CERAMICS COURTYARD,

CUMBRIA INSTITUTE OF THE ARTS, CARLISLE

Cumbria

Archaeological Excavation Assessment Report

Oxford Archaeology North

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SUMMARY

Oxford Archaeology North (OA North) was commissioned by Swarbrick Associates, on behalf of the Cumbria Institute of the Arts, to undertake an archaeological excavation on the campus of the Cumbria Institute of the Arts, Carlisle (NY 40370 57290). The work took place following an application for Scheduled Monument Consent and planning permission to roof over a courtyard between existing buildings to the east of the complex. The fieldwork was undertaken in September 2004.

The College is situated in an area which has been identified as being of considerable archaeological importance and is statutorily protected as a Scheduled Monument (County Sites and Monuments Record *5782*, Scheduled Monument 28484). The main college building is situated between the line of Hadrian's Wall and the probable course of the associated Vallum, *c*200m to the south-east of the Wall. It is also only approximately 500m north-east of the north-eastern defences of the Roman fort of Stanwix, the largest fort on Hadrian's Wall.

Preliminary evaluation work undertaken by OA North (2004b) showed that archaeological features were present on the site sealed below 1.3m of post-medieval overburden and possible alluvial or colluvial deposits. Beneath these deposits was a ditch, aligned north-west to south-east, which is almost at right angles to Hadrian's Wall and the Vallum. The full profile of the ditch was not seen but exceeded 2m in width and 1m in depth with steeply sloping sides, and appeared to be of post-medieval date. A deposit of orange-sandy silt, with a high proportion of stone inclusions, was cut by the ditch, and this probably represents a putative parade ground seen in excavations by the Central Excavation Unit (CEU), Carlisle Archaeological Unit (CAU), Lancaster University Archaeological Unit (LUAU), Newcastle University Archaeological Practice, and OA North on the college site and in its environs.

Archaeological mitigation on the Ceramics Courtyard site comprised the excavation of two triangular areas within the courtyard, separated by a modern trench running north/south containing active services. Area A covered roughly 70m^2 within the eastern half of the courtyard and incorporated Evaluation Trench 1, while Area B covered approximately 35m^2 within the western part of the courtyard, incorporating the limits of Evaluation Trench 2. Excavations revealed overburden deposits across the area, and a large waste water tank in Area A, associated with the construction in the nineteenth century of the buildings forming the courtyard of a reformatory school. These directly overlay post-medieval plough-soils relating to the use of the land as a field, prior to the school's construction. Sealed beneath the plough-soils was an extensive deposit of redeposited natural clayey silt and cobbles, laid down in two phases. This represents the putative parade ground identified during previous excavations and more recently during the evaluation by OA North; previous excavations have dated this deposit to the second century AD, although no dating evidence was recovered on this occasion. The parade ground deposits were found to seal an earlier ground surface, consisting of a thin dark-grey organic deposit. Cutting through this was a series of plough-marks running north/south and partially filled by parade ground deposits. The plough-marks and the ground surface represent a relict agricultural horizon, dating to before the parade ground and therefore of Romano-British date or earlier; such plough-marks have also been identified in other excavations nearby.

In Area B, the ditch identified in the OA North evaluation was identified again, clearly cutting the parade ground deposits and presumably, therefore, of post-medieval date, as suggested in the evaluation. A further ditch was also identified to the east of this, cutting the earlier ground surface, but sealed and partially filled by the parade ground deposits. This ditch was excavated to 1m in depth, but flooding and section collapses forced the abandonment of the area before excavation was complete due to safety concerns; nevertheless, this ditch can be interpreted as an early land division, comparable to examples identified in other nearby excavations, and is clearly of Romano-British date or earlier. The post-medieval ditch was not examined at all following concerns by the structural engineer that further collapses could undermine the buildings and road foundations.

This assessment examines the results of the excavation, and evaluates the potential for future analysis of each category of data with regard to the project's research aims. The process has been designed to correspond to the objectives laid out in the guidance document *Management Of Archaeological Projects* 2nd edition (English Heritage 1991). Having assessed the significance of the preliminary results and considered the potential of individual datasets to sustain further analysis, several data categories have been recommended for post-excavation analysis, whilst others are judged to have already been sufficiently analysed. Revised research objectives are presented to guide further analysis, synthesis, and interpretation of the evidence, with a view to eventual publication. The analysis of the data will provide important information on the character of Roman activity in the environs of Stanwix fort. This may be amalgamated with the archaeological evidence revealed by recent excavations in Stanwix to produce a greatly enhanced picture of the extent and nature of Roman and later settlement in Stanwix as a whole.

An updated research design has been compiled, and an appropriate programme of analysis outlined. It is recommended that a text suitable for publication either as a contribution to a volume on the archaeology of Stanwix or as an article in the *Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society* should be compiled.

ACKNOWLEDGEMENTS

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The fieldwork was undertaken by Jason Clarke, Nicola Gaskell, Jim O'Brien, Martin Sowerby and Matthew Town. Matthew Town compiled this report, the drawings were by Emma Carter and the environmental report was by Elizabeth Huckerby. The finds were examined and reported upon by Chris Howard-Davis. The report was edited by Tim Carew, Jamie Quartermaine and Rachel Newman. The project was managed by Jamie Quartermaine.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

1.1.1 Following an application for Scheduled Monument Consent and planning permission to undertake works within the campus of the Cumbria Institute of the Arts at Carlisle (NY 40370 57290) (Fig 1), Oxford Archaeology North (OA North) was commissioned by Swarbrick Associates to undertake an archaeological excavation of the site. The building works consisted of the roofing in of a courtyard between existing buildings. These lie adjacent to the Roman fort at Stanwix and a section of Hadrian's Wall, both of which are Scheduled Monuments (SM 28484) and the whole complex is part of the Hadrian's Wall World Heritage Site. This excavation follows on from an archaeological evaluation by OA North (2004b) which identified deposits that potentially relate to a former parade ground of the adjacent Stanwix fort. The work, which consisted of the excavation of two triangular areas, was carried out between the 6th and 17th of September 2004.

1.1.2 This report sets out the summary results of the excavation fieldwork; the assessment of the archive, both in terms of the stratigraphical, artefactual, and ecofactual data; and a statement of the potential of this material to provide useful additional archaeological knowledge through a programme of analysis. The resource requirements to undertake such post-excavation analysis and publication is then presented.

1.2 SITE LOCATION, GEOLOGY, AND TOPOGRAPHY

1.2.1 The Roman fort at Stanwix is situated on a natural platform formed by the undulating glacial landscape on the north bank of the river Eden. The topography descends on the west and south sides to the Eden floodplain, while to the north the fort commands a flat plain. The land slopes away to the east for approximately 450m, to a small hill, known as Wall Knowe; Hadrian's Wall runs along the northern crest of this hill, while the Vallum keeps to its southern foot (Smith 1978).

1.2.2 The site lies within the campus of the Cumbria Institute of the Arts, Brampton Road, Carlisle (NY 40370 57290) (Fig 1), which occupies the space between the eastern fort defences and Wall Knowe. The topography of the area has been suggested as an ideal location for a parade ground, as the grounds which the College occupy would have been overlooked by the fort and are relatively flat, with the land rising to both the east and the west. To the north, Hadrian's Wall would have provided a visual barrier, and to the south the Vallum would have defined the southern edge of the parade ground (CAU 1993a).

1.2.3 The area lies approximately 0.5 miles east of Stanwix village, and is part of the parish of Stanwix, within the old county of Cumberland, now part of modern day Cumbria (OA North 2002a) (Fig 1). Before the archaeological fieldwork, the site was an open space covered with tarmac, between workshop buildings used by the college. It lies at approximately 25.5m OD.

1.2.4 The solid geology comprises red, grey and green mudstones and siltstones of the Mercia Mudstones Group and these include various mudstones and the Stanwix

Shales, which all date to the Triassic Period (BGS 1982), with overlying drift deposits of glacial deposits such as gravel and boulder clay (Countryside Commission 1998). The soils which underlie the area have been mapped by the Ordnance Survey (OS) Soil Survey of England and Wales (1983) and are of the Clifton Association, composed of typical Stagnogleys. There are also some fluvial deposits along the margins of the Eden. More detailed soil geomorphology was undertaken immediately east of the development area during excavation works in 1976; this showed the drift geology to be 'gleyed soils on till, sand or shallow sand over till (surface or ground water gleys)' (Smith 1978).

2. ARCHAEOLOGICAL BACKGROUND

2.1 INTRODUCTION

2.1.1 This historical background is largely compiled from secondary sources and is intended only as a brief summary of historical developments around the study area, emphasising the overall development of Hadrian's Wall and the fort at Stanwix. A representation of the relative locations of the main features is shown in Figure 3.

2.2 HADRIAN'S WALL

2.2.1 In AD 122, Hadrian visited Britain, installing a new governor, Aulus Platorius Nepos. It is thought that Hadrian's Wall was started at this time under the governor's direction, sometime between AD 122 and AD 126 (Margary 1973; Collingwood Bruce 1978). There is no clear evidence when the Wall was completed, but by the end of Hadrian's reign all the components were in place. The original plan for the Wall was to use the forts already on the Stanegate, frequently some miles to the south, with the Wall itself secured only by milecastles and turrets. Before this design could be fully implemented, there was a change in plan, a decision being taken to attach the forts directly to the Wall. These varied in size from 1.3ha to 3.7ha and were large enough for whole auxiliary units, being built at relatively regular intervals along the Wall to provide fighting forces in every sector of the frontier. That the building of the forts was a later decision is demonstrated by their replacement of an existing turret (such as at Housesteads) or milecastle (as at Great Chesters). The decision was motivated by a need to improve military access to the areas north of the Wall and is reflected in the positioning of many of the forts astride the Wall, so that three of the four main gates lay north of the defences. The forts along it were spaced at relatively regular intervals, depending upon local topography, of approximately 12km, roughly equivalent to half a day's march (Breeze and Dobson 2000).

2.2.2 At the time of the construction of Hadrian's Wall, a large earthwork was also built, behind almost the full length of the Wall, a short distance to its south. This earthwork, known as the Vallum, consisted of a continuous steep-sided trench, 3m deep and 6m wide with a 2.4m wide flat base (unlike the ditch fronting the Wall, which seems to have had a normal Roman military V-shaped profile, although in places such as Blackcarts, this has proved not to be the case; T Wilmott *pers comm*). A bank of upcast, seemingly revetted with turf, about 6m wide and 3m high, was erected on either side of the ditch, which ran centrally between the two banks and was separated from them by a 3m wide space or berm. The overall width of the entire construction was 36m (Collingwood Bruce 1978). The Vallum is thought to have been built at the same time, or shortly after, the decision to move the forts onto the Wall line, as the Vallum clearly extends around the south side of all the Wall forts, or avoids the forts completely, with the exception of Carrawburgh, which is clearly later. The decision to create the Vallum may indicate a period of heightened tension in the Wall area; it is thought that it was intended to mark-out a rearward boundary or 'exclusion zone' behind the Wall, as it was not topped by either a palisade or a rampart walk (*ibid*). At the points where it passed

the forts and milecastles on the Wall, the Vallum ditch was left uncut, and there was a corresponding gap in both banks, forming a causeway which carried the road issuing from the *porta decumana* (rear gate) of the fortification. Originally causeways across the Vallum were placed behind each milecastle, approximately 79 in all, but the decision was rapidly made to reduce these to only 14. These surviving crossings were usually right next to forts and thus increased the control of movement (*ibid*; Breeze and Dobson 2000).

2.2.3 At the western end of the Wall, between Bowness-on-Solway and the River Irthing, the original Wall was constructed in turf (Stevens 1966), but this was subsequently rebuilt in stone. The Wall has largely vanished in the Stanwix area as a result of development and stone-robbing, although the alignments of both the Wall and Vallum are still apparent from their respective ditches; however, these are frequently obscured by ploughing and dumping (Smith 1978). The extant field boundaries dating to the Enclosure period of the eighteenth and nineteenth centuries are still largely dictated by the alignment of the Wall and Vallum (*ibid*).

2.2.4 Hadrian's Wall was traced in the grounds of Stanwix School in 1932 to 1934, and found to conform 'to the Intermediate standard since recognised to extend from near milecastle 54 to Bowness' (Simpson and Hogg 1935, 256) (Fig 2); the Wall was recorded as being 2.7m in width. Unpublished excavations by Hogg in 1961 located parts of the Wall and a ditch terminal within the centre of Scotland Road, which may suggest the position of the Carlisle to Netherby Roman road (cited in Dacre 1985) (Fig 2). An evaluation by Simpson in the 1930s, south of Tarraby Farm, showed that the Wall survived at foundation level, and this was confirmed by further excavations by Richardson at Hadrian's Camp further to the east (Smith 1978). Excavations by Daniels in 1975, near the summit of Wall Knowe, showed the Wall to be beneath the footpath, rather than in its position as indicated on the OS map, which showed it north of the footpath. No trace was found of Turret 65a at its position as predicted by measurement, with only the south face of the Wall visible in intermittent sections of the excavation (Goodburn 1976). Excavations in 1976 by the Central Excavation Unit (CEU) located the line of the Wall, and demonstrated that it lay immediately beneath Tarraby Lane for much of its length; the lane deviates from the Wall line approximately 250m north-east of its junction with Beech Grove, and from this point the Wall crosses open fields to the east of Beech Grove. In 1976 the Wall and ditch, on the line of a proposed sewer, were excavated by CEU. The ditch, 10m in width, was excavated to 3.5m below ground level before excavation was abandoned; the Wall was shown to survive as two courses of foundation slabs with infilling of sandstone rubble and sandy mortar, measuring 3.32m in width (Frere 1977; Smith 1978) (Fig 2).

2.2.5 Evaluation trenching by Carlisle Archaeological Unit (CAU) in 1994, north of Tarraby Lane, revealed a section of the ditch fronting Hadrian's Wall, together with evidence for the counterscarp bank. The primary ditch, possibly relating to the Turf Wall, may have had stakes set into its base. It appeared to have been recut during the third century AD. Two phases of counterscarp bank were also noted, on the north side of the ditch, which were found to overlie and preserve plough-marks representing pre-Wall agricultural activity (J Zant *pers comm*; Esmonde Cleary 1994; McCarthy 1999) (Fig 2 and Plate 1).

2.2.6 In 1997, CAU undertook further trenching along the line of Hadrian's Wall, but only one trench revealed the line of the Wall at the western end of the field, immediately adjacent to the northern side of Beech Grove, and 46m west of Tarraby Lane. The trench revealed the inner, south-eastern, face of the Wall, heavily denuded and disturbed and only represented by the basal course (CAU 1997a; Esmonde Cleary 1998). McCarthy (1999) states that the Wall uncovered in 1997 showed two phases of construction, but with no dating evidence (Fig 2).

2.2.7 In 2002, OA North undertook an archaeological evaluation on the site of a proposed 'juvenile recreation development area' at Beech Grove, immediately north-west of Tarraby Lane, and on the line of Hadrian's Wall. This involved the excavation of two trenches in the area of the proposed development. In one the north-western side of Hadrian's Wall was uncovered, at a depth of 0.45m, and in the other the south-eastern side of the Wall ditch was seen. The trenches did not expose the full extent of the features, which extended beyond the limits of the excavation (OA North 2002a) (Fig 2).

2.2.8 Excavations between 1932 and 1934 traced the Vallum to a point close to the east corner of the fort, and at the south corner a sharp turn was identified, indicating that the Vallum deviated around the fort and suggesting that the north mound was omitted near the fort, as at Birdoswald (Simpson 1933; Simpson 1934; Simpson and Hogg 1935; Daniels 1989). Excavations by CAU in 1998 identified the north-western edge of a large steep-sided ditch, at least 5m wide, near to the entrance to Cumbria College of Art and Design, now the Cumbria Institute of the Arts, on Brampton Road. This was interpreted as the Vallum, even though it was *c*75m to the south of the position shown on OS maps (CAU 1998a; Esmonde Cleary 1999). Further excavations in the same area by the Lancaster University Archaeological Unit (LUAU) in 1999 found no evidence that the Vallum was present in this area, despite its proximity to the feature identified by CAU (LUAU 1999) (Fig 2).

2.3 STANWIX FORT

2.3.1 The fort, covering 9.79 acres (Dacre 1985), was designed to hold a cavalry regiment numbering 1000. The fort is identified as *Uxelodum* on the Rudge Cup, meaning 'high place', and as *Uxelodunum* on the Amiens *Petera*, (Daniels 1989), although the latter can be translated from the native British as 'The waterside fortress' (www.roman-britain.org/places/uxelodunum.htm). The garrison is thought to have been the 1000-strong *Ala Petriana*, originally from Gaul and the sole regiment of this size on Hadrian's Wall. Epigraphic evidence places members of the unit within the area from about the end of the first century AD onwards, when they were quartered at Carlisle, but they were likely to have been stationed at Stanwix from *c*AD 130 until the end of Roman administration, as the *Ala Petriana* is mentioned in the Notitia Dignitatum (*c*AD 400 — www.roman-britain.org/military/alapet.htm; de la Bedoyere 2005). Indeed, the document would indicate that the fort may have come to be named *Petrianis*, after its distinguished garrison (www.roman-britain.org/places/uxelodunum.htm). The *Ala Petriana* was the senior auxiliary regiment of the Roman army in Britain, and is recorded as having been twice decorated with torques and made Roman citizens for valour in the field of battle (Daniels 1989). A cavalry-man's tombstone was found in the wall of the old parish church in 1790, and excavations in 1934 along the banks of the Eden to the south of

the fort uncovered mountings for cavalry-men's uniforms, harnesses and brooches thought to have come from a mid-second century AD bronze-founders' workshop in the grounds of the fort, washed down from the cliff and buried 4.5m deep in river silt (Daniels 1989).

2.3.2 ***River Crossing:*** the fort housed the senior commanding officer of the Wall (Birley 1961, 271), and presumably also served as the base for aggressive action against the northern tribes. It was positioned to guard the important western route to and from Scotland, and to guard the river crossing near to the current bridge over the Eden. The river crossing was originally thought to have been some distance north-east of the present crossing; a road is recorded as parallel to, and north-east of, Church Lane down to the Eden from the south-east gate of the fort, suggesting a probable location for the bridgehead (Daniels 1989); piling for the foundations of the present bridge also uncovered fragments of doric columns (Daniels 1989). Dredging in 1951 further west along the river uncovered a number of bridge stones, analysis of which suggests two probable construction phases for the bridge (McCarthy 1999) and a ground-penetrating radar survey undertaken in 1997 located significant anomalies south of the confluence of the Eden and Caldew at a depth of 2-3m on the projected line of Hadrian's Wall (*ibid*); this evidence is likely to relate not to the crossing point of a thoroughfare, but rather the position of a bridge carrying Hadrian's Wall itself.

2.3.3 Extensive excavations to locate the fort's defences have taken place over the last 70 years (Fig 2), only the south-east rampart of the fort being visible as an earthwork, in the churchyard of Stanwix church (Daniels 1989). The first excavations to locate the fort were undertaken by Simpson, Hogg and Richmond in 1931, in connection with the widening of Scotland Road and the creation of a car-park bounded by Church Terrace, Church Street and Scotland Road. A trench was dug across the site, running east to west, but no evidence for the fort was uncovered, although a layer of 'light coloured […] occupation earth' (Simpson 1932, 148) was revealed, producing a small quantity of Roman pottery. A fragment of inscribed stone, dated to AD 167, was also recovered from beneath the floor of a demolished modern building (Simpson 1932). A series of excavations in the 1930s by the same archaeologists established the positions of the south-east gate and, in 1940, following the discovery of the western ditches in the course of draining an air-raid shelter, the south angle tower, south-east wall and north-east wall being subsequently excavated (Daniels 1989).

2.3.4 No further excavation was carried out on the fort's defences until 1984, when an excavation undertaken by CAU in the car-park of the Cumbria Park Hotel, immediately north of the school playground, located the stone footings of the north-western fort wall and an interval tower. This was shown by excavation to be of one build, together with a rampart to the south-west and two ditches to the north-east, the inner of which was flat-bottomed (Frere 1985; Dacre 1985; McCarthy 1999). Spreads of cobble and soily gravel on the berm, which post-dated the construction of the fort's curtain wall, suggested a truncated surface, and a possible Roman oven was also identified along the back wall of the interval tower (Dacre 1985). These discoveries demonstrated that the fort had been enlarged in the Antonine period, projecting it north-west of Hadrian's Wall, where previously it had been believed that the Wall formed the north-western boundary of the fort (Smith 1978). The other key discovery was that of a ditch underlying the rear section of the interval

tower and the rampart, which was earlier than the enlargement of the fort, and was presumed to be associated with Hadrian's Wall, the foundations of which had been discovered there by Simpson and Hogg during excavations in 1932-4 (Simpson and Hogg 1935; Esmonde Cleary 1998; McCarthy 1999).

2.3.5 Further excavation by CAU in 1997 was undertaken in a narrow passage immediately adjacent to the north-western side of Stanwix School in advance of construction of a cloakroom and toilet extension. The single trench located the inner ditch of the north-western defences of the fort, but only the upper fills were excavated. Although the north-western edge of the ditch could not be seen, it was over 3.7m in width and 0.55m in depth. The upper fills contained frequent sandstone rubble which was thought to have tumbled from the fort wall (CAU 1997c; Esmonde Cleary 1998). Excavations in 1998 in the same passage by CAU were also undertaken prior to further toilet and cloakroom extensions to the school. The excavations provided a further section across the north-western defences of the fort. The line of the defences was confirmed, comprising the remains of the curtain wall, part of the inner ditch, and possible remains of a denuded rampart inside the wall. The position of a large pre-fort ditch, which had previously been seen in the 1984 excavations behind the Cumbria Park Hotel, was also established, and was thought to represent the ditch for the turf phase of Hadrian's Wall. Although examination of Simpson's work in the 1930s suggested that the north-west face of the stone phase of Hadrian's Wall would pass through the extreme south end of the trench, no trace of it was found. This may have been the result of particularly thorough robbing of the stonework, which could have occurred prior to the construction of the stone fort. Inside the fort, part of a cobbled surface, perhaps an intervallum road, was recorded (CAU 1998c; Esmonde Cleary 1999; McCarthy 1999).

2.3.6 An evaluation in 1998 by CAU at Cumbria Park Hotel, involving the excavation of a 2m square test-pit, again confirmed the existence of the Roman fort wall at a depth of 0.55m below ground level along with demolition or collapse deposits. These were cut by postholes that contained medieval pottery (CAU 1998d). A further evaluation in 1999 by CAU, again at the hotel, involved the excavation of three evaluation trenches. This located the north-west wall of the fort, and associated features, at a depth of approximately 0.3m below present ground level. The majority of the wall fabric had been robbed away, but at least one course of foundation blocks survived *in situ*, as well as part of the internal rampart, which extended at least 3m behind the wall. To the rear of the rampart was a metalled surface, perhaps an intervallum road. The north-eastern edge of the primary fort ditch was also located, along with a possible structure to the rear (CAU 1999; Burnham 2000). A watching brief by Carlisle Archaeology Ltd (CAL) (formerly CAU) in 2000, during groundworks for an extension of the Cumbria Park Hotel car-park, followed on from the two earlier phases of evaluation. Traces of part of the heavily disturbed north-western defences of the fort were observed, comprising the foundation for the stone curtain wall, a possible denuded internal rampart, a cobbled surface on the berm between the curtain wall and the inner ditch, and part of what may have been an outer defensive ditch. Probable internal metalled surfaces, and other deposits within the fort, were also observed (CAL 2001).

2.3.7 In 2000, LUAU undertook an evaluation in the walled garden to the east of the Cumbria College of Art and Design, now the Cumbria Institute of the Arts. This

involved the excavation of three trenches, of which those in the centre and east of the garden uncovered only natural deposits and features associated with the garden. However, in the western trench a 'V'-profiled ditch was identified, which had a marked steepening of gradient towards the base. This was orientated north-west to south-east, lying parallel to the north-eastern edge of the fort. The fills contained few diagnostic finds and indicated a very short period of use, with the ditch having been backfilled quickly. It was tentatively suggested that this was a ditch of Roman military origin and may pre-date the fort at Stanwix, possibly being part of a temporary camp or earlier fort (LUAU 2000b) (Fig 2).

2.3.8 Little is known of the internal organisation of the fort, although the headquarters are thought to have faced north-east (Daniels 1989). Excavations in 1932 by Simpson and Hogg in the grounds of Stanwix School uncovered metalled surfaces extending back from Hadrian's Wall and dated to the second century (Simpson 1933; Simpson and Hogg 1935). These were post-dated by the foundations of long barrack-like buildings, potentially stables, dated to between AD 305 and AD 367 (Simpson 1933; Simpson and Hogg 1935). A large granary building, oriented north-east to south-west, was identified extending into the grounds of the school in 1939, with traces of other stone buildings found to the north-west and south-east of the granary (Daniels 1989; Esmonde Cleary 1998). Little further work on the internal area of the fort occurred for the following 55 years, although a watching brief on building works to the rear of the Crown and Thistle Inn, east of the school, in 1976 showed that the Roman levels had been removed by levelling (Frere 1977). In 1993, excavations by CAU, in Barn Close in Stanwix, 40m south-west of the north-eastern defences and internal to the fort, revealed two phases of walls and surfaces, with fourth century pottery and coins (Esmonde Cleary 1994; McCarthy 1999; Fig 2).

2.3.9 In 1997, CAU carried out further work in the grounds of the school, in advance of the construction of an extension (CAU 1997b; Esmonde Cleary 1998; McCarthy 1999). Only minimal excavation was undertaken, and as such only the uppermost surviving Roman deposits were identified. Excavation of four trenches was undertaken in the playgrounds; in the upper playground, walls and drains, relating to a probable stone building north of the granary recorded in the 1930s, were revealed. One of the 1939 evaluation trenches was emptied, revealing a drain and a wall at right-angles to the granary that did not appear in the original excavation records; the wall may relate to a further building. Further metalled deposits were also identified in the trench. The walls of the barracks or stables located by Simpson and Hogg were not found, and were perhaps sealed by unexcavated deposits of earth and rubble presumed to have belonged with the walls found in the 1930s; however, metalled surfaces were identified, suggesting yards or roads internal to the fort. The metalled surfaces were sealed by dark soils, which were in turn cut by slots and postholes. Clay floored timber buildings were erected over some of the metalled surfaces; these were not well dated but at least one of the structures was built no earlier than the second half of the fourth century, demonstrated by the presence of Huntcliff ware (Esmonde Cleary 1998; McCarthy 1999).

2.3.10 In the lower playground, excavation did not proceed below the latest archaeological deposits, although earlier stratigraphy was noted in the side of a nineteenth century drainage trench. The earliest recorded deposit was a layer of turves, sealed by

deposits earlier than those associated with the later phases of the stone fort. The precise nature of this feature was unclear, but was thought to be either part of a rampart of an earlier turf-and-timber fort, or evidence of the Turf Wall that pre-dated the stone version of Hadrian's Wall to the west of the River Irthing (CAU 1997c; Esmonde Cleary 1998; McCarthy 1999). There were no obvious front or rear faces to this turf deposit, but it was located some metres south of the stone Hadrian's Wall discovered in the 1930s (Simpson and Hogg 1935). The deposit was overlain by later surfaces of compacted pebbles and also pre-dated robber trenches for stone walls associated with the later stone cavalry fort (CAU 1997c; McCarthy 1999).

2.3.11 In 1998, further excavation was undertaken in the grounds by CAU in advance of the construction of new buildings and extensions. Fort deposits were again uncovered, although they were difficult to interpret in the small area excavated. The earliest deposits were composed of a series of dumps of rubble, sealed by a metalled surface similar to those seen in previous excavations. This surface pre-dated a stone wall that probably formed part of a building within the south-western part of the fort (CAU 1998b).

2.3.12 In 1999, an excavation was carried out by CAU at the school in advance of the construction of new classrooms and other facilities (Fig 2). The excavation exposed extensive, although probably heavily truncated, deposits within the central range of the fort. A complex sequence of several phases of timber and stone buildings was recorded, but excavation was not undertaken due to the need for preservation *in situ*. The character of the building remains was impossible to define with any certainty, but the ground plan was interpreted as being consistent with a hospital. Remains of other walls, cobble spreads, surfaces and other external deposits were uncovered. The most significant result of the work was the discovery of a rectilinear arrangement of large postholes which cut the Roman levels, but which appeared broadly to respect, or be influenced by, the Roman layout. It was thought that they could represent the remains of at least one substantial timber building of late Roman or post-Roman date, similar to the remains of an early post-Roman timber hall excavated at Birdoswald fort (Burnham 2000; J Zant *pers comm*).

2.3.13 A series of watching briefs was undertaken by CAU in 1999 and 2000 on groundworks at the school (Fig 2). In 1999 these were undertaken during the demolition of the boiler house and subsequent groundworks, and the digging of foundation trench for a new boundary wall for the playground adjacent to Church Street. Very little archaeology survived, due to disturbance during the construction of the school buildings. In the area of the former boiler house, a possible Roman cobbled surface and a few other deposits of uncertain date and character were observed. In the foundation trench, modern overburden was seen directly above the natural subsoil (J Zant *pers comm*). In 2000, the removal of concrete platforms for temporary classrooms, and the excavation of a foundation trench for a gate and wall, revealed no archaeological deposits (J Zant *pers comm*).

2.3.14 In November 2004, OA North undertook an evaluation in the grounds of Stanwix School, east of the excavations on the school extension undertaken by CAU in 1999. The evaluation revealed post-medieval garden soils, relating to the use of the land as gardens and orchards prior to the school's construction. Sealed beneath these garden soils was a cobbled surface, thought to be the equivalent to the

cobbled surfaces identified during previous excavations. These have been broadly dated to the second century AD, although no dating evidence was recovered on this occasion. At the western end of the trench, a ditch was identified, clearly cutting the cobbled surface but sealed by the post-medieval garden soils, and thus it must date either to the Roman or medieval period. A post-medieval pipe trench was also identified (OA North 2004a).

2.4 THE FORT ENVIRONS

2.4.1 The traditional view was that the main focus of the extramural settlement lay south-east of the fort on the slope down to the river (collated in Salway 1965, 98). It has also been suggested that the size of this settlement was limited by the proximity of the town of Carlisle, which could have performed many of the functions of a *vicus* for the garrison (Salway 1965). In 1986, CAU excavated some deeply stratified deposits, including the remains of buildings, at the former Miles MacInnes Hall in Scotland Road, demonstrating the existence of extramural development beyond the west gate of the fort. Coins and other artefacts indicate that the earlier phases of activity were probably associated with an, as yet unlocated, fort pre-dating the stone cavalry fort, whilst the later phases related to the stone fort itself. Although the observations demonstrated the presence of timber buildings, metalled surfaces, probable ovens and other features, the nature of the work meant that it has proved difficult to understand the inter-relationships between these individual elements (McCarthy 1999; J Zant *pers comm*).

2.4.2 The excavations by the CEU in 1977 identified Roman buildings close to Dykes Terrace, south of the Vallum, and east of the fort (Smith 1978; McCarthy 1999), suggestive of a civilian extramural settlement in this area (Fig 2). In 1998, excavations by CAU identified further buildings, in the form of foundation slots, and possible industrial debris, near to the entrance to Cumbria College of Art and Design on Brampton Road (CAU 1998a; Esmonde Cleary 1999). In 1999, a watching brief and limited excavation at the main gate by LUAU also revealed evidence of Roman activity in the form of a dump containing Roman pottery, the butt-ends of two possible beam slots, a larger linear feature, a pit, a posthole, and a possible kiln. The evidence supports Roman occupation close to Brampton Road, probably terminating by the late third century AD (LUAU 1999) (Fig 2).

2.4.3 In addition to evidence of extramural activity, extensive archaeological work carried out over the past 30 years to the east of the fort has shown that the landscape in the area of Tarraby Lane supported an agricultural economy prior to the building of Hadrian's Wall, comprising field systems and settlement activity in a dispersed pattern. The most significant work in the area, carried out by Smith in 1976, covered 21ha and included numerous trial trenches and an open area excavation to the south of Tarraby Lane in the fields around Wall Knowe, immediately north-east of the present development area (Frere 1977; Smith 1978). A series of 'V'-shaped ditches, forming a field system in a gridded rectilinear pattern, broadly orientated north-east to south-west and north-west to south-east, extended across most of the fields investigated. This almost certainly pre-dated the Wall as it was aligned at an angle to it, and found on both sides of it (Frere 1977, Smith 1978; Fig 2). In contrast, the modern field systems are structured by the Wall and aligned on it, and this would presumably be the case for all field systems post-dating the Wall.

2.4.4 Open area excavations in the field of Wall Knowe, immediately north-east of the development area, identified the remains of a 'V'-shaped ditch and its later recut. Excavation of one of the ditches further to the east showed that it pre-dated a probable section of the Turf Wall; the ditch had largely silted up and was then backfilled before the construction of the Wall. Several plough-marks were also found running parallel with the ditch, sealed by a low bank; analysis of buried ground surfaces produced evidence of cereal pollen (Frere 1977; Smith 1978). The limited ceramic evidence from these ditches indicated activity in the first or early second century AD, although the ditches were mainly dated by association, on the basis of their size and shape (*ibid*). Radiocarbon dates obtained from the primary silts of a number of the ditches in the open area excavation point to a date range between the second century BC and the second century AD; all activity appeared to cease in the late second century AD (Smith 1978).

2.4.5 Within the open area excavation there were also two alignments of postholes, which did not appear to be contemporary with each other; one of these extended across the line of a ditch belonging to the field system, towards the line of Hadrian's Wall, with which it had a perpendicular alignment. This suggests that it post-dated both the field system and the construction of the Wall, but it may have been contemporary with the use of the latter. The more westerly alignment had large, square-cut postholes and contained *in situ* oak fragments; it was suggested that this may have been part of a post and rail fence suitable for a horse paddock, which would imply sections of the landscape were used for pasture. There was also evidence of a later, medieval cobbled road, along the northern edge of the field, adjacent to the boundary (Smith 1978).

2.4.6 Smith concluded that there was large-scale agricultural activity in the area surrounding the site, from the pre-Roman Iron Age and continuing in use up until the establishment of Hadrian's Wall. 'At the time of the construction of the Turf Wall, Wall Knowe was a patchwork of open fields bordered by hedges and ditches. The poorly drained ground between the drumlins would have been covered by alder and fringed with hazel/alder scrub containing some oak and a limited number of other trees' (Smith 1978, 56).

2.4.7 Excavations by CAU in 1993, in fields to the north of Tarraby Lane, were intended to investigate the Wall ditch and counterscarp bank further, in addition to the field system. Large numbers of evaluation trenches were excavated, which revealed more evidence of the pre-Wall activity, largely undated but presumably belonging to the Iron Age or Romano-British period (CAU 1993b; CAU 1993c; Esmonde Cleary 1994) (Fig 2). The first phase of evaluation identified a farmstead associated with a small amount of Roman pottery typical of the second century AD (CAU 1993b; Esmonde Cleary 1994). The second phase of evaluation found evidence for an extensive system of ditches that appeared to represent ancient field boundaries, together with groups of postholes, stakeholes and cobbled surfaces suggesting contemporary occupation. One pair of ditches appeared to represent a track-way, perhaps leading to a settlement. None of the archaeological features themselves could be dated, but their characteristics were thought to be similar to others of known prehistoric or Romano-British date. The absence of second century Roman pottery possibly implied a pre-Roman date for the features (CAU 1993c; Esmonde Cleary 1994). Excavation of evaluation trenches in 1994 revealed further features, such as smaller ditches, gullies, and cobbled spreads, suggestive of settlement

activity but of uncertain character and date. A charcoal sample from one feature produced a radiocarbon date that indicated Iron Age activity. The ditches were overlain by the cobbled surfaces, indicating more than one phase of activity. A section of the counterscarp bank to the north of Hadrian's Wall was found to overlie and preserve plough-marks representing pre-Wall agricultural activity (J Zant *pers comm*; Esmonde Cleary 1994; McCarthy 1999).

2.4.8 Further excavations by CAU in 1997 east of Beech Grove also identified a possible organic-rich buried ground surface, although no clear stratigraphic relationship was defined between it and Hadrian's Wall, which was found in the same trench. The buried ground surface was sealed by a subsoil 'mottled by darker semi-linear features evident in plan […] consisting of humus rich material' (CAU 1997a, 7); these could suggest evidence of plough-marks.

2.5 THE PARADE GROUND

2.5.1 An area of lower ground, between the fort and the rising ground to the north-east centred on Wall Knowe, has been investigated a number of times by CAU (McCarthy 1999) (Fig 2). These investigations have revealed an extensive clay platform, up to 0.5m thick, which has been provisionally interpreted as the parade ground of the fort at Stanwix, thought to cover 7.5 acres. 'Material recovered from within the make-up of the platform indicates a date not earlier than the second half of the second century for the construction of at least half the platform' (CAU 1998a, 2). Between this putative parade ground and the north-east gate of the fort, a raised area was identified which was tentatively identified as a tribunal (McCarthy 1999); this approximately corresponds to the walled garden of the college, which is now a car-park. Excavations in the walled garden in 2000 (LUAU 2000b), and a watching brief in 2002 (OA North 2002b), failed to identify any evidence relating to its use. The material deposited there sealed an earlier ground surface, and extensive areas of plough-marks and field boundary ditches, including some discovered in 1976 by CEU (Smith 1978).

2.5.2 The parade ground was first identified in 1990, when an evaluation was undertaken by CAU in advance of the proposed construction of a new primary school on land at the corner of Tarraby Lane and Beech Grove, north of the present proposed development area. Excavation of six evaluation trenches revealed evidence for cross-ploughing representing early, probably pre-Roman, ploughing in the form of plough- or ard-marks scoring the natural surface. These features were sealed by a highly organic buried soil or turf-line which was itself sealed by dumps of redeposited natural clay, interpreted as the makeup for the parade ground (Esmonde Cleary 1994; J Zant *pers comm*).

2.5.3 Evaluation work in 1993 (CAU 1993a) and 1994 by CAU in the college grounds was undertaken prior to building work; this led to an excavation in 1994, immediately north-east of the current development area. A sizeable area was opened up and revealed more evidence for pre- or early Roman ploughing associated with a buried soil or turf-line (Plate 1). A considerable quantity of preserved organic matter, including what is described as 'brushwood', was found at this level; P Flynn (*pers comm*) states that this was silver birch, possibly deliberately laid as a foundation. These deposits were overlain by thick dumps of

the make-up deposits for the parade ground. The uppermost deposits were associated with late post-medieval gardening activity (J Zant *pers comm*). Photographs of the excavations also show a sizeable ditch cutting north-west to south-east across the excavation area, probably of post-Roman date as it cut the parade ground deposits (Plate 2).

2.5.4 In 1995, CAU undertook an evaluation in advance of a proposed housing development to the north-east of the college grounds, on land around Wall Knowe. It appears that the sequence was identical to that recorded in previous excavations, consisting of plough-marks and a buried soil, sealed by make-up deposits for the parade ground (J Zant *pers comm*).

2.5.5 Excavations were undertaken in 1996 by CAU of 11 small, square trenches to take piles for a new structure at the college, in the courtyard immediately north-west of, and adjacent to, the current excavations. The excavations identified the same sequence of activity, as well as a possible field boundary ditch which stratigraphically pre-dated at least some of the plough-marks. The deposits were in turn sealed by soils of medieval and post-medieval date (J Zant *pers comm*).

2.5.6 Also in 1996, excavation of four trenches was undertaken by CAU to permit micromorphological analysis of the buried soils. Two of the trenches were placed north of Tarraby Lane in an attempt to find the remains of the counterscarp bank of Hadrian's Wall. Work elsewhere in the area had demonstrated that this overlay evidence for earlier, probably pre-Roman, ploughing. One trench was sterile, but the other trench revealed plough-marks on a north/south alignment cutting the natural subsoil, filled with, and sealed by, a black buried soil-like material. This evidence for probable pre-Roman agricultural activity was overlain by the remains of the Hadrian's Wall counterscarp bank. The other two trenches were excavated to the north-east of the current student accommodation buildings; cross-ploughing was found in both, in the form of plough-marks scoring the natural surface. In one, an east/west aligned ditch was discovered, sharing the alignment of the plough-marks, but with no stratigraphic relationship to them; this was provisionally identified as a pre-Roman field boundary ditch. Above the plough-marks was a black buried soil that may have been formed whilst the ditch was open. This was again sealed by make-up deposits for the parade ground. The results of the micromorphological study suggested that the buried soils were not diagnostic of past agricultural practices, and highlighted the need for further work (CAU 1996).

2.5.7 Excavations in 1998 by CAU, prior to further building work at the college immediately north-east of the development area, again revealed part of the parade ground deposits. This material was seen to be directly cut by a ditch in excess of 1.2m wide, which was not excavated. A second, possibly larger, ditch was observed to the north. Neither ditch was dated, but both were thought to be of Roman or post-Roman date on stratigraphic grounds. The top of the archaeological deposits lay *c*0.75m below the modern surface (J Zant *pers comm*).

2.5.8 In 1999, an excavation and watching brief was carried out within the college grounds by LUAU (Fig 2). Excavation to the south-west of the main college building revealed only twentieth-century features, and suggested that modern disturbance had been substantial, due to the building being terraced into the slope (LUAU 1999). A watching brief was undertaken concurrently by the Newcastle University Archaeological Practice on extensions on the south-east side of the main

college building. The excavations failed to uncover any archaeological deposits to the depth of the pile caps, other than a thick plough-soil and hillwash. A much deeper excavation was undertaken for the construction of a lift-shaft, which revealed an extensive area of cobbling similar to that encountered by the CAU evaluations to the north of the college building (CAU 1993a). Large postholes and slots were also discovered, apparently contemporary with the cobbled area; these were cut by ditches and overlain by burnt deposits. The deposits appeared to be concentrated in the east end of the trench, with the west end showing truncation from the point at which the college building has been terraced into the slope (A Rushworth *pers comm*).

2.5.9 In 2000, an evaluation and watching brief was carried out by LUAU to the north-west of the main college building (Fig 2). The watching brief of a pipe trench revealed a deposit of clay and cobbles running approximately two-thirds the length of the trench. The evaluation, between the pipe trench and the main college building to the south, revealed mainly nineteenth- and twentieth-century features and soil horizons. However, excavation in the centre of the trench revealed the same deposit of clay and cobbles as that identified in the watching brief by the Newcastle University Archaeological Practice. This deposit consisted of two phases of clay and cobble surfaces abutting a metalled surface at the western exposed end; Roman tile, brick and pottery were embedded in both clay surfaces. Little examination of the deposit was possible, but a sondage revealed the depth of the deposit to be *c*0.3m. These clay and cobble surfaces were interpreted as a further section of the parade ground (LUAU 2000a).

2.6 PREVIOUS ARCHAEOLOGICAL WORK ON THE SITE

2.6.1 In June 2004, OA North undertook an archaeological evaluation at the Ceramics Courtyard (Fig 4). Two trenches were excavated which showed that archaeological features were present on the site sealed below 1.2-1.3m of post-medieval overburden. Sealed beneath these deposits was a ditch aligned north-west to south-east, which is almost at right angles to Hadrian's Wall and the Vallum. The full profile of the ditch was not seen but it exceeded 2m in width and 1m in depth, and had steeply sloping sides. On the basis of finds in its fill, the ditch appeared to date to the post-medieval period. The ditch cut a deposit of orange sandy silt with a high proportion of stone inclusions, which represents a further section of the putative parade ground seen in the excavations on the site (OA North 2004b).

3. METHODOLOGY

3.1 PROJECT DESIGN

3.1.1 A project design (*Appendix 1*) was submitted by OA North in accordance with a verbal project brief by the English Heritage Hadrian's Wall Archaeologist. Following formal acceptance of the project design by English Heritage, OA North undertook the fieldwork between 6th and 17th September 2004. The work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists, and generally accepted best practice.

3.2 EXCAVATION

3.2.1 The new build has been designed to be constructed on piles, with ground beams linking the piles; these are arranged adjacent to the buildings that edge the courtyard. While the piles and ground beams can be investigated by localised trenches, it was recognised that narrow trenches would not provide an adequate overview for the site as a whole. An open area excavation could not extend up to the walls of the adjacent buildings because of the risk of de-stabilising these structures. Consequently English Heritage required that an open area excavation be undertaken within the central area of the courtyard, but divided diagonally through the centre of the courtyard by the line of a trench containing active services. This provided two triangular areas: A (16 x 9m) and B (11 x 6m), that covered 106sqm in total (Fig 4).

3.2.2 The excavation used a variety of techniques, from mechanical excavation to delicate hand excavation, to suit differing conditions. Following machine removal of the overburden, the core site was subject to manual cleaning over the whole excavation area, since extant deposits were fragile and machinery in their vicinity could disturb relatively delicate layers and relationships. The aim of this work was to investigate all features stratigraphically and to produce a plan of the site. Despite the potential significance of the site it was not considered necessary to excavate every feature in its entirety, and a rigorous sampling strategy was applied once the full potential of the site had been established. To maximise the information generated from available resources, all features were cleaned and a sample excavated, to establish their date, function and stratigraphic relationship. It was anticipated that there would be excavation of a minimum 50% of discrete features and 20% of linear features.

3.2.3 Prior to any ground disturbance the limits of the excavation area were fenced for safety. The topsoil and any obvious overburden deposits were then removed mechanically under archaeological supervision. Machine stripping of the excavation area was undertaken using a 360º excavator fitted with a 1m toothless ditching bucket, the work being supervised by a suitably experienced archaeologist. Spoil was removed from the site by lorry for disposal off site. Machine excavation was halted at the first significant archaeological deposit. Thereafter, structural remains and features were cleaned manually to define their extent, nature, form and, where possible, date; all deposits and features were subject to manual excavation in a stratigraphical manner. The deposits encountered during the excavations were

sampled according to the appropriate professional standards to enable environmental analysis if required.

3.2.4 For health and safety reasons the mechanical clearance was limited to a maximum depth of 1.2m, after which the sides were stepped in, to allow for an equivalent of an angle of 45°. It was anticipated that natural subsoils would be reached at depths of as much as 2m and therefore there needed to be a sufficiently large step in the sides of the trench to allow for this.

3.2.5 Following commencement of excavations in Area A, a large post-medieval water tank was identified at the eastern end of the area; assessment of this tank showed it had been dug to some depth and was still intact and serving as a sump for rain-water from the roof gutters. A decision was therefore made to leave this intact and a balk was left around the tank to maintain its stability. Machining in this area was undertaken down to the top of the putative parade ground deposits, which were predicted from earlier excavations to be up to 0.5m deep and to cover the whole of the excavation. No features were identified at this stage. A decision was made to remove the parade ground deposits by machine, in very shallow spits, which were monitored at all times for archaeological material. Excavation by machine was halted at a level 0.1m above the predicted level of the earlier ground surface, and excavation was continued manually. Constant water-seepage caused the ground conditions to be very difficult, and a pump had to be employed constantly to allow work to continue.

3.2.6 In Area B an identical approach was adopted. The large ditch identified in the evaluation was seen during removal of the parade ground deposits, and thus machine excavation was suspended on the western side of the trench, but continued through the deposits east of the ditch. Following heavy rain, parts of the sections in Area B collapsed, necessitating removal of the resulting spoil by machine. A section collapse on the north-west and south-west sides of the trench threatened to undermine the adjacent road and the foundations of the buildings. Accordingly, a batter, made of spoil from the excavations, was created on the advice of a structural engineer employed by the developer, but this proved to be unstable due to its saturation with water. This was therefore removed by machine, causing the truncation of the archaeological deposits in the western half of the trench. A crushed concrete batter was created on the north-west and south-west sides of the trench, more than halving the area available for investigation, and burying the large ditch on the western side of the trench. Manual excavation was then commenced, but was halted when there was a further section collapse on the south-eastern edge of the excavation area. For health and safety reasons the rest of the southern half of the area was backfilled with crushed concrete and the northern half of the trench was shored with sheet piling, and limited excavation was recommenced for a day. However, following torrential over-night rain, all the sections collapsed to some extent against the shoring and this became unstable. All excavation was therefore abandoned at this point. The limited excavation did not reach the bottom of features seen and there was no opportunity for the proper recovery of environmental samples. These variations were agreed with English Heritage during the course of the excavations. This had the effect of preventing the recording of sections in the southern part of the area, and prevented the taking of environmental samples from the cut features, particularly Ditch 30.

3.2.7 ***Recording:*** archaeological planning was undertaken using a data-logging total station linked to a Penmap computer, utilising AutoCad version R14. All planning data were digitally incorporated into a CAD system in the course of the excavation and the results were superimposed onto the base survey provided by Swarbrick Associates. This process generated scaled plans which were then manually enhanced. Section drawings were generated manually.

3.2.8 A complete record of all features and horizons in Area A was made, comprising a full description and preliminary classification of features on OA North *pro-forma* sheets, and their accurate location in plan. A photographic record in colour slide and monochrome formats was also compiled. Only a more limited record of Area B could be made, due to the adverse ground and weather conditions.

3.2.9 A full and detailed photographic record of individual contexts was maintained, and more general views were also generated, using 35mm cameras on archivably stable black and white print film as well as colour transparency. Photographic records were maintained on *pro-forma* sheets.

3.2.10 A programme of palaeoenvironmental sampling was undertaken at the site. A single stratified context with the potential for preserved ecofacts was identified; a bulk sample of 30 litres volume (for sub-sampling at a later stage) was collected and assessed for waterlogged and charred plant remains and other environmental indicators as appropriate. A monolith sample was also taken, for pollen and, potentially, other forms of analysis. The environmental sampling and assessment followed the English Heritage G*uidelines for environmental archaeology* (2002) and those of Oxford Archaeology (2000).

3.2.11 On completion of the site works, the trenches were backfilled with sub-base in accordance with the instructions of the client, but were not otherwise reinstated.

3.3 ARCHIVE

3.3.1 A full professional archive has been compiled in accordance with the project design (*Appendix 1*), and with current IFA and English Heritage guidelines (English Heritage 1991). The paper archive will be deposited with the Cumbria Record Office (Carlisle). The material archive (artefacts and ecofacts) will be deposited with Tullie House Museum in Carlisle following agreement with the client.

4. ORIGINAL RESEARCH AIMS

4.1 ACADEMIC AIMS

4.1.1 Stanwix Roman fort is still poorly understood, despite its importance as the largest military base along Hadrian's Wall and the station of the most powerful unit, the milliary *Ala Petriana*. Only relatively recently has the full extent of the stone fort been defined (Dacre 1985) and the primary, Hadrianic, phases of occupation remain very obscure, as does evidence for an adjacent civil settlement (*vicus*). The present excavation was designed to investigate the development site, which had previously demonstrated the survival of *in situ* Roman remains (OA North 2004b). The substantial area of undisturbed archaeological stratigraphy offered a unique opportunity to enable substantial and significant additions to be made to the body of knowledge concerning the development and growth of Stanwix and its environs in the Roman to post-medieval periods. The 2004 excavation was designed to clarify and enlarge on the results of the 2004 evaluation (OA North 2004b).

4.1.2 The original academic objectives stated prior to the 2004 excavation were addressed as a series of questions.

4.1.3 ***Can the presence of a parade ground to the north and east of the fort be confirmed and its full extent determined?:*** the clay platform revealed in the earlier evaluation and mitigation trenches, by CAU, LUAU, the Newcastle University Archaeological Practice and OA North, has been provisionally interpreted as an extensive parade ground covering a total of three, perhaps nearly four, hectares, including the area of the main college campus buildings and the former walled garden to the east. Such training or parading areas have been proposed at other forts on the northern frontier, notably at South Shields (Hodgson 1994) and Hardknott (Breeze and Dobson 2000). The presence of metalled surfaces and cobbles in the trenches north and south of the college may imply that the western part of the putative parade ground is more complex, and therefore the uncovering of a larger area would enable this to be studied.

4.1.4 ***How extensive was the civil settlement associated with Stanwix Roman fort?:*** the location, extent and chronology of the *vicus* have yet to be conclusively determined. Possible traces were recorded to the south-west of the fort in the foundation trenches for the flats built on the Miles MacInnes Hall site (Daniels 1989, 32). Given the limited state of knowledge regarding the extent of the *vicus*, any evidence — positive or negative — would prove valuable and make a useful contribution to a nationally-defined research theme (English Heritage 1997, 49 — Historic chronological period theme H1: *Military and civilian interaction*).

4.1.5 ***What was the nature of late Iron Age / pre-Wall exploitation of this area and what was the impact of the building of Hadrian's Wall?:*** the identification of a possible buried ground surface in the earlier evaluation (OA North 2004b), and the Tarraby Lane excavations (CAU 1996; 1997a) revealed plough-marks and field-boundary ditches, which suggests the development areas may contain significant evidence of late Iron Age or early Roman agricultural activity, with further potential to inform our understanding of the impact on the locality of the building of Hadrian's Wall.

4.2 OBJECTIVES

4.2.1 The objectives of the project were twofold:

- firstly, to excavate as much of the development area as was possible given the constraints of health and safety;
- secondly, to relate the findings to the previous excavations adjacent to the site and to the larger-scale picture of Roman to post-medieval development in the region.

5. FIELDWORK RESULTS

5.1 INTRODUCTION

5.1.1 The results of the excavation have provided further useful information on the survival of archaeological deposits within the development area, and their nature and composition. The results of previous excavations are not at present fully published, and little is currently understood with regard to the activity in the area immediately prior to the construction of the Wall and the associated fort at Stanwix. The impact of the construction of the Wall on the patterns of earlier land-use, in the form of late Iron Age or early Roman agricultural activity, is at present poorly understood.

5.1.2 Summary results of the excavation are presented below. The context list is reproduced in *Appendix 2*, with Figure 4 showing the position of the excavation in relation to the standing buildings. In the following narrative, a broad phasing has been allocated to the archaeological activity identified in the field. This phasing equates to the major events in the evolution of the site, and is based on general stratigraphic trends and provisional finds' dating. The results of the evaluation (OA North 2004b) are incorporated and discussed in this section. Contexts identified during the evaluation and recognised again in the excavation are indicated by italicised numbers, while those identified during the course of the excavation appear as bold, italicised numbers.

5.1.3 Within the boundaries of the surrounding upstanding buildings, as large an area as was safely possible was excavated, measuring 16m north to south by 9m east to west; this was divided into two excavation areas (Fig 4). The results of both excavation areas, Areas A and B, are discussed together, as they were broadly similar; the locations of contexts identified within Areas A and B are presented in plan in Figures 5 and 6 respectively, and in section in Figures 7 and 8 respectively. The ground was level across the area of the trenches before the excavation, and was at a height of 25.5m OD.

5.2 NATURAL SUBSOILS

5.2.1 The character of the natural subsoil was only discernible at two locations during the excavation of both areas, as conditions precluded full excavation of the areas down to natural. Within Area A, natural subsoil, ***8,*** was a pale-creamy-yellow and bright-orange firm fine sand, identified at the base of the excavated area, at up to 24.0m OD. Due to the severely waterlogged conditions, it was only partially uncovered, within a modern intrusion that was emptied during the course of excavation, and in the bases of sondages excavated along the edges of the sections to provide a full stratigraphic sequence of the deposits. The upper surface of natural subsoil ***8*** had been disturbed by later activity, probably agricultural, and this had produced a deposit of pale-greyish-brown firm silty sand, ***1***, above it.

5.2.2 Within Area B, natural subsoil ***27*** was only visible in the sides of an excavated ditch, ***30***, and in this part of the excavation it was a mid- to light-pink, mottled with

yellow, firm boulder clay, at 24.22m OD. It was also covered by a deposit of disturbed natural material, ***28***.

5.2.3 Variations seen in the natural subsoil may be the result of laminated undulating bands of clay and sand within the drift geology. Smith (1978) identified shallow sands over boulder clay in his assessment of the drift geology, which is consistent with the deposits exposed during this excavation.

5.3 PHASE 1 (IRON AGE / EARLY ROMANO-BRITISH PERIODS)

5.3.1 The earliest archaeological deposit identified related to a ground surface, representing a buried topsoil or turf-line, which was visible extending the full length of the excavated areas. The ground surface consisted of a continuous deposit of very dark-blackish-grey firm organic clayey silt, ***2*** and ***29*** (Plate 3). The deposit included a few charcoal flecks, and was excavated to a maximum thickness of 0.12m. The thickness varied across the area, being greatest at the northern end of the site, and thinning, although still present, towards the south. This ground surface was also recorded during the evaluation in Trench 2 as deposit *12*, where it was around 0.1m thick (OA North 2004b). The deposit was located at around 1.3m below the present ground level at the northern end of Area A, but rose towards the south, where it was identified around 1m below the present ground level at the southern end of the Area B.

5.3.2 Cutting through this deposit was a series of plough- or ard-marks, ***3*** (Fig 9), which were V-shaped in profile (Fig 10; Plate 9), and ran north-north-east to south-south-west. The marks varied between 0.02m and 0.1m in width, and extended across the full extent of Area A; the marks were also present in Area B, but were not fully recorded due to the difficult conditions in that trench. The overlying deposit, ***4***, (*Phase 2; Section 5.4.2*), which was the primary deposit of the putative parade ground, had filled a number of the plough-/ard-marks, the pink of the fill contrasting strongly with the blackish-grey ground surface (Plates 4 and 5). This suggests they must have been fresh when the later deposit was laid down, as they would have weathered quickly, and would suggest that here, at least, they were connected with the construction of the parade ground. On removal of buried topsoil layer, ***2***, further plough- or ard-marks were identified, scoring the underlying disturbed natural subsoil (***1*** and ***28***). Considerably more marks were identified, there filled with deposit ***2***, being seen as dark-blackish-grey lines against a pale-greyish-brown background (Plates 6, 7 and 8). The bulk of the marks still ran in the same direction, although at least two were also noted running at right-angles to these, in an east-south-east to west-north-west direction.

5.3.3 Ditch ***30*** (Figs 6 and 8) crossed the centre of Area B, running west-north-west to east-south-east, and was sealed beneath the putative parade ground deposits (*Phase 2*, Plate 9). It was 2.1m wide, and was excavated to a depth of 1m without reaching its base (*Section 3.2*), and a length of 2.5m was exposed. Although the base was not seen the profile of the ditch appeared to be V-shaped; a sump, a further 0.45m below the lower limit of excavation, elsewhere along the ditch, showed that the sides continued with no sign of a break of slope (Fig 8). The sides were steep and regular, at a gradient of about 80º.

5.3.4 At the base of the sump, a very dark-blackish-grey friable humic clayey silt, ***31***, was identified, containing a quantity of brushwood and twigs. This is thought to be a primary deposit within the ditch, or at least an early fill, although this could not be proven by excavation (*Section 3.2*). A mid-greyish-brown, with patches of pink, soft silty sand, ***32***, was found above this, approximately 0.4m thick, within the sump; this probably represents a more rapid silting episode following the accumulation of organic material. This was followed by a second organic layer, ***33***, up to 0.05m in thickness, which was a dark-greyish-brown firm humic clayey silt, containing a high proportion of well-preserved brushwood and twigs, and appeared to represent a short period of organic deposition. It was sealed by a deposit of mid-grey firm, slightly sandy silt, ***34***, 0.33m thick, containing a few sub-rounded pebbles. The preservation of the organic material it sealed suggests that the onset of renewed silting was fairly rapid.

5.3.5 Before the ditch had silted up completely, a 0.25m thick lens of plastic yellowish-orange mottled clay, ***35***, was deliberately deposited in it, probably to seal it off and to form a stable base for the deposition of the putative parade ground layers above. Above this clay, the upper deposit of the ditch consisted of putative parade ground deposit ***36***, which had slumped into the ditch. This was a mid-pinkish-orange firm sandy clay containing occasional sub-angular stones, and had a thickness of 0.4m. Fill ***35*** indicates that the ditch must still have been visible as an earthwork when the parade ground was laid down.

5.3.6 This phase was not directly dated during the excavation, but the identified features and deposits were sealed beneath the putative parade ground deposits (*Phase 2*) which have been dated elsewhere to the mid- to late second century AD. It therefore dates stratigraphically to the period prior to this, and was probably immediately prior to it, placing it in the early Romano-British period or Iron Age.

5.4 PHASE 2 (SECOND CENTURY AD)

5.4.1 Overlying buried topsoil and plough- or ard-marks was a deposit of clay and cobbles, previously identified as the parade ground for the fort at Stanwix (J Zant *pers comm*). Positive identification of this feature was possible as it closely matched deposits identified during a number of previous excavations by CAU, LUAU, the Newcastle University Archaeological Practice and OA North (*Section 2.5*).

5.4.2 The putative parade ground consisted of two separate (primary and secondary) layers of deposit. The lower (primary) parade ground deposit, overlying ditch ***30*** and plough-/ard-marks, was a pale-bluish-grey mottled with pink, soft clayey silt, ***4*** and ***41***, containing pink clay lenses and occasional sub-rounded stones. The deposit extended the full length of the excavation areas, and was excavated to a maximum depth of 0.4m. This deposit appeared to be a primary deposit, which was dumped in a single episode as a make-up layer to level up the existing ground surface.

5.4.3 The top of the primary deposit was located *c*0.85m below the modern courtyard at the southern end of the site, and was approximately level across the excavation area, although the southern section was not recorded due to the adverse conditions (*Section 3.2*). In the evaluation, the deposit was recorded at 1.2m from the current

ground surface within the western half of Area B (OA North 2004b), which may suggest the deposit sloped down to the west.

5.4.4 The uppermost, secondary, layer was a deposit of mid- to light-pinkish-orange firm clayey silt, ***5***, containing poorly sorted moderate sub-rounded cobbles. This covered the northern half of Area A, and varied in thickness but became thicker towards the north. The deposit was entirely truncated in the southern half of the area and in Area B, presumably as a result of nineteenth-century ploughing (*Phase 3*). Where the deposit reached its maximum thickness, of 0.4m, the truncation of the original surface may have been slight or even absent.

5.4.5 No features were identified cutting the putative parade ground deposits, other than a later ditch (*Phase 3*), and no structural evidence was identified on the surface. The deposit was not dated by artefacts, but excavations elsewhere have shown these deposits to be of mid to late second century date (*Section 2.5*).

5.5 PHASE 3 (MEDIEVAL TO NINETEENTH CENTURY)

5.5.1 Overlying the putative parade ground deposits were plough-soil and topsoil or garden-soil, which indicate agricultural usage of the site. Directly above the putative parade ground, a deposit of plough-soil consisted of mid- to dark-greyish-brown silty clay, ***14*** and ***40***, containing only moderate stone inclusions. This was up to 0.45m in thickness, extended right across the excavated areas, and was identical to deposit *5* seen in Trench 1during the evaluation.

5.5.2 Overlying the plough-soil was a deposit of firm dark-brownish-grey slightly silty clay, ***13*** and ***39***, containing moderate small to medium sub-rounded stone inclusions, again extending right across the excavated area. The deposit was up to 0.45m in thickness, and represents a buried topsoil or garden soil. This is identical to deposit *4* seen in Trench 1 during the evaluation (OA North 2004b). The thick layers of plough-soil, topsoil and garden-soil that overlay the putative parade ground were probably accumulated by the mass movement of soil from the higher ground on either side, most likely as a result of ploughing.

5.5.3 The plough-soil sealed a post-medieval field boundary ditch, ***42***, which was observed in section and in plan in the southern half of the excavation area; it was aligned north-west / south-east, and corresponded to ditch *8* in Trench 2 of the evaluation (OA North 2004b). During the evaluation the full width of the ditch could not be established as it extended beyond the limits of the trench, but it was greater than 2m. It was excavated to a depth of 1m, revealing that its northern edge was steeply sloping, with an angle of *c*60°. The base of the ditch was not exposed. During the excavation stage of the archaeological programme it was not possible to investigate this ditch further due to the difficult excavation conditions (*Section 3.2*), and only its position and orientation could be recorded.

5.5.4 The ditch stratigraphically post-dated the putative parade ground deposits, and ceramic building material fragments that are most likely to be post-medieval were recovered from it during the evaluation (OA North 2004b). It can therefore be broadly dated to the post-medieval period, although there is some doubt as to its precise age (*Section 8.4*). Eighteenth- to nineteenth-century pottery was recovered

from the plough-soil during the evaluation. No further features were identified that can be attributed to this phase.

5.6 PHASE 4 (NINETEENTH CENTURY TO PRESENT)

5.6.1 The latest deposits identified represent the construction of the reformatory school on the site. This comprised make-up deposits that were required to provide a firm base for the school's construction, a cobbled yard and flagged surfaces, and a network of drains that connected to a waste-water tank (Plate 10).

5.6.2 A thin layer of tarmac butted up to a series of pinkish-grey concrete slabs, ***9***, which fringed the edges of the courtyard. The tarmac was seen to seal a cobbled surface, ***10*** and ***37***, which was presumably the original courtyard of the school.

5.6.3 Beneath the courtyard was a make-up layer, ***11***, a dark-grey mixed clayey silt with frequent sub-rounded and sub-angular stone inclusions, up to 0.25m thick; this was probably laid to provide a stable base for the courtyard. A drain, ***26***, cut this deposit, filled by a mid-brownish-grey silty gravel, ***25***, and this was sealed by cobbled surface ***10***. Below make-up deposit ***11***, a large waste water tank, ***18***, was identified at the northern end of Area A (Plate 10). The tank measured 3.40m by 1.9m; its depth was not ascertained, but appeared to be in excess of 1.5m. It was constructed of regular stretcher-coursed bricks, mortared with pale-grey degraded lime mortar. It was capped with four nearly identical large red sandstone slabs, the largest of which measured 1.0m by 1.9m. There was a small access point or man-hole towards the north of the tank, constructed out of similarly-mortared sandstone blocks, which measured 0.5m by 0.3m by 0.1m, and was capped with a sandstone man-hole cover with an iron handle.

5.6.4 The tank served as a receptacle for water from the drains leading from the down-pipes of the gutters, and was presumably constructed at the same time as the reformatory school, therefore being nineteenth century in date. One of the drains, ***23***, was recorded in section, and was filled with a mid-greyish-brown sandy silt backfill, ***22***.

5.6.5 The tank was set within a large rectangular cut, ***17***, which had been backfilled with a dark greyish brown silty sand, ***16***, containing frequent fragments of building rubble, and was presumably filled immediately before deposit ***11*** was laid down over the tank. The tank cut an extensive deposit of redeposited natural material, ***12***, ***19*** and ***38***, consisting of mixed light-pink and yellow to mid-orangey-grey firm silty clay, which stretched approximately 14m from the northern end of the courtyard before petering out. This appears to have been a further make-up layer, laid to level the ground for the construction of the nineteenth-century school, and to provide a firm base for construction works. At the southern end of the courtyard, deposits of deteriorated tarmac, ***20***, and building rubble, ***21***, were also identified, and presumably served the same function.

6. ASSESSMENT OF THE RESULTS

6.1 INTRODUCTION

6.1.1 The aim of this section is to evaluate all classes of data from the excavation undertaken at the Ceramics Courtyard, Cumbria Institute of the Arts, Stanwix, Carlisle. A statement of the significance of the results from each element of the archive is given below. These statements are based on the assessment work undertaken, related to the original academic themes expressed in the project design.

6.1.2 The objectives of this section correspond broadly to, and are prescribed by, *Appendix 4* of *MAP2* (English Heritage 1991). They are to:

- assess the quantity, provenance and condition of all classes of material: stratigraphical, artefactual and environmental;
- comment on the range and variety of that material;
- formulate any further questions arising from the assessment of this material.

6.1.3 This section will present:

- a factual summary, characterising the quantity and perceived quality of the data contained within the site archive;
- a statement of the academic potential of these data;
- recommendations on the storage and curation of these data.

6.2 PROCEDURES

6.2.1 The method of assessment used varied with the class of information examined. All classes of finds were examined in full, with observations supplemented by the finds' records generated during the course of the excavation. Full details of all the recovered finds reside within the project archive.

6.3 STRUCTURAL AND STRATIGRAPHIC DATA

6.3.1 ***Quantification:*** the site archive from the evaluation (OA North 2004b) and the excavation in 2004 comprises the following:

Context / object / plan / section indices	6
Context records	58
Trench sheets	4
Plans on drawing film	6
Sections on drawing film	12
Monochrome photographs	118
Colour transparencies	118
Colour print	none

6.3.2 Excavation has allowed a stratigraphic record to be made of the archaeological deposits present in this part of Stanwix, dating perhaps from the Iron Age to the nineteenth century.

6.3.3 All contexts have been allocated to the natural geology or one of four broad periods of human activity, as follows:

- natural geological material on the site;
- Phase 1: buried soil horizon and plough-marks, probably of Iron Age or early Romano-British date, including a ditch which may date to the same period;
- Phase 2: construction of the putative parade ground, undated during these excavations but broadly dated elsewhere to the second century AD;
- Phase 3: medieval and post-medieval agricultural activity, including a large probable field boundary ditch;
- Phase 4: nineteenth century activity, and the construction of the school.

6.3.5 ***Evaluation:*** the deposits have demonstrated that, although the site lay on the eastern edge of the main focus of the Roman fort at Stanwix, significant activity was taking place on the site during this period. The sequence of deposits provide a dateable stratigraphic sequence spanning from the late Iron Age to the nineteenth century.

6.3.6 The results of the excavation, when combined with the results of previous and ongoing work in Stanwix, will provide significant evidence about the development of the Iron Age and Romano-British landscape, and contribute to our understanding of Roman military activity within Carlisle.

6.4 CERAMIC FINDS *by Christine Howard-Davis*

6.4.1 ***Quantification:*** the excavation at Stanwix has produced a small assemblage of Roman to post-medieval pottery, which dates from the second to the eighteenth centuries. The pottery varied in condition, with the earlier material being small and abraded, whilst the later material was less so. In total, one fragment of Roman and one fragment of post-medieval pottery were recovered from the excavations. Two fragments of unidentified ceramic were also recovered. The Roman pottery consisted of a small, abraded fragment of low-fired oxidised gritty pottery, and was recovered from ditch fill *9* during the evaluation. It is thought to date to the second century, and to have been made locally. The other pottery fragment was recovered from plough-soil *5* during the evaluation, and was from the base of a mottled-ware vessel. It is in good condition, and dates to the late seventeenth or early eighteenth century.

6.4.2 ***Evaluation:*** the potential second century pottery was recovered from ditch *8* in evaluation Trench 2 in Area B, which has been shown stratigraphically to post-date the putative parade ground, and is therefore likely to be residual. The seventeenth to eighteenth century pottery was retrieved from the plough-soil. The poor condition and small size of the two fragments of unidentified ceramic meant that it was not possible for them to be identified or dated further.

6.4.3 ***Assessment of Assemblage:*** the total assemblage of Roman material from both the excavation and the evaluation is remarkably small, given that these revealed Roman deposits, and that the site is very close to Hadrian's Wall and the largest fort on the Wall. Because the assemblage is so small further analysis will not significantly enhance our understanding of Roman pottery or the chronology, but the very small assemblage provides evidence, by its very absence, in support of these deposits being part of a parade ground, as such a site would not be expected to produce even moderate amounts of artefacts.

6.5 CERAMIC BUILDING MATERIAL AND DAUB

6.5.1 ***Quantification***: three fragments of ceramic building material and four fragments of daub were recovered from the evaluation (OA North 2004b). Two pieces of tile were recovered, one from the top fill and one from the lower fill of ditch *8* in evaluation Trench 2 in Area B. They were similar to each other in appearance, both being made of a high-fired fabric with quartz inclusions. The tile from ditchfill *9* was the corner of an unglazed ridge tile, and showed clear signs of having been sand cast. The other fragment was smaller, and may have come from a flat roof tile. Both tiles are thought to date to the post-medieval period. A brick fragment, which was recovered from ditchfill *9*, remains undated. Four lumps of daub were also recovered from ditchfill *9*. They were predominantly oxidised and only one of them retained an original surface. This surface was reduced, and slightly higher fired than the rest, and it had preserved in it two possible wood impressions.

6.5.2 ***Evaluation***: the presence of this material will add little to any study of finds from the site. The brick/tile is most likely to be of post-medieval date, reaching the site via a number of mechanisms, amongst them midden spreading. Daub is present in small quantities, but can add little to the understanding of the site as it lacks distinctive features. The fact that it appears to have been fired might imply that it derives from the superstructure of a hearth or other high temperature context, but it must be borne in mind that daub is often fired incidentally, as a result of a building fire.

6.6 STONE FINDS

6.6.1 ***Quantification:*** a single piece of worked flint was recovered during the evaluation.

6.6.2 ***Evaluation***: the flint was recovered from ditchfill *10*. The piece measures 25mm by 25mm with a maximum thickness of 10mm; it is triangular in section and appears to be a central section broken off from a larger blade. The form of the piece and the wear as a result of use, which is clearly visible around the edges, are consistent with a flint fragment used with a strike-a-light. Dating of the artefact is problematic as flint strike-a-lights are known from prehistory through to modern times. The fragment is unlikely to be of direct relevance to the Roman phase of activity at the site, and its presence in a ditch fill might imply that it is in fact residual. Isolated flint fragments are not an unusual find, representing a 'background noise' generated by millennia of prehistoric and later flint use.

6.7 PLANT REMAINS

6.7.1 ***Introduction:*** a single environmental bulk sample was taken from pre-Roman ground surface ***2***, and a monolith was taken through disturbed natural subsoil ***1***, pre-Roman ground surface ***2***, and putative primary parade ground surface ***4***. The bulk sample was processed for this assessment, for charred and waterlogged plant remains and the monolith for pollen.

6.7.2 ***Charred and Waterlogged Plant Remains Methodology***: the sample from the pre-Roman ground surface, ***2***, which was 30 litres in size, was hand floated, the flot (material that floated to the surface) being collected on a 250 micron mesh and air dried. A representative sample from the flot was scanned with a low-powered binocular microscope and all easily identifiable plant material was recorded on a scale of 1-5, where 1 (1-5 items) is rare and 5 (more than 100 items) is abundant. The matrix components were noted and their presence recorded. An assessment was made of the potential of the sample for further environmental analysis. Plant nomenclature follows Stace (1991).

6.7.3 ***Pollen Assessment Methodology***: the monolith was cleaned, the stratigraphy was described and four sub-samples were taken from depths of 0.24-5m, 0.30-1m, 0.37-8m and 0.43-4m from the top of the sample. The four samples were prepared for pollen analysis using the standard techniques of potassium hydroxide, zinc chloride, and acetolysis (Faegri and Iversen 1989). The residues were mounted in silicone oil and examined with an Olympus BH-2 microscope using x400 magnification routinely, and x1000 for critical grains. All the samples were assessed for pollen and counting was continued until a sum of at least 100 pollen grains from land pollen types had been reached on two or more complete slides, to reduce the possible effects of differential dispersal under the coverslip (Brooks and Thomas 1967). Pollen identification was carried out using the standard keys of Faegri and Iversen (1989) and Moore *et al* (1991) and a small reference collection held at OA North. Cereal-type grains were defined using the criteria of Andersen (1979); indeterminate grains were recorded using groups based on those of Birks (1973). Pollen plant nomenclature follows Stace (1991). Charcoal particles greater than 5µm were also recorded following the procedures of Peglar (1993). The data are presented in percentages of the total land pollen and fern spores with the exception of the pollen sum and charcoal sum, which are given in total grains.

6.7.4 ***Results of charred and waterlogged plant remains (bulk sample from pre-Roman ground surface, 2) (Table 1):*** the flot from the pre-Roman ground surface, ***2*** was 50ml in volume. Charcoal fragments, greater than 2mm, were abundant and included oak (*Quercus*) and some diffuse porous taxa, eg alder/hazel/birch (*Alnus*/*Corylus*/*Betula*). Some roundwood and heather (*Calluna*) charcoal was also recorded. The only other charred plant material identified included a few fragments of hazelnut shell (*Corylus*), a rush (*Juncus*) stem base, and a single sedge (*Carex*) seed. Arable and ruderal waterlogged weed seeds were also recorded and included wild radish (*Raphanus raphinistrum*), pale persicaria (*Persicaria lapthifolium*), fumitory (*Fumaria* sp), and abundant fat hen (*Chenopodium album*). These were undoubtedly in-situ and are probably an indication of arable activity in the area.

Sample	Context	Sample vol. (litres)	Flot description	Plant remains	Potential

Sample	Context	Sample vol. (litres)	Flot description	Plant remains	Potential
1	2	30	50ml. Charcoal (3-4), including diffuse porous taxa. Plus, industrial waste, coal and some possible modern contamination including several species of weed seeds and amorphous plant remains.	Other charred material (1) *Corylus*. Waterlogged seeds (2) including Raphanus raphinistrum and Persicaria lapathifolium	None

Table 1: Assessment of charred and waterlogged plant remains from bulk sample taken from context ***2***.

6.7.5 ***Evaluation of charred and waterlogged plant remains from the context 2 bulk sample:*** although the arable weeds are suggestive of arable activity in the area there was no evidence of any economic plants such as cereals in the sample. The presence of charred sedge and rush remains and the waterlogged seeds suggest that the pre-Roman ground surface was damp prior to the first Roman use of the site. The assemblage of waterlogged seeds suggest that the environment was either that of cultivated or waste ground and this supports the archaeobotanical evidence from the nearby Carlisle Millennium Project excavations (Huckerby in prep), where a similar plant assemblage has been recorded from the pre-Roman ground surface. Pollen data from that site also suggest that the ground was damp and relatively open prior to the construction of the first Roman fort in Carlisle, although some alder carr woodland, which again indicates wetter conditions, must have been present nearby.

6.7.6 ***Monolith Results:*** the stratigraphy of the monolith (Table 2) comprised an obvious organic rich buried soil (0.12m thick) was recorded in the monolith sample, and sealed the subsoil. The soil was sealed by the deposits of the parade ground which graded from a loam to a lighter more sandy deposit with flecks of charcoal.

Depth m from top of monolith	**Description**
0-27	Pinkish-grey clayey silt, ***5***
0.27-0.32	Parade ground deposit (pale-bluish-grey clayey silt), ***4***
0.32-0.44	Pre-Roman Buried soil, ***2***
0.54-0.50	Subsoil, ***1***

Table 2: Stratigraphy of the monolith sample through the pre-Roman buried soil and parade ground deposits

6.7.7 ***Pollen***: well preserved and very abundant pollen was identified in the samples from the buried pre-Roman ground surface, ***2,*** at depths of 0.37-38m and 0.43-0.44m from the top of the monolith but pollen was absent in context ***4*** at a depth of 0.30-0.31m and was very poorly preserved at 0.24-0.25m depth.

6.7.8 ***Pre-Roman Buried Soil, 2 (Table 3):*** *Corylus avellana*-type (hazel-type), *Alnus* (alder) and Poaceae (grasses) pollen were the major pollen types recorded in the two samples from the pre Roman buried soil, ***2***. Heather was also recorded in this

context and although the percentage of pollen from herbaceous plants was similar in both samples the assemblage was more diverse in the lower one and include a possible grain of cereal-type, ribwort plantain (*Plantago lanceolata*) and a number of undifferentiated herb pollen types.

Depth		**0.24-25m (*4*)**	**0.30-0.31m (*4*)**	**0.37-0.38m (*2*)**	**0.43-0.44m (*2*)**
Context		4	4	2	2
Taxa					
Trees and shrubs		41.7		61.4	58.6
Ericales				5.2	5.7
Herbs		56.3		31.1	31.9
Fern spores		1.9		4.6	4.0
Trees and shrubs					
Alnus	Alder	0.9		22.5	25.6
Betula	Birch			3.6	1.4
Corylus avellana type	Hazel-type	19.4		31.3	28.3
Salix	Willow	0.9			
Quercus	Oak	20.3		4.6	2.9
Ulmus	Elm			0.3	0.2
Ericales					
Calluna	Heather			5.2	5.7
Herbs					
Apiaceae	Cow parsley family			0.3	
Caryophyllaceae	Pink family				0.5
Cerealia					0.2
Chenopodiaceae	Goosefoots	2.9			
Fabaceae	Pea family	1.9		0.3	
Filipendula	Meadowsweet			0.6	0.5
Plantago lanceolata	Ribwort Plantain			0.6	2.9
Plantago sp.	Plantains	5.8			0.5
Poaceae	Grasses	44.6		27.1	23.4
Potentilla	Cinquefoils				0.2
Rosaceae	Rose family				1.0
Unknown herbs				0.9	2.2
Aquatics					
	Bog moss			0.3	
Fern spores					
Polypodium	Polypoid ferns	1.9			0.2

Pteridium	Bracken				
Undifferentiated ferns					3.8
Indeterminate		103.8		32.3	21.2
Total pollen		103	No pollen present	306	367

Table 3: Assessment of pollen from contexts ***2*** and ***4***. The data are expressed as percentage of the pollen sum, which includes total land pollen and fern spores

6.7.9 ***Evaluation of the Pollen assemblage from the Monolith***: the pollen assemblage from the pre-Roman buried soil suggests that there were areas of cleared land with some stands of alder and hazel wood. Although there was evidence of plough marks cutting into the subsoil beneath the pre-Roman buried soil, the pollen is indicative of pastoral rather than an arable regime. However, a single grain of cereal-type pollen was tentatively identified in the lower part of context ***2***.

6.7.10 The interpretation of the pollen record from the soil profiles is problematic and should be assessed cautiously. The first consideration is that of bioturbation caused by earthworm burrowing and root penetration, both of which can cause the downward movement of pollen in the profile (Moore *et al* 1991). The second, which is very relevant at Stanwix, are the effects of ploughing which causes the mixing of the profile and increased aeration of the soil. This increase in aeration inhibits the preservation of the pollen grains or leads to differential preservation; for example dandelion type and lime are more readily preserved than oak pollen thereby causing a skewed dataset. In these circumstances the proportion of indeterminate grains is very high; however, in the pre-Roman buried soil, ***2***, the majority of the pollen was well preserved and would be worthy of further analysis. The apparent discrepancy between the evident ard marks cut into the pre-Roman buried soil, 2, and the relative dearth of cereal pollen, may in part reflect that the pollen sample was relatively small and that cereals typically produce relatively little pollen. Further analysis would potentially provide a more representative indication of cultivation within the pre-parade ground deposits.

6.7.11 The pre-Roman environment of Carlisle and the Hadrian's Wall area has been summarised in Huntley (1999). At Birdoswald the landscape is thought to have been densely wooded with alder (Wiltshire 1997) but at other sites the picture is similar to that recorded at Ceramics Courtyard site with some stands of alder and hazel woodland but also with some cleared ground. Balaam (1978) looked at a several pollen profiles from buried soil beneath various archaeological features associated with Hadrian's Wall but not from beneath the parade ground itself. He considered that some areas were more wooded than others and the present study area supports this. Inside the boundaries of the earliest timber fort at Carlisle, an area of which was excavated as part of the Millennium Project, pollen from the pre-Roman ground surface again suggests a partially cleared landscape with areas of both woodland and grassland (Huckerby forthcoming).

6.7.12 The soil micromorphology studies of the pre-Hadrian's Wall paleosoils at Stanwix were undertaken by Usai and she highlighted the need for more research into the soil micromorphological evidence from ancient soils (Usai 2001). The present profile, with its buried soil, could add to the existing dataset.

7. CURATION AND CONSERVATION

7.1 RECIPIENT MUSEUM

7.1.1 Tullie House Museum in Carlisle has been nominated as the ultimate place of deposition for the material archive (artefacts and ecofacts), and the paper and electronic archive.

7.2 CONSERVATION

7.2.1 There were no immediate conservation requirements in the field and no other immediate or anticipated conservation requirements.

7.3 STORAGE

7.3.1 The complete project archive, which will include records, plans, both black and white and colour photographs, and artefacts, will be prepared following the guidelines set out in *Environmental standards for the permanent storage of excavated material from archaeological sites* (UKIC 1990) and *Guidelines for the preparation of excavation archive for long term storage* (Walker 1990).

7.3.2 All finds will be packaged according to the Museum's specifications, in either acid-free cardboard boxes, or in airtight plastic boxes for unstable material.

7.4 DISCARD POLICY

7.4.1 Unprocessed environmental samples will be discarded prior to the deposition of the archive.

7.5 GENERAL CONSERVATION

7.5.1 Most of the assemblage is moderate to well-preserved and in good condition. Thus the conservation requirement is low.

7.6 PACKAGING

7.6.1 The assemblage is currently well-packed and will require no further packaging. Box lists are prepared and will be updated from the database when the identification of objects is complete.

8. STATEMENT OF POTENTIAL FOR FURTHER POST-EXCAVATION WORK

8.1 OVERALL POTENTIAL

8.1.1 The archaeological potential of the site was highlighted in an evaluation earlier in 2004 (OA North 2004b), and was subsequently targeted in the mitigation phase of the project. Two adjoining areas were examined: one in the north-east corner of the courtyard, measuring 16 x 9m (Area A), and one in the south-west corner, measuring 11 x 6m (Area B). The archaeology was sealed by concrete and overburden relating to post-medieval agricultural horizons and made ground deposits.

8.1.2 The proposed development provided a unique opportunity to study an area of land on the eastern fringes of the village of Stanwix by means of a modern open area excavation, which has the potential of providing a better understanding of the development, layout, and activities of this part of the landscape from the Iron Age through to the present day. To this end, the greatest potential for analysis lies in confirming the phasing and dating of the archaeological remains, and in studying and comparing features which can be shown to be of Roman and post-medieval date. The results of the excavation, when combined with the results of previous and ongoing archaeological work in Stanwix, have the potential to provide a significant contribution to our understanding of the development of the landscape from pre-Roman agricultural use, through the Roman military occupation of the area, to post-Roman activity.

8.2 IRON AGE

8.2.1 The fieldwork demonstrated the survival of a distinct phase of pre-Roman activity in the form of a buried ground surface, plough-marks scoring the ground surface, and a ditch. The alignment of the plough-marks fits with evidence uncovered during previous excavations: plough-marks have been extensively identified by CAU across the north-eastern half of the college grounds, and during excavations around the lower slopes of Wall Knowe, sealed by putative parade ground deposits (J Zant *pers comm*). More limited survival of plough-marks has also been identified to the north of the development area around Beech Grove and Tarraby Lane (CAU 1997a; McCarthy 1999), and during the works by Smith in the fields around Wall Knowe (Smith 1978), where they were demonstrated to pre-date the construction of Hadrian's Wall. The plough-marks and the old ground surface point to further evidence of survival of a relict agricultural landscape in this area, and are of great importance for our understanding of past agricultural practices.

8.2.2 The ditch is on a similar alignment to the rectilinear field systems identified by Smith (1978), which were broadly aligned north-east to south-west and north-west to south-east. It appears to fit known agricultural patterns within the area, which suggest that there were open fields bounded by ditches extending across the landscape to the north-east and north of the development area, prior to the construction of Hadrian's Wall. The stratigraphic position of the ditch, and the large

quantity of organic material visible within one of its fills, makes it a potentially significant archaeological feature, even if the adverse conditions of the excavation limited the dating and environmental information recovered from it. It was not clear during excavation whether plough-marks cut across this ditch; although none were identified, the excavation conditions are likely to have prevented their recognition. This ditch may have been previously identified during archaeological fieldwork by CAU in 1996 in the adjacent courtyard, as this revealed a field boundary ditch that stratigraphically pre-dated some of the plough-marks (J Zant *pers comm*); however, it is not possible to corroborate this on the basis of currently available information. Ditches of Roman or post-Roman date were also identified during excavations by CAU to the north-east of the development area in 1998 (J Zant *pers comm*). The present excavation may therefore provide further evidence of pre-Wall agricultural activity within the environs of the fort.

8.3 ROMAN PERIOD

8.3.1 The fieldwork demonstrated the presence of a phase of Roman military activity, associated with the adjacent Stanwix fort, to the south-west of the development area. This phase was characterised by an extensive deposit of redeposited clay and cobbles, which has been interpreted as being the parade ground for the fort.

8.3.2 These and previous excavations demonstrate that this putative parade ground probably originally extended from the walled garden, now the college car-park, eastwards as far as Wall Knowe, and would indicate that it was at least 150m in extent. The excavations by LUAU, and the watching brief by the Newcastle University Archaeological Practice, in 1999 (LUAU 1999), as well as the watching brief on a pipe-trench by LUAU in 2000 (LUAU 2000a), indicate that the main college buildings have been terraced into the hill-side on the western side of the parade ground, truncating the deposits, which has limited our knowledge of its western extent. However, work during the conversion of the walled garden to a carpark in 2000 (LUAU 2000) failed to identify any remains in this area, which has not been so extensively truncated by development as elsewhere. This suggests the western limit of the parade ground was somewhere between the centre of the main college building and the walled garden. The eastern extent remains unclear, although it was shown by excavations in 1994 by CAU to survive well in the walled garden to the north-east of the development area, later the site of the student accommodation block. Limited information is available on the evaluations undertaken by CAU in the field to the north-east of this excavation, running up the side of Wall Knowe; however, evaluations in 1990, 1995 and 1996 did identify similar deposits on the lower reaches of the slope (J Zant *pers comm*). The northern and southern limits are less well understood, but it is likely to have extended north as far as the line of Hadrian's Wall, and south to the Vallum, which would have provided clear physical barriers, and were contemporary with its use (CAU 1993a).

8.3.3 The nature of the parade ground deposits evidently changed across the site. A report by CAU states that 'the platform has been created by terracing into the hillside and re-depositing the quarried material down the slope' (CAU 1998a, 2), and this appears to have been borne out by these excavation results. Excavation by LUAU in 2000 on the parade ground's most westerly surviving section showed that the deposits were thinner, at 0.3m in depth (LUAU 2000a). These excavations also

found no evidence of a ground surface beneath the deposits, which points to it having been quarried away by construction activity for the parade ground. These excavations also identified two phases of construction: cobbling and metalling overlying some form of foundation deposit. The deposits were thinner in these excavations than those in the Ceramics Courtyard, as the ground in the latter development area was lower and would have been slightly boggier, and hence needed building up to provide a level surface. The dumping of these deposits in the centre, and to the east, sealed the pre-Roman ground surface. As yet there is no evidence of terracing into the hill of Wall Knowe, which may suggest that the quarrying was confined to the western side of the area, adjacent to the fort.

8.3.4 The absence of finds from such deposits is unsurprising, as previous excavations have only recovered limited dating evidence from them. In addition, the truncation of the parade ground at the Ceramics Courtyard by ploughing had removed the surface and thus reduced the likelihood of any finds, as these would very probably have been concentrated on its surface. Where such deposits have been found elsewhere, even the surface has proved to be relatively sterile, which may support the concept that the area was effectively only used for military exercises (CAU 1993a), with settlement activity occurring elsewhere, perhaps further to the south (LUAU 1999). Nevertheless, excavations by LUAU (2000a) did recover pottery, brick and tile from the surface of the parade ground, which dated the deposits to the second to third centuries AD. Also, Paul Flynn (*pers comm*) states that pottery was recovered from the parade ground deposits and ground surfaces east of the buildings. At present, however, only limited descriptions are available for all CAU fieldwork in the vicinity that was undertaken between 1990 and 1998.

8.4 POST-MEDIEVAL PERIOD

8.4.1 The post-Roman phases all indicate that the area was used as agricultural land, peripheral to the developing village of Stanwix, prior to the construction of the reformatory school in the nineteenth century. The remains encountered consist of plough-soils and garden-soils, and a probable field boundary ditch.

8.4.2 Previous work by OA North (2002a) has identified, from cartographic evidence, that the land in the environs of the reformatory school (now part of the Cumbria Institute of the Arts) was open fields until the later half of the nineteenth century and early twentieth century, when housing developments began to encroach on it with the eastward expansion of the village of Stanwix. The land occupied by the reformatory school appears to conform to the agricultural land identified on the tithe map of 1839/40 (CRO(C) DRC/8/181) as belonging to John Hodgson, and named 'Low Todhills' in the apportionment. This was presumably sold or gifted to build the reformatory school, which appears to have occupied the western half of the field, with the eastern half used as a walled garden; this was excavated in 1994 by CAU and is now used for student accommodation blocks for the college, immediately north-east of the development area. A small amount of seventeenth- to eighteenth-century pottery was recovered from the buried plough-soils in one of the evaluation trenches at the Ceramics Courtyard (*Section 6.4.2*). Excavations in other parts of the site have also identified similar plough-soils, indicating that they are common in the area. They were thick to the south-west of the main college building, where there was a watching brief in 1999 by the Newcastle University

Archaeological Practice Ltd (A Rushworth *pers comm*), and were also found to the north-west of the college buildings during excavations in 2000 by LUAU (2000a). In these excavations the plough-soils were dated to the nineteenth century. The limited information available on the CAU excavations (in 1994 within the footprint of the student accommodation block, and in 1996 in the courtyard to the north-west of the current excavations) also point to garden and plough-soil deposits being uncovered, which can be dated to between the medieval and late post-medieval periods (J Zant *pers comm*).

8.4.3 The alignment of the field boundary ditch is consistent with the landscape development outlined by Smith (1978), who suggested that the modern field systems were structured by the Wall, being at right-angles or parallel to it. This also fits with the evidence from the tithe map (DRC/8/181), which shows the field called Low Todhills in this position; the western boundary ditch of this field appears to conform to the position of the ditch uncovered in the evaluation. The ditch was shown to cut the parade ground deposits (OA North 2004b), and the artefactual evidence also points to a post-medieval date for its fill. However, this was not conclusive, as it was only based on fragments of ceramic building material. Given the lack of corroboration it may be necessary to reappraise this material and thus the information from which this ditch was phased. In addition, it was large for a field boundary ditch, and appears more in line, in its size and profile, to large Roman ditches (*cf* LUAU 2000b). Organic deposits were noted in this ditch during the evaluation, before this was disrupted by vandals (OA North 2004b). A large ditch was identified during excavations by CAU in 1994 to the north-east of the development area, apparently with a similar alignment and profile to this ditch and with organic deposits visible towards its base (Plate 2). It is possible that both these ditches could represent earlier field boundaries, perhaps relating to medieval strip fields radiating south from Tarraby Lane, which later become amalgamated into a large post-medieval enclosure.

8.4.4 The school building is still extant, and is now in use as wood- and metal-working shops, and a pottery, for the Cumbria Institute of the Arts. The construction is of nineteenth-century date, and appears on the First Edition Ordnance Survey (OS) map of 1866, but not on the tithe map of 1839/1840 (DRC/8/181), which indicates that it was constructed between these dates.

8.5 ARTEFACTUAL POTENTIAL

8.5.1 ***Roman to Post-Medieval Pottery:*** the ceramic assemblage from the site is extremely small and as such constitutes an inadequate basis for further study. The material has already been studied as part of the assessment and it is considered that further analysis will not significantly improve our understanding of the assemblage and its significance.

8.6 OTHER FINDS

8.6.1 ***Ceramic building material:*** closer analysis of the ceramic building fragments recovered from the excavations has the potential to provide further evidence on the dating of the deposits.

8.6.2 Other artefacts will contribute little to the interpretation of the site.

8.7 ENVIRONMENTAL POTENTIAL

8.7.1 ***Plant Remains:*** the monolith sample from the pre-Roman ground surface ***2*** and ***29*** should be subject to analysis of the plant remains, including pollen, as little is known about the environment of the pre-Roman landscape, and it has the potential to provide such data. Comparison with results from the fields around Wall Knowe, obtained by Smith (1978), Annetwell Street, Carlisle (Huntley 1989) and at the Carlisle Millennium excavation (Huckerby in prep), could provide a fuller picture than at present of the development of the landscape prior to militarisation in the Roman period, and also a correlation of results, which could aid the stratigraphic interpretation of the site.

8.7.2 It is recommended that the monolith sample should be submitted to a soil micromorphologist for analysis to enhance the already existing dataset of Usai (2001) from buried soil beneath the parade ground at Stanwix.

8.7.3 There is no potential for any further analysis of the bulk sample from the pre-Roman ground surface.

8.8 REGIONAL PRIORITIES

8.8.1 The following section highlights aspects of the results from the Ceramics Courtyard excavation which are considered to be of particular significance in the context of the archaeology of north-west England.

8.8.2 The excavation has demonstrated that, although this area lay towards the edge of the main focus of activity in the Roman period, at Stanwix Roman fort, significant activity was taking place on the site during the Iron Age and Roman periods. There was no structural evidence for occupation on the site, but the activity was typical of that expected given that this was an agricultural landscape during the Iron Age, and was immediately superseded by the Roman activity in the form of a putative parade ground. Two ditches were recorded, relating to agricultural activity in the Iron Age and at some point between the late Roman and post-medieval periods.

8.8.3 The fieldwork has produced a very limited assemblage of pottery, which will add a little to the collection from the area. The buried ground surface contained organic material which can provide environmental data relating to the character of the landscape in the pre-Roman period.

8.8.4 The site provides further evidence of activity in the environs of Hadrian's Wall and Stanwix Roman fort. The fort is still poorly understood, despite its importance as the largest military base along Hadrian's Wall, the station of Roman Britain's largest cavalry unit, the milliary *ala Petriana*. Only relatively recently has the full extent of the stone fort been defined (Dacre 1985) and the primary, Hadrianic, phases of occupation remain very obscure, as does evidence for an adjacent civil settlement (*vicus*). Given the limited state of knowledge regarding the extent of the

vicus, any evidence, positive or negative, will prove valuable and make a useful contribution to a nationally-defined research theme (English Heritage 1997, 49 - Historic Chronological Period Theme H1: *Military And Civilian Interaction*). Issues relating to these themes are raised in the English Heritage-sponsored Regional Research Frameworks and the forthcoming Hadrian's Wall Research Framework. The results of the excavation, particularly for the Roman period and when integrated with the results of previous and any future work in Stanwix, will contribute to some of these themes.

8.8.5 The programme of archaeological work can also contribute to several of the objectives outlined in the Hadrian's Wall World Heritage site management plan, including: the dissemination of fieldwork results; helping to define the extent of site components; developing an understanding of the archaeological or historic value of individual sites and of the World Heritage Site as a whole; by improving public understanding about the value and importance of the World Heritage Site; and finally, by monitoring the state of preservation of sub-surface archaeological deposits (English Heritage 2002).

9. UPDATED RESEARCH AIMS AND OBJECTIVES

9.1 ORIGINAL RESEARCH AIMS AND OBJECTIVES

9.1.1 The original academic aims and objectives was specified in *Section 2* of the project design for the excavation (OA North 2004c), and reiterated in *Section 4* (*above*).

9.2 UPDATED RESEARCH AIMS

9.2.1 The following general aims can be identified as achievable from an assessment of the material and artefactual records of Ceramics Courtyard, Cumbria Institute of the Arts:

- to elucidate the development and chronological history of the site;
- to integrate the results with the findings of previous excavations on the site, and with previous excavations adjacent to the site;
- to contribute to the existing archaeological knowledge of pre-Roman and Roman Stanwix, to its military, domestic, and commercial layout, and pattern of development, with an emphasis on the development of the landscape in the environs of the fort.

9.3 SPECIFIC UPDATED RESEARCH AIMS

9.3.1 This section follows the guidance of English Heritage regarding the formulation of updated research aims (English Heritage 1997, 2-3). This recommends that it is useful to treat *aims* as major themes or goals to which specific *objectives* contribute, and think of these aims and objectives as questions.

9.3.2 ***Updated Research Aim 1:*** What is the nature and date of the pre-Roman activity in this part of Stanwix?

Objective 1: What is the character and nature of pre-Roman activity on the site?

Objective 2: Can the dating of the pre-Roman activity on the site be refined?

Objective 3: Is it possible to provide appropriate study of, and comparison between, previously identified elements of this activity?

Objective 4: What is the evidence for land division within the area of the site?

Objective 5: Is it possible to elucidate our understanding of the local environment in the environs of Stanwix?

9.3.3 ***Updated Research Aim 2:*** What is the nature of Roman settlement in this part of Stanwix?

Objective 1: What is the character and nature of Roman activity on the site?

Objective 2: Is it possible to elucidate our understanding of the local environment of Stanwix by further study of environmental samples retrieved from the parade ground?

Objective 3: What was the extent and use of the parade ground?

Objective 4: Is it possible to enhance our understanding of the development of Roman land-use of the site and how it may relate to activity on adjacent sites?

9.3.4 ***Updated Research Aim 3:*** What is the nature of post-Roman activity in the area?

Objective 1: Is it possible to enhance our understanding of the development of post-Roman land-use of the site?

10. METHOD STATEMENT

10.1 INTRODUCTION

10.1.1 The following tasks are required to fulfil the revised research aims outlined in *Section 9*. This will require a programme of analysis, followed by the preparation of an appropriate text for publication.

10.2 INFORMATION AND REVIEW

10.2.1 It is proposed that regular review meetings be held to monitor the progress of the analysis, and to keep all parties informed at regular review sessions.

10.3 PHASING, STRATIGRAPHY AND SITE DESCRIPTIONS

10.3.1 The Ceramics Courtyard site will need to be put into the context of the other archaeological work that has been undertaken in the vicinity. Because of the very limited information that is available in the public domain about much of this work, it will be necessary to consult the archives of these excavations, which are available. The work done so far on some of the stratigraphic sequences, phasing, and artefacts of the sites with potential may need to be updated.

10.3.2 Limited further work is required on the artefact and ecofact assemblages, and in-house specialists should be able to commence this without undue delay. The stratigraphy and matrices will therefore be checked as soon as possible, to allow this information to be disseminated. On completion of this work, the site database may require updating and amending.

10.3.3 Further dating evidence may be available with the completion of specialist reports, but few, if any, amendments to the database are envisaged. The detailed analytical text of the stratigraphic information will then be written for the final report into which the prepared relevant plans and sections will be integrated.

10.3.4 Data will be compiled from previous excavations in the vicinity of this project, where necessary for its interpretation and contextualisation. Cartographic and documentary evidence will be consulted in order to determine the background information required to present coherent data on the historical and topographical background to the site.

10.4 ARTEFACTS

10.4.1 ***Roman pottery:*** as the assemblage of the recovered material is so small, no further analysis of the Roman ceramics will be undertaken, beyond that already produced for this assessment. A brief statement will be written for inclusion in the publication text.

10.4.2 ***Post-medieval pottery:*** as the assemblage of the recovered material is so small, no further analysis of the post-medieval ceramics will be undertaken, beyond that already produced for this assessment.

10.4.3 ***Ceramic building material and other finds:*** these will be catalogued for inclusion in the published report.

10.5 ENVIRONMENTAL EVIDENCE

10.5.1 ***Charred and waterlogged plant remains:*** the sample from the pre-Roman ground surface, was found to have little further potential for charcoal and waterlogged plant remains and will not be subject to further analysis.

10.5.2 The monolith sample, taken through pre-Roman ground surface ***2***, pre-Roman plough-marks ***3***, and primary parade deposit ***4,*** has not been assessed, but its potential is such that it should be analysed to provide information on the pre-Roman environment and land-use of the site. The monolith will be sub-sampled at selected intervals, determined by the stratigraphy, to define differences between, and within, the represented contexts. These sub-samples will be processed for pollen, charred and uncharred plant remains, and for insects. Where possible, these will be identified and quantified, comparing the results with those from other archaeological investigations in the area, and a report on the results will be compiled.

10.6 ILLUSTRATION

10.6.1 During each part of the analytical programme, a selection will be made of appropriate material for illustration. This will cover general site plans, phase plans, and sections. Experienced illustrators, using standard conventions, will compile these illustrations, either digitally for the plans, or manually as appropriate.

10.7 PUBLICATION TEXT

10.7.1 Following the completion of the full analysis of all the stratigraphic and artefactual evidence, a text suitable for publication as a contribution to a volume on the archaeology of Roman Stanwix, or as an article in the *Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society*, will be prepared. This will be in the format described in *Section 11*, and will incorporate as necessary any information from comparable excavations. This text will be submitted to internal revision, and to the specialist contributors after editing, for their comments. The edited text will be submitted to an external referee for formal academic review. Following incorporation of the referee's and other comments, the text will be copy edited, ready for publication.

11. PUBLICATION SYNOPSIS

11.1 INTRODUCTION

11.1.1 Following the analysis and interpretation of the 2004 excavation results, a text will be prepared suitable for publication as a contribution to a volume on the archaeology of Stanwix, or as a journal article in the *Transactions of the Cumberland and Westmorland Antiquarian and Archaeological and Society*.

11.2 THE STRUCTURE OF THE REPORT

11.2.1 The following section represents a likely breakdown of the proposed publication. The publication article will address the revised and updated research aims and objectives detailed in *Section 9*.

11.2.2 The text will be supported by a number of graphics, comprising line drawings and photographs to illustrate the evidence, tables to summarise data and, where appropriate, interpretative phase drawings.

11.3 OUTLINE SYNOPSIS

THE EXCAVATION BACKGROUND	
Circumstances of the project/site location	500 words
Historical Background	1000 words
Archaeological Background	1000 words
RESULTS	
Pre-Roman features	1000 words
Roman features	1000 words
Post-Medieval features	500 words
FINDS AND ENVIRONMENTAL EVIDENCE	
Ceramics	200 words
Other finds	400 words
The environmental evidence	1200 words
Radiocarbon Dating	400 words
CONCLUSIONS	1000 words
BIBLIOGRAPHY	
ACKNOWLEDGEMENTS	100 words

12. RESOURCES AND PROGRAMMING

12.1 PROJECT TEAM

12.1.1 The project team will consist mainly of OA North internal staff, although it is likely that radiocarbon assay will be conducted at the University of Kiel, Germany. The quality assurance for the project will be maintained by OA North Director Rachel Newman and the project will be managed by Jamie Quartermaine, Senior Project Manager.

12.1.2 The following Oxford Archaeology North staff will work on the project:

Elizabeth Huckerby	Senior Environmentalist (environmental data)	EH
Rachel Newman	Director OA North	RN
Adam Parsons	Illustrator	AP
Jamie Quartermaine	Senior Project Manager	JQ
Paul Clark	Project Supervisor	PC
John Zant	Project Officer	JZ
	Project Assistant	pa

12.2 MANAGEMENT

12.2.1 OA North places importance on the tight and effective management of the post-excavation stages of projects in order to deliver best value to our clients. An element of time is provided to on-going quality assurance and internal monitoring. This is part of our internal quality assurance system and ensures the prompt delivery of the agreed report on time and budget. Regular meetings are planned in order that the representatives of the client will be kept fully informed of the progress of the work.

12.2.3 Communication between the OA North team and the University of Kiel is of great importance. In order to facilitate this OA North will regularly liaise with specialists in order that information is shared and disseminated.

12.2.4 In addition to the internal team structure, quality standards will be maintained by an external referee, who will appraise the quality of the report prior to publication.

12.3 HEALTH AND SAFETY

12.3.1 All Oxford Archaeology North post-excavation work will be carried out under relevant Health and Safety Legislation, including the Health and Safety at Work Act (1974). A copy of the Oxford Archaeology Health and Safety Policy can be supplied on request. The nature of the work means that the requirements of the following legislation are particularly relevant:

Workplace (Health, Safety and Welfare) Regulations (1992) – offices and finds processing areas.

Manual Handling Operations Regulations (1992) – transport of bulk finds and samples.

Health and Safety (Display Screen Equipment) Regulations (1992) – use of computers for word-processing and database work.

COSSH (1998) - finds conservation and environmental processing/analysis.

12.4 TASK LIST

12.4.1 The project has been broken down into a series of tasks, which are set out in the Task List in *Appendix 3*.

12.5 TOTAL COSTS

12.5.1 The total costs for the publication stage are set out in the Financial Breakdown section in *Appendix 4*.

12.5.2 The University of Kiel has been asked to quote rates fixed for the duration of the contract, and therefore the costs given for radiocarbon assay will also be fixed until November 2006.

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APPENDIX 1: PROJECT DESIGN

August 2004

Oxford Archaeology North

CERAMICS COURTYARD,

CUMBRIA INSTITUTE OF ART AND DESIGN,

CARLISLE

ARCHAEOLOGICAL INVESTIGATIONS PROJECT DESIGN

Proposals

The following project design is offered in response to a request from Chris Harper of Swarbrick Associates, for an archaeological investigation at the Ceramics Courtyard, at the Cumbria Institute of Art and Design, Carlisle.

1. INTRODUCTION

1.1 CONTRACT BACKGROUND

1.1.1 Swarbrick Associates, on behalf of Cumbria Institute of Art and Design, has requested that the Oxford Archaeology North submit a project design for an archaeological excavation in advance of a redevelopment of the Ceramics Courtyard at the Cumbria Institute of Art and Design. This excavation follows on from an archaeological evaluation by Oxford Archaeology North (2004) which identified the deposits that potentially relate to a former parade ground of the adjacent Stanwix fort.

1.2 ARCHAEOLOGICAL BACKGROUND

1.2.1 ***Stanwix Fort***: excavations of the fort at Stanwix in the 1930s by Simpson, Hogg and Richmond established the positions of the south gate, and the defences on the north-eastern, south-eastern and south-western sides. Internal buildings, including a granary, were located in the playground of Stanwix Primary School (Simpson and Hogg 1935). In the 1980s, an excavation in the car-park of the Cumbria Park Hotel, immediately north of the school playground, located the stone footings of the north-western fort wall and an interval tower, together with two ditches beyond (McCarthy 1999). This demonstrated that the fort had been enlarged in the Antonine period, projecting it north of Hadrian's Wall. The other key discovery was that of a ditch underlying the interval tower, which was clearly earlier than the enlargement of the fort and was presumed to be associated with Hadrian's Wall, the foundations of which had been discovered by Simpson and Hogg in 1932-4 (Simpson and Hogg 1935; McCarthy 1999, 163).

1.2.2 In 1997, Carlisle Archaeological Unit (CAU) carried out further work in the playground of the Primary School, in advance of the construction of an extension to the school (McCarthy 1999, 164). The earliest identifiable feature consisted of a turf deposit, overlain by a substantial deposit of clay; this turf deposit was either part of a rampart or perhaps evidence of the Turf Wall that pre-dates the stone version of Hadrian's Wall to the west of the River Irthing. There were no obvious front or rear faces to this turf deposit, but it was located some metres south of the stone Hadrian's Wall discovered in the 1930s (Simpson and Hogg 1935). The walls located by Simpson and Hogg were not found, but stone and cobbled surfaces and rubble deposits were identified and were presumed to have belonged with the walls found in the 1930s. Timber buildings erected after the deposition of Huntcliff ware in the fourth century were also discovered (McCarthy 1999).

1.2.3 In 1997 and 1998, CAU dug two further trenches in a narrow passage immediately adjacent to the north-western side of the Victorian school, locating the inner ditch and the stone footings of the fort wall (McCarthy 1999). Other work in Stanwix in 1993 revealed two phases of walls and surfaces (CAU 1993).

1.2.4 ***The Fort Environs***: in 1986, CAU excavated some deeply stratified deposits, including remains of buildings, at the former Miles MacInnes Hall in Scotland Road, demonstrating the existence of extramural development beyond the west gate of the fort (McCarthy 1999).

1.2.5 Between the fort and the rising ground to the north-east centred on Wall Knowe, is an area of lower ground, where investigations by CAU, in the grounds of Cumbria Institute of Art and Design, in 1996 revealed an extensive clay platform up to 0.5m thick, which was provisionally interpreted as the parade ground for the fort (*ibid*). The clay identified as a parade ground sealed an old ground surface, with extensive areas of plough-marks, and field boundary ditches, including some discovered in 1976 by the Central Excavation Unit (Smith 1978). In 1998, excavations by CAU identified further buildings and possible industrial debris near to the entrance to Cumbria Institute of Art and Design on Brampton Road (CAU 1998). The investigation also identified a large ditch, interpreted as the *Vallum*, even though it was *c*75m to the south of the position shown on OS maps.

1.2.6 An excavation and watching brief was carried out at the Institute in 1999 by Lancaster University Archaeological Unit (1999). Excavation to the south-west of the main college building revealed only twentieth century features, and suggested that modern disturbance had been heavy due to the building being terraced into the slope. However, a watching brief at the main gate revealed a dump containing Roman pottery, the butt-ends of two possible beam slots, a larger linear feature, a pit, a posthole, and a possible kiln. The evidence suggests Roman occupation close to Brampton Road, probably terminating by the late third century AD. No evidence for the *Vallum* was present in this area (LUAU 1999) despite its proximity to the feature identified by CAU (1998).

1.2.7 A watching brief was undertaken at the same time by Newcastle University's Archaeological Practice on extensions on the south-east side of the main college building. The excavations failed to uncover any archaeology to the depth of the pile caps, except for a thick plough-soil and hillwash. A much deeper excavation was undertaken for the construction of a lift-shaft, however, which revealed an extensive area of cobbling similar to that encountered by the CAU evaluations (1993) to the north of the College building. Large postholes and slots were also discovered, apparently contemporary with the cobbled area; these were cut by ditches and overlain by burnt deposits. The deposits appeared to concentrate in the east end of the trench, with the west end showing truncation from the point at which the college building has been terraced into the slope (A Rushworth *pers comm*).

1.2.8 An evaluation and watching brief were carried out in June 2000 by LUAU (2000a) to the north of the main college building. The watching brief on a pipe trench revealed a deposit of clay and cobbles running approximately two thirds the length of the trench. The evaluation was between the pipe trench and the main college building to the south, and revealed mainly nineteenth and twentieth century features and soil horizons. However, excavation in the centre of the trench revealed the same deposit of clay and cobbles as identified in the watching brief. This deposit consisted of two phases of clay / cobble surfaces abutting a metalled surface at the western exposed end, Roman tile, brick and pottery were embedded in both clay surfaces. The brief provided only for the recording of features that would be affected by the proposed development, so little examination or interpretation of the deposit was possible. A sondage, however, revealed the depth of the deposit to be *c*0.3m. These clay and cobble surfaces correspond to those identified by the 1996 excavations by CAU (McCarthy 1999), which were then interpreted as a parade ground (LUAU 2000a).

1.2.9 In June 2004 OA North undertake an archaeological evaluation at the Ceramics Courtyard (NY 40370 57290). Two trenches were excavated which showed that archaeological features were present on the site sealed below 1.2-1.3m of post-medieval overburden. Sealed beneath these deposits was a ditch aligned north-west to south-east, which is almost at right angles to Hadrian's Wall and the *Vallum*. The full profile of the ditch was not seen but it certainly exceeds 2m in width and 1m in depth with steeply sloping sides. On the basis of the finds in the fill the ditch would appear to date to the post-medieval period. Cut by the ditch in Trench 2 was a deposit of orange sandy silt with a high proportion of stone inclusions, which may well relate to a putative parade ground seen in the 1996 excavations by CAU on the site.

1.3 OXFORD ARCHAEOLOGY

1.3.1 Oxford Archaeology has over 30 years of experience in professional archaeology, and can provide a professional and cost-effective service. We are the largest employer of archaeologists in the country (we currently have more than 200 members of staff) and can thus deploy considerable resources with extensive experience to deal with any archaeological obligations you or your clients may have. We have offices in Lancaster and Oxford, trading as Oxford Archaeology North (OA North), and Oxford Archaeology (OA) respectively, enabling us to provide a truly nationwide service. OA is an Institute of Field Archaeologists Registered Organisation (No 17), and is thus bound by the IFA's Code of Conduct and required to apply the IFA's quality standards.

1.3.2 Between our two offices our company has unrivalled experience of working on sites of all periods, and is recognised as one of the leading archaeological units in the country with regard to dealing with large-scale archaeological projects. OA North has considerable experience of the assessment, evaluation and excavation of sites of all periods, and has particular experience of archaeology in the North West having undertaken in recent years excavation, survey, building recording and post-excavation projects in both urban and rural environments. Watching briefs, evaluations and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables. In particular OA North has been involved in the archaeological evaluation and investigations at the Cumbria Institute of the Arts, since 2000, and has considerable experience of working on Hadrianic Wall sites.

2. AIMS AND OBJECTIVES

2.1 AIMS

2.1.1 The principal aim is to provide a mitigative record of the archaeological features and stratigraphy that will be disturbed in the course of the proposed development. The project will aim to record any identified archaeological remains or deposits within the excavation areas and to recover finds and environmental material where present. A stratigraphic record of features and deposits will be made

with a view to furthering our understanding of the Stanwix fort, the associated wall fortifications and also the pre-Roman activity on the site (see below).

2.1.2 An archive for the project to the specification provided in *Appendices 3 and 6* of English Heritage's *Management of Archaeological Projects, 2nd edition* (MAP2), prepared during the excavation programme, and supplemented as necessary during any phase of analysis, will be prepared to professional standards for deposition in an appropriate repository.

2.2 RESEARCH OBJECTIVES

2.2.1 Set out below are the questions which the archaeological deposits within the development area are considered most likely to have significant potential to address.

2.2.2 Stanwix Roman fort is still poorly understood, despite its importance as the largest military base along Hadrian's Wall - the station of the most powerful unit, the military *ala Petriana*. Only relatively recently has the full extent of the stone fort been defined (Dacre 1985) and the primary, Hadrianic, phases of occupation remain very obscure, as does evidence for an adjacent civil settlement (*vicus*).

2.2.3 The mitigation excavation will provide an important opportunity to test the interpretations proposed on the basis of the evaluation work and thereby address a series of questions regarding the Roman site of Stanwix:

2.2.4 ***Can the presence of a parade ground to the north and east of the fort be confirmed and its full extent determined?*** the clay platform revealed in the earlier evaluation and mitigation trenches (LUAU 2000a; CAU 1998 and OA North 2004) was provisionally interpreted as an extensive parade ground covering a total of three and perhaps originally nearly four hectares, including the area of the main college campus buildings and the former walled garden to the east. Such training/parading areas have been proposed at other forts on the northern frontier, notably South Shields and Hardknott. The presence of metalled surfaces and cobbles in the trenches north and south of the college may imply that the western part of the putative parade ground is more complex, and the uncovering of a larger area will enable this to be studied.

2.2.5 ***How extensive was the civil settlement associated with Stanwix Roman fort?:*** the location, extent and chronology of the *vicus* have yet to be conclusively determined. Possible traces were recorded to the south-west of the fort in the foundation trenches for the flats built on the Miles Macinnes Hall site (Daniels 1989, 32), although the antiquarian sources, Horsley and the Bishop of Cloyne, suggest that the main focus of the settlement lay south-east of the fort on the slope down to the river (collated in Salway 1965, 98). It has also been postulated that the size of the *vicus* was limited by the proximity of the town of Carlisle which could have performed many of the functions of a vicus for the garrison (Salway 1965, 100).

2.2.6 Given the limited state of knowledge regarding the extent of the *vicus* any evidence - positive or negative - will prove valuable and make a useful contribution to a nationally-defined research theme (EH 1997, 49 - Historic chronological period theme H1: *Military and civilian interaction*).

2.2.7 ***What was the nature of late Iron Age exploitation of this area and what was the impact of the building of Hadrian's Wall?:*** the identification of a possible buried ground surface in the earlier evaluation and the Tarraby Lane excavations revealed plough-marks and field-boundary ditches suggests the development areas may contain significant evidence of late Iron Age or early Roman agricultural activity, with further potential to inform our understanding of the impact on the locality of the building of Hadrian's Wall. These may be studied by means of a suite of environmental analyses, notably by palaeoenvironmental analysis of buried soils.

3. METHOD STATEMENT

3.1 MITIGATIVE EXCAVATION

3.1.1 The proposed new build will be constructed on piles, with ground beams linking the piles; these will be arranged adjacent to the buildings that edge the courtyard. While the piles and ground beams can be investigated by localised trenches, it is recognised that narrow trenches will not provide an adequate overview for the site as a whole. An open area excavation can not extend up to the walls of the adjacent buildings because of the risk of destabilising the extant structures. As a consequence the English Heritage inspector is requiring that an open area excavation be undertaken within the central

area of the courtyard, but which will be divided by the line of a diagonal service through the centre of the courtyard. This will provide for two triangular areas (16m x 9m and 11m x 6m) and will be 106sqm in total.

3.1.2 The excavation will use a variety of techniques from mechanical excavation to delicate hand excavation, to suit differing conditions. Following machine removal of the overburden, the core site will be subject to manual cleaning over the whole excavation area, since extant deposits may be fragile and machinery in their vicinity could disturb relatively delicate layers and relationships. The aim of this work will be to explore all features stratigraphically and to produce a clear plan of the site. Despite the potential significance of the site it will not be necessary to excavate every feature in its entirety, and a rigorous sampling strategy will be applied once the full potential of the site has been established. To maximise the available resources, all features will be cleaned and a sample will be excavated, but they will not necessarily be excavated to their full extent if sufficient information can otherwise be retrieved to establish their date, function and stratified relationship. This will result in the excavation of a minimum 50% of discrete features and 20% of linear features.

3.2.3 Prior to any ground disturbance the limits of the excavation area will be hoarded or fenced to allow safe working without endangering members of the public. The topsoil and any obvious overburden deposits will be removed mechanically under archaeological supervision. Machine stripping of the excavation area will be undertaken using a 360^{o} excavator fitted with a 1.5m - 2m toothless ditching bucket. The work will be supervised by a suitably experienced archaeologist. Spoil will be removed from site, but the costs for this are not provided for in the present proposal. Machine excavation will then stop at the first significant archaeological deposit. Thereafter, structural remains and features will be cleaned manually to define their extent, nature, form and, where possible, date; all deposits and features will be subject to stratigraphic manual excavation. The deposits encountered during the excavations will be sampled according to the appropriate professional standards to enable environmental analysis if required.

3.2.6 For health and safety reasons the depth of the mechanical clearance will be limited to a maximum depth of *c*1.25m, after which the sides will be stepped in. It is anticipated that natural subsoils will be reached at depths of as much as 2m and therefore there will need to be sufficient step to enable this excavation.

3.3 RECORDING METHODOLOGY

3.3.1 All elements of the work will be recorded in accordance with current English Heritage guidelines (*MAP2*) and the best practices formulated by English Heritage's Centre for Archaeology (CfA).

3.3.2 ***Survey Control:*** a series of survey control points will be established on site by means of closed traverse using a total station.

3.3.3 ***Planning:*** archaeological planning will be undertaken using a data-logging total station linked to a Penmap computer, utilising AutoCad version R14. All planning data will be digitally incorporated into a CAD system in the course of the evaluation and will be superimposed with the base survey provided by Swarbrick Associates. This process will generate scaled plans which will also be subject to manual survey enhancement. The drawings will be generated at an accuracy appropriate for 1:20 scale but can be output at any scale required. This digital process will go hand-in-hand with the manual enhancement of digital plans. Three-dimensional recording of selected finds' classes will be undertaken using a total station, where appropriate. Section drawings will for the most part be generated manually.

3.3.4 ***Context Recording:*** archaeological stratigraphy will be recorded using *pro-forma* sheets which are in accordance with those used by English Heritage. Similar object record and photographic record *pro-formas* will be used. All written records of survey data, contexts, artefacts and ecofacts will be cross-referenced from *pro-forma* record sheets using sequential numbering.

3.3.5 The contextual details will be incorporated into a Harris matrix essentially hand-drawn on site for checking purposes but which is normally generated using specially designed Arched version 2 matrix generation software. In accordance with standard practices the contextual data will be incorporated into the Harris Matrix during the course of the fieldwork.

3.3.6 A full and detailed photographic record of individual contexts will be maintained and similarly general views will be generated. Photography will be undertaken using 35mm cameras on archivably stable black and white print film as well as colour transparency. Digital photography will also be

undertaken throughout the course of the fieldwork for presentation purposes. Photographic records will be maintained on special photographic *pro-forma* sheets.

3.4 FINDS

3.4.1 Finds recovery and sampling programmes will be in accordance with current best practice (following IFA and other specialist guidelines) and subject to appropriate expert advice. OA North employs a wide range of in-house finds specialists and palaeoecologists, providing considerable expertise in the investigation, excavation, and finds management of sites of all periods and types, who are readily available for consultation and site visits.

3.4.2 In addition OA North maintains close contact with Ancient Monuments Laboratory Conservators at the Universities of Durham and York, from whom advice and emergency access to conservation facilities is readily available. Finds handling, management and storage during and after fieldwork will follow professional guidelines (IFA/UKIC).

3.4.3 Neither artefacts nor ecofacts will be collected systematically during the mechanical excavation of overburden unless significant deposits, for example pottery or clay tobacco pipe waster dumps, 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; ensuing study of these artefacts individually will not, however, 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 only if of significance to the dating and/or interpretation of the site or specific features. It is not anticipated that ecofacts (eg unmodified animal bone) will be collected during this procedure.

3.4.4 Subsequent to the removal of overburden artefacts and ecofacts will be collected and handled as per best practice. All material will be collected and identified by stratigraphic unit. Hand collection by stratigraphic unit will be the principal method of collection. The location of individual findspots for 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 in 3-D.

3.4.5 Finds will be processed and administered at regular intervals (on a daily basis) on site. All finds will be treated in accordance with OA North 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 a case guidance and/or expertise will be sought from a suitably qualified conservator.

3.4.6 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.

3.4.7 Where possible, spot dates will be obtained on pottery and other finds recovered from the site at regular intervals during the project, in order to inform on-going excavation strategies. In the case of Roman and medieval pottery, the artefacts will be examined, and in the first instance commented upon, by OA North in-house specialists and where further refinement is appropriate local expertise will be employed, alongside that of the OA North in-house specialists. Where possible the data generated by this exercise will be incorporated into the proposed GIS at the earliest opportunity.

3.4.8 Animal bone will be recovered from stratified deposits only. It will be recovered by hand, with no programme of sieving unless specific and unusual circumstances warrant increased levels of collection.

3.4.9 The recovery of human remains is not anticipated, but if encountered they will, if possible, be left *in situ* covered and protected. If removal is necessary, then the relevant Home Office permission will be sought, and the removal of such remains will be carried out with due care and sensitivity as required by the *Burials Act 1857*.

3.5 ENVIRONMENTAL SAMPLING

3.5.1 A programme of palaeoenvironmental sampling will be undertaken at the site under the guidance of Sue Stallibrass (the North West regional advisor for English Heritage, based in Liverpool University).

3.5.2 In the event of encountering stratified contexts with the potential for preserved ecofacts, a programme of environmental sampling will be undertaken. The environmental sampling and assessment will follow the English Heritage guidelines for environmental archaeology 2002 and those of Oxford Archaeology 2000. Bulk samples of 30 litres volume (to be sub-sampled at a later stage) will also be collected and will be assessed for waterlogged and charred plant remains and other environmental indicators as appropriate. It may also be appropriate to take a series of monolith samples, which would be assessed for pollen. It is proposed that flotation be undertaken off site following completion of the fieldwork.

3.6 OTHER MATTERS: WELFARE AND FACILITIES

3.6.1 Access to the site will be arranged via the client/main contractor.

3.6.2 Ken Hope will erect Harris fencing around the site to restrict access from the general public. It is assumed that the developer will provide on-site accommodation and toilet facilities. Ken Hope will provide the plant and will ensure that all excavated material is removed from the site.

3.6.3 The client is asked to provide OA North with information relating to the position of live services on the site.

3.7 HEALTH AND SAFETY

3.7.1 A risk assessment will be prepared by OA North in advance of all stages of field work. 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 (3rd Edition, 1997). OA North will liase with the client/main contractor to ensure all health and safety regulations are met.

3.7.2 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.

3.7.3 Normal OA North working hours are between 9.00 am and 5.00 pm, Monday to Friday, though adjustments to hours may be made to maximise daylight working time in winter and to meet travel requirements. It is not normal practice for OA North staff to be asked to work weekends or bank holidays and should the client require such time to be worked during the course of a project a contract variation to cover additional costs will be necessary.

3.8 POST-EXCAVATION ASSESSMENT

3.8.1 ***Archive:*** the results of the fieldwork will form the basis of a full archive to professional standards, in accordance with current English Heritage guidelines (*The Management of Archaeological Projects, 2nd edition, 1991*) and the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC 1990). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The deposition of a properly ordered and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the IFA in that organisation's code of conduct.

3.8.2 The paper and finds archive for the archaeological work undertaken at the site will be deposited with Tullie House, in accordance with their guidelines, as this is the nearest museum which meets Museums' and Galleries' Commission criteria for the long term storage of archaeological material (MGC 1992). This archive can be provided in the English Heritage Centre for Archaeology format, both as a printed document and on computer disks as ASCii files (as appropriate). The archive will be deposited with the Tullie House Museum within six months of the completion of the overall project. Except for items subject to the Treasure Act, all artefacts found during the course of the project will be donated to the receiving museum.

3.8.2 ***Assessment:*** OA North accords with best practice for the analysis of the excavation results in accordance with the guidelines of MAP2. This would involve a brief assessment of the dataset generated by the excavation, followed by a review of the excavation archive to establish the potential for further analysis. This assessment will take place in close consultation with the client and the format for the final report will also be agreed at this stage of the work. The Harris Matrix, largely produced during the excavation programme will be completed and checked as part of the assessment. The assessment will involve the compilation of a brief archive report, detailing the stratigraphic history of the site, and outlining the significance of the structural, artefactual and environmental evidence.

3.8.3 ***Analysis:*** an appropriate programme of analysis should then be undertaken to prepare a research archive, as detailed in Appendix 6 of *Management of Archaeological Projects.* It is not possible to provide a finite quotation of costs for the final analysis and reporting until the results of the assessment are known, but a best estimate of costs has been submitted on the basis of the results of the work to date. A provisional programme of post-excavation analysis is proposed, on the basis of the anticipated recovery of material from the excavation; however, the extent of the programme can only be reliably assessed on completion of the fieldwork. The proposed programme anticipates analysis of the artefactual evidence and of the site stratigraphy leading to the production of a final report.

3.8.3 ***Client Report:*** following the analysis of the excavation results, a report will be written which will present, summarise, and interpret the results of the programme and will incorporate specialist reports on artefact assemblages and environmental reports. It will include an index of archaeological features identified in the course of the project, with an assessment of the site's development. It will incorporate appropriate illustrations, including copies of the site plans and section drawings all reduced to an appropriate scale. The report will consist of a statement of acknowledgements, lists of contents, executive summary, introduction summarising the brief and project design and any agreed departures from them, methodology, interpretative account of the site and associated structures, gazetteer of features, a complete bibliography of sources from which data has been derived, and a list of further sources identified during the programme of work.

3.8.4 ***Publication:*** The results of the programme of works detailed above should be placed in the public domain by a number of routes, firstly by publication and secondly by deposition of the archive in an appropriate museum. A synthesis of the work should also be placed in Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society. The cost implication of this element of the programme will be subject to the assessment and review.

4. STAFFING PROPOSALS

4.1 The project will be under the overall charge of **Jamie Quartermaine**, BA, Surv Dip, MIFA (OA North Senior Project Manager) to whom all correspondence should be addressed. The fieldwork will be undertaken by **Matt Town** BA, (OA North Project Officer).

4.2 The processing and analysis of any palaeoenvironmental samples will be carried out by **Elizabeth Huckerby** BA, MSc (OA North Project Officer), who has extensive experience of the palaeoecology of the North West, having been one of the principal palaeoenvironmentalists in the English Heritage-funded North West Wetlands Survey. Assessment of any finds from the excavation will be undertaken by OA North's in-house finds specialist **Chris Howard-Davis**, BA, MIFA.

5. MONITORING

5.1 Monitoring of the project will be undertaken by the Jeremy Parsons of Cumbria County Council and Mike Collins of English Heritage.

5.2 Access to the site for monitoring purposes will be afforded to the English Heritage Inspector at all times. Resources have been allocated for at least one site meeting between all interested parties to review the archaeological work.

APPENDIX 2: CONTEXT LIST

Context Number	AREA	Description	Depth
1	A	Disturbed natural subsoil	0.15m
2	A	Pre-Roman ground surface	0.12m
3	A	Plough or ard-marks	0.10m
4	A	Primary parade ground deposit	0.40m
5	A	Secondary parade ground deposit	0.40m
6	A	Evaluation trench/sondage	1.70m
7	A	Backfill of ***6***	1.70m
8	A	Natural subsoil	-
9	A	Paving slabs	0.06m
10	A	Cobbles	0.10m
11	A	Make-up layer	0.25m
12	A	Redeposited clay make-up layer	0.25m
13	A	Buried top- or garden-soil	0.45m
14	A	Relict plough-soil	0.45m
15	A	Parade ground (group no)	0.60m
16	A	Backfill of ***17***	-
17	A	Construction cut for ***18***	-
18	A	Post-medieval waste-water tank	1.20m+
19	A	Redeposited clay make-up layer	0.10m
20	A	Make-up layer	0.06m
21	A	Make-up layer	0.05m
22	A	Backfill of ***23***	0.29m
23	A	Drain cut	0.29m
24	A	Water-pipe cut	0.30m
25	A	Backfill of ***26***	0.20m
26	A	Drain cut	0.20m
27	B	Natural subsoil	-
28	B	Disturbed natural subsoil	0.10m
29	B	Pre-Roman ground surface	0.08m
30	B	Ditch cut	1.40m+
31	B	Fill of ***30***	-
32	B	Fill of ***30***	0.40m
33	B	Fill of ***30***	0.05m
34	B	Fill of ***30***	0.33m
35	B	Fill of ***30***	0.25m
36	B	Fill of ***30***	0.40m
37	B	Cobbles	0.15m
38	B	Make-up layer	0.15m
39	B	Buried top- or garden-soil	0.16m
40	B	Relict plough-soil	0.40m
41	B	Parade ground	0.34m
42	B	Probable Post-Medieval boundary ditch aligned north-west/south-east, equivalent to evaluation ditch *8*	Unexcavated

APPENDIX 3: TASK LIST

Task No	Task	Days	Resources
Task 1:	Project Set up	1	JQ
	Contact / Liaise with Project Team	0.5	JQ/ JZ / PC
Task 2:	Upgrading of context database	1.5	pa
Task 3:	Process samples for radiocarbon assay	1.5	EH
Task 4:	Refine Phasing / Edit Matrix	2	PC
Task 5:	Production of Site Narrative	5	PC
Task 6:	Documentary Research	3	PC
Task 7:	Stratigraphic Illustrations	2	Illust
Task 8:	Palaeoenvironmental Analysis	7	EH
Task 9:	Publication Illustrations	2	AP
Task 10:	Publication Compilation	5	PC / JZ
Task 11:	Edit Publication Text	1	JQ
Task 12:	Quality Assessment of Publication	1	RMN
Task 13:	Incorporation of Edits	1	JQ
Task 14:	Prepare Archive for Deposition	1	pa

APPENDIX 4: FINANCIAL BREAKDOWN

CERAMICS COURTYARD, CUMBRIA INSTITUTE OF THE ARTS, CARLISLE: POST-EXCAVATION COSTINGS

The total cost quoted for the post-excavation is a fixed price which is inclusive of all management, overheads, and other disbursement costs (travel and expenses), to undertake the programme of work as defined in this project assessment. Any other variations from this programme of work at the client's direction will require recosting. All staff costs are inclusive of holiday entitlement, as well as NI and Superannuation.

- Commercial in Confidence
- All costs are exclusive of VAT
- Salaries and wages inclusive of NI, Superannuation and overheads
- Project duration beyond 31-03-2006 will require adjustment for inflation
- Inclusive of radiocarbon assay

The costs for publication assume that the results will be published in the Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society.

Total Costs £ 6075.00

FIGURES

PLATES

Plate 1: CAU excavations 1994, facing north-east, showing ditch in background, parade ground deposits in section, pre-Roman ground surface and plough-marks

Plate 2: CAU excavations 1994, facing north-west, showing section across the ditch cutting parade ground deposits, with pre-Roman ground surface in the sides of the ditch

Plate 3: General shot of Area A facing north, showing the sondage through parade ground deposits ***4*** and ***5***, and pre-Roman ground surface ***2*** at base of trench

Plate 4: Detailed shot of the pre-Roman ground surface, ***2***, showing plough-marks, ***3***, filled by parade ground deposit, ***4***, facing north-east

Plate 5: Detailed shot of plough-marks, ***3,*** filled by parade ground deposit, ***4***, facing north

Plate 6: Detailed shot of plough-marks, ***3***, on removal of pre-Roman ground surface, ***2***, cutting disturbed natural subsoil, ***1***, facing north-east

Plate 7: Detailed shot of plough-marks, ***3***, on removal of the pre-Roman ground surface, ***2***, cutting disturbed natural subsoil, ***1***, facing east

Plate 8: Detail of south-facing section showing plough-mark, ***3***

Plate 9: Record shot of partially excavated ditch, ***30***, facing north-west

Plate 10: Post-medieval waste-water tank ***18***, facing north

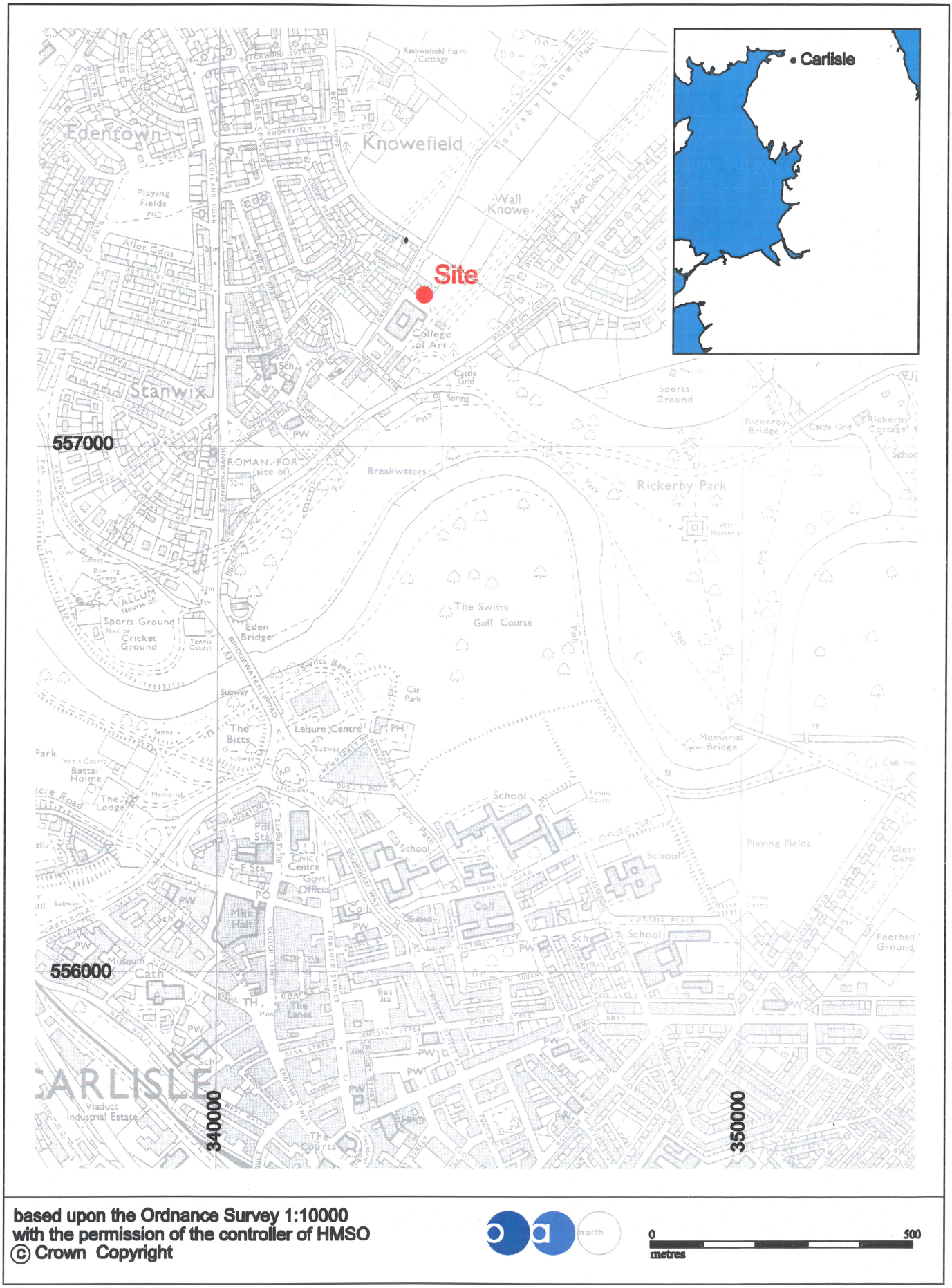


Figure 1: Location map

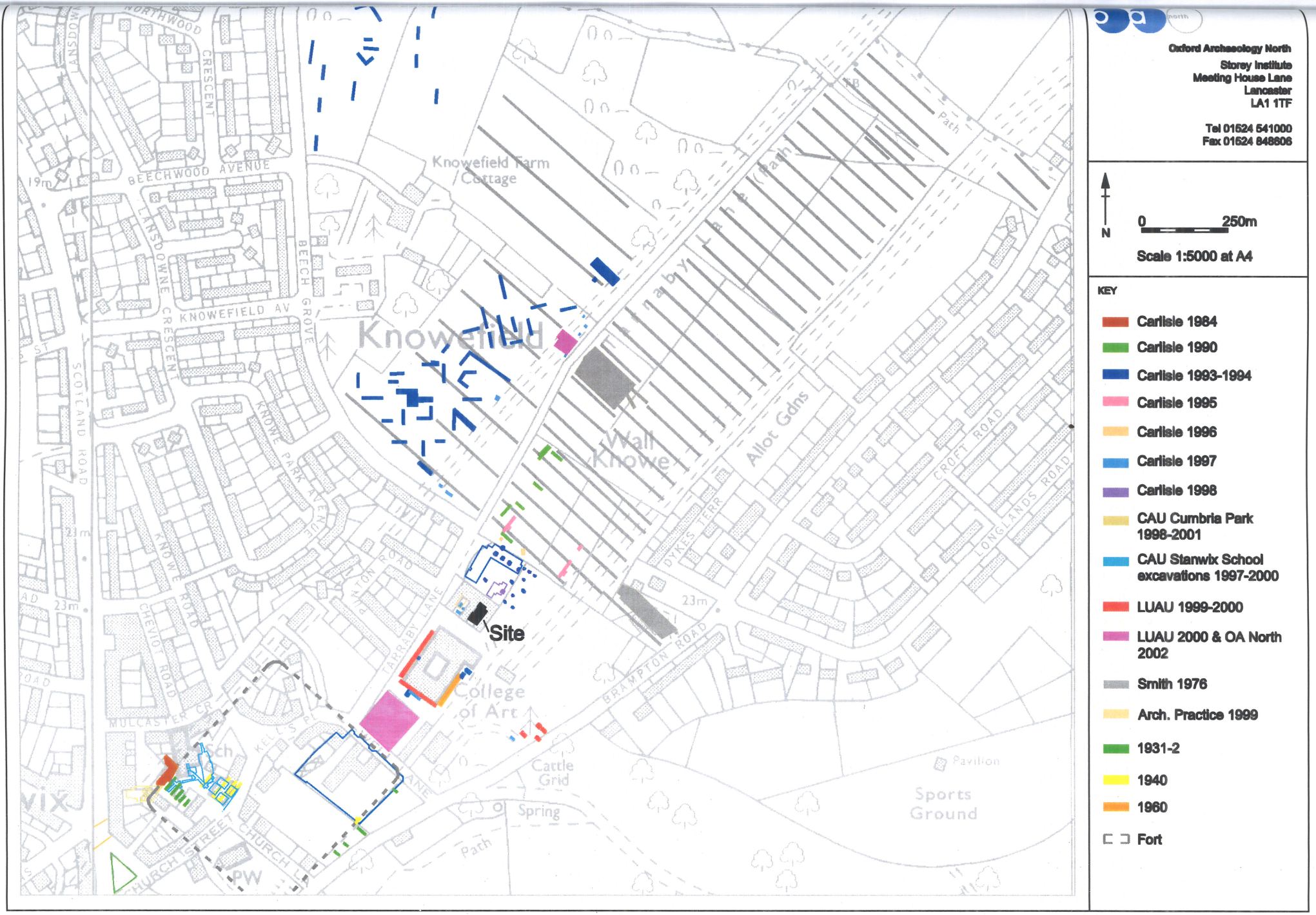


Figure 2: Location of the site in relation to previous interventions

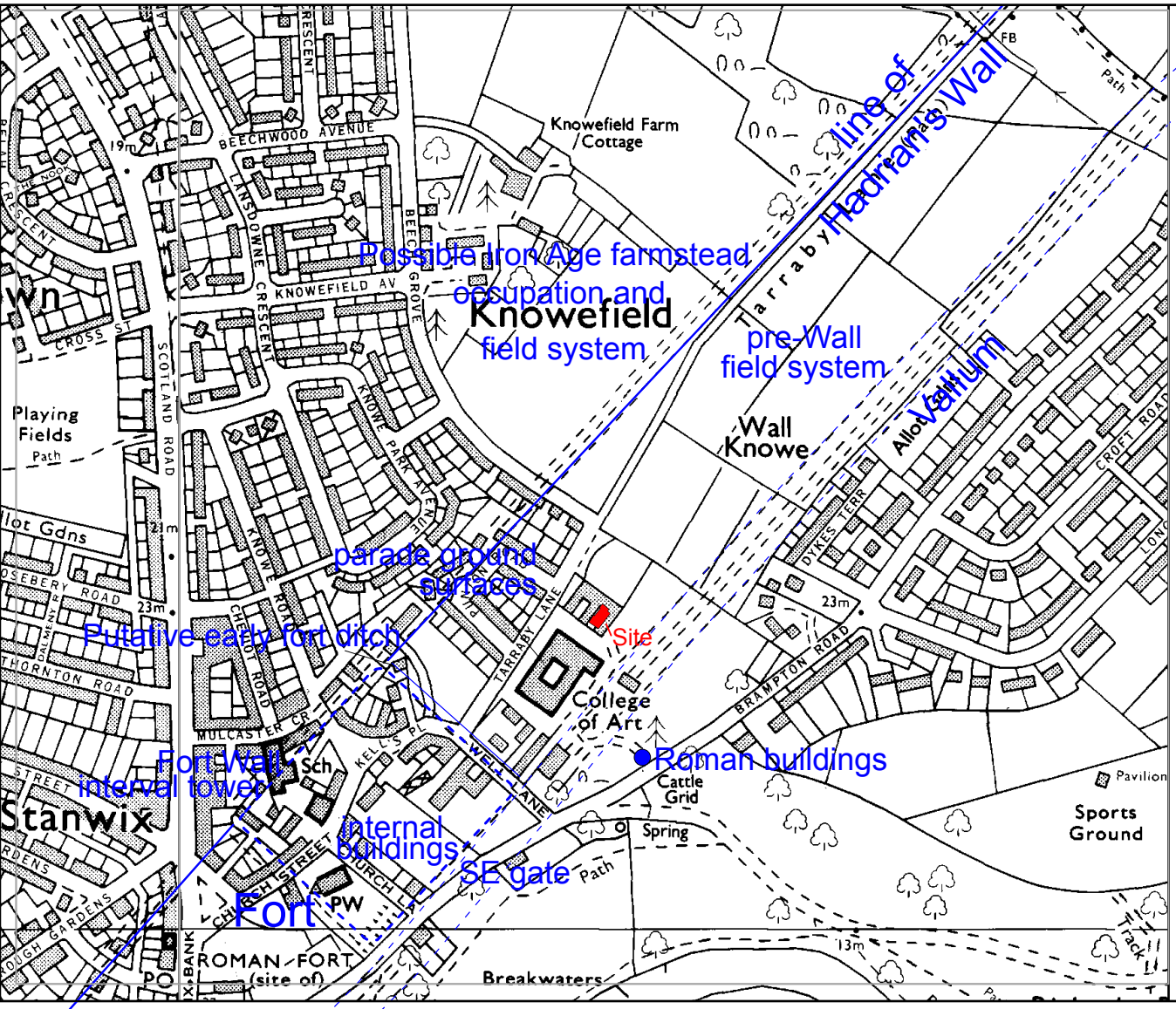


Figure 3: A representation of known Roman activity in Stanwix

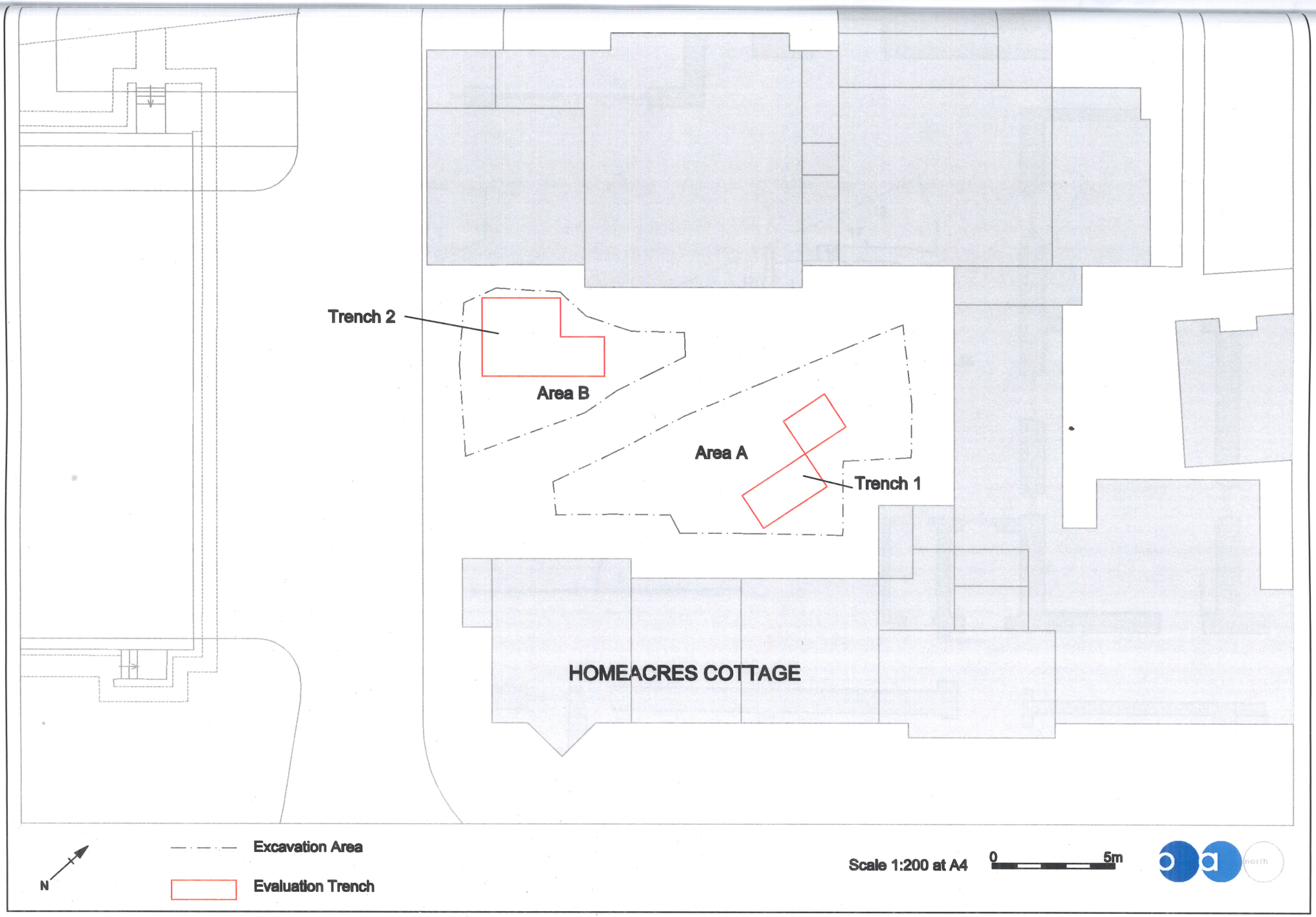


Figure 4: Location of Excavation Areas

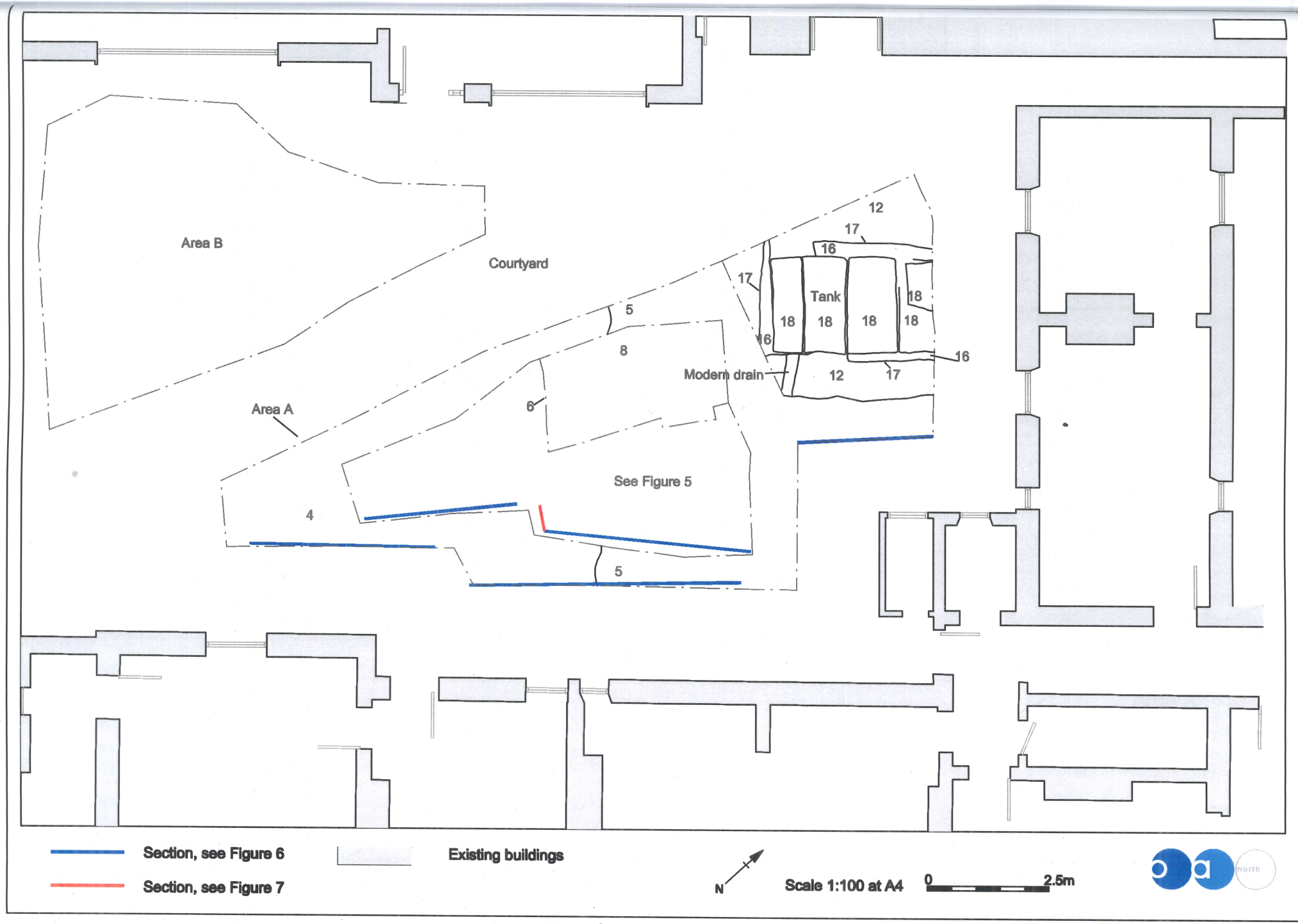


Figure 4: Plan of Area A

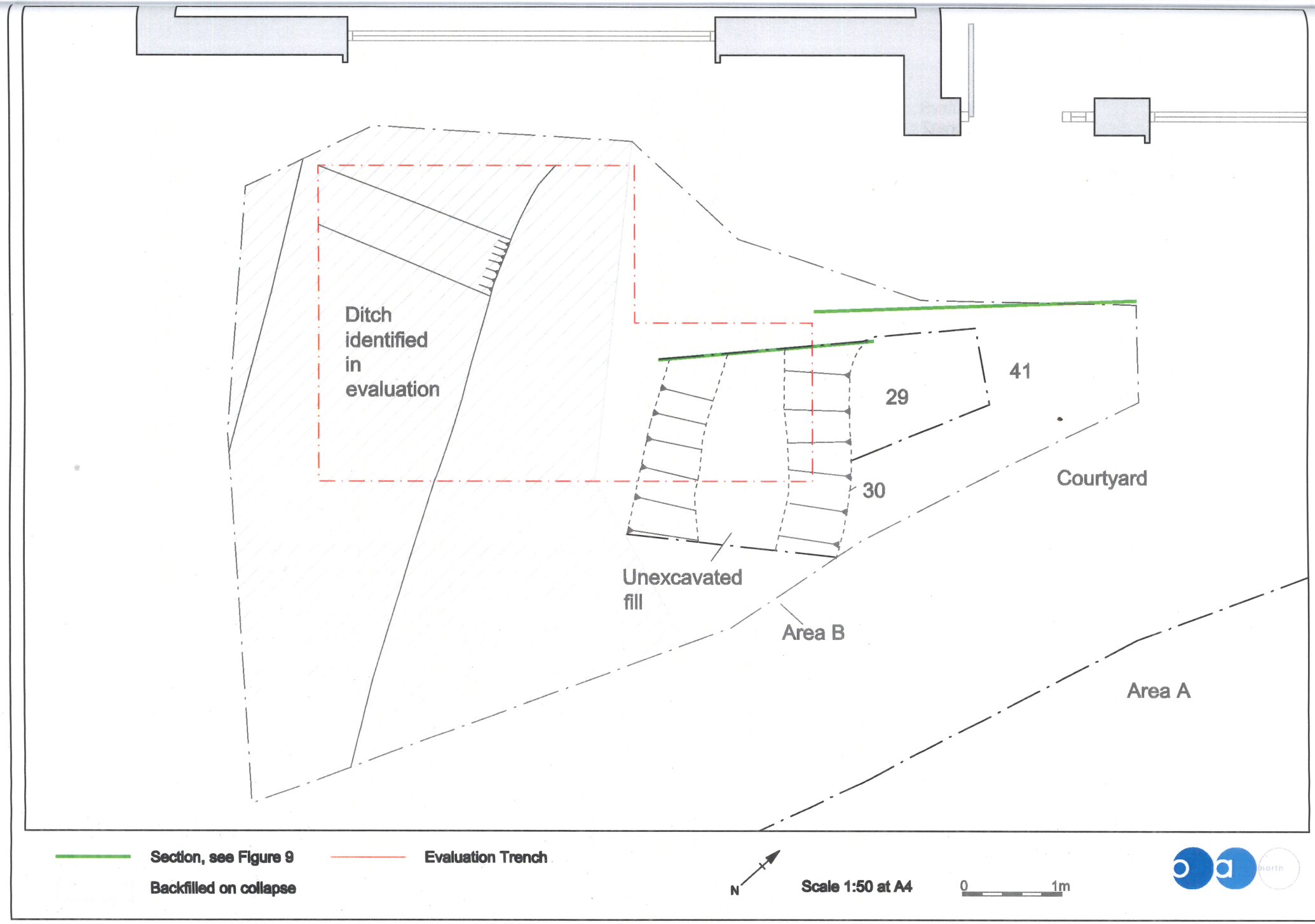


Figure 6: Plan of Area B

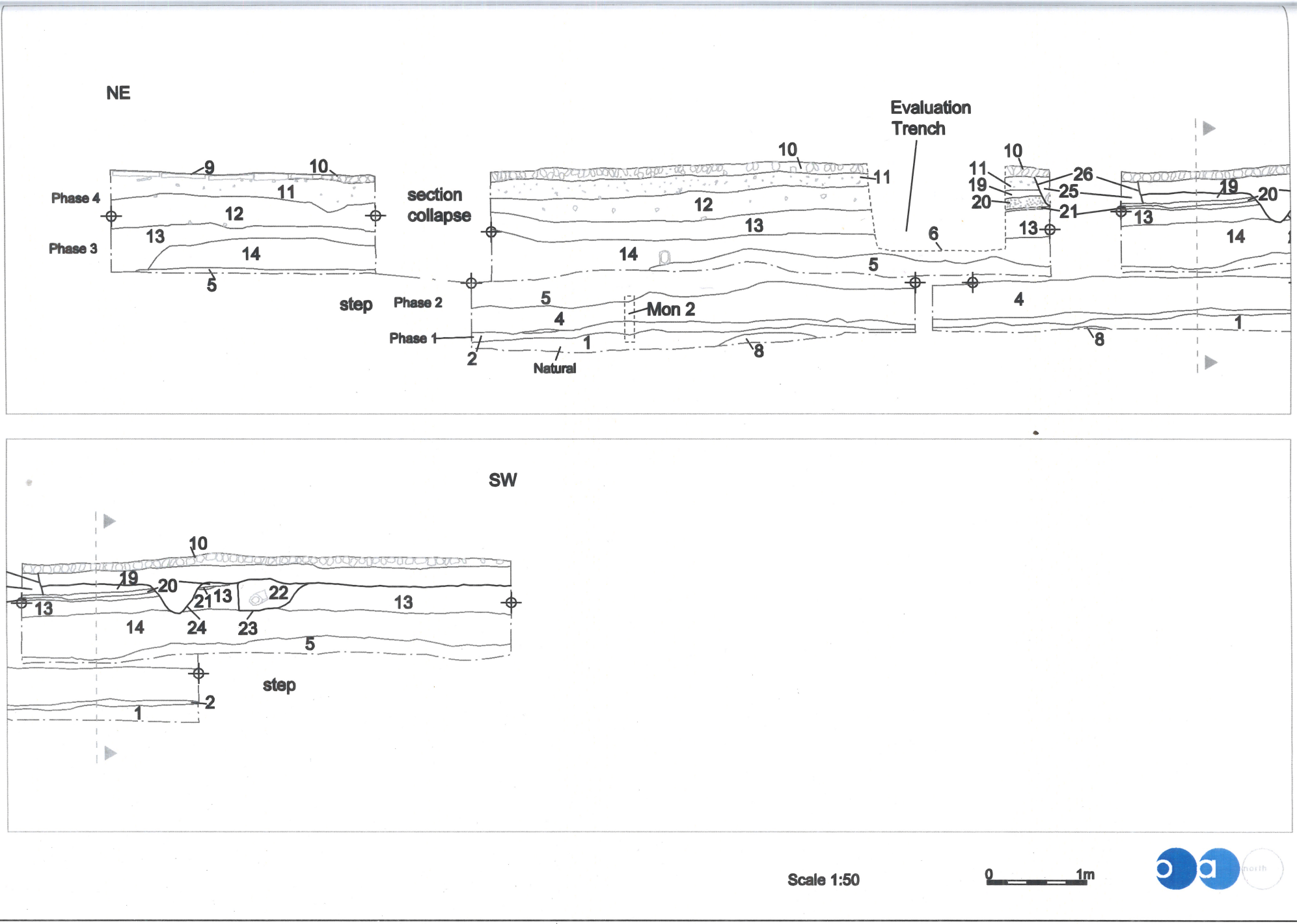
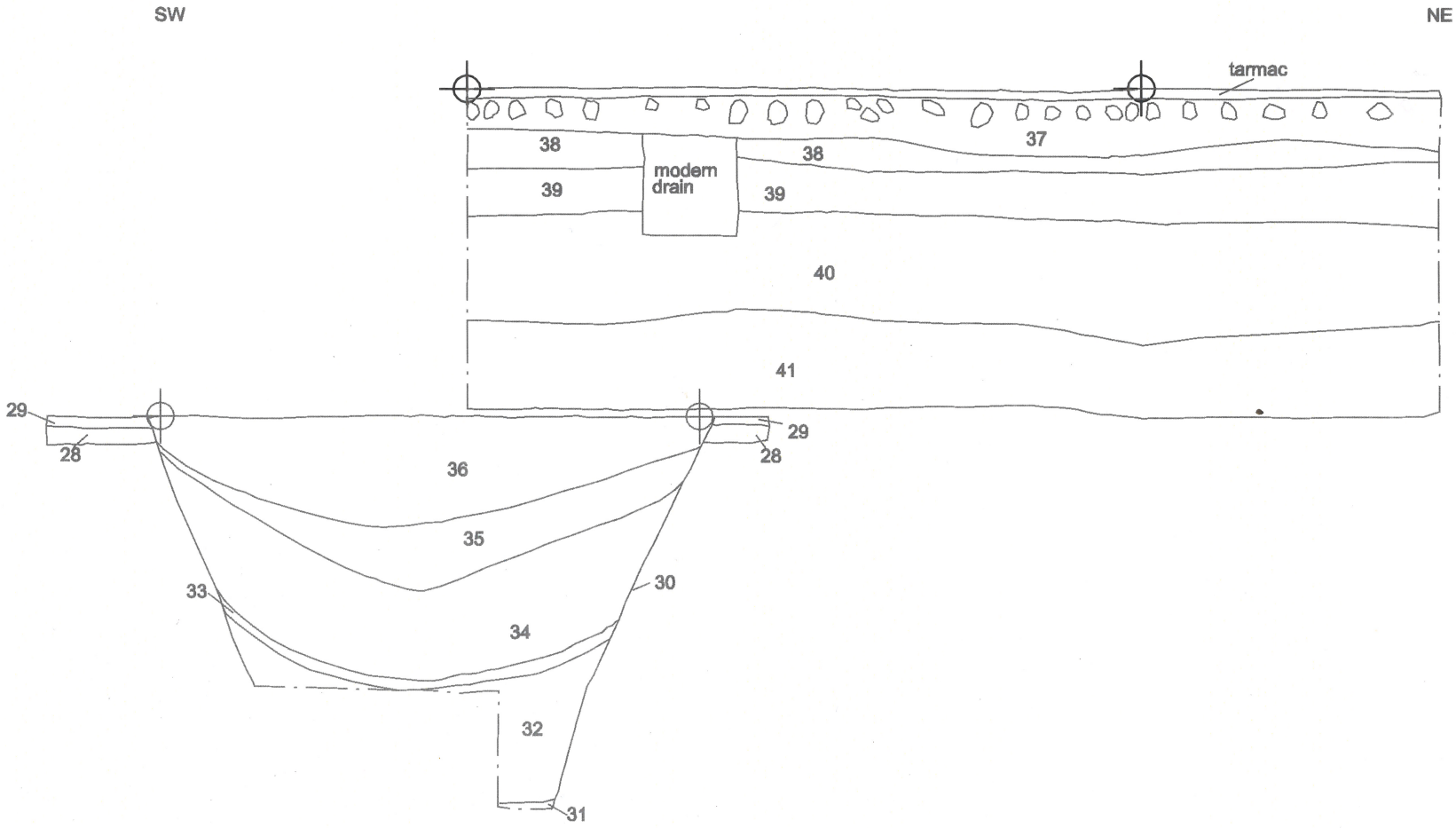


Figure 6: North-west-facing section, Area A

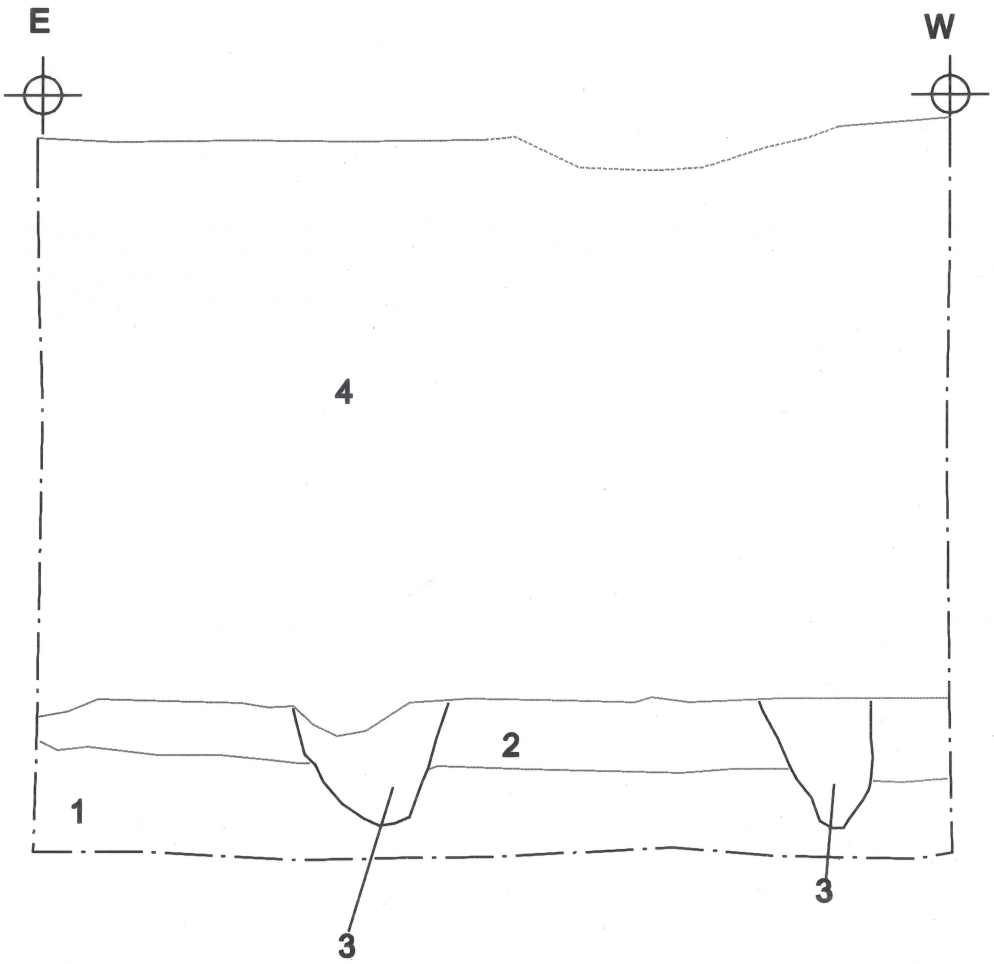


Scale 1:25

0 0.5m

Figure 8: South-east-facingsection, Area B

Figure 9: Plan of plough-marks seen above and below original ground surface - Area A



Scale 1:5 at A4

0 0.1m

Figure 9 : North-facing section of Area A, showing ploughmarks

Plate 1: CAU excavations 1994, facing north-east, showing ditch in background, parade ground deposits in section, pre-Roman ground surface and plough-marks

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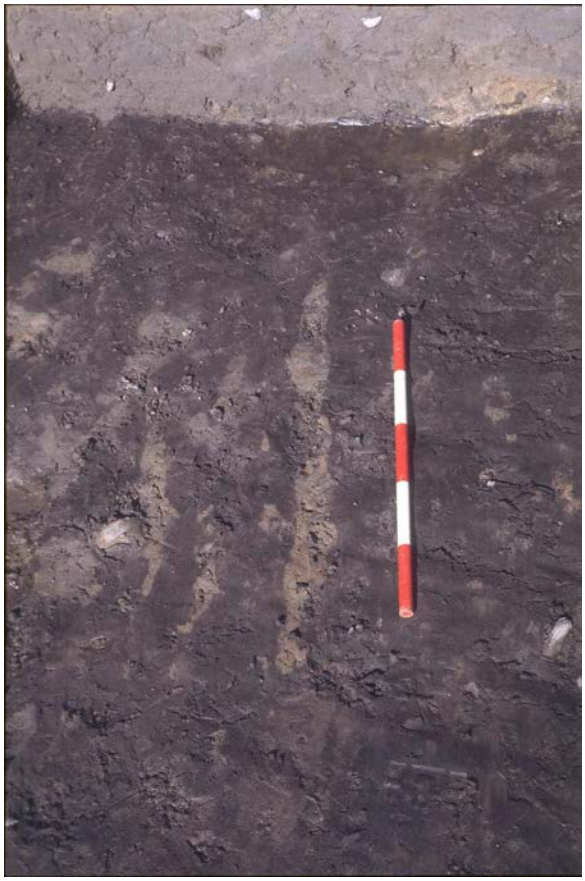

Plate 5: Detailed shot of plough-marks, ***3***, filled by parade ground deposit, ***4***, facing north

Plate 6: Detailed shot of plough-marks, ***3***, on removal of the pre-Roman ground surface, ***2***, cutting disturbed natural, ***1***, facing north-east

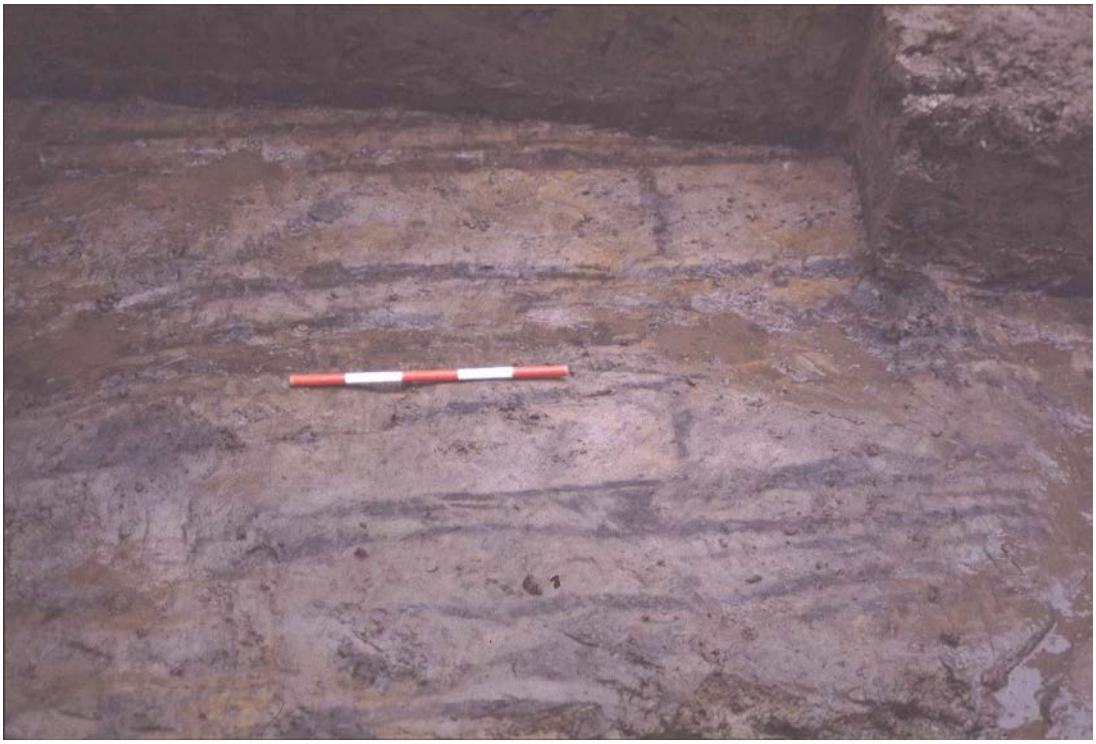

Plate 7: Detailed shot of plough-marks, ***3***, on removal of the pre-Roman ground surface, ***2***, cutting disturbed natural subsoil, ***1***, facing east

Plate 8: Detail of south-facing section showing plough-mark, ***3***

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Plate 10: Post-medieval waste-water tank ***18***, facing north