THE FRATRY PROJECT, CARLISLE CATHEDRAL,

CUMBRIA

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SUMMARY

In October 2012, Oxford Archaeology North (OA North) undertook a trial-trench evaluation to the north and east of the medieval Fratry at Carlisle Cathedral, in central Carlisle, Cumbria (NY 399 559). This was once a priory of Augustinian canons, as well as being the seat of the bishop, from 1133. The Fratry forms the southern part of the medieval cloister, and, together with the land and buildings that now occupy the Cathedral Precinct, is of enormous cultural heritage and religious significance, falling within the jurisdiction of the Cathedrals Fabric Commission for England (CFCE), as well as being a Scheduled Monument (SM 546). The works were commissioned by the Carlisle Cathedral Development Trust, overseen by Dr Mike McCarthy, the Cathedral Archaeologist, and were undertaken to help inform proposals for improvements to visitor attractions and accessibility to the Fratry building, as well as the installation of central-heating facilities that will serve the Cathedral Precinct as a whole.

During the evaluation, five small trenches were excavated by hand: one against the north wall of the Fratry, another partially across the southern cloister walk and garth, and a third straddling the Dorter arcade, where it investigated the eastern cloister walk, and the former Dorter undercroft. A fourth, against the east wall of the Fratry, also lay within the former Dorter undercroft, whilst the last was excavated in the garden of No 4, the Abbey, just to the south-east of the Fratry. The trenches were generally 1m wide and up to 6m long and 1.25m deep. They demonstrated that significant archaeological deposits are present within the area of the proposed development, but, with the exception of some of the post-medieval structural remains, most are blanketed beneath thick bands of post-medieval demolition material, probably relating to the seventeenth-century reorganisation of the Cathedral Precinct. The shallowest medieval remains would appear to be in the area of the southern cloister, where the footing of the arcade, and the top of a possible medieval soil horizon, lay some 0.57m below ground level. In the eastern cloister walk, medieval deposits were rather deeper, at some 0.9m, whilst medieval remains in the area of the Dorter undercroft could have been as little as 0.75m deep. In the garden of No 4, the Abbey, the proposed location for the new boiler, no identifiably medieval deposits were encountered within the 0.9m depth of investigation, although elements of a seventeenth-century building were rather more shallow, at 0.5m. No articulated burials were identified within any of the trenches.

The substantial assemblage of finds comprised domestic refuse, personal items, and building material, dating from the Roman period to the nineteenth century. A concentration of Roman artefacts in one organic deposit, identified at a depth of just 0.9m at the eastern end of the Fratry, included tile fragments with legionary stamps, glass, pottery, and a fourth-century coin. Although it is possible that this may represent an *in-situ* Roman deposit with some medieval contamination, it may be material that had been disturbed during the medieval construction of the Fratry undercroft. Well-preserved palaeoenvironmental remains from that deposit suggested similar material might be encountered in other organic silts that were identified at the limit of excavation in several of the other trial trenches.

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The evaluation was undertaken by Vickie Jamieson, Jon Onraet, Aidan Parker and Becky Wegiel, under the direction of Caroline Raynor, who also undertook the survey. The report was written by Caroline Raynor, with the drawings produced by Mark Tidmarsh and Marie Rowland. The animal and human bone was assessed by Andrew Bates and Vickie Jamieson, respectively, whilst the finds were examined by Christine Howard-Davis, Dr Mike McCarthy and Catherine Brooks. The palaeoenvironmental sample was assessed by Elizabeth Huckerby. The project was managed by Stephen Rowland, who also edited the report. Quality assurance was provided by Rachel Newman.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

1.1.1 Buttress Fuller Alsop Williams (BFAW), architect to the Carlisle Cathedral Development Trust (henceforth, the Client), is currently working on proposals for improvements to the Fratry at Carlisle Cathedral (NY 399 559; Fig 1; Plate 1). The proposals concern improvements to visitor attractions and accessibility to the Fratry building, as well as the installation of central heating facilities that will serve the Cathedral Precinct as a whole. It is highly likely that the enactment of these proposals will be accompanied by a level of intrusive groundworks and earthmoving activities that may disturb or adversely affect below-ground archaeological remains. The land and buildings that occupy the Cathedral Precinct are of enormous cultural heritage and religious significance, falling within the jurisdiction of the Cathedrals Fabric Commission for England (CFCE) and it is also a Scheduled Monument (SM 546).

Plate 1: View from the north, showing the Fratry building, with Trenches 3 and 4 in the southern cloister walk and Trench 2 against the east wall of the Fratry

1.1.2 In order to help inform the planning process, Dr Mike McCarthy, Consultant Archaeologist to the Carlisle Cathedral Dean and Chapter (henceforth, the client), requested that the development should be accompanied by a programme of archaeological works that would permit a greater understanding of the nature, depth, extent and significance of the buried heritage resource within the projected zone of development impact. This would enable a suitable mitigation strategy to be agreed upon between the client and the regulatory bodies, and implemented either by excavation prior to the commencement of

the construction works or by design to preserve the remains *in-situ*. Accordingly, Buro 4, the client's project manager, commissioned Oxford Archaeology North (OA North) to undertake a programme of small-scale investigation to the north and east of the Fratry in September and October 2012.

1.2 SITE LOCATION, TOPOGRAPHY AND GEOLOGY

1.2.1 The historic city of Carlisle occupies a strategically important site, where the principal north/south land route west of the Pennines (represented in the modern road system by the A6 trunk road) crosses the River Eden, and forms a junction with an important trans-Pennine route through the Tyne-Solway gap (represented by the modern A69). The historic city centre is situated on the south bank of the Eden close to its confluence with the River Caldew. A third river, the Petteril, flows through the modern eastern suburb and joins the Eden a little over 1.5km east of the Caldew.

1.2.2 Carlisle Cathedral Precinct, within the city's historic core, covers a roughly rectangular area of 2.08ha on the north-west/south-east alignment of the ancient walled city. The northern half of the precinct is occupied by the medieval cathedral, with a graveyard to its north, and the remains of the cloister of the Augustinian priory to the south. The investigation area (NY 399 559; Figs 1 and 2; Plate 1) was located around the Fratry, to the south of the Cathedral.

1.2.3 The cathedral, standing at *c* 25m AOD, occupies one of two high points in the city, with the other occupied first by the Roman fort, and latterly by the extant medieval castle. The solid geology of the Carlisle area comprises soft, reddish Triassic St Bees sandstone of the Sherwood Sandstone Group, which lies above the Permian St Bees shales and is itself overlain by and intercalated with the less extensive grey Kirklinton sandstone (McCarthy *et al* 1990, 1–2). Over most of the modern city, the sandstone bedrock is overlain to a depth of several metres by drift deposits of glacial till, principally an orange-pink boulder clay (British Geological Survey 1982).

1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

1.3.1 Under the amended Care of Cathedrals Measure (2008), Carlisle Cathedral Precinct is the subject of a regularly updated archaeological assessment report (McCarthy 2010). That document presents the most comprehensive review of the current state of knowledge concerning the precinct (including the Fratry and its immediate surroundings) and it is not the intention of the following sections to reiterate data that could be more effectively sought from the assessment report.

1.3.2 The church was founded in 1122, originally as the Augustinian Priory of St Mary, but also became a cathedral with the establishment of the diocese of Carlisle in 1133 (Weston 2000, 9; 2011, 104-5). The cloister was built to the south of the church, and on the south side of the cloister lay the Fratry (refectory), whilst on the east was the Dorter (dormitory) range, the west wall of which is still largely standing (Weston 2000, 88). This is the conventional design for an Augustinian house. Parts of the east end of the Fratry date to the

thirteenth century, as do the earliest visible elements of the Dorter, though documentary references indicate the existence of an earlier dormitory (*ibid*). The Fratry undercroft has been dated to *c* 1300 (*op cit*, 91), but the building was largely reconstructed in the fifteenth century, and has been altered on several occasions subsequently.

1.3.3 Archaeological investigations in and adjacent to the Fratry have been limited. Wooden piles and an earlier drain were observed beneath the piers of the undercroft in 1922 (Martindale 1924) whilst a watching brief in 1988 exposed elements of the wall at a depth of 0.6m (Keevill 1991). A geophysical survey undertaken in 2000 (Schmidt and Hamilton 2009) revealed an extensive series of anomalies across most of what would have been the open area in the middle of the cloister (on the north side of the Fratry), and immediately to the south of the Fratry. To the south-east, anomalies found in the grounds of Nos 3 and 6, The Abbey, might represent pre-Norman features. A more recent ground-penetrating radar (GPR) survey (GSB Prospection 2010) to the immediate north of the Fratry revealed a series of anomalies between the ground surface and a depth of 3.15m. These could represent structural elements of the medieval claustral ranges (at a depth of 0.3-2.3m), possible graves, and, at depths exceeding 2m, potentially earlier structures within the cloister garth (*ibid*). Elsewhere in the Cathedral Precinct, investigations have revealed a substantial depth of stratigraphy. Natural clay has been encountered in one location only, *c* 60m north of the Fratry and at a depth of 4.57m below the modern surface (Simpson 1988). The natural geology is likely to be sealed by almost 2m of Roman layers, features, and structures associated with an extramural settlement, and later town, to the south of the fort, including waterlogged deposits (*ibid*; Keevill 1989).

1.3.4 Fragments of early medieval crosses have been recovered from the vicinity of the cathedral, and historical sources suggest that Carlisle was an important post-Roman ecclesiastical centre (Weston 2000, 7-8; Summerson 1993, 10; Tudor 1984, 68-9), and the Cathedral Precinct is perhaps the pre-eminent site for understanding early medieval settlement in Carlisle (McCarthy 2004, 7-8). Significant pre-Norman deposits, graves and finds (including ninth-century coins and tenth-century metalwork) were identified during the cathedral treasury excavations of 1988, *c* 40m north of the Fratry (Keevill 1989) and further, possibly eighth-century, burials have been identified by more recent test pits (Keevill 2008, 50). The precise depth of the top of early medieval deposits beneath the modern surface is unclear, though, in one of a number of test pits dug in 1985, probable early medieval graves were encountered *c* 1.2m below the surface (*op cit*, 43-4, fig 6). The floor of the medieval north cloister walk is said to lie 1.2m below the modern surface (Weston 2000, 88), whilst the excavations adjacent to the Cathedral church in 1985 and 1988 determined that the medieval ground surface lay *c* 1m below the modern surface (*op cit*, 292). In recent years, watching briefs elsewhere within the precinct have been maintained on groundworks of shallow depth, with nothing but fairly modern features and deposits being exposed.

1.4 RESEARCH FRAMEWORK

1.4.1 A detailed overview of the research context for the project, together with the aims and objectives of the archaeological investigation, has been presented in

the project design for the works (*Appendix 1;* section 2), and, for the sake of brevity, will not be reiterated here.

2. METHODOLOGY

2.1 PROJECT DESIGN

2.1.1 The project design (*Appendix 1*), which was approved by the Cathedral Archaeologist and EH, was adhered to in full throughout the programme of investigation. All works met current IfA and EH standards, and generally accepted best practice (EH 1991; 2006; IfA 2001; 2008).

2.2 TRIAL TRENCHING

2.2.1 ***Trench configuration***: in all, five trial trenches were excavated during the programme (Fig 2; Plate 1). Three, Trenches 1, 3 and 4, were placed in the cloister walks in order to investigate the nature of deposits that might be impacted upon by the proposed improvement works to the Fratry and the eastern cloister walk. A fourth (Trench 2) was positioned against the east wall of the Fratry, to investigate the route for some pipes for a new boiler. Trench 5 was placed in the garden of No 4, The Abbey, a potential site for the new boiler. All of the trenches were 1m wide, and, with the exception of Trench 1 (which was 6m long), were 3m long. All were excavated to a depth that satisfied the Cathedral's Consultant Archaeologist.

2.2.2 ***Methodology***: the fieldwork methodology adhered to that presented in the project design (*Appendix 1*) and was undertaken following standard OA systems and in close liaison with the Cathedral's Consultant Archaeologist. Modern surfaces were lifted and stockpiled with the assistance of the Cathedral Maintenance team. Thereafter, the excavation was undertaken stratigraphically by hand. Each successive deposit was cleaned and defined by hand, and inspected for archaeological features.

2.2.3 ***Levels***: during the excavations, existing base stations set out by BFAW were utilised, and all levels have been tied into their grid. For the sake of compatibility, that system has been used throughout the text and illustrations in this report. Heights calculated using the BFAW grid are presented with the suffix 'AG' (*Architect's grid*).

2.3 FINDS

2.3.1 Artefacts and ecofacts were recovered, processed, assessed and stored in accordance with the project design (*Appendix* 1, sections 4.4.6-10 and 5.1.5). All sherds were examined and identified, those of medieval date being classified according to the criteria set out in McCarthy and Brooks 1992, Brooks 2000, and Brooks 2010.

2.4 SAMPLES

2.4.1 A palaeoenvironmental sample was recovered, processed, assessed and stored in accordance with the project design (*Appendix 1*, sections 4.4.1-3 and 5.1.2-4).

2.5 ARCHIVE

2.5.1 The data from the investigation has been collated to form a full archive to professional standards, in accordance with Appendix 3 of English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). It is important the original record archive (paper, magnetic and plastic media) and material archive (artefacts) is kept together in order to maintain their integrity. Accordingly it is proposed that consultation should take place with stakeholders to establish whether the full archive will be deposited with Cathedral, or with Carlisle's Tullie House Museum and Art Gallery (THMAG). If the latter, it would be possible for the museum to loan finds to the Cathedral on a five- to ten-year cycle.

3. SUMMARY OF THE FIELDWORK RESULTS

3.1 THE EVALUATION

3.1.1 In order to aid the planning and development process, the following sections present a detailed account of the stratigraphic sequence encountered in each trench. *Appendix 2* provides a catalogue of the deposits recorded.

3.1.2 ***Trench 1****:* positioned at the northern end of the eastern cloister walk (Fig 2), the trench was orientated east/west and was excavated beneath an arch in the wall that bounded the rear of the cloister walk and the western side of the Dorter. Accordingly, the western half of the trench encompassed part of the cloister walk, whilst the east lay within the area formerly occupied by the undercroft beneath the Dorter (Plates 2 and 3). A very small, shallow, extension was made on the northern edge of the trench in order to trace the extent of a wall in that position. The trench was excavated to a maximum depth of 0.95m (499.15m AG) in its western half, and 0.65m (499.61m AG) to the east, with a central baulk, some 1.5m wide, left largely unexcavated, given the presence of modern services and potentially unstable architectural components.

*Plate 2: East-facing view of Trench 1, showing blocking wall **118** in front of the Dorter arcade pillar*

*Plate 3: West-facing view of Trench 1, showing compacted clay ?bedding layer **112***

3.1.3 Part of the central baulk was occupied by levelled wall ***118*** (Fig 3; Plates 4 and 5), the top of which lay just 0.1m below the modern ground surface and which correlates with a probable post-medieval structure shown blocking the

archway on historic drawings (D Weston *pers comm*). The structure was composed of (presumably reused) well-dressed sandstone blocks and slabs, and continued northward to the foot of the archway. In the western half of the trench, a sequence of layers had built up, or had been deposited, against the west face of wall ***118***. Thus, beneath modern topsoil ***100***, and subsoil ***101*** (Plate 5), was a 0.2m-thick layer of largely sterile crushed yellow sandstone and sand, ***103***. This sealed 0.17m-thick rubble layer ***113***, which comprised pink sandstone in a sandy clay matrix and produced a mixed assemblage of finds, including both Roman and post-medieval artefacts, as well as single fragment of disarticulated human bone.

*Plate 4: Trench 1, looking east, showing basal deposit **116** and wall **118***

Plate 5: North-facing section at the western end of Trench 1, showing rubble demolition deposits

3.1.4 Beneath that sequence was deposit ***114***, a 0.3m-thick demolition layer of pink sandstone and mortar, amongst which several decorative architectural fragments may have originally been part of the Chapter House (demolished *c* 1665; D Weston *pers comm*). Beneath layer ***114*** was mixed mortar and clay layer ***116*** and, projecting from the east-facing section at the western terminus of the trench, a large pink sandstone flag, ***117***, which possibly represented an *in-situ* element of the medieval cloister walk. A bedding layer for this putative floor may have been represented by layer ***115***, a thin lens of fine sand which, at the base of the western half of the trench (at 499.15m AG), sealed unexcavated dark brownish-black organic soil ***121***.

3.1.5 Under modern topsoil ***100*** and subsoil ***101***, in the eastern half of the trench, a rather different sequence from that to the west was revealed. Disturbed deposit ***102*** was a 0.5m-thick layer of mid-brown sandy loam, with frequent inclusions of angular sandstone fragments, mortar and burnt wood, which appeared to be associated with two modern services, east/west-orientated gas pipe ***104***, and north/south-aligned electrical cable ***106***. Beneath was possible buried soil horizon ***108***, a mid-brown soft sandy silt containing occasional rounded pebbles. This, in turn, overlay ***109***, a 0.05m-thick black silt layer which was heavily compacted, perhaps from trampling. This sealed ***110***, a 0.1m-thick homogeneous levelling layer of friable orange/pink sand and sandstone fragments, which covered ***111***, a thin black band of blackish-brown soft silty sand. Beneath this, at 499.61 AG, was a very compacted layer of clean light yellowish-brown clay, ***112***. Although somewhat higher than the putative flagged surface of the cloister walk to the west, it is possible that layer ***112*** may have formed, or perhaps bedded, a surface to the Dorter undercroft.

3.1.5 ***Trench 2:*** Trench 2 was again orientated east/west within the area of the former Dorter undercroft (Fig 2; Plates 6 and 7). The modern ground level lay at 500.16m AG and the trench was excavated to a maximum depth of 1.25m

(within a sondage), with archaeological features encountered at a depth of *c* 0.8m (499.37m AG). Removal of 0.1m-thick modern topsoil ***200*** (Fig 4) revealed a substantial, 0.6m-thick, layer of dark-brown sandy silt, ***201***, with a high proportion of demolition debris (including crushed pink sandstone, handmade brick, mortar and fragments of unglazed ceramic floor tile; Plate 8) and containing Roman, medieval and post-medieval finds. Adjacent to the Fratry wall at the western end of the trench, deposit ***201*** directly overlay a line of ceramic tiles, ***206*** (at a height of 499.37m AG, and disturbed by modern services ***210***), whilst, across the eastern part of the trench, it sealed a possible surface of loosely compacted mortar, ***202***. Mortar ***202*** partially overlay seemingly trampled silty sand deposit ***205***, which appeared to have developed against the west face of a north/south-aligned wall, 0.7m from the eastern end of the trench. The latter comprised a single course and skin of weathered handmade half bricks (***203***) bonded with mortar ***208*** and bedded upon 0.16m-thick deposit ***204***, which comprised compacted mortar with a small amount of fragmentary brick inclusions.

Plate 6: West-facing view of Trench 2, mid-excavation. The east wall of the Fratry is in the background

Plate 7: West-facing view of Trench 2, post-excavation

3.1.7 Beneath these layers, at a depth of 0.9m, was deposit ***207***, a 0.33m-thick, dark brownish-black humic silty clay that contained a large amount of butchered animal bone (Plate 8). At the base of the trench, this overlay mid- to dark-brown soft silty clay ***209***.

Plate 8: South-facing section and sondage in Trench 2

3.1.8 ***Trench 3:*** Trench 3, placed in the southern cloister walk against the wall of the Fratry, was orientated east/west (Fig 2) and, following a northward extension of its eastern end, formed an L-shape. The modern ground level lay at 499.58m AG, and the trench was dug to a maximum depth of just over 1m (499.54 AG). Removal of *c* 0.15m-thick concrete surface ***300*** and 0.3m-thick light brown sandy silt bedding layer ***301*** revealed mixed rubble deposit ***302*** (Fig 5). This 0.32m-thick deposit produced several large fragments of green-glazed and incised ceramic tiles, and had developed against structure ***303***, the pink sandstone rubble foundations of the northern wall of the Fratry (Plate 9). These foundations extended northwards from the base of the extant wall by a distance of between 0.52m and 0.65m and, at a depth of 0.58m, appeared to lie within a cut (***305***) through dark brown/black moist organic silt ***304***. Silt ***304*** contained a little rubble and continued beyond the maximum depth of excavation at 498.57m AG (Plate 10).

*Plate 9: West-facing view of Trench 3, showing rubble foundations **303** of the Fratry*

*Plate 10: West-facing section within Trench 3, showing deposits **300-4***

3.1.9 ***Trench 4:*** Trench 4 was aligned north/south and straddled the southern cloister walk and the adjacent part of the cloister garth (Fig 2). The modern ground surface lay at *c* 499.60m AG and the trench was excavated to a maximum depth of 0.95m (498.65m AG). Beneath the modern concrete and topsoil ***400*** (0.1m deep) was a modern sewer, ***408***, which extended north-west/south-east across the northern end of the trench (Fig 6). This service trench cut deposit ***401***, a mixed rubble demolition layer which extended across the whole of the trench, was 0.25m deep, and produced finds from both the medieval and post-medieval periods. Beneath was deposit ***402***, a further

demolition or levelling layer made up of dark reddish-brown silt with crushed mortar and brick, and contained animal bone.

*Plate 11: South-facing view of Trench 4, showing the remains of cloister wall foundation **405***

3.1.10 Across much of the northern half of the trench, deposit ***402*** sealed a skim of plastic orange clay, ***404***, which in turn partially covered a deposit of crushed lime mortar, ***403***. Mortar ***403***, together with underlying sand layer ***407*** and compacted mortar layer ***406*** (which may potentially have represented a surface extending across the southern half of the trench), had been deposited against the southern face of pink sandstone wall ***405***. This east/west-aligned wall occupied the central part of the trench at 499.025 AOD (Plate 11) and probably represented the foundation of the cloister arcade. It was 0.5m wide, with the southern half constructed of well-faced rectangular blocks (on average 0.4-0.5m long by 0.3m wide), whilst the northern half comprised large unworked fragments of sandstone bonded together by a thick layer of mortar. It is possible that this rough material was originally the inner core of the wall, and that the northern face had rested upon flagstones ***411*** (499.04m AG). If not part of wall ***405***, the flags may represent an ambulatory around the edge of the cloister garth. Like mortar deposit ***403***, levelled sandstone structures ***405*** and ***411*** were sealed by clay skim ***404***.

3.1.11 At the southern end of the trench, deposit ***406*** appeared to have been cut by a 0.7m-wide sub-circular feature, ***412***, which was filled with rubble ***413***. It is possible that this was a robber cut to remove a structural element around which mortar layer ***406*** had been deposited. Mortar ***406*** sealed dark-

brown/black organic deposit ***410***, the top of which was exposed at the base of the trench (0.85m deep).

*Plate 12: East-facing view of Trench 5, showing sandstone walls **503, 504**, and **505***

3.1.12 ***Trench 5:*** Trench 5, placed on an east/west alignment within the walled garden of No 4, The Abbey (Fig 2), was excavated to a maximum depth of 0.95m and encountered post-medieval deposits only (Plate 12). The modern ground level lay at 500.79m AG, which was rather higher than in any of the other trenches. Topsoil ***500*** and subsoil ***501***, with a cumulative depth of 0.28m, were removed to reveal extensive demolition deposit ***502*** (Fig 7), a 0.4m-thick layer of crushed pink sandstone and red brick rubble and mortar. This deposit had been heavily disturbed by the presence of a large tree stump, with a root network that extended to the base of the trench. Beneath, were the remains of levelled east/west brick wall ***514***, which had been bedded upon 0.07m-thick sandy lime mortar deposit ***513*** (Plate 13). Scars on the west-facing elevation of No 4, The Abbey and the western garden wall may have both related to structure ***514***.

*Plate 13: South-facing section within Trench 5, showing rubble demolition deposits and mortar surface **513***

3.1.13 In the northern half of the trench, layer ***513*** sealed rubble deposits ***506-8***. Together with rubble deposit ***509***, in the southern half of the trench, these lay between sandstone foundations ***503***, ***504***, and ***505***, which collectively represented the remains of a structure levelled at *c* 500.31m AG. East/west-aligned wall ***503*** measured 3m long, 0.42m wide and in excess of 0.4m high (the basal courses lay below the safe depth of investigation). It was constructed of roughly coursed pink sandstone blocks, several of which were well shaped and appeared to be recycled from one of the earlier monastic structures. Mortar-encrusted walls ***504*** and ***505*** may represent internal subdivisions to the north, and bounded substantial sandstone slab ***510*** (0.72m long by 0.1m thick, continuing beyond the northern limit of excavation). The exposed end of slab ***510*** appeared weathered and fractured, with evidence of a recessed, chamfered edge, perhaps suggesting that this, too, had been reused from an earlier structure. Another large pink sandstone slab, ***511***, appeared to abut walls ***503*** and ***504*** at a depth of 499.90m AG. This may represent the remains of an *in situ* surface lying at the level of what seems to have been the base of slab ***510***. The latter's function is unclear, although it may be the footing of a domestic hearth. To the south of wall ***503***, and beneath rubble ***509***, was dark brownish-black friable garden soil ***512***, the top of which was exposed at the base of the trench (499.93m AG).

3.2 THE STRATIGRAPHIC ARCHIVE

3.2.1 ***Quantification of the Stratigraphic archive***: the documentation pertaining to the excavation was quantified and assessed (Table 1).

Context sheets	67
Drawings	10
Black and white films	1
Digital images	168
Object records	11
Environmental sample records	1

Table 1: Quantification of the archive of stratigraphic records

3.2.2 ***Assessment***: the archive of primary fieldwork data is a comprehensive record of the stratigraphic information recovered, with significant remains of archaeological interest having been recorded graphically, textually, and photographically. As such, it provides the analytical basis for an understanding of the sequence of historical events that took place on the site, and a flexible framework within which the analysis of the other forms of data could take place. The fieldwork has enabled a basic characterisation of the features and deposits within the areas investigated, which, on the basis of historical documentation, previous studies, stratigraphic relationships and artefact assemblages, have been allocated to the Roman, medieval and post-medieval periods.

3.2.3 ***Potential:*** the fieldwork has undoubtedly provided stratigraphic information that is of significance to the present development, which is the primary focus of the investigation, but, in addition, it has provided some appreciation of the more shallow deposits around the Fratry. However, despite the quality of the record, the stratigraphic archive pertaining to the evaluation alone has little potential for more detailed analysis. For instance, it has been possible to interpret deposits, and sometimes to equate them tentatively, and to gain some understanding of the localised stratigraphic sequence, but it is difficult, and perhaps ill-advised, to attempt to frame a wider picture from the results revealed by the series of small interventions at various points in the claustral range. Many of the deposits encountered can only be understood fully if they can be exposed across a wider area, and the main potential of the stratigraphic sequence from the evaluation lies with the manner in which it can inform, and be integrated with, more extensive excavation in the future.

4. THE FINDS AND PALAEOENVIRONMENTAL REMAINS

4.1 OVERVIEW

4.1.1 ***Quantification***: in total, 1102 fragments of artefacts and ecofacts were recovered from the five trenches investigated (Table 2; *Appendix 3*). The first numeral of each context number relates to the trench within which it was recorded.

Trench	Context	Pottery	Ctp	Cbm	Cu alloy	Iron	Lead	Glass	Stone	Mollusc	Bone	*Total*
1	***101***	13	6	0	0	3	0	0	0	0	18	*40*
	102	19	0	1	1	1	1	2	3	1	22	*51*
	103	3	4	0	0	2	0	0	0	1	3	*13*
	109	0	0	1	0	0	0	0	0	0	1	*2*
	110	0	0	0	0	0	0	0	0	0	2	*2*
	113	12	3	0	1	2	1	0	0	5	48	*72*
	114	0	0	0	0	0	0	0	0	0	10	*10*
	116	1	0	0	0	0	0	0	0	0	0	*1*
2	***200***	6	1	1	0	9	0	5	0	0	3	*25*
	201	32	8	3	1	8	5	27	7	9	95	*195*
	202	1	0	0	0	2	0	0	0	0	0	*3*
	207	7	0	10	1	0	0	1	1	0	100	*120*
3	***301***	2	1	7	1	0	0	0	0	3	80	*94*
	302	2	1	5	0	0	0	0	3	0	40	*51*
	303	1	0	0	0	0	0	0	0	0	11	*12*
	305	0	0	0	0	0	0	1	0	0	19	*20*
4	***400***	13	5	0	0	0	0	2	0	0	6	*26*
	401	20	8	0	0	4	1	11	1	27	158	*230*
	402	4	0	0	0	0	0	2	4	0	56	*66*
	403	0	0	0	0	0	0	0	0	6	0	*6*
	404	0	0	0	0	0	0	0	0	0	4	*4*
	409	2	0	0	0	1	0	4	0	1	7	*15*
	410	2	2	2	0	0	0	2	0	0	9	*17*
5	***500***	10	0	0	0	0	0	0	0	0	4	*14*
	502	3	0	1	1	0	0	0	2	0	0	*7*
	507	1	0	0	0	0	0	0	0	0	0	*1*
	512	0	0	0	0	0	0	0	1	0	0	*1*
Unstrat		0	0	0	3	1	0	0	0	0	0	*4*
Totals		*154*	*39*	*31*	*9*	*33*	*8*	*57*	*22*	*53*	*696*	***1102***

Notes: Ctp=clay tobacco pipe; cbm=ceramic building material; cu alloy=copper alloy

Table 2: Distribution of finds, by context and material, from the five evaluation trenches around the Fratry

4.2 POTTERY

4.2.1 ***Overview of the pottery***: the overall quantity of pottery is small, and includes a range of types that could be expected to occur in a densely occupied Roman and medieval town such as Carlisle (Swan *et al* 2009; Hird 2000; 2010; Table 3; *Appendix 4*). There are very few contexts without post-medieval material, leading to the impression that most, if not all, of the Roman and medieval pottery is residual. The safest interpretation is that a great deal of soil deposition took place, probably for levelling up parts of the cathedral precinct,

especially the area of the former dormitory and to the rear of No 1, The Abbey. This probably took place in the nineteenth century, when a suitable context for this might be the works instituted by Ewan Christian in the 1850s (McCarthy 2010).

4.2.2 All the Roman material can be matched elsewhere in Carlisle. The medieval pottery is also typical of that found in many other places in Carlisle, including the excavations for The Treasury in 1988 (Brooks forthcoming). No sherds of pre-Norman type or Continental imports are present.

Fabric	Date of ceramics	No of sherds	Comment
Samian ware	Second century	7	Probably all Central Gaulish. No stamps but fragmentary decoration as on Dr37
Mortaria	First to third centuries	3	includes 1 x reeded rim
Roman coarse wares (calcite-gritted, BB1 and grey wares)	Second to fourth centuries	10	
Medieval Gritty wares, Fabrics 1, 2, 3	Twelfth to early thirteenth century	17	
Medieval sandy wares, Fabrics 4, 13, 15/17/19, 41	Mainly thirteenth to fifteenth/sixteenth centuries	27	
Cistercian ware	Sixteenth century	1	
Black wares	Sixteenth or seventeenth century	3	
Tin-glazed earthenware	Seventeenth century	4	1 x possible drug jar
Brown- and buff-glazed earthen/stonewares	Seventeenth to nineteenth centuries	39	
China and porcelain	Eighteenth to nineteenth centuries	32	
Various	Uncertain	1	
Tile	Medieval	3	
Tile	Roman or medieval	1	Industrial or architectural
Total		149	

Note: Fabrics as in McCarthy and Brooks 1992; Brooks 2000; 2010

Table 3: Summary of overall quantities of pottery

4.2.3 ***Roman pottery assessment***: only 16 fragments of Roman pottery were recovered (Table 4). Even in this small assemblage, several different fabrics were evident, and the high representation of samian ware is notable. Nothing in the group, however, stands out as unusual, with a single decorated fragment (form Dr37) from modern subsoil ***101***, and a cup of form Dr33 from organic silt ***207***, pointing to second-century activity (Webster 1996). This dating is reflected by the single greyware rim, although the Black Burnished ware category 1 (BB1) fragments from post-medieval rubble layer ***401*** indicate a slightly later date, extending into the third century (Tyers 1996, 185). All three fragments of mortarium are from the Mancetter-Hartshill kilns, exporting to the North between the mid-second and the mid-fourth centuries (*op cit*, 123-4), and the hammer-head rim from organic silt ***207*** is a late form, possibly contemporary with the single Huntcliff-type rim, dating *c* AD 360-410 (Gillam 1970, type 163), from the same context.

Context	Object Record No	Samian	Greyware	Oxidised ware	BB1	Huntcliff ware	Mortarium	Total
101	1003	3						3
102	1103	1						1
113	1089/1111		1				1	2
116	1030		1					1
207	1031/1115/1131	2		1		1	1	5
401	1064				2			2
502	1026						1	1
507	1017	1						1
Totals		*7*	*2*	*1*	*2*	*1*	*3*	*16*

BB1 = Black Burnished ware fabric 1

Table 4: Distribution of Roman pottery

4.2.4 *Potential*: the datable vessels will add to an understanding of the stratigraphic sequence and levels of disturbance seen in individual stratigraphic units, but the assemblage is otherwise too small to make any contribution to the understanding of the site.

4.2.5 ***Medieval pottery assessment:*** some 55 fragments of medieval pottery were recovered (Table 5). The medieval pottery is in good condition, being large fragments without significant abrasion, suggesting that it has not sustained significant disturbance since deposition. The group was assessed by rapid scan, with the fabrics classified according to the criteria set out in McCarthy and Brooks (1992), and Brooks (2000; 2010). The majority of the sherds appear to be glazed, and several rim fragments from jugs are present, whilst cooking jars are ostensibly absent, suggesting, as might be expected from its ecclesiastical context, that the group represents use at table, rather than food preparation. At this stage, it appears that there are few, if any, red oxidised gritty wares, typical of Carlisle in the twelfth and early thirteenth centuries (McCarthy and Taylor 1990; Miller 2011), and most of the fabrics seem to fall into the partially reduced and fully reduced fabric groups, suggesting a later thirteenth/fourteenth-century and later date for its deposition. Most of the fabrics are relatively gritty or sandy, but a few fragments of somewhat finer reduced green-glazed wares are also present, falling into the widespread northern 'reduced Greenware tradition'. This leaves no doubt that deposition was continuing into the fifteenth or sixteenth century (McCarthy and Brooks 1992; Bradley and Miller 2009), presumably to the Dissolution, when it might be expected that there would be a break.

4.2.6 *Potential*: the datable vessels and fabrics will contribute to an understanding of the stratigraphic succession and levels of disturbance seen in individual stratigraphic units, but the assemblage is otherwise too small to make any significant contribution to the understanding of the site. In view, however, of the patchy nature of publication of medieval pottery in the city, a small illustrated report should be prepared for inclusion in any published report

Context	Object Record No	Count
101	1005	2
102	1103	15
113	1004	1
113	1046	1
201	1028	18
202	1008	1
207	1115	2
301	1013	1
302	1093	2
303	1007	1
401	1064	8
402	1042	1
410	1057	2
Totals	*63*	*55*

Table 5:Distribution of medieval pottery

4.2.7 ***Post-medieval and modern pottery assessment*:** in all, 83 fragments fall into this category, the overwhelming majority of them being of mid- to late eighteenth-century or later date (Table 6). The assemblage is fragmentary and there are few chronologically sensitive fabrics or forms present. Three fragments of Cistercian-type ware are probably the earliest fabric represented, dating to the sixteenth and seventeenth centuries (McCarthy and Brooks 1988). There are also a few fragments of tin glaze ware, dating from the later seventeenth to the eighteenth centuries, and a single fragment of eighteenth-century white salt-glazed stoneware. Whilst other fragments (for instance, some of the black-glazed redwares, and self-glazed redwares), may well date to the eighteenth century, they are not sufficiently diagnostic for this to be stated with confidence. Later material is largely confined to black-glazed coarsewares, refined white earthenware tablewares, and Industrial slipware kitchenwares, dating from the nineteenth and twentieth centuries (Bernard-Hughes nd). There is, in addition, a small group of terracotta garden wares from modern topsoil ***500***.

Context	Object Record No	Cistercian-type ware	Post-medieval and Modern	Totals
101	1005		8	8
102	1103		3	3
103	1006		3	3
113	1089	1	7	8
200	1081		6	6
201	1019/1028		14	14
301	1013	1	0	1
400	1053		13	13
401	1064	1	9	10
402	1042		2	2
409	1065		2	2
500	1023		11	11
502	1026		2	2
Totals		*3*	*80*	*83*

Table 6:Distribution of post-medieval and modern pottery

4.2.8 *Potential*: the few datable vessels will contribute to an understanding of the stratigraphic succession and levels of disturbance seen in individual stratigraphic units, but the assemblage is otherwise too small to make any contribution to the understanding of the site.

4.3 CLAY TOBACCO PIPE

4.3.1 ***Assessment***: there are only four potentially datable bowls amongst the 39 fragments of clay tobacco pipe, which otherwise largely comprises undiagnostic stem fragments. Bowls from subsoil ***101***, topsoil ***400***, and rubble ***401***, can all be dated to approximately 1640-60 (Oswald 1975), and as such appear to concur with the dates of pottery from the same contexts, although it must be noted that finds from many of the contexts are somewhat mixed.

4.3.2 ***Potential***: the datable bowls will contribute to an understanding of the stratigraphic succession, but the assemblage is otherwise too small to make any contribution to the understanding of the site.

4.4 CERAMIC BUILDING MATERIAL

4.4.1 ***Assessment***: the ceramic building material can be divided into two groups. All that from silty layer ***207*** is likely to be of Roman origin, whilst the remainder is clearly glazed floor tile, contemporary with the medieval occupation of the site. The Roman material is of interest, and must link with the intensive occupation in and around the fort. The group includes part of a hypocaust box/flue tile, and a *tegula* roof tile bearing part of a legionary stamp (only the letters LEG survive).

4.4.2 The remainder of the tiles are green glazed and largely without decoration. However, two worn fragments from large, thick tiles, found in mortar and rubble layer ***302***, have impressed or incised geometric compass-drawn patterns, but are not of the conventional line-impressed class of tile. They find no exact parallels in Jennie Stopford's corpus (2005), although her resumé of tiles from Carlisle (from the Cathedral, Scotch Street, and Annetwell Street) includes examples decorated freehand, or with a compass, to which these are presumably related. She also notes examples of significantly thicker tiles from Shap Abbey, the decoration of one of which (*op cit*, fig 25.1 no 32.1) is similar, but not identical, to the examples from the Fratry. The examples listed from Carlisle (Stopford 2005, 256) remain undated. The fabric of most of the tiles concurs with that given by Stopford (*ibid*). The remainder of the tiles are plain, although a triangular glazed example from rubble ***201*** appears to have a brief hand-written inscription or graffito (to be confirmed), which would be of interest.

4.4.3 ***Potential***: the assemblage is too small to make any significant contribution to the understanding of the site, and none of the tiles was recovered *in situ*. Given, however, the apparent lack of information and independent dating with regard to the medieval tiles of the ecclesiastical complex, there is some potential for a little further analysis, perhaps focused on dating.

4.5 METALWORK

4.5.1 ***Copper alloy (including coins) assessment***: three coins were recovered, comprising an unstratified and corroded Roman radiate copy, dated *c* AD 270-90; a fourth-century radiate copy from organic silt ***207*** (Reece 1970); and, from post-medieval rubble deposit ***502***, a very worn halfpenny, which, although illegible, probably dates to the late seventeenth/eighteenth century. Apart from the coins, there are few copper-alloy artefacts, none of which can be dated with any precision, although it is likely that the ear scoop from rubble ***102***, pins, and a single aglet, are from the medieval or early post-medieval period.

4.5.2 *Potential*: the assemblage is too small to make any significant contribution to the understanding of the site, beyond the dating evidence derived from the coins. The ear scoop and aglet are objects of interest, and should be mentioned in any future publication.

4.5.3 ***Ironwork assessment***: there are only 33 fragments of ironwork, X-radiography showing them all to be nails or other related items associated with building. Many are hand-forged, and cannot be dated with any precision, the form remaining largely unchanged from the Roman period to the nineteenth century. Two contexts (topsoil ***200*** and rubble ***201***) produced modern wire nails, a threaded screw, and a modern coach bolt.

4.5.4 *Potential*: the assemblage is too small to make any significant contribution to the understanding of the site, but the presence of ironwork should be mentioned in any future publication.

4.5.5 ***Lead assessment***: there are few lead artefacts, none of which can be dated with any precision, although it is likely that at least one of the three fragments of kame is of cast medieval type, and is thus relevant to any consideration of the medieval window glass.

4.5.6 *Potential*: the assemblage is too small to make any significant contribution to the understanding of the site, but the medieval window kame should be considered in conjunction with the medieval window glass (*Section 4.6.3*) and will add to information on the appearance of the medieval structures in the vicinity.

4.6 GLASS

4.6.1 ***Assessment***: of the 57 fragments of glass, 24 are sheet or window glass, the remainder from blown vessels. The glass varies greatly in condition, from very poor and crumbling, to moderate to good. This probably reflects the differing chemical composition of the glass, with medieval and early post-medieval potash glass surviving significantly less well than Roman soda glass, and modern material.

4.6.2 Fragments of Roman vessel glass came from silt layer ***207*** and late rubble layer ***401***. These are most likely to derive from activity associated with the nearby Roman fort and/or civil settlement. There is no evidence for medieval vessel glass, although, as this tends to survive poorly, this is not entirely unexpected. Two body fragments from a dark olive-green wine bottle of late

seventeenth-century form came from rubble ***401***, and marginally later material, including a dark green 'case' bottle, came from the layer below (***402***), suggesting that there was a period of disruption at around that time. Other fragments of eighteenth-century dark green glass came from rubble ***102***, topsoil ***200***, fill ***409*** of modern service trench ***408***, and organic layer ***410***. Nineteenth-century vessels came from rubble ***201***, and topsoil ***400***.

4.6.3 Most of the window glass is of recent date, but there are seven fragments from painted medieval quarries (from late rubble layers ***201*** and ***401***), and four of sixteenth- to seventeenth-century 'forest glass' quarries from the latter deposit. The medieval fragments all preserve part of at least one original edge, whilst the latter are all mid-pane fragments. It is undoubtedly the case that the painted glass derives from the ecclesiastical buildings on the site. All are very badly weathered, largely obscuring the original colour of the metal, but, where visible, it appears to be greenish-colourless and the naturalistic painted designs might suggest that the quarries derive from 'grisaille' decorative schemes rather than figurative panels. Although frequently used in the main body of the church, 'grisaille' work tended to be used more widely in other conventual buildings, being much easier and cheaper to obtain than the highly expensive stained and painted lights seen in the church (Crewe 1987).

4.6.4 ***Potential***: only the medieval window glass has any potential to contribute to an understanding of the appearance of buildings on the site, and it should be considered in conjunction with medieval lead window kame (*Section 4.5.3*).

4.7 STONE

4.7.1 ***Assessment***: with the exception of a single small disc of black slate from late garden soil *512*, the stone assemblage comprises entirely small- or medium-sized fragments of building stone, all, as might be expected, being hard red sandstone. Several of these are fragmentary medieval mouldings; one, from demolition layer *502*, is probably a plain window cill, and one from demolition layer *114* is clearly from window or other tracery, and may well derive from the Chapter House, demolished in the seventeenth century (D Weston, *pers comm*).

4.7.2 ***Potential***: the assemblage is too small to make a significant contribution to the understanding of the site, but the medieval architectural fragments should be considered in conjunction with other medieval building materials from the site, and will add to information on the appearance of medieval structures, including the Chapter House.

4.8 FAUNAL REMAINS

4.8.1 ***Mollusca assessment***: marine and terrestrial mollusc shell came from a limited range of features. Oyster shell was by far the most frequent, with only one other marine species represented (the common cockle), and it is likely that both represent the consumption of these common edible taxa. The only terrestrial species present, *Helix aspersa*, is a common and widespread garden taxon, and adds little to any interpretation of the site.

4.8.2 *Potential*: the assemblage is too small to make any significant contribution to the understanding of the site.

4.8.3 ***Animal Bone assessment***: in total, 682 hand-collected bone or teeth fragments were assessed, of which 193 (28%) were identified to a species level or low order group. Table 7 presents a complete species list and the number of individual specimens (NISP).

Taxon	Roman?	Medieval	Post-medieval	Post-medieval/ modern	Modern	Total
Mammal bone						
Equus sp		1	4			5
Cattle	22	2	36	7	10	77
Pig	10	2	7	1	2	22
Sheep/goat	4	3	38	9	5	59
Sheep			6		1	7
Dog	3		1		1	5
Cat					3	3
Rabbit			1			1
Hare			1			1
Red Deer			1			1
Cattle/red deer		1		1	2	4
Sheep/goat/roe deer			2			2
Mouse					1	1
Rodentia sp			1			1
Medium mammal	4	4	68	22	11	109
Large mammal	57	20	107	13	11	208
Cat-sized mammal			1			1
Small mammal			2			2
Unidentified mammal	35	6	72	18	7	138
Total Mammal Bone	**135**	**39**	**348**	**71**	**54**	**647**
Bird Bone						
Domestic fowl		1	4		1	6
Domestic/greylag goose			1			1
Mallard duck	1					1
Woodcock			1			1
Golden plover	1					1
Domestic fowl/bantam			1			1
Domestic fowl/ pheasant			1		1	2
Strigiforme sp			1			1
Bird			15	2	2	19
Total Bird Bone	**2**	**1**	**24**	**2**	**4**	**33**
Other bone						
Fish			1			1
Human			1			1

Table 7: Number of individual specimens (NISP; bone of the same individual counted as 1 NISP)

4.8.4 Domestic stock animals comprise the bulk of the assemblage, although bones from phased deposits also included dog, deer, domestic fowl, goose, golden plover and an owl (*Strigiforme sp*), as well as a fish bone and a fragment of human mandible. The latter, from a juvenile individual, derived from rubble layer ***113*** (Trench 1), and clearly represented disarticulated material that had been incorporated into that deposit. Where the two species could be

distinguished, the bones were identified as of sheep rather than goat. Goats may well also be present, but most probably in small numbers, in line with the national norm (Maltby 1981, 159-61). The bone phased as 'Roman?' was excavated from a single organic silt deposit, ***207***, which is evidently fairly rich in mammal and bird bone.

4.8.5 Overall, the condition of the bones between each period is largely consistent, being fragmented, with normally less than 50% of the original part present, but with limited erosion to the surface. The soil conditions seem conducive to moderate to good bone preservation. As these remains are from trial trenches, it is unsurprising that few bones were present from which the age of death could be estimated (ageable mandibles and epiphyseal fusion) or that could be measured. A decent proportion had butchery marks upon them (Table 8).

Period	**Agable Mandibles**			**Bones with Epiphyseal Fusion**			**Measurable Bones and Teeth**			**Bones with Butchery Marks**		
	Cattle	Sheep/ goat	Pig	Cattle	Sheep /goat	Pig	Cattle	Sheep /goat	Pig	Cattle	Sheep /goat	Pig
Roman?	2	1		10	1	3	5	1	3	3	1	3
Medieval				1	1	1		3	1			
Post-medieval				9	15	1	9	10	1	3	9	
Post-medieval/ Modern	1			1	3	1	1	2			4	1
Modern				2	3		1	4		4	2	

Table 8: Quantity of specimens from which tooth wear, epiphyseal fusion, biometric and butchery data may be obtained for the principal domestic stock animals

4.8.6 *Potential:* the total number of identifiable fragments from the current archaeological works is too small to provide a reliable representation of the proportion of stock animals husbanded or consumed. However, for a small collection of material, a wide variety of species was recorded, including wild mammals and birds, as well as domestic species. Similarly, there is currently no potential for an informative taphonomic study of the bone fragments or analysis of husbandry practices, using mortality rates and biometrics. However, it is evident that there is the potential for a significant and well-preserved archaeozoological assemblage to be recovered from the site if more extensive fieldwork should be undertaken.

4.9 PALAEOENVIRONMENTAL REMAINS

4.9.1 ***Quantification and Assessment****:* a single 30-litre bulk sample, from dark brown/black organic ***207*** silt (Trench 2, within the area of the former Dorter undercroft) was processed and assessed (Table 9). Amongst the abundant charred plant remains, complete and fragmented cereal grains were common, and included wheat (*Triticum* sp), oats (*Avena*), barley (*Hordeum*), and indeterminate grains. Some of the wheat grains had impressions on their surfaces that suggested they were from a glumed variety, possibly spelt wheat

(*Triticum spelta*), although this could not be confirmed, as no crop-processing waste (chaff) was observed.

Context	Matrix	Plant remains	Potential
207/[1]	Charcoal >2mm ++, <2mm ++ including *Quercus*, diffuse porous taxa and roundwood, bone fragments ++ , metal +, sand and gravel	CPR cereals including wheat, oats and barley (4), charred weed seeds (3) including Poaceae, *Chenopodium album* and small Fabaceae seeds, uncharrred seeds (1) *Conium maculatum*	CPR Dating

Notes: Plant remains are scored on a scale of abundance of 1-4, where 1 is rare (up to five items) and 4 is abundant (>100 items). Matrix components are recorded as present + or abundant ++. CPR = charred plant remains. Nomenclature follows Stace (2001)

*Table 9: Summary of palaeoenvironmental remains from organic silt **207***

4.9.2 Frequent weed seeds were also recorded, including members of the grass family (Poaceae) with medium-sized seeds, fat-hen (*Chenopodium album*), and members of the vetch/bean family (Fabaceae) with small seeds. Interestingly, the typically medieval suite of corn marigold (*Gleobionis segetum*), stinking chamomile (*Anthemis cotula*), and corncockle (*Agrostemma githago*) seeds (Hall and Huntley 2007) were absent from the assemblage. A few uncharred seeds of hemlock (*Conium maculatum*) were likely to represent modern contaminants.

4.9.3 Abundant charcoal fragments were recorded in the sample. Oak (*Quercus*) and diffuse porous, probably hazel/alder (*Corylus*/*Alnus*), charcoal was identified, together with roundwood charcoal. Frequent fragments of mammal bones, gravel, evidence of some metallic remains, and occasional modern roots were noted in the matrix.

4.9.4 ***Potential***: irrespective of whether the sample derives from a deposit that is Roman (as the bulk of the artefactual and palaeoenvironmental evidence suggests), or medieval in origin, it has good potential for further analysis that would be informative about the nature of activity and diet in this part of the city. Indeed, there has been very little study of medieval palaeoenvironmental remains from the area of Carlisle Cathedral, or from religious institutions in the North West in general. Oats are not so common in Roman assemblages, although it is of note that reasonable amounts were identified at the Lanes and Annetwell Street, Carlisle, and Papcastle (Huntley and Stallibrass 1995, 58). Certainly, the findings indicate that other similar deposits will have some potential for the retention of significant palaeoenvironmental information, should any future development involving groundworks be deep enough to encounter them.

5. CONCLUSIONS

5.1 INTRODUCTION

5.1.1 Despite the small scale of the investigation, and the limited depths that could be achieved in such narrow interventions, archaeological remains were encountered in each of the trenches. Each encountered post-medieval deposits, and occasionally structures, and medieval remains were also revealed; it is possible that at least one of the deposits originated in the Roman period, although early medieval remains were typically elusive. Whilst seemingly analogous deposits were observed in several trenches, the correlation of those deposits at particular levels is hindered by the modern topography, which slopes down from the north.

5.2 DISCUSSION

5.2.1 ***Roman Remains***: many of the Roman artefacts recovered were found in association with later finds, and it is apparent that they had been redeposited through the reworking of older strata. Nonetheless, there is a small possibility that organic silt ***207***, identified at a depth of 0.9m below modern ground level in Trench 2, may actually be of Roman origin: it contained mainly (but not exclusively) Roman finds, lacked palaeoenvironmental remains typical of medieval assemblages, and lay below dated medieval deposits (and if deposit ***207*** is Roman, then underlying layer ***209*** must also be so). Clearly, silt ***207*** contained a lot of refuse, and might feasibly represent midden material. If it was a relict soil horizon, then the lack of abrasion to the artefacts might suggest that it had not been extensively worked. Given the location of the deposit, it is possible that it represents Roman material that was dug out and locally redeposited during the medieval construction of the Fratry undercroft. Nonetheless, the possibility cannot be completely discounted that *in-situ* Roman deposits lie at slightly shallower depths around the Fratry than in the more northerly part of the precinct (where the uppermost deposits lie at a depth of some 1.8-2.74m; Keevill 1989; Simpson 1988), albeit still somewhat below the likely depth of the proposed development groundworks at the Fratry. Although it is tempting to correlate similar organic horizons ***121***, ***304*** and ***410***, at the bases of Trenches 1, 3, and 4, respectively, with silt ***207***, each of those three deposits was either left uninvestigated at the base of the trench (and thus produced no dating evidence), or, in the case of silt ***410***, contained later artefacts. Moreover, none of the deposits in question appeared very similar to the distinctive, soft, black, organic-rich sediments found in association with earlier Roman occupation in the city and beneath the Cathedral nave (McCarthy 2010).

5.2.2 ***Medieval Remains***: in addition to the foundations of standing medieval structures (those of the Fratry in Trenches 2 and 3, and the Dorter arcade in Trench 1), the upper parts of the buried medieval strata would appear to have been encountered in several trenches (Trenches 1 and 4, and possibly Trench 2, as well). Chief among these were those associated with the cloister,

including the probable levelled remains of the southern cloister arcade (at 499.03m AG, some 0.57m below ground level, in Trench 4). The structure correlates with an anomaly on the geophysics plot (GSB 2010), and it could be inferred from the latter that the underlying foundations may have continued to some considerable depth (perhaps as much as 2m). It is possible that the abutting mortar deposits (***403*** and ***406***, at a depth of some 0.67m) may have been surfaces for the corresponding cloister walk, or, perhaps more likely bedded such surfaces. Indeed, it is probable that the surface of the south cloister walk lay above 499.02m AG, which was the level of the top of the rough sandstone foundations for the north wall of the Fratry (Trench 3).

5.2.3 Flagstone ***117*** (Trench 1; at a depth of 0.9m) may have been part of the otherwise robbed-out eastern cloister walk, or perhaps even part of the cloister arcade: it might be inferred from the geophysics results that the remains of such a structure are present at the western end of the trench, although the anomalies appear neither so deep nor so straight as those of the southern arcade (GSB 2010). It is feasible that clay layer ***112*** may have been associated with the floor of the Dorter undercroft; however, its height relative to that of the putative eastern cloister walk perhaps makes that interpretation tenuous. It is also just possible that very fragmentary tiled surface, ***206*** (Trench 2, at a depth of 0.8m) might have been medieval. Assuming that these structures and deposits are indeed medieval, then, stratigraphically, the underlying, rather organic, horizons (***121***, ***207***, ***304*** and ***410***, at the bases of Trenches 1, 2, 3, and 4, respectively) are also likely to be of that date, or even earlier.

5.2.4 Given that only the uppermost medieval strata were reached, it is perhaps unsurprising that no *in-situ* burials were identified, and it could be assumed that any such features again lie below the limit of the present investigation. The relative lack of disarticulated human bone might imply either that post-medieval disturbance was not particularly deep, or that the areas investigated had not hosted concentrated burial activity.

5.2.5 ***Post-medieval Remains***: post-medieval structural remains were identified in three locations. The surviving course of levelled wall ***118*** (Trench 1), which blocked the archway to the Dorter undercroft, lay just beneath the ground surface, but could have been built during the mid-seventeenth-century reorganisation of the precinct. Rather insubstantial brick wall ***203*** (Trench 2) may have been a garden feature or defined the edge of a path, whilst the remains in Trench 5 seemed to relate entirely to the construction and demolition of two post-medieval buildings at that location. Substantial sandstone walls ***503***, ***504***, and ***505*** most likely relate to the building known as No 4, The Abbey, which was constructed in the mid-seventeenth century to provide residences for the newly installed Canons (D Weston *pers comm*). It is known that this area of the complex was remodelled in the nineteenth century, and it seems that the levelled foundations of the earlier building were adapted to support an outshut (since demolished) on the south-west elevation of the current building on the site.

5.2.6 The majority of the stratigraphic sequence comprised deposits of made ground, which generally contained a substantial rubble component likely to derive from the demolition and modification of precinct buildings in the mid-

seventeenth century (Weston 2000, 88). Very similar material was observed during a watching brief of a drainage trench around the south wall of the Fratry in 1988 (Keevill 1991). Deposits ***201***, ***301-2*** and ***401-2*** in Trenches 2-4, respectively, contained architectural fragments, and, in the case of those in Trench 3, medieval floor tiles. Such material is likely to have derived from the demolition of the claustral ranges. Indeed, it is notable that such layers were somewhat thinner in Trenches 3 and 4, in the southern cloister walk, where only the arcades, rather than the corresponding claustral building, had been pulled down. Pink sandstone deposits ***113*** and ***114*** (Trench 1) contained architectural stone work similar to pieces recovered from a service trench within the area of the former Chapter House, to the east; it is possible that some of the current material may also have derived from that structure (D Weston *pers comm*). Uppermost rubble deposit ***103*** appeared to be somewhat later, and could have been waste from Dean Tait's alterations to the southern entrance of the Cathedral in 1853-6 (Weston 2000, 24).

5.3 IMPACT ASSESSMENT

5.3.1 The evaluation demonstrated that significant archaeological deposits are present within the area of the proposed development, but, with the exception of some of the post-medieval structural remains, most are blanketed beneath thick bands of post-medieval demolition material. The shallowest medieval remains would appear to be in the area of the southern cloister, where the footing of the arcade, and the top of deposit ***304***, lay some 0.57m below the present ground level. In the eastern cloister walk, medieval deposits were rather deeper, at some 0.9m, whilst medieval remains in the area of the Dorter undercroft could have been as little as 0.75m. In Trench 5, the proposed location for the new boiler, no identifiably medieval deposits were encountered within the 0.9m depth of investigation, although elements of a seventeenth-century building were rather more shallow, at 0.5m.

5.4 REVIEW OF RESEARCH AIMS AND OBJECTIVES

5.4.1 The results of the evaluation suggest that any further work on the site should capture data that would help to address RQ1-2 and RQ5-6, which relate to the understanding of the stratigraphic sequence, a greater appreciation of the historical development of the site, the nature of medieval architecture on the site, and the presentation of the findings to the wider public. Although it is apparent that some of the project aims cannot be addressed to any great extent by the data recovered during the present programme of evaluation, it would be inappropriate to discount the relevance of those aims to any future fieldwork on the site, not least because it cannot be certain that the results obtained to date are truly representative of the wider stratigraphic sequence. Sufficient to note, it is perhaps unlikely that shallow future works will recover much data to address RQ3 and RQ4 (*Appendix 1*, section 2.2), concerned as they are with the study of human remains.

5.4.2 Some consideration needs to be given to the possibility that Roman deposits lie at a shallower than expected depth within the southern claustral range.

Accordingly, the project research aims should be reviewed to allow for the investigation of such remains, should development groundworks exceed depths of 0.9m.

5.5 RECOMMENDATIONS FOR FURTHER WORK

5.5.1 It is recommended that the archive generated during the evaluation should be integrated with that produced by any further archaeological works undertaken in association with the development of the Fratry. Accordingly, no further specific works on the evaluation archive are recommended at this stage, and it is thus inappropriate to produce an updated project design. Should it be the case that, for any reason, further archaeological investigation in association with the proposed development at the site does not take place, the results of the current programme should be published. Such a publication would be facilitated by undertaking a small programme of further work on specific elements of the archive, including the appropriate recording of, and preparation of brief illustrated reports on, the Roman and medieval pottery, tile and coins, the medieval window kames and glass, and of the medieval stonework. The stratified Roman, medieval and post-medieval faunal remains should be fully recorded and a short report compiled to be included within the site archive, and any publication text. The post-medieval/modern and modern bone may be discarded with no further work, having no real research value. An estimate of resources for such work can be provided if required.

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APPENDIX 1: PROJECT DESIGN

THE FRATRY PROJECT, CARLISLE CATHEDRAL, CUMBRIA

Archaeological Evaluation: Project Design

Oxford Archaeology North

September 2012

Carlisle Cathedral Development Trust

OA North Ref: L10528

NGR: NY399559

1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Buttress Fuller Alsop Williams (BFAW), architect to the Carlisle Cathedral Development Trust (henceforth, the Client), is currently working on proposals for the development of the Fratry at Carlisle Cathedral. The proposals concern improvements to visitor attractions and accessibility to the Fratry building, as well as the installation of central heating facilities that will serve the Cathedral precinct as a whole. It is highly likely that the enactment of the proposals will be accompanied by a level of intrusive groundworks and earthmoving activities that may disturb or adversely affect below-ground archaeological remains. The land and buildings that occupy the Cathedral Precinct are of enormous cultural heritage and religious significance, falling within the jurisdiction of the Cathedrals Fabric Commission for England (CFCE) and, as a Scheduled Ancient Monument (No 546), the auspices of English Heritage (EH).

1.1.2 In order to help inform the planning process, Dr Mike McCarthy, Consultant Archaeologist to the Carlisle Cathedral Dean and Chapter, requested that the development should be accompanied by a programme of archaeological works that would permit a greater understanding of the nature, depth, extent and significance of the buried heritage resource within the projected zone of development impact. This would enable a suitable mitigation strategy to be agreed upon between the client and the regulatory bodies, and implemented either by excavation prior to the commencement of the construction works or by design to preserve the remains *in-situ*. Accordingly, Buro 4, the client's project manager, commissioned Oxford Archaeology North (OA North) to undertake a programme of small-scale investigation to the north and east of the Fratry. The following document is a project design for undertaking an archaeological evaluation and represents the Written Scheme of Investigation (WSI) required to accompany applications for intrusive works to EH for Scheduled Monument Consent (SMC) and to the CFCE (including the investigation and recovery of funerary remains).

1.2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

1.2.1 Under the amended Care of Cathedrals Measure (2008), Carlisle Cathedral Precinct is the subject of a regularly updated archaeological assessment report (McCarthy 2010). That document presents the most comprehensive review of the current state of knowledge concerning the precinct (including the Fratry and its immediate surroundings) and it is not the intention of the following sections to reiterate data that could be more effectively sought from the assessment report.

1.2.2 The Cathedral precinct covers a roughly rectangular area of 2.08 ha on the north-west/south-east alignment of the ancient walled city. The northern half of the precinct is occupied by the east/west-aligned medieval cathedral, with a graveyard to its north, and the remains of a cloister to the south. The present cathedral church was founded in 1122, originally as the church of the Augustinian Priory of St Mary, but became a cathedral with the establishment of the diocese of Carlisle in 1133 (Weston 2000, 9; 2011, 104-5). On the south side of the cloister lay the Fratry (refectory) itself, whilst on the east was the Dorter (dormitory) range, the west wall of which is still largely standing (Weston 2000, 88). Parts of the east end of the Fratry date to the thirteenth century, as do the earliest visible elements of the dormitory, though documentary references indicate the existence of an earlier dormitory (*ibid*). The Fratry undercroft has been dated to *c* 1300 (*op cit*, 91), but the building was largely reconstructed in the fifteenth century, and was altered on several occasions subsequently. The proposed archaeological evaluation lie within the claustral range, contacting the cloister, its walls and walks, as well as walls of the Fratry and the dormitory.

1.2.3 Archaeological investigations in and adjacent to the Fratry itself have been limited. Wooden piles and an earlier drain were observed beneath the crypt piers in 1922 (Martindale 1924) whilst a watching brief in 1988 exposed elements of the wall at 0.6m depth (Keevill 1991). A geophysical survey undertaken in 2000 (Schmidt and Hamilton 2009) revealed an extensive series of anomalies across most of what would have been the open area in the middle of the cloister (on the north side of the Fratry, where some of the proposed evaluation trenches will be), and immediately to the south of the Fratry. To the south-east, anomalies found at Nos 3

and 6 The Abbey might possibly represent pre-Norman features. A more recent ground-penetrating radar (GPR) survey (GSB Prospection 2010) to the immediate north of the Fratry revealed a series of anomalies between the ground surface and a depth of 3.15m below ground level (bgl). These could represent structural elements of the medieval claustral ranges (c 0.3-2.3m bgl), possible graves, and at depths exceeding 2m bgl, potentially earlier structures within the cloister garth (*ibid*). Elsewhere in the cathedral precinct, investigations have revealed a substantial depth of stratigraphy. Natural clay has been encountered in one location only, *c* 60m north of the Fratry and at a depth of 4.57m below the modern surface (Simpson 1988). The clay is likely to be sealed by almost 2m of Roman layers, features and structures associated with the extramural settlement to the south of the fort, including waterlogged deposits (*ibid*; Keevill 1989).

1.2.4 Fragmentary Anglian cross shafts and historical sources suggest that Carlisle was an important post-Roman ecclesiastical centre (Weston 2000, 7-8; Summerson 1993, 10; Tudor 1984, 68-9), and the cathedral precinct is perhaps the pre-eminent site for understanding early medieval settlement in Carlisle (McCarthy 2004, 7-8). Significant pre-Norman deposits, graves and finds (including ninth-century coins) were identified during the cathedral treasury excavations of 1988, *c* 40m north of the Fratry (Keevill 1989; McCarthy forthcoming) and further, possibly eighth-century burials have been identified by more recent test pits (Keevill 2008, 50). The precise depth of the top of early medieval deposits beneath the modern surface is unclear, though in one of the test pits dug in 1985, probable early medieval graves were encountered *c* 1.2m below the surface (*op cit*, 43-4, fig 6). The floor of the medieval north cloister walk is said to lie 1.2m below the modern surface (Weston 2000, 88), whilst the excavations adjacent to the cathedral church in 1985 and 1988 determined that the medieval ground surface lay *c* 1m below the modern surface (*op cit*, 292). In recent years, watching briefs elsewhere within the precinct have been maintained on ground works of shallow depth, with nothing but fairly modern features and deposits being exposed.

1.3 OXFORD ARCHAEOLOGY

1.3.1 OA North, based in Lancaster, is the northern office of Oxford Archaeology (OA; Institute for Archaeologist's (IfA) registered organisation no 17), the leading archaeological and heritage practice in the country, employing in excess of 350 professionals across three regional offices. OA North is itself the largest archaeological contractor in north-west England, with an unsurpassed breadth of experience of working in Cumbria. As a registered educational charity, OA is dedicated to maintaining and promoting the highest professional, academic, commercial and ethical standards and to the provision of access to archaeology for all. It has both an established reputation and a philosophical imperative in the pursuit of efficient and cost-effective fieldwork, post-excavation excellence, and high-quality publication and outreach. The project thus fits in easily with the organisation's long-term strategy and vision to be at the forefront of archaeological research, discovery and exploration and to be recognised as champions of the social and cultural importance of archaeology. Furthermore, the organisation has been regularly involved with HLF-funded and community projects, and has many staff who are skilled supervisors and teachers of volunteers of all ages and levels of experience. We pride ourselves on our delivery of accessible outreach, including open days, lectures, information panels, leaflets, *etc*, including the compilation of the Medieval Teacher's Pack for the Tullie House Museum and Art Gallery, Carlisle.

1.3.2 Over the past 30 years, OA has also worked extensively in the fields of church and burial archaeology, excavating and analysing literally thousands of burials ranging in date from the Neolithic period (*c* 4000 BC) to the twentieth century. In order to respond efficiently to a demand that has increased over the last 15 years, OA has created a dedicated burials department known as Heritage Burial Services (HBS). It employs specialist osteoarchaeologists, all of whom are fully qualified archaeologists and human osteologists, and are experienced in general archaeological fieldwork (particularly pertaining to burials) and in the study of human remains.

1.3.3 As an organisation, OA has a high level of experience early medieval and medieval ecclesiastical archaeology in the North West. We have been involved with excavations at the Viking Age burial site at Cumwhitton (Patterson *et al*, forthcoming), the early medieval monastic site at Dacre (Newman and Leach forthcoming), Warrington Friary (Heawood *et al* 2002), Chester Cathedral (OA North 2011a), Lancaster Friary (Bates *et al* in press), Preston

Friary (OA North 2011b) and Furness Abbey (OA North 2011c), the post-excavation programme for Norton Priory (Brown and Howard-Davis 2008), and are poised to undertake the post-excavation works for St Michael's Church, Workington. We have also undertaken numerous investigations of standing churches. Other significant early medieval and medieval ecclesiastical assemblages from elsewhere in Britain that have been analysed and/or published by OA include, *inter alia*, a mass grave of up to 54 Viking warriors from the Weymouth Relief Road, Dorset (OA forthcoming a), 187 late Anglo-Saxon and medieval skeletons from St Martin's, Wallingford (Soden *et al* 2005), well over 1000 articulated burials, plus hundreds more that had been disturbed, from Abingdon Abbey (Allen forthcoming), Christ Church Cathedral, Oxford (Boyle 2001), Whitefriar's, Canterbury, Kent (Webb and Loe forthcoming), and the Dominican friary church and burial ground at Princesshay, Exeter, Devon (Loe forthcoming a). In Carlisle, OA North has been/is involved with the post-excavation and publication of the sites on Rickergate and Botchergate (Newman 2011a) and with the Roman forts (Zant 2009; Howard-Davis 2009), and the northern Lanes (Zant and Howard-Davis in prep).

2. AIMS AND OBJECTIVES

2.1 RESEARCH CONTEXT

2.1.1 Although the proposed project is development led and seeks to inform the planning process, it is highly likely that the works will encounter significant archaeological remains of great academic value. In order to maximise the potential of the heritage resource, archaeological projects are strategic in nature, with a series of clearly defined aims, often posed as research questions, and objectives, which are the practical means formulated to address the research questions. These aims and objectives are modified and developed to meet the requirements of the project and the confines of the available data. In order to formulate the academic aims and objectives of the proposed small-scale investigation, it is necessary to give some brief consideration of the manner in which the known and suspected heritage resource at the site might address prioritised themes for research presented within national and regional research agendas and framework. Themes pertaining to the early medieval, medieval, and post-medieval periods are considered most appropriate (McCarthy 2010), whilst it is probable that any Roman remains are too deeply buried to be contacted by the proposed investigation. However, the present limited understanding of both the full extent of the works, and of the heritage resource immediately around the Fratry, means that only a brief examination of such themes is appropriate at this stage.

2.1.2 Those national research agendas and policies consulted included EH Research Strategy documents *Exploring our Past Implementation Plan* (2003), *Discovering the Past, Shaping the Future* (2005a), and the guidelines produced jointly with the Church of England on the best practice for the treatment of human remains excavated from Christian cemeteries (EH 2005b). Other agendas comprise that produced in 1987 by the Society for Medieval Archaeology and JP Greene's 1992 summary of future research aims. The research framework for North West England (Brennand 2006; 2007) has provided a region-specific resource framework and research agenda for the early medieval, medieval and post-medieval periods (Newman 2006a; Newman 2006b; McNeil and Newman 2006; Newman and Brennand 2007; Newman and McNeil 2007; Newman and Newman 2007) that include numerous research topics that are relevant to the study of the data recovered from the Fratry. The themes presented in the above documents have been condensed and are briefly outlined in the paragraphs below. All are related, and need to be examined utilising an holistic, interdisciplinary, approach.

2.1.3 ***Cultural change and continuity***: there is a need to understand even the most basic aspects of activity in towns such as Carlisle following the apparent cessation of the Roman administration, and the role of different cultural, ethnic and religious influences, in evolving and crystallising the identities and institutions that can be seen with greater clarity in the post-Conquest period.

2.1.4 ***Religion, economy and society:*** there is a need for extensive and site-specific studies of ancillary buildings associated with religious institutions. Also of importance is to develop further an understanding of medieval religion and its social stratification through a comprehension of its specific material remains and through burial behaviour (particularly grave form, body position, osteological attributes and associated artefacts). The organisation of medieval religious sites in accordance with belief systems should be examined, particularly in terms of their physical environment, which has been little studied. The nature of medieval religious institutions and their relationship with their hinterlands should also be studied.

2.1.5 ***Osteology:*** full scientific analysis of human skeletal assemblages, using all available physical and biochemical techniques, is a high priority in examining the demography and biology of medieval populations.

2.1.6 ***Chronology:*** there is a need to establish closely dated artefact sequences across the region, linked to scientific dating, but also to improve the dendrochronological sequence for the region;

2.1.7 ***Artefacts:*** a corpus of artefacts relating to medieval popular belief and spiritual customs should be developed. The origin and inter- and intra-site distribution of building materials and other artefacts should be analysed and interpreted within socio-economic and technological contexts.

2.1.8 ***Palaeoenvironmental remains***: there is a need to recover and examine well-dated and well-stratified assemblages of plant and faunal remains in their various forms, and through a range of techniques, where these help to provide information about the nature of activity at sites, their surrounding landscapes, and resource exploitation

2.1.9 ***Wider themes:*** data should be examined within the territorial context of the site, but also the site's natural environment, particularly where this aids the identification of regional patterns that may be different from more general trends. Studies of periods of transition (*ie*, from the medieval to post-medieval period) are important, as is an understanding of the subsequent post-medieval development of medieval sites.

2.2 RESEARCH AIMS

2.2.1 By considering the above themes and initiatives, the following research questions (RQ) can be posed to inform and guide the strategies to be implemented during the project.

RQ1 What is the nature, date, density, extent, and state of preservation of the archaeological remains on the site, and what can be understood of their sequence, relationships and their functions?

RQ2 How can the evidence recovered further an understanding of the historical development of activity and structures within the Cathedral precinct, particularly during the early and high medieval periods?

RQ3 What evidence is there for differing cultural, ethnic and religious influences in terms of the expression of belief and attitudes towards death and burial?

RQ4 What could be learnt about the demography, epidemiology, geographical origins and standards of living of the population buried on the site?

RQ5 What could the findings tell us about early medieval and medieval architecture and building practices?

RQ6 How can the results of the investigation be made available to the wider public in an accessible form, whilst undertaking appropriate archiving of the artefacts and primary data?

2.3 OBJECTIVES

2.3.1 The following objectives of the project have been formulated in consideration of the research questions (*Section 2.2*). The manner in which specific elements of these objectives will be addressed is presented in the method statement within this document (*Section 4*).

ROa Undertake an appropriate programme of evaluation trenching and rapidly investigate and record the on-site stratigraphy in order to:

- define and understand better the relationships between individual deposits and elements of the site, including their relative sequencing;
- gain an understanding of the location, organisation and sequence of burial activity;
- identify variations in modes of burial practice, including body position and funerary furniture;
- establish a basic deposit model for the zone of development impact.

ROb Undertake an appropriate finds recovery strategy (including metal detection) and, using suitable reference material, undertake appropriate identification, cataloguing and stratigraphic integration of the stratified artefacts and ecofacts in order to:

- maximise the recovery of artefactual material;
- establish as accurately as possible the frequency, date, geographical origin, style, quality and function of the individual components of the artefact assemblage;
- make recommendations for stabilisation, conservation, retention and display.

ROc Recover all human remains from the area of trenching, then undertake a suitable programme of osteological assessment that will establish their potential for detailed analysis, biochemistry and scientific dating.

ROd Recover, process and assess palaeoenvironmental samples from a range of suitable well-stratified deposits in order to establish:

- their potential to provide information about the nature of activity on the site and its surrounding environment;
- their potential to contain material for scientific dating;
- the likelihood of encountering informative palaeoenvironmental remains during further works around the Fratry.

ROe Collate all results of the above objectives and prepare them for dissemination in the form of a report for submission to the project's stakeholders and to the Cumbria Historic Environment Record (Kendal).

ROf Return the assemblage of human remains and any appropriate finds to the Cathedral, and collate and submit the remainder of the archive to the Cumbria Record Office (Carlisle).

3. BASIC CONSIDERATIONS

3.1 LEGAL CONSIDERATIONS

3.1.1 ***Scheduled Monument Consent:*** the site is a Scheduled Ancient Monument and no intrusive archaeological investigation can take place until the present project design has been approved by EH, and written Scheduled Monument Consent (SMC) has been issued and received by OA North. A copy of the consent and any conditions pertaining will be issued to site to ensure that all works are undertaken in full compliance with that document.

3.1.2 ***Human Remains:*** the site is consecrated according to the rites of the Church of England and, as a result, there is a requirement for the CFCE to ensure that appropriate Faculty permissions have been granted prior to the investigation and removal of any human remains (Care of Churches and Ecclesiastical Jurisdiction Measure 1991, Faculty Jurisdiction Measure 1964). The CFCE directions will replace the need for a Ministry of Justice (MoJ) licence. During the excavation, all treatment of human remains will be in full compliance with the CFCE directions.

3.1.3 It is the responsibility of OA North to ensure that the local Environmental Officer is informed of the proposed exhumation and to provide a Risk Assessment and this methodology for the works. The Client may appoint a co-ordinator under CDM (Construction Design and Management) regulations and, as a secondary contractor, OA North will comply with all necessary legislation and reasonable requirements of the principal contractor by operating under the principal contractor's safe system of works, by providing a specific risk assessment which will accompany the corporate health and safety policy and ensuring the maintenance of a safe working environment within OA working areas. OA North will ensure that all employees and authorised visitors are fully instructed in appropriate risk avoidance and approved on-site procedures (Public Health (Control of Diseases) Act 1984). The Health and Safety at Work Act 1974 under which the Personal Protective Equipment at Work Regulations are made will be complied with at all times by the Archaeological Contractor. Evidence of appropriate procedures will be detailed in the Risk Assessment.

3.2 ETHICAL AND RELIGIOUS CONSIDERATIONS

3.2.1 All staff involved in the exhumation and recording of human remains will be expected to behave with due care and attention, showing respect for the dead at all times. The burials represent the remains of past inhabitants of the city and thus particular consideration will be afforded to the sensitivities of the current parishioners and residents in all exhumation and archaeological works. The excavation and osteological analysis of human remains will be screened from the public at all times.

3.2.2 ***Storage of Remains and Reinterment:*** OA North will be responsible for the individual bagging or boxing of skeletons. It is likely that, following completion of the fieldwork, the excavated assemblage will be transported to OA's offices at either Lancaster or Oxford, where they will reside whilst detailed assessment is undertaken. If the results of the assessment indicate that the remains are completely unsuitable for any form of detailed analysis, this strategy may be reviewed, to minimise movement of the remains and to expedite their deposition. It is anticipated that, following osteological analysis, all human remains (both disarticulated and articulated) and associated funerary furniture will be deposited by the Client in an appropriate manner. Whilst it is recommended that this matter be discussed with all interested parties and that there is an agreement with the CFCE, a programme for deposition will be included within the final report.

3.3 STANDARDS

3.3.1 OA North shall conform to the standards of professional conduct outlined in the Institute of Field Archaeologists' *Code of Conduct*, the IfA *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology* (1990, revised 1997), the IfA *Standards and Guidance for Excavations and Watching Briefs* (1994) and the British Archaeologists and Developers' Liaison Group *Code of Practice*.

3.3.2 OA is a member of the Institute of Environmental Assessment and the Council for British Archaeology. All osteologists adhere to the standards of the IfA and BABAO, and subscribe to standards of excavation of human remains (McKinley and Roberts 1993) and methodologies of osteological analysis (Brickley and McKinley 2004) set out by these organisations, and to English Heritage's *Guidance for best practice for the treatment of human remains excavated from Christian burial grounds in England* (Mays 2005). Full archaeological recording and excavation, according to the Institute's Standard for archaeological excavation, will be followed for all structures and non-burial deposits.

3.4 HEALTH AND SAFETY

3.4.1 ***Risk assessment:*** OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). OA North will liase with the client to ensure all health and safety regulations are met. A detailed risk assessment will be completed in advance of any on-site works, with continuous monitoring and updating during the fieldwork. This can be supplied to all interested parties on request.

3.4.2 ***Deep excavations and shoring:*** consideration will be given to the safety of the excavation at all times, and investigation will not exceed a safe working depth. If there is a requirement for shoring to be installed, then such works would need to be undertaken by a contractor skilled in such matters and who will be available to inspect their handiwork on a regular basis. All open archaeological sites, especially in the event of deep excavations, will be inspected by the Site Director or other appointed and competent person. These inspection records will be signed and dated, and form part of the on-site Health and Safety folder, which will always be available to all interested parties on request. Further, where a shoring system has been installed within the trench to secure unstable edges or to allow deeper excavation, this shoring system will be inspected on a regular basis by a properly qualified operative, with additional visits after events that could lead to destabilisation. All inspections will be documented appropriately.

3.4.3 ***Spoil management:*** where there is a requirement for the careful cutting and removal of turf, this will be conducted with appropriate tools, and stored in a manner that facilitates its removal to a storage location by ground staff (it cannot be kept at the point of excavation, as there is no means of keeping it in an appropriate manner). Paving slabs will be carefully lifted and stockpiled with appropriate lifting equipment. Areas of 'blacktop' or other such surfaces will be cut out by an appropriately skilled member of the Cathedral maintenance team (not by OA). Spoil will be neatly stockpiled on boards/tarpaulins a safe distance from the trenches, with topsoil and subsoil and surface materials kept separate.

3.4.4 ***Reinstatement:*** layers of permeable membrane can be laid at the base of the excavation prior to the commencement of backfilling. Trenches will be backfilled with the excavated arisings (topsoil uppermost), and compacted manually, before the stockpiled turf and paving slabs (the latter with the aid of the cathedral maintenance team and lifting equipment, as appropriate) are relain. Reinstatement of blacktop and/or similar surfaces would be undertaken by the Cathedral maintenance team. A condition survey will be undertaken of the area of each trench prior to excavation to ensure that the area is returned to a state as close as can reasonably be expected to that which existed prior to the fieldwork.

3.4.5 *Staff training and PPE:* all project staff will be CSCS qualified, proof of which can be provided in the form of CSCS cards. All project staff will wear full basic PPE whilst on site, to include safety helmets, safety boots and high-visibility jackets. Noise defenders, gloves and eye protection will be made available to staff as necessary.

3.4.6 ***Site Welfare:*** health and safety regulations require access to adequate welfare facilities to be provided for the duration of the fieldwork. This includes a clean area for eating, for sheltering from inclement weather, with adequate hygiene facilities (a particularly important matter when dealing with human remains and waterlogged deposits). These areas should be separated from those secure areas used for the storage of tools, finds, human remains and fuel. Such facilities will be provided by the Client, and will consist of the Cathedral Offices and the tower.

3.4.7 ***Fencing and hoarding requirements:*** the area around the trial trenches will be accessible to the visiting public during working hours, whilst there is always a risk of unauthorised visits and

trespassing in the evenings and at weekends. Thus, the excavation trenches and spoil, together with any additional storage and welfare facilities, will require protection with heras fencing whilst open, and any appropriate signage. Screening will be required during the exhumation of any human remains and, as a preference, will comprise layers of hessian or similar material wrapped around the heras fencing; this allows the details of the excavation to be obscured, but also the wind to pass through, meaning that the covered fence panel is lighter, more manoeuvrable and less prone to toppling than the solid barrier panels.

3.4.8 ***Services:*** full regard will, of course, be given to all constraints (services *etc*) during the excavation as well as to all Health and Safety considerations. As a matter of course the field team will use a CAT and Genny prior to any excavation to test for services. However, this is only an approximate location tool. All information regarding services, *ie* drawings or knowledge of live cables or services, within the study area should be made available to the OA North project manager prior to the commencement of the evaluation. Copies of the service information will reside with the site director.

3.4.9 ***Contamination:*** any known contamination issues or any specific health and safety requirements on site should be made known to OA North by the client to ensure all procedures can be met, and that the risk is dealt with appropriately. Should any presently unknown contamination be discovered during excavation, it may be necessary to halt the works and reassess the risk assessment. Should it be necessary to supply additional PPE or other contamination avoidance equipment this will be costed as a variation.

3.4.10 ***Infectious diseases:*** funerary archaeology presents a specific and complex range of hazards. Although no coffin liquor and soft tissue is anticipated, the risk must be borne in mind. The risk of anyone contracting smallpox is remote but the potential threat to the population at large is such that it must be taken seriously. Staff will wear protective clothing including disposable suits and gloves where the survival of coffin liquor and soft tissue is suspected. Full protective suits, gloves and dust masks will also be worn if working in enclosed spaces, where there is a danger of inhalation of lead dust from coffins.

3.4.11 Where lead coffins were used there may be an increased risk of infection due to the good preservation of bodies and other materials. The highest risk category is that of the sealed lead coffin. If any soft tissue remains are encountered, the hazard presented will be treated as potentially severe and suitable protective systems will be used. It is not only the human remains themselves that present a risk but also the coffin linings and pads, and the result of the body's decomposition, a viscous black liquid. The greatest potential risk presented by this activity is that of contracting anthrax, although the risk associated with working with the remains of a recorded anthrax death are thought to be small. A higher risk is gained from the well-preserved horsehair or woollen materials used in the coffin pads, pillows and packing. Minimum precautions are to wear the correct level of protective equipment. On-site washing facilities will be provided for all staff. Protective clothing will remain within the area of the site for the duration of the work. Overalls, gloves and disposable respirators will be sealed in opaque plastic bags and disposed of in accordance with statutory requirements.

3.4.12 Although sealed lead coffins will be recorded, OA does not undertake their removal or disposal, but is happy to recommend a reputable exhumation company who are willing to undertake this work.

3.5 INSURANCE

4.5.1 OA North has professional indemnity to a value of £2,000,000, employer's liability cover to a value of £10,000,000 and public liability to a value of £15,000,000. Written details of insurance cover can be provided if required.

3.6 COPYRIGHT AND CONFIDENTIALITY

3.6.1 The client holds copyright of all drawings and other records that they provide to OA North as part of this work. Oxford Archaeology will retain full copyright of all generated original records and primary data, and any commissioned reports, tender documents or other project documents, under the Copyright, Designs and Patents Act 1988 with all rights reserved;

excepting that it will provide an exclusive licence to the client in all matters directly relating to the project as described in this project design.

3.6.2 OA North will assign copyright to the client upon written request but retains the right to be identified as the author of all project documentation and reports as defined in the Copyright, Designs and Patents Act 1988 (Chapter IV, s.79). OA North will advise the client of any such materials supplied in the course of projects, which are not OA North's copyright.

3.6.3 OA North undertakes to respect all requirements for confidentiality about the client's proposals provided that these are clearly stated. It is expected that such conditions shall not unreasonably impede the satisfactory performance of the services required. OA North further undertakes to keep confidential any conclusions about the likely implications of such proposals for the historic environment. It is expected that clients respect OA North's general ethical obligations not to suppress significant archaeological data for an unreasonable period.

3.7 OWNERSHIP

3.7.1 Currently the material archive (artefacts, ecofacts and palaeoenvironmental samples) found during the fieldwork belong to the owners of the land from which they were recovered (*ie*, the Dean and Chapter), whilst the documentary archive is the property of OA North. OA North would deposit copies of the documentary archive with the Cumbria Record Office (Carlisle), whilst human remains will be deposited with the Cathedral, or the Tullie House Museum (as requested/arranged by the Dean and Chapter). It is assumed that the division and deposition of elements of the material archive with the Cathedral and the Tullie House Museum will be established in consultation with the Client and the dean and Chapter. OA North retains the intellectual property rights for photography, written text and other works generated during the programme of works and the issuing of deliverables to meet the requirements of the Client.

3.8 PROJECT MONITORING

3.8.1 Monitoring of the archaeological investigations will be undertaken by the Inspector of Ancient Monuments for EH, and by the Cathedral Archaeologist, who will be afforded access to the site at all times. Monitoring meetings will be established with the Client, Cathedral Archaeologist and the Inspector.

3.8.2 OA North will ensure that any significant results are brought to the attention of the client and the Inspector (EH) as soon as is practically possible.

4. FIELDWORK METHODOLOGY

4.1 MANAGEMENT AND COMMUNICATIONS

4.1.1 Throughout both the fieldwork and post-excavation stages of the project, OA North will maintain close liaison with the Client's representatives, project manager, consultant archaeologist, and English Heritage. This will include notification of all proposals, start and completion dates, as well as regular updates on findings and progress, and any requested changes to the programme and scope of the works. Scheduled Monument Consent and a CFCE licence for the removal of human remains will be sought well in advance of fieldwork. Particularly close liaison will be required prior to the commencement of works, in order to ensure that all health and safety measures are in place, and that the site set-up is both safe, and does not interfere with the daily life of those that live and work in, and visit, the Cathedral precinct. Correspondence and copies of reports will be circulated as indicated in the brief.

4.1.2 Close project management will ensure the efficient execution of the project to time and budget. The project team will be managed by Stephen Rowland, who will organise and monitor the internal OA North staff and the external specialists. Specialists have been chosen for their knowledge of the region and its materials, and for their ability to fulfil contracts to budget and on time. Steve will report to Rachel Newman (OA North Senior Executive Officer: Research and Publication) whom, as Project Executive, will undertake quality assurance and academic direction, and to Alan Lupton (OA North Operations Manager), who is responsible for timetabling staff to ensure that the programme runs to time. In parallel, Steve will report to the Cathedral Archaeologist and to Buro 4, who will provide quality assurance for the Client.

4.1.3 OA North places importance on the tight and effective management of the post-excavation stages of a project in order to deliver best value to our clients. An element of managerial time, particularly of the Operations Manager, will be dedicated to ongoing internal monitoring, whilst the Project Executive will monitor and assure quality. This is part of OA North internal quality assurance system and ensures the prompt delivery of the agreed report or other deliverables on time and budget. General management time will be required to deal with the organisation of non-specific tasks, administration and correspondence, together with the preparation of any progress reports, project review meetings and for liaison with the Client's monitor. Basic project review, including the tracking of task completion and logging of resource expenditure, will be undertaken internally on a weekly basis. Brief progress reports for submission to the Client's monitor can be prepared to coincide with each invoice and would summarise the current status of each of the tasks (including task sub-divisions). Any problems likely to impact upon the schedule will be transmitted immediately to the Client's representative.

4.1.4 ***Project team briefing:*** it will be necessary to brief each member of the project team concerning the aims and objectives of the project, expected outcomes, and their specific roles, responsibilities, products and timetable. Where possible, the briefing will be undertaken collectively, although external specialists may have to be contacted separately. Following the completion of each task sub-division, the responsible staff member will inform the project manager, preferably through a brief email, with details of the work that was undertaken, the time taken, and any positive or negative issues arising that may affect further works. Should any issues arise during the undertaking of a task, the responsible staff member will inform the project manager by whatever convenient method guarantees that the information is transmitted and received. The project manager will in turn keep the Project Executive informed of progress, developments and issues.

4.2 LOCATION

4.2.1 The general investigation area is shown on Drawing 7387 (04) 103. Within that area it is expected that four trenches will be investigated, three of which will be 3m long, and one of which will be 6m long. These will initially measure 1m in width and up to 1m in depth (where safe to do so, and if necessary in localised sondages), but, at the request of the Cathedral Archaeologist and where resources permit, may be expanded to 2m in width to allow a maximum safe excavation depth across the trench and additional sondages. Further expansion

may be undertaken at the request of the Cathedral Archaeologist and where resources permit, although it is not anticipated that the total area of investigation would exceed 45m^2.

4.3 EXCAVATION

4.3.1 Modern surfaces will be lifted and stockpiled, or cut out and removed, with the assistance of the Cathedral maintenance team, as appropriate. Overburden will be removed either by hand and will be stored adjacent to the trench on plastic sheeting/wooden boards. Thereafter, excavation will be undertaken in successive, level spits, by hand until the first significant archaeological deposit. This deposit will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and inspected for archaeological features. Such features will be defined and a base plan produced. The exact position and extent of the excavation will be located on topographic survey information provided by the client. The trenches will be planned digitally by experienced surveyors to record the site according to OS co-ordinates, using an EDM Total Station.

4.3.2 The trenches will be excavated to a point that satisfies the Cathedral Archaeologist and the archaeologist, to a point where structure remains preclude further investigation, or to a depth of 1m, the maximum depth of a 2m-wide trench in accordance with health and safety constraints. However, should the archaeological deposits extend below this depth, localised sondages will be excavated to a depth that is considered reasonable and safe. Where there is a requirement to excavate beyond a safe depth, this would involve stepping out or shoring of the trench sides. This has not been accounted for in the costings section as each trench or test pit will be treated on a case-by-case basis, but will be costed subsequently as a variation.

4.3.3 During excavation the trenches and spoil will be subject to an on-going metal detector survey by an OA North archaeologist experienced in this work.

4.3.4 Any investigation of intact archaeological deposits will be exclusively manual. Selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 1m- wide sample, and extensive layers will, where possible, be sampled by partial rather than complete removal. It is hoped that in terms of the vertical stratigraphy, maximum information retrieval will be achieved through the examination of sections of cut features. All excavation will be undertaken with a view to avoiding damage to any archaeological features that appear worthy of preservation *in-situ* or would be better understood across a wider-area excavation.. Any archaeological or historical structural features will also be left *in-situ* regardless, unless their removal is specifically requested by the Cathedral Archaeologist.

4.3.5 All information identified in the course of the site works will be recorded stratigraphically, using a system, adapted from that used by Centre for Archaeology Service of English Heritage, with sufficient pictorial record (plans, sections, and monochrome contacts) to identify and illustrate individual features. Primary records will be available for inspection at all times.

4.3.6 Results will be recorded on *pro-forma* context sheets. The site archive will include both a photographic record and accurate large scale plans and sections at an appropriate scale (1:50, 1:20 and 1:10). All artefacts and ecofacts will be recorded using the same system, and will be handled and stored according to standard practice (following current Institute for Archaeologists guidelines) in order to minimise deterioration.

4.4 GENERAL PROCEDURES

4.4.1 ***Environmental Sampling:*** samples (bulk samples of *c* 40 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches). These will be returned to OA North's offices for processing. Deposits of particular interest may incur additional sampling, on advice from the appropriate in-house specialist. The location of all samples will be recorded on drawings and sections with heights OD *etc*.

4.4.2 Between 25%-100% of bulk samples shall be selected for processing, based on the advice from OA North's in-house environmental manager. However, the basis of the advice will be agreed with the Cathedral Archaeologist and the client prior to processing commencing, which will be included in the final report. An assessment of the environmental potential would include soil pollen analysis and the retrieval of charred plant macrofossils and land molluscs

from former dry-land palaeosols and cut features. In addition, the samples would be assessed for plant macrofossils, insect, molluscs and pollen from waterlogged deposits.

4.4.3 In order to achieve the aims of the programme of work, it may be required to obtain dating evidence through radiocarbon dating, dendrochronological or other such techniques. This would only be undertaken in consultation with the Cathedral Archaeologist and the client.

4.4.4 ***Human remains:*** treatment of these remains will be in accordance with the Church of England and English Heritage's guidelines (2005) and with any CFCE and Environmental Health directions.

4.4.5 For the purposes of the evaluation it is normal that only the human remains within the defined excavation areas will be removed, and the remainder of each burial outwith this will be left *in-situ*. However, where there is scope and resources to expand the trenches to enable the recovery of complete burials, this can be undertaken. Removal of human remains will be carried out with due care and sensitivity under the environmental health regulations, and any such remains will be screened from the public using debris netting. Furthermore, it is possible that a visit will be required from an OA North human remains specialist to advise on recording. Prior to this work commencing the English Heritage Regional Science Advisor will be contacted for advice.

4.4.6 ***Finds:*** all finds recovered during the investigation will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) and Tullie House Museum's guidelines.

4.4.7 Finds recovery and sampling programmes will be in accordance with best practice (current IfA guidelines) and subject to expert advice. OA has close contact with Ancient Monuments Laboratory staff at the Universities of Durham and York and, in addition, employs in-house artefact and palaeoecology specialists, with considerable expertise in the investigation, excavation, and finds management of sites of all periods and types, who are readily available for consultation. Finds storage during fieldwork and any site archive preparation will follow professional guidelines (UKIC). Emergency access to conservation facilities is maintained by OA North with the Department of Archaeology, the University of Durham.

4.4.8 With the exception of human remains and metal-detected finds, neither artefacts nor ecofacts will be collected systematically during the excavation of the modern topsoil unless significant deposits are encountered. In such an eventuality, material will be sampled in such a manner as to provide data to enhance present knowledge of the production and dating of such artefacts, although any ensuing studies will not be regarded as a major element in any post-excavation analysis of the site. Other finds recovered during the removal of overburden will be retained. It is not anticipated that ecofacts (*eg* unmodified animal bone) will be collected during this procedure.

4.4.9 All material will be collected and identified by stratigraphic unit during the excavation process. Hand collection by stratigraphic unit will be the principal method of collection, but targeted on-site sieving could serve as a check on recovery levels where resources permit. Objects deemed to be of potential significance to the understanding, interpretation and dating of individual features, or of the site as a whole, will be recorded as individual items, and their location plotted in 3-D.

4.4.10 Finds will be administered at regular intervals. They will be retained in the Cathedral office during the works, so that they can be examined by the Cathedral Archaeologist, unless they are unstable and require immediate attention. At the completion of the works they will be removed from the site in order that they can be processed at OA North offices. All finds will be treated in accordance with OA standard practice, which is cognisant of IfA and UKIC Guidelines. In general this will mean that (where appropriate or safe to do so) finds are washed, dried, marked, bagged and packed in stable conditions; no attempt at conservation will be made unless special circumstances require prompt action. In such case guidance will be sought from OA North's consultant conservator.

4.4.11 Should waterlogged deposits and such finds be encountered, they will be treated as appropriate. In the case of large deposits of waterlogged environmental material (*eg* unmodified wood), advice will be sought with the OA North specialist and English Heritage Regional Science Advisor with regard to an appropriate sampling strategy.

4.4.12 Where possible, spot dates will be obtained on pottery and other finds recovered from the site. Artefacts will be examined and commented upon by OA North in-house specialists.

4.4.13 Any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.

5. POST-EXCAVATION PROCESSING, REPORT AND ARCHIVE

5.1 FIELDWORK ARCHIVE COMPLETION

5.1.1 The evaluation is likely to produce palaeoenvironmental samples, finds, and ecofacts; these will be processed so that they can be assessed.

5.1.2 ***Palaeoenvironmental samples***: a number of tubbed sediment samples for general biological analysis (GBA) and bone recovery can be expected. Since these will be collected in accordance with the judgement of the experienced excavation staff (with particular regard to stratigraphic position, formation processes, taphonomy and palaeoenvironmental potential) and in cognisance of the project's research aims and objectives, it can be assumed that all samples derive from important deposits that were considered to have sufficient palaeoenvironmental potential to make a genuine contribution to an understanding of the site. Dependent on the judgement of the palaeoenvironmentalist, between 25% and 100% of each sample will be processed, although smaller sub-samples may be retained for biochemical analysis, parasite squashes, *etc*.

5.1.3 GBA samples will be processed manually through their disaggregation within water, the floating-off of any light fraction (including insects, charred (CPR) and waterlogged (WPR) plant remains) within a 250-500 micron mesh, and the collection of dense residue within a nest of graded sieves, the smallest with a 500 micron mesh. Sample processing sheets will be completed. Dense residues and light fractions will be air dried or kept wet, as appropriate, and bagged for sorting.

5.1.4 Each of the processed residues will be sorted for the removal of industrial waste, artefacts, large/dense ecofacts, and for bones, which will be packaged appropriately, with bags clearly labelled that the material derives from bulk sampling (as opposed to hand collection). The residues will also be scanned for non-removable or dense palaeoenvironmental material (*ie* fine charcoal or encrusted/mineralised ecofacts). Records of the sorted and scanned material will be made on processing sheets.

5.1.5 ***Artefacts and Ecofacts:*** the recovered artefact and faunal assemblages will need to be processed so that they are clean, appropriately packaged, organised and ready for assessment. Cleaning will be undertaken in a manner appropriate to the material, using tools and techniques that will minimise abrasion, degradation or any other form of damage. Wet materials will be dried thoroughly at a low, stable temperature. The assemblage will then be packaged appropriately according to context and material-type. Pottery of different dates will be bagged separately, as will any sherds that derive clearly from specific vessels or distinct scatters. All bags will then be allocated a unique object record number (ORN), preferably ascending in context order, boxed by material, and catalogued within the OA North computerised finds system. Summary data will be abstracted from the OA North finds database for inclusion within the site database, and as a catalogue to send to the appropriate specialists. The fully processed finds assemblage will be organised by material type, loan forms completed, and will be then transported, as required (by hand, van or courier), to appropriate internal and external specialists.

5.1.6 ***Human osteological material:*** to enable the completion of all further works, the human remains will be gently processed over a fine mesh sieve to ensure that no material is lost, and will be bagged, boxed and catalogued.

5.2 STRATIGRAPHY

5.2.1 The stratigraphic data gathered during the fieldwork will be checked, quantified, collated and summarised within a brief report. Digital photographs will be labelled and organised according to the relevant photographic indices; these will form the primary source of plates for all reports and publications. The labelling of the monochrome contact prints will be undertaken as part of the archiving. Original site drawings will be scanned and then digitised in a CAD package, where they will be integrated with the survey data generated during the fieldwork and the form the basis for the final report illustrations.

5.3 OSTEOLOGICAL ASSESSMENT

5.3.1 The human osteological material recovered from the evaluation and those retrieved from the washed palaeoenvironmental sample residues will be processed, catalogued and assessed for their analytical potential. Assessment of this material will seek to address a number of specific aims:

i. to assess the potential of the human remains for the estimation of biological parameters such as sex, age and stature;
ii. to assess the potential of the remains to yield palaeopathological information in order to learn about the health status of past peoples;
iii. to assess the potential of the remains for isotope analysis;
iv. to recommend any additional specialist analysis, such as radiography, of the remains;
v. to establish the potential of the remains to contribute to archaeological knowledge at regional and national levels, and the most appropriate way of realising this potential;
vi. to contribute to an updated project design for analysis of the remains, with cost and time implications specified.

5.3.2 In order to achieve these aims, the following objectives will be employed during the osteological assessment:

- quantification of the remains, including the number of articulated skeletons and quantity of disarticulated human bone;
- evaluation of the overall condition and completeness of the remains, with reference to the survival of indicators of age, sex and stature, metrical and non-metrical analyses, and palaeopathological examination;
- establishment of the basic demographic composition of the population, including the proportion of adults and the proportion of juveniles;
- establishment of the overall range and extent of palaeopathological conditions.

5.3.3 Human remains will be assessed in accordance with the recommendations set out by Mays *et al* (2002) in *Guidelines for producing assessment documents and analytical reports*. The assessment will be undertaken with reference to relevant site documentation, namely plans, on-site skeleton recording forms and photographs. Each skeleton will be rapidly scanned and a *pro-forma* skeleton assessment form will be completed, detailing condition, completeness and noting any potential for biological information and palaeopathological information. These observations will provide adequate guidance to the potential of the remains for further study, in accordance with recommended practice (Brickley and McKinley 2004). They will be, by their very nature, preliminary and subject to change as a result of any future recommended study of the remains.

5.3.4 *Condition and completeness:* the general condition of the skeletal material will be assessed with reference to the scoring system set out by McKinley (2004), which grades bones according to the degree of erosion to surfaces and alteration to bony contours. The completeness of each skeleton will be estimated by recording, as a percentage, how much of the skeleton has survived, and assigning it to one of the following categories:

1 = <25% complete
2 = 25-50% complete
3 = 50-75% complete
4 = >75% complete.

5.3.5 *Biological sex and age:* the basic demographic composition of the population will be established through cursory examination of extant age and sex indicators by employing the techniques described by Brickley and McKinley (2004). The potential of the remains for estimating a more detailed demographic profile, with narrower age categories, will be explored by considering the extent and range of sex and age indicators that have survived and the reliability of these indicators. Estimation of biological sex and age is more accurate if a range of indicators is employed instead of one or two (Bedford *et al* 1993) and this will be taken into account.

5.3.6 *Metrical analysis:* potential of the remains for metrical analysis will be scored on a scale of 1-5, where '1' denotes skeletons that show no potential (*ie* no elements can be measured owing to fragmentation and/or poor preservation) and '5' denotes skeletons that show high potential

(*ie* the full range of standard cranial and post-cranial measurements can be taken). The results will be considered in the context of estimating stature, for which the maximum length of a complete long limb bone and the sex of the individual is required (Trotter 1970). Metrical data may also be employed to assist in the estimation of sex (Bass 1987) and also to explore variation in skeletal anatomy in relation to environmental and hereditary influences. For example, calculation of the platymeric (degree of flattening on the femur front to back), platycnemic (degree of flattening of the tibia front to back) and cephalic (cranial shape) indices may be undertaken by employing measurements of the relevant bones.

5.3.7 *Non-metrical analysis:* non-metric traits are another means of studying human skeletal variation in relation to the environment and inheritance (Saunders 1989; Tyrell 2001). The potential of skeletons for scoring non-metric traits will be assessed on a scale of 1-5, where '1' denotes skeletons that show no potential (*ie* preservation has prevented the observation of all standard cranial and post-cranial sites) and '5' denotes skeletons that show high potential for non-metrical analysis (*ie* all standard cranial and post-cranial sites can be scored). More readily observable traits will be noted (but not formally scored) to provide an indication of the level and range of traits present in the population.

5.3.8 *Palaeopathology:* the analysis of palaeopathology is dependent on the completeness and preservation of skeletons. Similar bony changes may be observed in many different categories of disease and they can be very subtle; incomplete and poorly preserved skeletons therefore limit palaeopathological study. Assessment of the potential of the remains to yield palaeopathological information, including dental conditions, will, first and foremost, consider the completeness and condition of the skeletons.

5.3.9 Pathology will not be scored formally, but lesions will be noted in order to establish the range and extent of disease in the population. It will also establish the extent to which it will be possible to diagnose the lesions identified on the bones and whether any specialist analyses that may enhance understanding of the conditions are required (for example, the analysis of fractures is greatly enhanced by the application of radiography). Palaeopathological assessment will be undertaken with reference to standard texts (for example, Aufderheide and Rodriguez-Martin 1998; Hillson 1996; Ortner 2003).

5.3.10 *The significance of the assemblage:* the significance of the assemblage will be considered by taking into account the results of the above and evaluating these in the context of other populations that are similar in date and type (Roberts and Cox 2003).

5.4 ARTEFACT AND ECOFACT ASSESSMENT

5.4.1 All finds work will be carried out in accordance with the Institute for Archaeologists *Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials* (IfA 2001). Each of the recovered material categories will be assessed by suitable specialists to record information fully and adequately on all pertinent aspects of the assemblage, in accordance with current and accepted industry guidelines for the various material types. All metalwork and a selection of industrial residues will be submitted for x-ray, and the interpretation of these artefacts will be reviewed with the aid of the x-ray plates. The results of the assessment will be presented within a report for integration into the post-excavation assessment report, and will provide details of the quantity and quality of the artefactual data, spot-dating where possible, and an assessment of the potential for any further analysis within the framework of the original research questions and objectives, which will be articulated through a series of recommendations. Requirements for illustration and long-term conservation and storage will be established, but should any requirement for specialist short-term conservation be identified, then selected finds will be sent to Durham University Conservation Laboratory for stabilisation.

5.4.2 ***Faunal remains:*** the faunal remains will be assessed using the standard zooarchaeological methodologies of Cohen and Serjeantson (1996) and Halstead and Collins (1995), and utilising osteological reference material held by OA North, together with standard reference works (Schmid 1972). Measurements taken will again follow standard guidelines (Von den Driesch 1976; Payne and Bull 1988). Separation of sheep and goat (Boessneck 1969), and the separation of red and fallow deer (Lister 1996) will take place where possible. The assessment will generate a basic catalogue recording the state of preservation, fragmentation and evidence

for taphonomy, together with a count of anatomical elements by taxon and the proportion of elements usable for ageing and metrical analysis.

5.5 PALAEOENVIRONMENTAL ASSESSMENT

5.5.1 Essentially, the assessment of the environmental assemblage will seek to identify those samples with good preservation of a range of charred (CPR) and waterlogged (WPR) plant, pollen and faunal remains, and which are apparently free from modern contamination; the assessment will then make recommendations for further analyses that are appropriate to the project's research framework. The palaeoenvironmental assessment methodology will follow EH guidelines (2002) and Dr Sue Stallibrass, EH Regional Scientific Advisor for the North West, will be consulted as appropriate.

5.5.2 The light fractions from the processed bulk sediment samples, together with any relevant material recovered from/observed within the dense residues, will be examined for waterlogged, charred or mineralised plant remains using a Leica MZ6 binocular microscope. All plant material will be provisionally identified and quantified on a scale of 1-5, where '1' is fewer than five items and '5' is more than 100. Plant nomenclature will again follow Stace (1997) and identification will be aided by comparison with the modern reference collection held at OA North. The components of the matrix will be noted and the suitability of the samples for further analysis and scientific dating will be recorded. The results of the identification process will be recorded into a database. The presence of snails and insects will be noted, and these can be subject to more detailed examination where additional resources are available. The results of the palaeoenvironmental assessments will be articulated within written reports for integration into the post-excavation assessment document, with a contribution to the non-technical executive summary. Care will be taken to ensure that colloquial plant names, where possible, are used alongside scientific nomenclature.

5.6 REPORT

5.6.1 The results from the evaluation will be presented within a report that will be issued within six to eight weeks, unless an alternative deadline is agreed with the client and regulatory bodies, and not withstanding any specialist reports. Both hard copies and digital copies (pdf) will be submitted to the Client, and the Cathedral Archaeologist. Hard copies will also be submitted to the Dean and Chapter, CFCE, the Historic Environment Records (HER) and English Heritage. The report will include;

- a site location plan related to the national grid
- a front cover to include the NGR
- a concise, non-technical summary of the results
- the circumstances of the project and the dates on which the fieldwork was undertaken
- description of the methodology
- a summary of the historical background to put the results into context
- description of the results, to include the results of any specialist work undertaken
- description and basic record of the finds and ecofacts, including qualification by sherd count and weight for the pottery and CBM
- summary analysis of the environmental assessment
- interpretation of the results and their potential archaeological significance, together with an impact assessment of the proposed development
- plans showing the location and position of trenches and test pits, excavation plans and sections,
- illustrations of unusual or important artefacts,
- photographs as appropriate,
- a copy of the brief and project design, and indications of any agreed departure from that design
- the report will also include a complete bibliography of sources from which data has been derived, and a list of any further sources identified but not consulted,
- summary tables listing contexts and finds.

5.6.2 Recommendations for further work will only be included in the report where they have been formulated in agreement with the Cathedral Archaeologist, EH and the Client, as appropriate.

5.6.3 ***Confidentiality:*** all internal reports to the client are designed as documents for the specific use of the client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.

5.7 ARCHIVE

5.7.1 The results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with Appendix 3 of English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). This archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the HER (the index to the archive and a copy of the report). OA North will deposit the original record archive (paper, magnetic and plastic media) with the Cumbria Record Office (Carlisle), and the material archive will be submitted to Tullie House Museum.

6. PROGRAMME AND STAFFING

6.1 PROGRAMME

6.1.1 It is anticipated that the work will commence in mid-October 2012 following receipt of SMC and the CFCE approval. The work is expected to take approximately 2 weeks, but this may be extended where further investigation is required and additional resources are available.

6.1.2 ***Report and Archive:*** the report and archive will be produced following the completion of all the fieldwork. The final report will be available within six to eight weeks of completion of the fieldwork, specialist reports permitting. The archive will be deposited within six months.

6.2 STAFFING

6.2.1 A summary of the proposed project team is presented in Table 1. Further details of OA staff can be provided on request. The project will be under the direct management of Stephen Rowland (OA North Senior Project Manager) to whom all correspondence should be addressed.

Team member	Principal role
OA North staff	
Stephen Rowland, BSc (Hons), MSc	Senior Project Manager; organisation of the archaeological project, including preparation of project designs, method statements, risk assessments, strategic overview, client liaison, and basic quality assurance
John Zant, BA (Hons)	Project Champion: Academic advice, guidance and background information
Jeremy Bradley BA (Hons), MA/Caroline Raynor BA (Hons)/Andy Bates, BSc (Hons), MSc	OA North project officers and fieldwork directors. Responsible for the day-to-day management and organisation of the fieldwork team, on-site standards and interpretation of the archaeological remains. Jeremy directed the recent works at Furness Abbey, whilst Caroline and Andy directed the evaluations at Chester Cathedral.
Rachel Newman, BA (Hons), FSA	Project Executive, responsible for overall academic guidance and quality assurance
Louise Loe BA (Hons), PhD	Head of Burials Service - Expert; Advice on the treatment and conservation of human remains
Chris Howard-Davis BA (Hons)	Finds Manager - Assessment and analysis of finds, conservation advice; detailed academic input
Elizabeth Huckerby BA (Hons), MSc	Environmental Manager Advice and academic leadership on palaeoenvironmental assessment and analysis
Andrew Bates BSc (Hons), MSc	Assessment and analysis of zooarchaeological remains
External Experts	
Dr Mike McCarthy	Assessment and analysis of medieval pottery
Dr Caroline Paterson	Assessment and analysis of early medieval metalwork
Dr Richard Macphail, UCL	Pedological thin section assessment and analysis
Ian Panter, YAT Wood Conservation Laboratory	Advice on treatment of organic remains. Conservation of such remains
Jenny Jones	Based at University of Durham; advice on, and conservation of inorganic remains
Dr Andrew Millard	Based at Durham University; Isotope analysis
Professor Terry Brown	Based at Manchester University; DNA analysis
John Carrott	Palaeoecology Research Services: assessment of Parasites
Enid Allison	Canterbury Archaeological Trust; study of Insect remains
Lydia King	Based at Lancaster University; study of diatoms
Philip Barker	Based at Lancaster University; study of foraminifera
SUERC	Radiocarbon dating

Table 1: Summary of the project Team

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APPENDIX 2: CONTEXT LIST

Context	Trench	Description	Period
100	1	Modern topsoil	Modern
101	1	Subsoil	Modern
102	1	Modern sandy clay and rubble layer associated with installation of services	Modern
103	1	Yellow sand and crushed sandstone layer	Post-medieval
104	1	Cut for east/west-orientated gas pipe	Modern
105	1	Fill of ***104***	Modern
106	1	Cut for north/south-orientated electricity cable	Modern
107	1	Fill of ***106***	Modern
108	1	Possible post-medieval soil horizon	Post-medieval
109	1	Compact black silty clay layer	Post-medieval
110	1	Rubble/demolition layer	Post-medieval
111	1	Black sandy soil layer	Post-medieval
112	1	Compacted orange/brown clay bedding layer	Medieval?
113	1	Pink sandstone rubble and clay mixed demolition layer	Post-medieval
114	1	Pink sandstone rubble and white lime mortar rubble layer	Post-medieval
115	1	Fine sterile sand layer	Medieval?
116	1	Mixed mortar and silty clay layer	Medieval?
117	1	Possible sandstone flag floor within cloister	Medieval?
118	1	North/south-orientated pink sandstone wall	Post-medieval
119	1	Cut for insertion of modern concrete post	Modern
120	1	Modern fill of ***119***	Modern
121	1	Black organic silty deposit	Medieval
200	2	Modern topsoil	Modern
201	2	Substantial rubble layer	Post-medieval
202	2	Mortar layer at east end of trench	Post-medieval
203	2	Row of north/south-orientated handmade orange bricks	Post-medieval
204	2	Compacted white lime mortar deposit	Post-medieval?
205	2	Mid-brown sandy silt layer	Post-medieval
206	2	Ceramic tiles at the west end of trench	Medieval?
207	2	Dark brown/black organic silt	Roman or medieval
208	2	Mortar deposit	Post-medieval
209	2	Mid-brown organic clay	Roman or Medieval
300	3	Modern concrete surface	Modern
301	3	Bedding layer	Modern/Post-medieval
302	3	Mixed mortar and rubble layer	Post-medieval
303	3	Pink sandstone foundations of Fratry north wall	Medieval
304	3	Dark brownish-black organic silt	Medieval
305	3	Construction cut for footing ***303***	Medieval
400	4	Modern topsoil	Modern
401	4	Rubble layer	Post-medieval
402	4	Rubble layer	Post-medieval
403	4	Layer of crushed mortar	Medieval?
404	4	Layer of orange clay	Post-medieval
405	4	Northern wall of southern cloister (foundation)	Medieval
406	4	Mortar, surface or bedding layer	Medieval?
407	4	Sand layer over ***406***	Medieval?
408	4	Cut for installation of modern service	Modern
409	4	Fill of ***408***	Modern

Context	Trench	Description	Period
410	4	Organic layer visible at base of trench	Medieval
411	4	Pink sandstone, either paving or part of wall ***405***	Medieval
412	4	Sub-circular feature/depression	Post-medieval?
413	4	Fill of sub-circular feature/ depression	Post-medieval?
500	5	Modern topsoil	Modern
501	5	Subsoil	Modern
502	5	Rubble and mortar demolition layer	Post-medieval
503	5	East/west-orientated pink sandstone wall	Post-medieval
504	5	North/south-orientated wall at the east end of trench	Post-medieval
505	5	North/south-orientated wall at the west end of trench	Post-medieval
506	5	Mortar and rubble infill west of ***504***	Post-medieval
507	5	Mortar and rubble infill to the east of ***504***	Post-medieval
508	5	Mortar and rubble infill to the east of ***505***	Post-medieval
509	5	Mixed mortar, sandstone rubble and friable soil layer	Post-medieval
510	5	Sandstone structure north of ***503***	Post-medieval
511	5	Pink sandstone flag floor	Post-medieval
512	5	Dark friable organic garden soil layer	Medieval/post-medieval
513	5	Thick compact grey/white mortar layer	Post-medieval
514	5	Brick structure built on top of wall ***503***	Post-medieval

APPENDIX 3: FINDS CATALOGUE

Context	ORN	Material	Category	No Frags	Description	Period
101	1127	Bone	Animal	20	-	Not closely dated
101	1003	Ceramic	Vessel	3	Three fragments of samian ware, one decorated	Roman
101	1005	Ceramic	Vessel	10	One fragment Romano-British greyware, one fragment medieval pottery, eight of post-medieval pottery	Roman/medieval/ post-medieval
101	1106	Ceramic	Tobacco pipe	6	Five plain stem fragments, one spurred bowl with milled line	1640-60?
101	1128	Ceramic	Building material	1	-	
101	1095	Iron	Nail	3	Two large nails, complete, with one clenched. One shaft fragment	Not closely dated
102	1087	Bone	Animal	1	-	Not closely dated
102	1108	Bone	Animal	21	-	Not closely dated
102	1101	Ceramic	Building material	1	Very worn green-glazed tile in markedly laminar fabric. Very obvious fingerprints to rear	Medieval
102	1103	Ceramic	Vessel	19	One fragment of samian ware, three of oxidised Romano-British pottery, 12 of medieval pottery, three of post-medieval pottery	Roman/medieval/post -medieval
102	1083	Copper alloy	Ear scoop	1	Plain ear scoop/nail pick	Early post-medieval?
102	1104	Glass	Vessel	2	Body fragments of dark olive green wine bottle	Eighteenth century
102	1034	Iron	Nail	1	Complete nail with relatively large head	Not closely dated
102	1035	Lead	Kame	1	Milled kame	Post-medieval?
102	1109	Mollusc	*H aspersa*	1	Garden snail	Not closely dated
102	1140	Stone	Architectural	3	Small fragments of mouldings, possibly windows	Medieval?
103	1091	Bone	Animal	3	-	Post-medieval
103	1006	Ceramic	Vessel	2	Two fragments of post-medieval pottery	Post-medieval
103	1006	Glass	Vessel	1	Body fragment dark olive green wine bottle	Eighteenth century
103	1015	Ceramic	Tobacco pipe	4	Plain stem fragment	Post-medieval
103	1097	Iron	Nail	2	Nails, one with tiny droplets of lead	Not closely dated
103	1092	Mollusc	*O edulis*	1	Oyster	Not closely dated
109	1098	Bone	Animal	1	-	Not closely dated
109	1001	Ceramic	Building material	1	Small fragment	Not closely dated
110	1056	Bone	Animal	2	-	Not closely dated
113	1043	Bone	Animal	14	-	Not closely dated
113	1044	Bone	Human	7	-	Not closely dated
113	1124	Bone	Animal	31	-	Not closely dated
113	1004	Ceramic	Vessel	2	One fragment medieval pottery, one fragment Cistercian-type ware	Medieval-early post-medieval
113	1016	Ceramic	Tobacco pipe	3	Plain stem fragment	Post-medieval
113	1046	Ceramic	Vessel	1	One fragment medieval pottery or tile	Medieval
113	1089	Ceramic	Vessel	6	One fragment Romano-British greyware, two fragments of medieval and three fragments of post-medieval pottery	Roman/medieval/ post-medieval

Context	ORN	Material	Category	No Frags	Description	Period
113	1111	Ceramic	Building material	1	Undiagnostic fragment	Not closely dated
113	1111	Ceramic	Vessel	1	One fragment mortarium	Roman
113	1112	Ceramic	Building material	1	Undiagnostic fragment	Not closely dated
113	1077	Copper alloy	Pin	1	Small dress pin with stamped head	Nineteenth century on
113	1086	Iron	Nail	2	Two nails, one lacking head	Not closely dated
113	1096	Lead	Kame	1	Offcut	Not closely dated
113	1105	Mollusc	*O edulis*	5	Oyster	Not closely dated
113	1123	Mollusc	*C edule*	1	Cockle	Not closely dated
113	1110	Stone	Building material	1	One fragment building stone	Not closely dated
114	1107	Bone	Animal	10	-	Not closely dated
114	1138	Stone	Architectural	1	Window tracery. Red sandstone	Medieval
116	1030	Ceramic	Vessel	1	One fragment of greyware	Roman
200	1055	Bone	Animal	2	-	Not closely dated
200	1116	Bone	Animal	1	-	Not closely dated
200	1009	Ceramic	Building material	1	Small sand-cast fragments, obvious fingerprints	Medieval
200	1018	Ceramic	Vessel	6	Six fragments of post-medieval pottery	Post-medieval
200	1114	Ceramic	Tobacco pipe	1	Plain stem and mouthpiece fragment	Post-medieval
200	1011	Glass	Vessel	2	Two thin-walled blown fragments in dark olive green fabric	Post-medieval
200	1011	Glass	Window	3	Three small mid-pane colourless fragments	Modern
200	1045	Iron	Nail	9	Small nail fragments, modern bolt, modern screw	Modern
201	1036	Bone	Animal	41	-	Not closely dated
201	1048	Bone	Animal	54	-	Not closely dated
201	1012	Ceramic	Tobacco pipe	8	All plain stem, one retains varnished mouthpiece	Post-medieval
201	1019	Ceramic	Vessel	12	12 fragments of post-medieval pottery	Eighteenth century or later
201	1028	Ceramic	Vessel	20	12 fragments medieval pottery and eight of post-medieval pottery	Medieval-Post-medieval
201	1090	Ceramic	Building material	3	One almost complete triangular tile, brownish-green glaze. Appears to have a word or words written long-hand. One corner fragment, possibly same tile; one other fragment	Medieval
201	1122	Ceramic	Building material	6	Small, plain floor tiles, plain green glaze	Medieval
201	1084	Copper alloy	Object	1	Cylindrical object	Nineteenth century on?
201	1010	Glass	Vessel	3	Small fragments of dark pale greenish-colourless bottle	Nineteenth century
201	1010	Glass	Window	8	Small mid-pane fragments of bluish and colourless glass	Nineteenth century
201	1010	Glass	Window	1	Small fragment of pane edge, painted and grozed	Medieval
201	1010	Glass	Vessel	13	Small fragments of dark olive green wine bottle	Nineteenth century
201	1080	Glass	Window	2	Pane-edge fragments, grozed painted glass, design of acorns and oak leaves	Medieval
201	1021	Iron	Nail	1	Small nail	Not closely dated

Context	ORN	Material	Category	No Frags	Description	Period
201	1022	Iron	Nail	6	All nails, at least two modern wire nails	Modern
201	1049	Iron	Nail	1	Shaft fragment only	Not closely dated
201	1020	Lead	Offcut	4	Irregular offcuts	Not closely dated
201	1025	Lead	Kame	1	Possibly cast kame	Medieval?
201	1028	Mollusc	*H aspersa; C edule; O edulis*	6	One land snail, one cockle, four oyster	Not closely dated
201	1047	Mollusc	*H aspersa O edulis*	3	One land snail, two oyster	Not closely dated
201	1050	Stone	Architectural	2	Small fragments	Medieval
201	1130	Stone	Building material	1	Roof tile, nail hole	Not closely dated
201	1131	Stone	Architectural	2	Small fragments of building stone	Medieval
201	1141	Stone	Architectural	2	Small fragments of mouldings	Medieval
202	1008	Ceramic	Vessel	1	One fragment of medieval pottery	Medieval
202	1024	Iron	Nail	2	Small nail fragments with tiny droplets of lead	Not closely dated
207	1132	Bone	Animal	146	-	Not closely dated
207	1031	Ceramic	Vessel	2	One fragment of Huntcliff jar rim, one fragment of Mancetter-Hartshill mortarium rim	Mid-late fourth century
207	1115	Ceramic	Vessel	3	Two fragments samian, one fragment medieval pottery	Roman/medieval
207	1133	Ceramic	Vessel	1	Oxidised base?	Roman?
207	1135	Ceramic	Building material	9	Seven fragments of tegula, one with incuse legionary stamp (LEG[); one small box tile fragment with square aperture; one sand-cast fragment, one unidentified	Roman
207	1081	Copper alloy	Coin	1	Coin with ?tin wash. Lab 12/460. Fourth-century radiate copy	Fourth century
207	1029	Glass	Vessel	1	Body fragment mould-blown storage vessel	First to third century
207	1136	Stone	Architectural	1	Corner moulding	Medieval
301	1085	Bone	Animal	80	-	Not closely dated
301	1013	Ceramic	Vessel	2	One fragment late medieval pottery, one fragment Cistercian-type ware	late Medieval/early post-medieval
301	1014	Ceramic	Tobacco pipe	1	Plain stem fragment	Post-medieval
301	1102	Ceramic	Building material	1	Small fragment green-glazed tile	Medieval?
301	1002	Copper alloy	Offcut	1	Strip, possibly perforated	Not closely dated
301	1113	Mollusc	*O edulis*	10	Oyster	Not closely dated
302	1119	Bone	Animal	43	-	Not closely dated
302	1093	Ceramic	Vessel	2	Two fragments medieval pottery	Medieval
302	1094	Ceramic	Tobacco pipe	1	Plain stem fragment	Post-medieval
302	1117	Ceramic	Building material	5	Fragments of thick green-glazed tile, now very worn, with incised geometric patterns	Medieval
302	1120	Ceramic	Vessel	1	One fragment post-medieval pottery	Post-medieval
302	1121	Mollusc	*O edulis*	3	Oyster	Not closely dated
302	1118	Stone	Architectural	2	Moulding fragments	Medieval
303	1088	Bone	Animal	11	-	Not closely dated
303	1007	Ceramic	Vessel	1	One fragment medieval pottery	Medieval
305	1125	Bone	Animal	20	-	Not closely dated
305	1126	Ceramic	Vessel	1	Undiagnostic	Not closely dated
305	1037	Glass	Window	1	Bluish, mid-pane fragment	Nineteenth century on

Context	ORN	Material	Category	No Frags	Description	Period
400	1051	Bone	Animal	6	-	Not closely dated
400	1053	Ceramic	Vessel	13	13 fragments of post-medieval pottery	Post-medieval
400	1054	Ceramic	Tobacco pipe	5	Four plain stem fragments, one spurred bowl fragment	1640-60?
400	1052	Glass	Vessel	2	Bluish base of Hamilton bottle, body fragment of dark olive green wine bottle	Late eighteenth century on
401	1074	Bone	Animal	158	-	Not closely dated
401	1063	Ceramic	Tobacco pipe	8	Six plain stem fragments, one stem/spur fragment, one heeled bowl, no stamp	1640-60?
401	1064	Ceramic	Vessel	20	Two fragments of Roman pottery, eight fragments of medieval pottery, one fragment of Cistercian-type ware, nine fragments of post-medieval pottery	Roman/medieval/post-medieval
401	1062	Glass	Window	4	Mid-pane fragments 'Forest' glass	Sixteenth-seventeenth century
401	1062	Glass	Window	1	Small bluish mid-pane fragment	Nineteenth century on
401	1062	Glass	Vessel	1	Small colourless fragment with pinched lump	Roman?
401	1062	Glass	Vessel	2	One dark olive-green wine bottle body fragment, one dark olive-green case bottle	Seventeenth century?
401	1062	Glass	Window	3	Grozed quarry fragments, colourless/grisaille	Medieval?
401	1100	Iron	Nail	4	One complete nail and three shaft fragments, one clenched	Not closely dated
401	1099	Lead	Offcut	1	Conical fragment, now cut through	Not closely dated
401	1033	Mollusc	*O edulis*	27	Oyster	Not closely dated
401	1032	Stone	Architectural	1	Building stone	Not closely dated
402	1070	Bone	Animal	56	-	Not closely dated
402	1041	Ceramic	Building material	1	Possible thrown water pipe?	Not closely dated
402	1042	Ceramic	Vessel	3	One fragment medieval pottery, one fragment post-medieval pottery	Medieval/post-medieval
402	1040	Glass	Vessel	2	One body fragment dark olive green wine bottle, one body fragment dark olive green case bottle	Late seventeenth to eighteenth century
402	1071	Stone	Architectural	4	Building stone	Not closely dated
402	1072	Stone	Architectural	2	Building stone	Medieval?
402	1073	Stone	Architectural	1	Squared building stone	Medieval
403	1039	Mollusc	*O edulis*	6	Oyster	Not closely dated
404	1038	Bone	Animal	4	-	Not closely dated
409	1068	Bone	Animal	7	-	Not closely dated
409	1065	Ceramic	Vessel	2	Two fragments post-medieval pottery	Post-medieval
409	1066	Glass	Vessel	4	Small body fragments dark olive green wine bottle	Eighteenth century?
409	1067	Iron	Nail	1	Complete large-headed nail, clenched	Not closely dated
409	1069	Mollusc	*O edulis*	1	Oyster	Not closely dated
410	1061	Bone	Animal	9	-	Not closely dated
410	1057	Ceramic	Vessel	2	One fragment of Roman, one fragment of medieval pottery	Roman/Medieval
410	1059	Ceramic	Tobacco pipe	2	Plain stem fragments	Post-medieval
410	1060	Ceramic	Building material	2	Thin, sand-cast tile fragments	Medieval?
410	1058	Glass	Vessel	1	Small fragment of dark olive-green wine bottle	Eighteenth century?

Context	ORN	Material	Category	No Frags	Description	Period
410	1058	Glass	Window	1	Small fragment of pale greenish pane-edge fragment	Eighteenth century?
500	1027	Bone	Animal	4	-	Not closely dated
500	1023	Ceramic	Vessel	10	10 fragments of post-medieval and later pottery	Post-medieval
502	1026	Ceramic	Vessel	3	One fragment of mortarium, two fragments of post-medieval pottery	Roman/post-medieval
502	1076	Copper alloy	Coin	1	Coin; very worn, probable halfpenny. Lab 12/458	Post-medieval
502	1137	Stone	Architectural	1	Building stone	Not closely dated
502	1139	Stone	Architectural	1	Dressed cill, window embrasure	Medieval
507	1017	Ceramic	Vessel	1	One fragment of samian ware	Roman
512	1129	Stone	Object	1	Small black slate counter	Not closely dated
9999	1078	Copper alloy	Aglet	1	Complete, plain but relatively large aglet. X-ray shows rivet surviving	Medieval?
9999	1079	Copper alloy	Pin	1	Long, wound and stamped-headed pin	Post-medieval
9999	1082	Copper alloy	Coin	1	Coin with silver coating or wash. Radiate copy dated AD 270-90. Lab 12/459	AD 270-90
9999	1075	Copper alloy?	Nail	1	Nail	Not closely dated

APPENDIX 4: CERAMIC CATALOGUE

Context	Object	Fabric	No sherds	Comments and date
101	1003	Samian	3	Possibly Central Gaulish, includes one decorated fragment. Second century
	1005	15/17/19	1	Partially reduced greyware, Roman
		41	1	Overfired, Late Medieval Reduced Grey ware; fifteenth-sixteenth century
			1	Post-medieval reduced coarseware unglazed; seventeenth-nineteenth century
			2	Black-glazed reduced coarseware; seventeenth-nineteenth century
			1	Post-medieval brown-glazed coarseware, internal white slip; eighteenth-nineteenth century
			2	English stoneware; eighteenth-nineteenth century
			1	Brown-glazed white earthenware, possible teapot; nineteenth century
			1	White earthenware; nineteenth century
102	1103		1	Samian, decorated, Central or East Gaulish; second-mid-third century
			1	Buff with burnishing; Roman
			2	Coarse oxidised wares; Roman
		1, 2	7	Red gritty; twelfth-early thirteenth century
		3	1	Glazed jug; late twelfth-early thirteenth century
		15/17/19	4	Partially reduced greyware; late thirteenth-fourteenth century
			1	Buff earthenware, brown glaze, flat dish; eighteenth-nineteenth century
			1	White salt-glazed stoneware; eighteenth century
			1	White earthenware, possible teacup; nineteenth century
103	1006		1	Brown-glazed red earthenware; eighteenth-nineteenth century
			1	White earthenware; nineteenth century
113	1004	15/17/19	1	Partially reduced greyware; thirteenth-fourteenth century
			1	Cistercian-type ware with white slip; sixteenth century
	1089		1	Greyware, everted rim; Roman
		15/17/19	1	Late Medieval Reduced Grey ware; fifteenth-sixteenth century
			2	Brown-glazed red earthenware; seventeenth-nineteenth century
			1	Tin-glazed earthenware; seventeenth-eighteenth century
	1111		1	Mortarium; Roman
116	1030		1	Greyware rim; Roman
200	1018		2	Brown-glazed red earthenware; eighteenth-nineteenth century
			3	Plain white earthenware; nineteenth century
			1	Transfer-printed white earthenware; nineteenth century
201	1000		1	Stoneware bottle; nineteenth century
			2	Glazed floor tile; medieval
		1,2	4	Red gritty ware; twelfth-thirteenth century
		3	1	White gritty ware; late twelfth-thirteenth century
		13	1	Sandy; thirteenth-fourteenth century
		15/17/19	1	Part-reduced greyware; late thirteenth-fourteenth century
		41	4	Late Medieval Reduced Grey ware; fourteenth-sixteenth century
			3	Brown-glazed red earthenware; seventeenth-nineteenth century
			1	Cistercian-type ware or blackware; sixteenth-seventeenth century
			1	Buff-glazed earthenware; eighteenth century
			1	English stoneware, ginger-beer bottle; nineteenth century
	1019		2	Red earthenware, one with brown and one with white slip; eighteenth-nineteenth century
			1	White salt-glazed stoneware; eighteenth century

Context	Object	Fabric	No sherds	Comments and date
201	1019		1	Chip of white porcelain; eighteenth-nineteenth century
			1	White earthenware; nineteenth century
			5	Transfer-printed, blue, willow pattern; nineteenth century
			2	Buff earthenware with blue stripes; nineteenth century
202	1008	4	1	Buff gritty; thirteenth-fourteenth century
207	1031		1	Calcite-gritted; fourth century
			1	Reeded-rim mortarium; Roman
	1115		2	Samian ware rims; second century
			1	Burnished coarseware; Roman
		1,2	1	Red gritty; twelfth-thirteenth century
	1133		1	Large, red unglazed, possible industrial or architectural building, red earthenware; undatable
301	1013		1	Blackware; seventeenth century
			1	Buff earthenware; possible eighteenth century
302	1093	1,2	1	Red gritty; twelfth-early thirteenth century
			1	Glazed roof tile; medieval
	1120	15/17/19	1	Late Medieval Reduced Grey ware; overfired jug; possibly fourteenth century
303	1007	15/17/19	1	Partially reduced greyware; thirteenth-fourteenth century
305	1126		1	Red sandy; Roman or medieval
400	1053		1	Brown-glazed earthenware; seventeenth-nineteenth century
			1	Blackware, white internal slip; nineteenth century
			1	Tin-glazed earthenware; seventeenth century
			10	White earthenware including teapot lid, saucer; nineteenth century
401	1064		1	Greyware everted rim; Roman
			1	Black-burnished ware fabric 1; Roman
		13	1	Sandy; thirteenth-fourteenth century
		15/17/19	1	Partially reduced grey ware jug with rouletting; thirteenth-fourteenth century
		41	6	Late Medieval Reduced Grey ware; fifteenth-sixteenth century
			4	Black-glazed earthenware; eighteenth-nineteenth century
			1	Blackware; white slip; seventeenth century
			1	Buff earthenware; eighteenth century
			1	Buff feathered slipware; eighteenth century
			1	Tin-glazed earthenware; seventeenth-eighteenth century
			2	White china; nineteenth century
402	1042	41	1	Late Medieval Reduced Grey ware; fifteenth-seventeenth century
			1	Buff earthenware; eighteenth-nineteenth century
409	1065		2	Buff earthenware; eighteenth century
410	1057		1	Oxidized flagon; Roman
		1,2	1	Red gritty; twelfth-thirteenth century
500	1023		4	Red earthenware, flowerpot; nineteenth-twentieth century
			1	Tin-glazed earthenware, drug jar; eighteenth-nineteenth century
			4	White porcelain, gold-painted rim, plate; eighteenth-nineteenth century
			1	Plain white earthenware; nineteenth century
			1	Staffordshire slipware; seventeenth-eighteenth century
			1	Red earthenware, flowerpot; nineteenth-twentieth century
502	1026		1	Mortarium; Roman
507	1017		1	Samian ware base, Central Gaulish. Second century

Note: Abbreviations: BB1 – Black Burnished Ware 1; CG – Central Gaulish; LMRG – Late Medieval Reduced Grey ware; RB – Romano-British; Fabrics as in McCarthy and Brooks 1992; Brooks 2000; 2010.

FIGURES

SR*L110528*MAT*Oct 2012

Figure 1: Site location

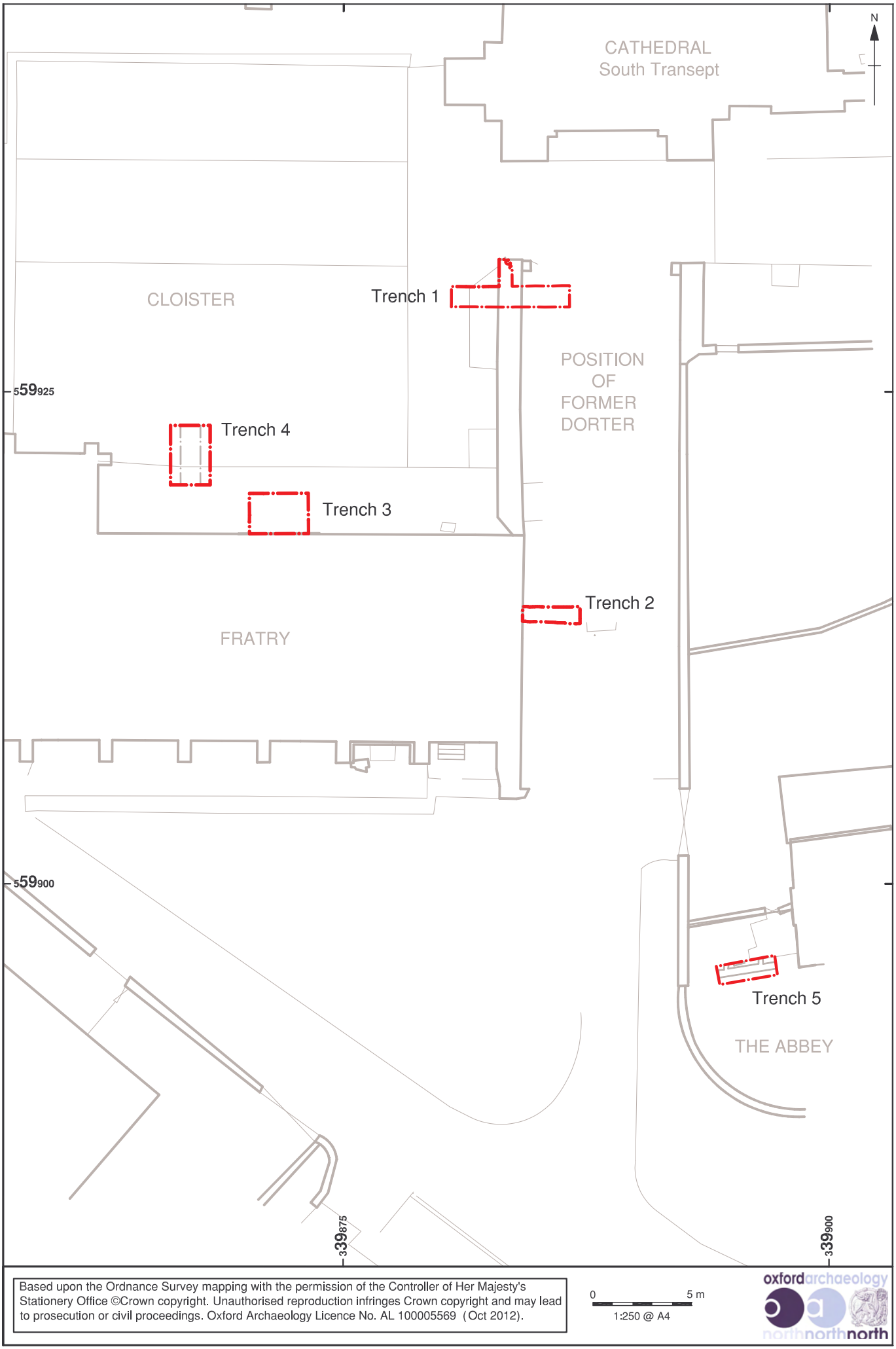

Figure 2: Trench location, showing Trenches 1-5

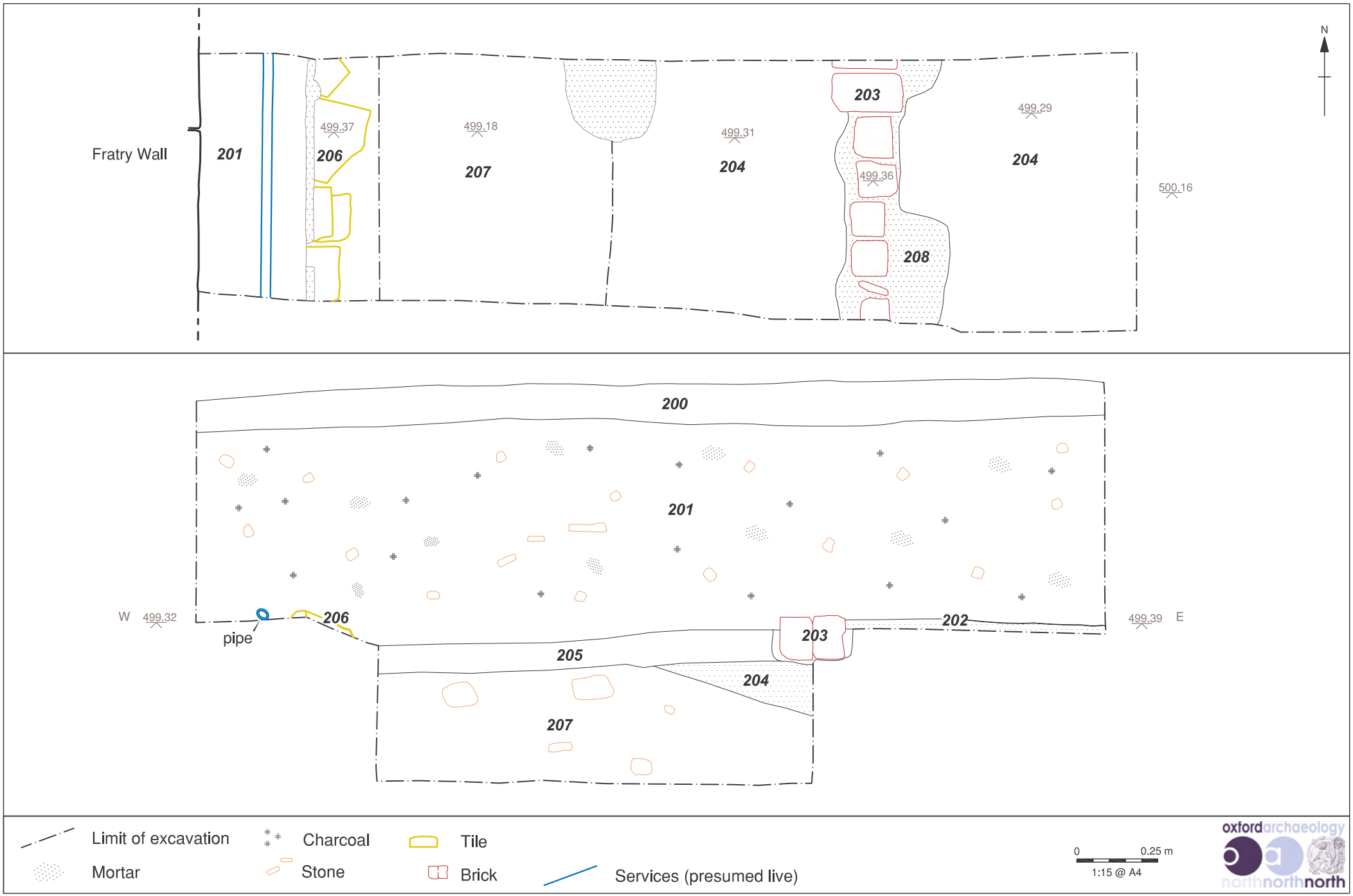

Figure 4: Trench 2: plan and south-facing section

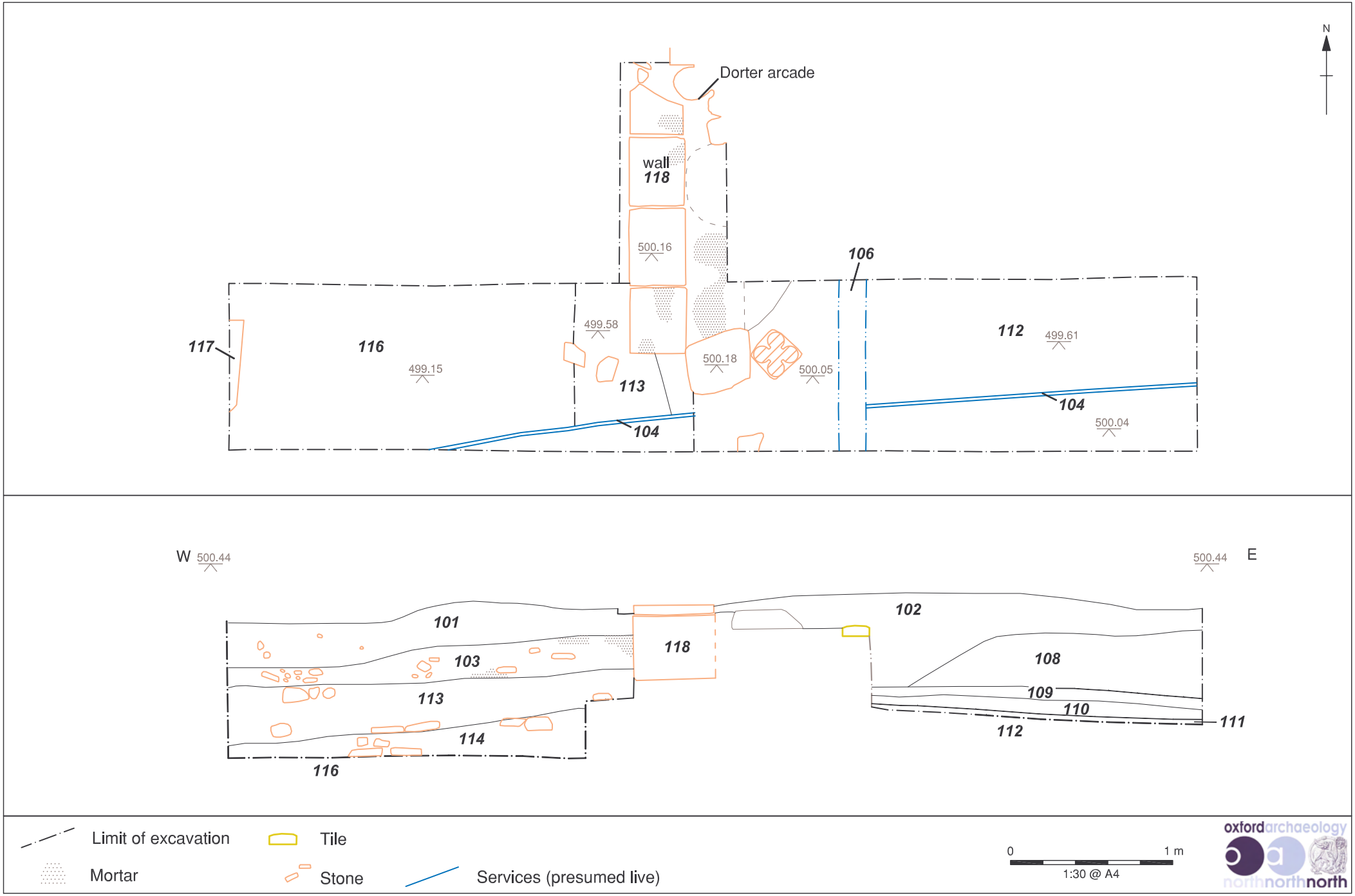

Figure 3: Trench 1: plan and south-facing section

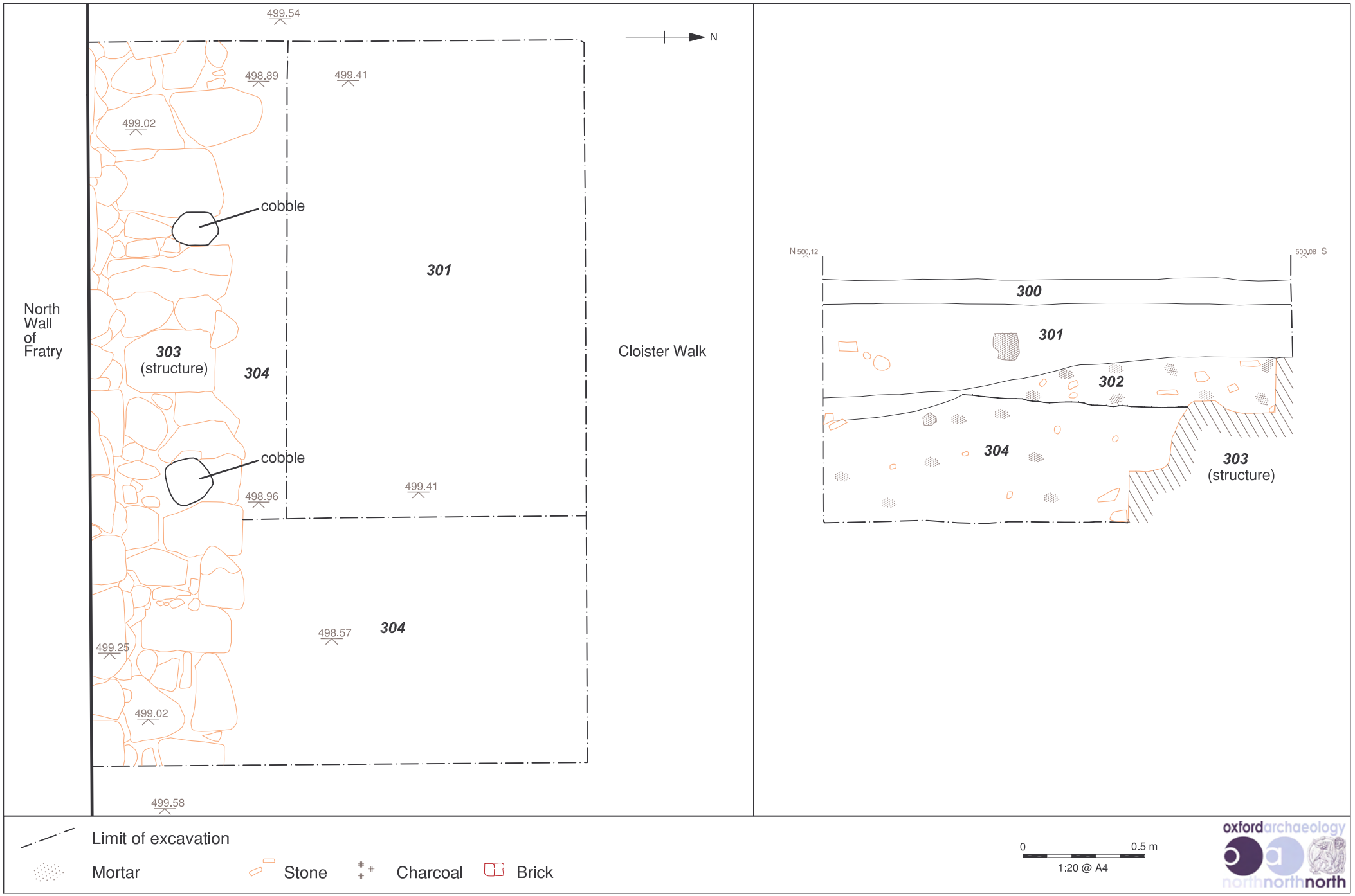

Figure 5: Trench 3: plan and west-facing section

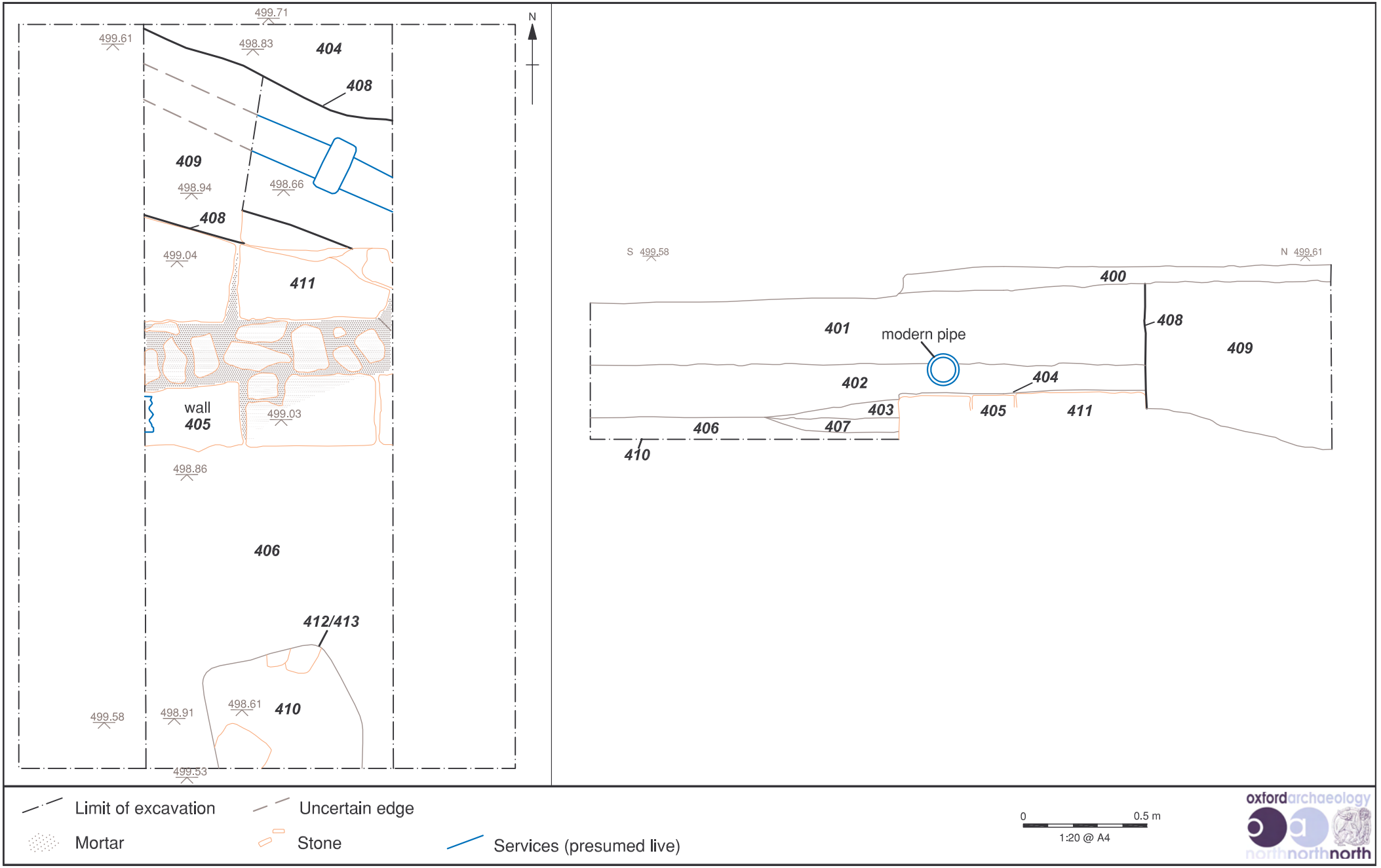

Figure 6: Trench 4: plan and east-facing-section

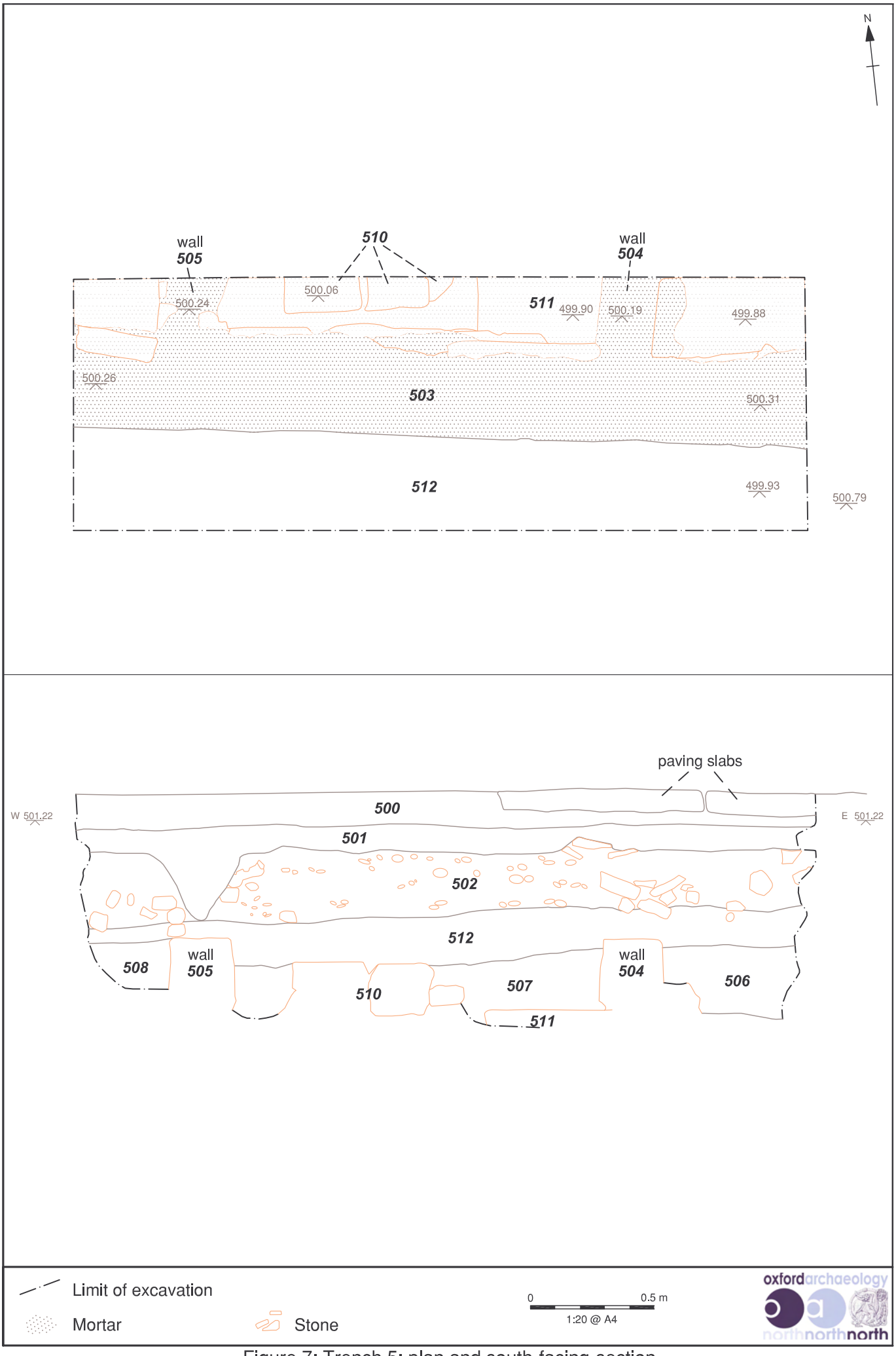

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Figure 7: Trench 5: plan and south-facing-section