree of detail regarding the location and extent of production is less than might be desired. Brandsby type wares have been identified in Hull and York, at Wharram Percy and Rievaulx Abbey and appear to date to the period between the mid 13th and mid 14th centuries (Watkins 1987:107-9, Brooks 1987:153-4, Jennings 1992:24-6, Le Patourel 1979:88-9, Slowikowski 2000:78, Drummond 1988:35-8). As Brooks has noted (1987:153), while one pottery has been identified in Brandsby, sherds with similar general characteristics are also known in other fabrics and it is probable that there were other potteries in the area producing similar wares. This is an issue with many medieval and post-medieval North Yorkshire wares as the area was clearly the location of a thriving pottery industry but too few potteries have been identified to date and their products remain to be definitively characterised. This is reflected in the suffix –type applied to the type names and also the relatively large number of unidentified wares listed under generic names in the data table. The identification of the *Reduced North Yorkshire type ware*, probably a variant of the Brandsby type wares is based on the description provided by Watkins (1987: 109).

Hambledon type wares have also been identified from sites across the area and, like the Brandsby-type wares, have been discussed extensively elsewhere (Brooks 1987:159-60, Jennings 1992: 30-1, Le Patourel 1979:93, Slowikowski 2000:80, Drummond 1988:38). As with the Brandsby-type wares, there seems to be some variation in the Hambledon type fabrics and this is reflected in the examples from Helmsley in that the observable characteristics of the sherds were not always identical with published descriptions of other assemblages. In particular the characteristic flaking of the glaze described by Jennings (1992:30) was not observable on the sherds from Helmsley. Hambledon type wares appear to date to the 14th and 15th centuries and seem to have succeeded the earlier York Glazed and Brandsby type wares. In turn it seems to have been replaced by the post-medieval Ryedale type wares in the 16th and 17th centuries.

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Other identifiable wares included a sherd of *Reduced Greenware type ware* (context 304) and larger quantities of *Green Glazed Sandy ware*, a late medieval to post-medieval type distinguished by its fine, even sandy fabric and glaze on both the internal and external surfaces. In both of these cases the type names cover the products of a number of individual potteries which have yet to be adequately defined and characterised. *Humberwares* were notable by their scarcity although a sherd of a drinking jug (Jennings 1994) was identified in context 115 and a probable sherd from a jug in context 304.

Unidentified wares formed a high proportion of the total and have been ascribed generic names in the data table. While it is probable that some of these may be variants of the named types (and particularly of the Hambledon type ware group), others probably represent the products of local potteries which are either unfamiliar to the author or have yet to be adequately defined. There were certainly significant regularities in the fabrics with the *Reduced Sandy wares* in particular notable for the occurrence of rounded black non-crystalline rock fragments alongside the ubiquitous quartz sand. The characteristics of other types are briefly described in the data tables with the generic names summarising their salient characteristics. The rather unsatisfactory state of our knowledge of medieval pottery from North Yorkshire was highlighted by Mellor (1994) and will also be the subject of comment in a forthcoming review of medieval ceramic studies by the Medieval Pottery Research Group.

Post-medieval and later pottery was notable by its scarcity and the lack of common post-medieval to early modern types (including Cistercian ware, Blackware, Yellow ware, Slipware etc) suggests either a hiatus in activity in the area of the excavation after the later medieval period or the extensive truncation of deposits of this date by later activity. Contexts 101, 303 and an unstratified context in Trench 2 all produced fragments of 18th and 19th century pottery but in every case the numbers of sherds were very low.

Discussion

Trench 1

Trench 1 produced the largest assemblage of pottery; sixty-one sherds weighing 1447 grams and representing a maximum of fifty-eight vessels. A sherd of splash-glazed Sandy ware from context 111 was amongst the earliest sherds from the site but was most probably residual within a later context. The same context also included a number of joining sherds and an unusual wide everted rim (in a Hambledon ware variant fabric) with internal combing and an applied and impressed strip externally.

Context 107 included a good example of a pot disc in a Hambledon type fabric. Such discs are common on sites across Europe and vary widely in date. They are generally regarded as gaming pieces in the absence of any other convincing explanation.

The overall impression given by the assemblage from Trench 1 is of later medieval activity in the area of the trench represented by the deposition of pottery dating to the period between the mid 13th and 15th centuries with an unusually small residual element and a surprising absence of post-medieval and later wares.

Trench 2

Trench 2 produced a group of twenty-five sherds weighing 713 grams and representing a maximum of twenty-two vessels. Although both Brandsby and Hambledon type wares were present, unidentified local wares were somewhat commoner. Whether this indicates a difference in the date range of the contexts excavated is unclear; on the face of it, it seems unlikely as the sherds lacked traits that would identify them as of earlier medieval date and there were no indications that they were significantly later in date. It seems more likely that for unknown reasons activity in the area of the trench involved pottery from as yet poorly documented sources. Contexts 201 and 202 produced three joining sherds from the lid seated rim of a jar. These were in a slightly coarse, buff sandy fabric of unknown type and date although the high quality of the manufacture would seem to suggest a date in the 13th or early 14th century rather than later.

Trench 3

Trench 3 produced a small assemblage of sixteen sherds weighing 810 grams representing a maximum of thirteen vessels. Context 303 was distinguished by the late date of the pottery while context 304 also included a sherd of Brown Glazed Coarseware alongside a largely later medieval assemblage. The group also included sherds of Humberware type and Reduced Greenware alongside unidentified local wares and a small group of Reduced North Yorkshire type wares.

Conclusion

The pottery assemblage described in this report consisted predominantly of locally manufactured wares dating to the period between the mid 13th and 15th centuries with remarkably little material of either earlier or later date. Further work on the site might reveal whether the scarcity of later pottery was the result of later truncation of the archaeological strata or of the use of the area for purposes which excluded the deposition of pottery. The virtual absence of earlier medieval (11th to early 13th century) pottery may be the result of the area lying outside the area of the town between these dates although the author is not sufficiently acquainted with the topography of medieval Helmsley to assert this as definite.

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Table 1. Pottery from Borogate, Helmsley, North Yorkshire

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes
100	Hambledon type ware	1	45	1	BS	Hollow ware	Grey-green glaze ext	C14th – C15th	See Watkins 1987, Brooks 1987 for description; reduced throughout
100	Hambledon type ware	1	2	1	BS	Hollow ware	Bright green glaze int & ext	C14th – C15th	Brooks 1987
101	Hambledon type ware	1	79	1	Strap handle	Jug/cistern	Thick, dark green glaze	C14th – C15th	Wide strap handle w/ internal plug; buff to pale grey body
101	Hambledon type ware	1	11	1	BS	Hollow ware	Dark green glaze ext; combed wavy lines ext	C14th – C15th	Reduced body
101	Hambledon type ware	1	9	1	BS	Hollow ware	Light green mottled glaze	C14th – C15th	Dark grey int, pale grey ext under glaze
101	Hambledon type ware	1	15	1	BS	Hollow ware	Mid-green mottled glaze	C14th – C15th	Pale grey body
101	Whiteware	1	78	1	Recessed base	Jar	U/Dec	M – LC19th	
103	Hambledon type ware	1	124	1	Rim & strap handle	Jug	Dark green glaze ext; triple row of stabbed holes on top of handle	C14th – C15th	Pale grey body w/ dark grey int surface; occasional muscovite int
103	Hambledon type ware	1	76	1	BS & handle stump	Jug/cistern	Dark green glaze ext	C14th – C15th	Finger impressions int; pale grey to pale brown body
103	Hambledon type ware	1	13	1	BS	Hollow ware	Dark green glaze ext	C14th – C15th	Pale buff body
103	Hambledon type ware	1	6	1	Applied plaque	?Jug	Dark green glaze ext; thumb imp plaque w/ stamp in centre	C14th – C15th	Pale grey body
103	Hambledon type ware	1	7	1	BS	Hollow ware	Green glaze ext	C14th – C15th	Pale grey body w/ dark grey int surface, occasional fine muscovite
103	Hambledon type ware	1	10	1	BS	Hollow ware	Pale green glaze ext	C14th – C15th	Pale grey body w/ buff int surface
107	Buff Sandy ware	1	28	1	Base	Hollow ware	Patchy pale green glaze w/ extensive pitting	Medieval	Footed base; pale fine buff fabric
107	Hambledon type ware	1	19	1	BS	Hollow ware	Dark green mottled glaze ext	C14th – C15th	Dark grey body w/ light grey margin; pot disc
107	Hambledon type ware	1	23	1	BS	Hollow ware	Mottled dark green glaze ext	C14th – C15th	Dark grey int, pale grey ext under glaze
107	Hambledon type ware	1	4	1	BS	Hollow ware	Pale green glaze int & ext; combed wavy lines ext	C15th	Pale buff-orange body

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes
107	Hambledon type ware	1	11	1	BS	Hollow ware	Green glaze ext	C14th – C15th	Pale grey body
107	Hambledon type ware	1	25	1	BS	Hollow ware	U/Dec	Late Medieval	Pale grey body w/ dark grey core; one large iron-rich sandstone inc & finer black grit
107	Reduced Sandy ware	1	6	1	BS	Hollow ware	Streaky green glaze ext	Late Medieval	Fine sandy body w/ abundant fine sub-rounded quartz up to 0.1mm
107	Reduced Sandy ware	1	6	1	BS	Hollow ware	Streaky green glaze ext; impressed line ext	Late Medieval	Very fine, pale grey sandy body w/ sparse fine muscovite
107	Reduced Sandy ware	1	11	1	Base	Hollow ware	Patchy green glaze ext	Late Medieval	Pale grey body w/ buff ext margin; fine body w/ occasional w/ hard sub-angular black grit
108	Buff Sandy ware	1	13	1	Rim	Jar/CP	U/Dec	LC11th – C13th	Fine buff sandy fabric; diamond profile rim on a thin walled body, heavily abraded
108	Late Medieval Sandy ware	1	5	1	Base	Hollow ware	U/Dec	Late Medieval	Slightly abraded fragment of a base
111	Brandsby type ware	1	17	1	BS	Hollow ware	Thin, hard, pale green glaze w/ dark green flecks	MC13th – MC14th	Hard, fine pale grey body
111	Buff Sandy ware	1	15	1	BS	?Jug	Glazed ext; heavily burnt w/ ridge on neck	Medieval	Fine buff body; occasional non-crystalline grit, probably local
111	Hambledon type ware	1	19	1	BS	Hollow ware	Green glaze ext & raised ridge ext	Late Medieval	Dense dark grey body w/ pale grey ext margin; occasional black grit
111	Hambledon type ware	1	61	1	Rim	?Jar	Wide everted rim w/ combed wavy lines int; app & imp band below rim	C14th – C15th	Unusual wide everted rim but w/ typical applied strip decoration ext
111	N. Yorks type ware	1	8	1	BS	Hollow ware	Impressed line ext; patchy green glaze	C13th – C14th	Pale grey reduced fabric w/ dull orange ext margin w/ occasional black grit
111	Oxidised Sandy ware	1	11	1	BS	Hollow ware	U/Dec	Medieval	Unidentified quartz tempered orange sandy ware, probably C12th – C13th
111	Oxidised Sandy ware	1	8	1	?Base	Hollow ware	U/Dec	Medieval	Hard dull orange body w/ moderate fine quartz & round non-crystalline grains up to 1.5mm
111	Oxidised Sandy ware	1	4	1	BS	Hollow ware	U/Dec	?C13th – C14th	Orange body w/ moderate quartz grit & non-crystalline sub-angular black grit & round white grit
111	Reduced N.Yorks type ware	2	57	1	BS	Hollow ware	Patchy mottled green glaze ext on buff ext surface	LC13th – C14th	Hard reduced grey body w/ light ext margin; fine w/ occasional non-

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes
									crystalline incs; cf Watkins 1987:109
111	Reduced N.Yorks type ware	1	28	1	Rim	Jug	Narrow deep parallel grooves w/ dark green glaze ext	LC13th – C14th	Hard, dense reduced body w/ light ext margin w/ occasional black non-crystalline grains; pulled spout
111	Splash Glazed Sandy ware	1	5	1	BS	Hollow ware	Spots of green splashed glaze ext; ?impressed line	LC11th – EC13th	Oxidised sandy body w/ abundant sub-angular quartz & occasional non-crystalline grit
113	Brandsby type ware	1	6	1	BS	Hollow ware	Pale green glaze w/ darker mottling	MC13th – MC14th	Pale grey body
113	Oxidised Sandy ware	1	16	1	BS	Hollow ware	U/Dec	Medieval	Pale buff-orange body w/ moderate sub-angular quartz & occasional non-crystalline grit; pitted ext
113	Reduced Sandy ware	1	7	1	BS	Hollow ware	Green-brown glaze ext w/ raised ridge ext	Later Medieval	Very fine, dense pale grey body;
113	U/ID Sandy ware	1	14	1	BS	Hollow ware	Traces of glaze ext	Medieval	Heavily burnt w/ attached slag-like lump
115	?Brandsby type ware	1	23	1	BS	Hollow ware	U/Dec	?MC13th – MC14th	Dull buff ext margin, reduced core & int; hard even fabric
115	Brandsby type ware	1	20	1	BS	Hollow ware	Mottled green glaze ext	MC13th – MC14th	Hard, dense fine reduced body w/ occasional non-crystalline grit
115	Brandsby type ware	1	38	1	Base	Hollow ware	Spots of clear glaze ext	MC13th – MC14th	Fine sandy body w/ occasional non-crystalline grains
115	Buff Sandy ware	2	22	1	BS	Hollow ware	Rilled profile w/ patches of pale green glaze	?C12th – C13th	Thin walled vessel; light dense buff fabric w/ moderate fine quartz & occasional non-crystalline white grit
115	Hambledon type ware	1	105	1	BS	Hollow ware	Multiple combed wavy lines under dark green glaze ext, thin green glaze int	C14th – C15th	Thick reduced body w/ dark grey core
115	Humberware	1	40	1	BS	Drinking jug	U/Dec	LC14th – C15th	See Jennings 1994
115	Oxidised Sandy ware	2	70	1	BS	Hollow ware	Knife trimmed ext	Medieval	Fine even dull buff fabric w/ abundant rounded quartz up to 1mm
115	Oxidised Sandy ware	1	52	1	Handle	Hollow ware	Mottled green glaze on top of strap handle	Medieval	Hard, dense dull orange to grey fabric w/ fine quartz sand
115	Reduced Sandy ware	1	13	1	Base	Hollow ware	Spots of green glaze on underside	Medieval	Reduced w/ thin buff margin int; abundant quartz grit up to 0.2mm

116	Brandsby type ware	1	26	1	BS & dec handle	Jug	Dark green mottled glaze; small rod handle	MC13th – MC14th	Pale grey body w/ dark grey core; fine body w/ sparse black & white non-crystalline grit
116	Brandsby type ware	1	11	1	BS	Hollow ware	Dark green glaze ext	MC13th – MC14th	Hard, fine dense pale grey body w/ occasional white grit
116	Brandsby type ware	1	16	1	BS	Hollow ware	Green glaze ext	MC13th – MC14th	Pale grey reduced body w/ buff int margin
116	Brandsby type ware	1	10	1	BS	Hollow ware	Spots of green glaze ext	MC13th – MC14th	Yellow-buff body w/ dark grey core w/ occasional black grit
116	Hambledon type ware	1	13	1	BS	Hollow ware	Dark green glaze ext, mid green patchy glaze int	C14th – C15th	Fine even yellow-buff body
117	Brandsby type ware	1	18	1	BS	Hollow ware	Pale yellow-green glaze ext, blistered	LC13th – C14th	Pale orange fabric w/ occasional non-crystalline grains
117	Reduced N.Yorks type ware	1	7	1	BS	Hollow ware	Dark green glaze over combed wavy lines ext	LC13th – C14th	Fine pale grey body
117	Reduced N.Yorks type ware	1	8	1	BS	Hollow ware	Dark green glaze ext	LC13th – C14th	Fine very hard, dense reduced fabric
117	Reduced Sandy ware	1	16	1	BS	Hollow ware	Pale green glaze int only; ext surface pitted & abraded	Late Medieval	Fine white to grey w/ sparse non-crystalline grit up to 1mm
118	Reduced Greenware	1	37	1	BS & handle stump	Jug	Green glaze ext	LC13th – C15th	Double handle thumbing; hard reduced body; abraded edges
201	Buff Sandy ware	1	28	1	Rim	Jar	U/Dec	C13th – C15th	Abundant sub-rounded quartz up to 0.2mm in a buff sandy textured body; form resembles Humberware jars
201	Oxidised Sandy ware	1	60	1	Base	?Bowl	Green glaze int only	Medieval	Fine dull red oxidised body w/ grey int surface; abundant fine quartz tempered body
201	Reduced Sandy ware	1	21	1	BS	Hollow ware	Shallow parallel grooves ext; pale mottled green glaze ext	Medieval	Fine pale grey fabric w/ moderate fine quartz grit & occasional black grit
201	Reduced Sandy ware	1	18	1	BS	Hollow ware	Spots of green glaze ext	Medieval	Hard dense reduced fabric w/ sparse quartz & occasional black grit
201	Reduced Sandy ware	1	31	1	BS	Hollow ware	Slightly mottled green glaze ext	Medieval	Very hard, dense pale grey reduced fabric w/ fine quartz & sparse black grit up to 1mm
201	Reduced Sandy ware	1	75	1	Base	Hollow ware	Sparse streaks of yellow glaze ext	Medieval	Hard, dense reduced body w/ buff ext margin; sparse fine quartz and occasional black grit

202	Buff Coarse Sandy ware	1	5	1	BS	Hollow ware	U/Dec	?C12th – C14th	Dull orange body w/ abundant sub-rounded quartz up to 0.5mm
202	Coarse Sandy ware	1	9	1	BS	Hollow ware	Patchy bright green glaze ext	?C13th – C14th	Abundant sub-rounded quartz up to 0.5mm in a buff to grey body; local
202	Hambledon type ware	3	67	2	Base	Hollow ware	Patchy mottled dark green glaze ext	C14th – C15th	Hard, dense reduced fabric, dark grey int, pale grey ext w/ occasional black grit
202	Hambledon type ware	1	20	1	BS	Hollow ware	Patchy yellow-green glaze ext	C14th – C15th	Hard, dense reduced fabric, dark grey int, pale grey ext w/ occasional black grit
202	Oxidised Sandy ware	1	9	1	Rim	Hollow ware	U/Dec	?Post-medieval	Clubbed rim; probably later than rest of context
202	Reduced Sandy ware	1	32	1	Base & BS	Hollow ware	U/Dec	?C13th – C14th	Fine even reduced body w/ abundant sub-rounded quartz up to 0.5mm
203	Brandsby type ware	1	6	1	BS	Hollow ware	Mottled yellow green glaze ext	MC13th – MC14th	Pale grey reduced body
203	Green Glazed Sandy ware	1	49	1	Base	Hollow ware	Green glazed int & partially ext	?C15th – C16th	Fine, dense grey to dull orange body w/ occasional rounded quartz up to 0.8mm
203	Reduced Sandy ware	1	3	1	BS	Hollow ware	Pale green glaze ext	?C13th – C14th	Resembles Hallgate B
201&202	Buff Coarse Sandy ware	3	65	1	Rim	Jar	U/Dec	?C12th – C13th	Everted open lid-seated rim; buff body w/ pale grey core; abundant even sub-angular quartz up to 0.6mm
Tr 2 U/S	Green Glazed Sandy ware	1	64	1	Rim	Bowl	Dark green glaze int	C15th – C16th	Oxidised sandy body; flat-topped rim; fired inverted
Tr 2 U/S	Green Glazed Sandy ware	1	16	1	Rim	Dish	Green glaze int; patchy ext	C15th – C16th	Profiled rim; abraded edges
Tr 2 U/S	Mottled ware	1	29	1	Base	Bowl	Dark mottled glaze int; patches of red slip ext	C18th	
Tr 2 U/S	Oxidised Sandy ware	1	20	1	Handle	Jug	Pale green glaze; two prominent ridges on top	Medieval	Abundant fine quartz sand in a hard, even dull orange body
Tr 2 U/S	Reduced Sandy ware	1	86	1	Base	Jar	Patchy dark green glaze on underside of base & ext	Medieval	Hard, dense reduced body w/ a buff ext margin; fine quartz & occasional black grit
303	Brown Glazed Fineware	1	4	1	BS	Hollow ware	Brown glaze int & ext	C18th - EC19th	Fine red body
303	Yellow Glazed Coarseware	1	64	1	Rim	Bowl	White slip int under clear glaze; glazed ext	C19th – EC20th	
303	Yellow Glazed Coarseware type	1	66	1	Rim	Bowl	Discoloured white slip under glaze int	LC18th – C19th	
304	Brown Glazed Coarseware	1	55	1	Base	Jar/pancheon	Brown glaze int only	LC18th – C19th	

304	Green Glazed Sandy ware	3	124	2	BS	Hollow ware	Mottled & streaky green glaze int & ext, slight blistering int	C15th – C16th	Fine even light orange fabric w/ rare white incs; probably local
304	Hambledon type ware	1	30	1	Strap handle	Jug	Patches of sparse, very thin glaze ext	Medieval	Fine dull orange body w/ grey core; sparse quartz grit
304	Humberware type	1	113	1	Base	Jug/jar	Discoloured green glaze ext	LC13th – C15th	Stacking scar on underside, abraded from use
304	Reduced Greenware type	1	69	1	BS	Hollow ware	Dark green glaze ext	LC13th – C15th	Hard, fine, dense reduced body
304	Reduced N.Yorks type ware	2	112	1	Base	Jar	Traces of green glaze ext but very heavily pitted ext surface	LC13th – C14th	Reduced throughout w/ quartz & sub-rounded black grit
304	Reduced N.Yorks type ware	1	118	1	Base	Hollow ware	Green glaze int & ext	?C14th – C15th	Fine even pale grey body w/ sparse black grit; stacking scar on underside
304	Reduced N.Yorks type ware	1	39	1	Rim	Bowl	Mottled dark green glaze int only	?C15th – C16th	Round clubbed rim w/ ridge below rim; hard, dull buff fabric w/ fine quartz & black grit
304	Reduced Sandy ware	2	16	1	BS	Hollow ware	Fine impressed lines ext; green glaze int & ext	?C15th – C16th	Fine pale grey sandy fabric;
U/S	Green Glazed Sandy ware	1	41	1	BS	Hollow ware	Green glaze int & patchy ext	C15th – C16th	Dull orange body w/ abundant sub-rounded quartz up to 0.2mm
U/S	Reduced Sandy ware	1	10	1	Rim	Jug	Dark green glaze ext; ridge below round rim	?C13th - C14th	Fine reduced body w/ moderate fine quartz
U/S	Reduced Sandy ware	1	32	1	BS	Hollow ware	Patchy dark green glaze ext	Medieval	Hard, fine dense reduced body w/ fine quartz & occasional black grit
	Total	**105**	**3053**	**96**					
111	Stone	1	8	1	N/A	N/A	N/A	N/A	Small fragment of sandstone
303	CBM	3	13	2	Flakes	Tile	U/Dec	Undated	

APPENDIX 5

Palaeoenvironmental assessment of an archaeological deposit from Trench 1, Context 111, Barker's Yard, Helmsley, North Yorkshire

Dr Jane Wheeler

Introduction

Palaeoenvironmental analysis of a stratigraphically constrained archaeological deposit from Trench 1 was undertaken to present complementary environmental data to consolidate the sedimentary and archaeological interpretation of the site at Barker's Yard, Helmsley, North Yorkshire. The palaeoenvironmental assessment of a soil sample from context 111 has produced evidence which provides a snap shot of the local environment in the immediate vicinity of the site during the Medieval development of the town.

Methods

Macro-analysis

7 litres of bulk soil was processed using flotation and then wet sieved (2µm) (cf. Pearsall 2000). The residue was then spread evenly on a tray and air-dried. Once dry the residue (450 ml) was sieved using a 4µm and 2µm sieve to remove the silt and fine sand components, and also to enable the macro-charcoal assemblage to be fractionised. 100% of the ≥4µm fraction was retained for analysis. Data are presented in tabular format see Table 1.

	Flot size (ml)	Items present
Animal bone fragments	5	3
Burnt animal bone fragments	8	12
Charcoal fragments ≥4µm	50	55
Charcoal fragments <4µm	100	700
Ceramic building material (CBM)	30	20
Fe object (nail)	7	1
Slag	32	10
Clay ? Wattle and daub fragments	6	3
Gravel/pebbles ≤3cm	200	570
Root matter	12	80
Total	**450**	**1451**

Table 1. Macro-remains: Trench 1, context 111.

Micro-analysis

A sub-sample of approximately 1cm^3 was taken from the bulk soil sample collected from context 111 during excavation. The sub-sample was prepared for pollen and non-pollen palynomorph (NPP) analyses following Barber (1976). In order to remove mineral matter the organic component of each sub-sample was separated using density flotation (Nakagawa *et al.* 1998). Pollen was counted to a total of 300 total land pollen (TLP), excluding spores. All data are expressed as a percentage of the TLP, although spores are excluded from the TLP sum. Rare pollen types are categorised as ≤1%. Fungal spores, including non-pollen palynomorphs (cf. van Geel *et al.* 1982/1983, 2003; van Hoeve and Hendrikse 1998), were also identified to provide additional environmental information. These data are expressed as a percentage of TLP. Microscopic charcoal was counted in three fractions (<21µm, 20-50µm, and >50µm) in addition to TLP. A *Lycopodium* 'spike' (cf. Stockmarr 1971) was also counted to act as an indicator for

actual pollen presence, but is not included in the total pollen sum. Identification, including cereal-type pollen, was aided by reference keys in Fœgri *et al.* (1989), Moore *et al.* (1999), Beug (2004), Reille (1999), and supported by a modern type-slide reference collection. As the separation of *Myrica gale* (Bog-myrtle) from *Corylus avellana*-type (Hazel) can be difficult, these pollen grain types are classified as *Corylus avellana*-type (Edwards 1981). Nomenclature follows Stace (2001). Palaeoenvironmental data are presented in tabular format in Table 2.

Results

The archaeological sediment analysed (111) comprised a mid-brown grey silty loam with fine sand and some clay, and inclusions of rounded, angular, and sub-angular gravel (≤8cm), small pebbles (≤3cm), and modern root fibres. Archaeological inclusions included fractured animal bone (including high-temperature burnt fragments), fragments of CBM, slag, the shaft of an iron nail, small lumps of a clay-like putty material with small root or grass inclusions (possibly small lumps of wattle and daub), and charcoal fragments. The latter quantitatively dominating the macro-assemblage (see Table 1). A scan of the bulk sediment using a hand-held magnet also revealed the presence and dense concentration of hammerscale (Scurfield pers. comm.).

The palaeoenvironmental assessment (see Table 2) has revealed relatively high levels of indeterminate pollen from this archaeological context. High counts of corroded and degraded indeterminate pollen grains are usually the result of microbial attack, chemical and biochemical oxidations, pH >5.5, mechanical forces (reflected by the torn component (96.7%)), and aeration (Havinga 1967, Delcourt and Delcourt 1980, Andersen 1991). Poor qualitative preservation can be attributed to the high inorganic component of this deposit, and the fluctuating hydrology of the site within the dynamic floodplain of the River Rye and adjacent to Borough Beck. However, the low percentage presence of *Lycopodium* spores (25%) indicates relatively good quantitative preservation.

Eutrophic conditions, indicative of flooding and elevated nutrient levels, are also suggested by the presence of fungal spores Type 146 (3.3%) (van Geel *et al.* 1982/1983). Whilst the presence of fungal spores Type 55A (4.7%) indicates the deposition of woody and vegetation detritus (van Geel *et al.* 1982/1983, 2003), which may also have been the result of an episode of flooding at the site. However, it is also possible that this NPP marker may simply be representative of the local vegetational environment prior to the creation of the Medieval water channel [cut 124].

The pollen spectrum reveals an open local environmental dominated by Poaceae (grasses) (46.7%) and Cyperaceae (sedges) (5.7%). The dominant tree species are *Alnus* (Alder) (13.7%) and *Quercus* (Oak) (12%), with similar counts of *Corylus avellana*-type pollen (11%). The TLP percentage for *Alnus* is interesting as it is well below 40%, indicating that this species was part of the dry land component as opposed to forming carr vegetation (Binney *et al.* 2005). The presence of *Prunus*-type pollen (Cherry family) (1.7%) could be representative of *Prunus spinosa* (Sloe/Blackthorn), or wild or cultivated fruit trees, e.g. *Prunus domestica* (Wild Plum), *Prunus avium* (Wild Cherry), and *Prunus padus* (Bird cherry). Dwarf shrubs represented by Ericaceae undifferentiated (Heather family) (1%) and *Calluna vulgaris* (Heather) (0.7%) suggest nearby heathland, or possibly the local utilisation of Heather as thatch.

	Percentage (%) Data
Trees	
Pinus	1
Betula	1.3
Quercus	12
Ulmus	1
Alnus	13.7
Shrubs	
Corylus avellana-type	11
Salix	0.3
Prunus-type	1.7
Dwarf Shrubs	1
Ericaceae undifferentiated	0.7
Calluna vulgaris	
Herbs	
Poaceae	46.7
Poaceae cereal-type indeterminate	1.3
Cyperaceae	5.7
Rumex acetosa/acetosella-type	0.7
Chenopodiaceae	0.3
Filipendula	1
Galium-type	0.3
Taraxacum-type	0.3
Spores	
Pteropsida (monolete) indeterminate	12
Pteridium	8
Polypodium	0.7
Non-Pollen Palynomorphs (NPPs)	
Cercophora-type ascospores Type 112	1
Fungal spores Type 55A	4.7
Sordaria-type ascospores Type 55B	0.3
Mougeotia cf. *Gracillima* (Hasall) Wittrock Type 61	0.3
Cladocera undifferentiated Type 72C	0.3
Tilletia sphagni Naw. Type 27	0.3
Gloeotrichia-type Type 146	3.3
Fungal spores Type 729	0.3
Micro-charcoal	
Charcoal <20µm	3038
Charcoal 21-50µm	480
Charcoal >50µm	245
Lycopodium	25
Indeterminate Pollen	
Corroded	51.3
Degraded	73.3
Folded/Crumpled	7.3
Torn	96.7
Unknown	3
Summary (%) Data	
Trees	29
Shrubs	13
Herbs	56

Table 2. Percentage data (%) for Trench 1, Context 111.

The summary dominance of herbaceous taxa (56.3%), in comparison to 42% arboreal pollen (AP) (i.e. combined trees and shrubs), implies the site was relatively open comprising rough grassland with peripheral or possibly localised woodland or wood pasture. The presence of *Alnus* and *Salix* (Willow) (0.3%) suggests relatively wet ground conditions, probably resulting from the proximity of the site to the River Rye, and/or the presence of groundwater-tolerant species growing adjacent to the water channel. Whilst the presence of Poaceae cereal-type pollen indeterminate (1.3%) suggests localised cereal cultivation this category may be representative of wild grasses which may have been utilised for hay, animal fodder or bedding, or for human usage. The six remaining herbaceous species are taxa associated with rough wet pasture and disturbed ground, i.e. Cyperaceae, *Rumex acetosa/acetosella*-type (Sheep's Sorrel/Common Sorrel), *Filipendula* (Meadowsweets), and *Taraxacum*-type (Dandelions) (Behre 1981). Chenopodiaceae (Goosefoots) and *Galium*-type (Bedstraws) taxa are also associated with rough wet grassland and open wasteland, being ruderal markers for disturbance in response to human activity (Behre 1981).

The spore presence which includes Pteropsida undifferentiated (Pteridophytes (Ferns)) (12%), Pteridium (Bracken) (8%), and Polypodium (Polypodies) (0.7%) implies a damp and shady environment, and as such the presence of some form of canopy cover. It is also possible that the spore presence may be the result of cut ferns being brought onto the site for animal bedding or human utilisation. The presence of NPP fungal spores Type 55B (0.3%) and Type 112 (1%) suggests an animal presence at the site as these coprophilous spores are associated with the presence of herbivore dung (van Geel *et al.* 1982/1983, 2003). The presence of fungal spore Type 27 (0.3%) is also interesting as this particular NPP is found only in association with *Sphagnum* (Bog Moss) peat (van Geel *et al.* 1982/1983, 2003). It is possible that this fungal spore may have been transported to the site from surrounding heathland in floodwater. However, it is also feasible that the spore may have been brought to the site in peat or heather turf for fuel or thatch. NPP Type 72C (0.3%) may also have been brought onto the site in peat, as this species similarly prefers an acidic environment, particularly pools that have formed on the surface of peat bogs (van Hoeve and Hendrikse 1998). Whilst NPP Type 61 (0.3%), which is usually associated with open water (van Hoeve and Hendrikse 1998), may have been transported to the site during an episode of flooding by the Rye or the Medieval channel.

Percentage data for all three fractions of microscopic charcoal suggests very localised and intensive burning activity. Whilst the greater representation of micro-charcoal ≤20µm (3038%) could be representative of distant burning activity, when considered in conjunction with the two larger micro-charcoal fractions 21-50µm (480%) and >0µm (245%), which are also quantitatively high, it is more likely that this fire activity was an immediate local event. During the counting of micro-charcoal the anatomical characteristics were clearly visible and identified as originating from predominantly dicotyledonous wood types. A cursory assessment of the macro-charcoal assemblage from context 111 also revealed an admixture of dicotyledonous taxa, including ring porous (*Quercus*) and semi-ring porous species or roundwood.

Discussion

The palaeoenvironmental assessment of sediment (context 111) from Trench 1 at Barker's Yard, has presented a complementary data-set which has provided insight into the local Medieval environment and development of Helmsley. Data show that the environment was open wet grassland, most probably wet meadows or pasture, but with a remaining tree and shrub presence represented by scrubby Alder and Willow on wetter ground adjacent to the River Rye, with peripheral Oak-Hazel woodland or wood pasture. Recent palaeoenvironmental and historical data for the environs of Rievaulx and Bilsdale to the immediate north of the township of Helmsley has established that the local low valley areas comprised established pasture and meadow with surviving pockets of woodland and hedgerow vegetation by the early Medieval period (Wheeler

2007). The herbaceous pollen component presents a very localised picture of rough disturbed ground, probably an area of waste or disturbed open ground in the immediate vicinity of the water channel. The NPP fungal spore data-set indicates a eutrophic environment that would be consistent with nutrients deposited during flooding, or the presence of herbivores at the site. If, as the slag report suggests (see Appendix 3) there was a forge or smithy in the immediate vicinity, it is feasible that eutrophy may have been caused by the presence of animals, e.g. horses for shoeing and/or stabling. The presence of marker fungal spores favouring acidic and a *Sphagnum* peat environment is also interesting, as it is possible that buildings adjacent to the site may have been thatched with Heather, or peat was being transported onto or via the site.

The lithostratigraphy also provides insight into the ground conditions and hydrology of the site during between the 12th and 14th centuries. Ongoing episodes of periodic flooding defined by the depositional sequence of flood deposits on the eastern bank of the water channel (see Figure 10 of the main report) is typical of low velocity flooding, most probably from the River Rye, and prior to the construction of the water channel which cut these deposits, i.e. contexts 114, 113, 112, 111, and 106. The relative 12th – 14th century date range for the basal east bank deposits, and the 13th – 14th century date for the basal deposit on the west bank (context 117), indicates ongoing episodes of flooding which may have been a consequence of the climatic downturn at the beginning of the Little Ice Age (Lamb 1977). The creation of the channel may therefore have been a response to increasing wetness at the site, or simply have been constructed to divert water from Brough Beck to the River Rye in order to be used as a power source for a nearby mill, forge, or smithy.

High counts of microscopic charcoal across all three fractions indicate an intense episode, or constant episodes of localised, and probably contained fire activity, i.e. from a hearth. Again this would be consistent with the presence of an operational forge or a smithy in the vicinity of the site. The presence of slag in the deposit revealed by macro-analysis also implies localised metal-processing, which consolidates the interpretation presented in the slag report (Appendix 3). Whilst the dense concentration of hammerscale observed in the deposit confirms the presence of a smithy.

Conclusion

The commission of this palaeoenvironmental assessment has provided a rare opportunity to investigate the local environment of Helmsley in the late Medieval period. This study has produced a snap shot of the vegetational and hydrological dynamics of a specific location, and human activity at the site during the development of the township in the 13th – 14th centuries. However, the absence of comparable data from stratigraphic and chronologically associated deposits supported by precise radiometric dating limits the current environmental interpretation. Whilst the results presented in this report complement and consolidate the archaeological interpretation, and demonstrate the potential of conducting a palaeoenvironmental assessment, further analysis of consecutive stratigraphic deposits could produce a tightly constrained chronology of the sedimentary and vegetational history of the local site, and the Medieval development of Helmsley which would develop our understanding of the changing environment of the township through time.

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