# AN ARCHAEOLOGICAL EVALUATION AT TRINITY SCHOOL (OAKFIELD COLLEGE SITE), CONDERCUM ROAD, BENWELL, NEWCASTLE-UPON-TYNE, TYNE AND WEAR

# An Archaeological Evaluation at Trinity School (Oakfield College Site), Condercum Road, Benwell, Newcastle-upon-Tyne, Tyne and Wear

***Central National Grid Reference: NZ 2185 6450***

***Site Code: TSB 09***


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# 1. NON-TECHNICAL SUMMARY

1.1 An archaeological evaluation was undertaken in January 2009 by Pre-Construct Archaeology Limited at Trinity School (Oakfield College Site), Benwell, Newcastle-upon-Tyne. The work was commissioned by Sir Robert McAlpine Limited and was undertaken ahead of re-development of the school, as part of the Newcastle 'Building Schools for the Future' Project.

1.2 The site lies in the north Benwell area to the west of the centre of Newcastle. Roughly rectangular in shape, it covers an area of *c.* 2.70 hectares and is centred at National Grid Reference NZ 2185 6450. Set on the northern valley side of the Tyne, the site is bounded to the east by Condercum Road, to the south by Conhope Lane, and to the west and north by housing along several streets, including Weidner Road and Springhill Gardens.

1.3 The site does not lie within a conservation area and there are no scheduled monuments or listed buildings within its boundaries. It is for the Roman period that the site is of particular archaeological interest since it lies *c.* 50m south of the line of Hadrian's Wall, with the site of Benwell (*Condercum*) Roman fort within 150m to the north-west. The site probably lies within the easternmost limit of the area occupied by the civilian settlement associated with the Roman fort.

1.4 The existing school buildings and a small community farm occupy the landscaped northern portion of the site, with the southern portion largely undeveloped ground, sloping away to the south, and in use as pasture for grazing and a sports pitch. The evaluation comprised geophysical survey and a follow-up trial trenching exercise in the southern area and the broad aim was to assess the impact of the development proposals upon the archaeological resource. The new build in the development proposals is to occupy the northernmost part of the undeveloped southern area, extending across most of the width of the site, with a roughly central extension to the north, linking up with the existing complex of buildings.

1.5 The broad conclusion of the geophysical survey was that any subtle anomalies of possible archaeological interest were largely obscured by strong anomalies arising from buried services, inspection covers and iron litter in topsoil. Initially, five trial trenches (Trenches 1-5) were investigated to test the area of the proposed main new build, with two additional trenches (Trenches 6 and 7) then investigated due to the significance of findings in the westernmost trenches.

1.6 In summary, archaeological remains of significance were encountered within Trenches 1, 2, 6 and 7, these sited in and around the western half of the new build footprint. No archaeological remains of significance were encountered within Trenches 3, 4 and 5, these sited within the central and easternmost portions of the new build footprint.

1.7 Natural boulder clay - representing the drift geology of the area - was exposed across the base of all the evaluation trenches. The maximum depth below existing ground level at which boulder clay was recorded was 1.50m in Trench 6, this the northernmost trench, while a depth of 0.36m below existing ground level represents the shallowest depth, this seen in the easternmost trench, Trench 5.

1.8 Trench 1, sited at the westernmost end of the new build footprint, recorded a broad but relatively shallow ditch, which produced a tiny sherd of Roman pottery and a fragment of possible Roman ceramic building material. Aligned SW-NE, the feature may have served as a land boundary during the Roman period, running across the sloping ground to the south-east of *Condercum* fort. Part of what may have been a roughly SE-NW aligned feature was recorded in Trench 6, the northernmost of all the trenches. No artefactual material was recovered from this feature, but its stratigraphic position and the similarity in composition of its fill to that of the ditch recorded in Trench 1 also suggests a potential Roman date.

1.9 In Trenches 2 and 7, developed soils, up to 0.40m thick, were recorded overlying natural boulder clay. Although no artefactual material was recovered from these deposits, their stratigraphic position indicates that they are of medieval or earlier origin.

1.10 Two portions of what may have been the same north-south aligned ditch were recorded in Trenches 2 and 7. A sherd of medieval pottery recovered in Trench 2 indicates a 13th to early 14th century date for the feature, which may have been a drainage ditch or a land boundary on the valley side east of the medieval village of Benwell. Part of a possible east-west aligned linear feature was also recorded in Trench 6.

1.11 Likely early modern era levelling deposits were recorded in Trenches 1, 2, 3 and 6 and these are potentially derived from landscaping activity on land south of a former dwelling, 'Lower Condercum', which stood on the site in the 19th century. Certain and probable drainage features attributed to the post-medieval period or early modern era were recorded in Trenches 2 and 5. The features in Trench 2 comprised stone- and brick-lined culverts while two features in Trench 5 were simply ditches. Part of a substantial feature recorded in Trench 4 may have been associated with known colliery workings located to the south of the site.

1.12 Modern drainage features were recorded in Trenches 1, 3, 5 and 7. In Trench 6, a substantial levelling deposit, up to *c*. 0.70m thick, was of modern origin and was probably derived from activity associated with landscaping when the existing school buildings were constructed. In all the trenches, the uppermost deposit recorded comprised topsoil with developed turf, up to 0.60m thick.

# 2. INTRODUCTION

## 2.1 General Background

2.1.1 This report details the results of an archaeological evaluation co-ordinated and undertaken 6-29 January 2009 by Pre-Construct Archaeology Limited (PCA) at Trinity School (Oakfield College Site), Benwell, Newcastle-upon-Tyne. The work was undertaken ahead of re-development of the school, as part of the Newcastle Building Schools for the Future (BSF) Project. The work was commissioned by Sir Robert McAlpine Limited (SRM), the Principal Contractor for the BSF Project.

2.1.2 The site is of considerable archaeological interest for the Roman period, due to its close proximity to the Hadrian's Wall corridor and *Condercum,* the Roman fort on the line of the Wall in Benwell. The site lies just to the south of the Wall – with two sections having Scheduled Ancient Monument status in this area - and within the assumed eastern limit of the civilian settlement, *vicus*, associated with the Roman fort.

2.1.3 The archaeological evaluation was undertaken on the recommendation of the Tyne and Wear County Archaeologist, taking advice from the English Heritage Hadrian's Wall Archaeologist, due to the proximity of the development to the Roman frontier. A desk-based assessment[1] undertaken prior to the investigations had highlighted the archaeological potential of the site.

2.1.4 The evaluation was undertaken according to PCA's Project Design,[2] which was prepared in advance of the work and approved by relevant bodies. The broad aim was to assess the impact of the development proposals upon the archaeological resource. The evaluation comprised an initial geophysical survey, followed-up by a trial trenching exercise. The geophysical survey was undertaken by GeoQuest Associates on behalf of PCA and a full report on that element of the evaluation is appended to this report (Appendix D).

2.1.5 The completed Site Archive, comprising written, drawn, and photographic records, will be deposited at Tyne and Wear Museum Archive, Arbeia, South Shields, under the site code TSB 09. The Online Access to the Index of Archaeological Investigations (OASIS) reference number is: preconst1-55000.

## 2.2 Site Location and Description

2.2.1 Benwell is a western suburb of Newcastle, *c.* 4km from the city centre (Figure 1), and very much defined to the north by West Road, which closely follows the line of Hadrian's Wall as it leaves the city. Benwell was an outlying village throughout the medieval period and continued to be so until coal mining proved a catalyst for growth in the 18th century. The early modern industrial era witnessed significant development, and eventually the area has become subsumed into the urban sprawl of Newcastle.

[1] Pre-Construct Archaeology 2008.
[2] Pre-Construct Archaeology 2009.


Figure 1. Site location
Scale 1:25,000

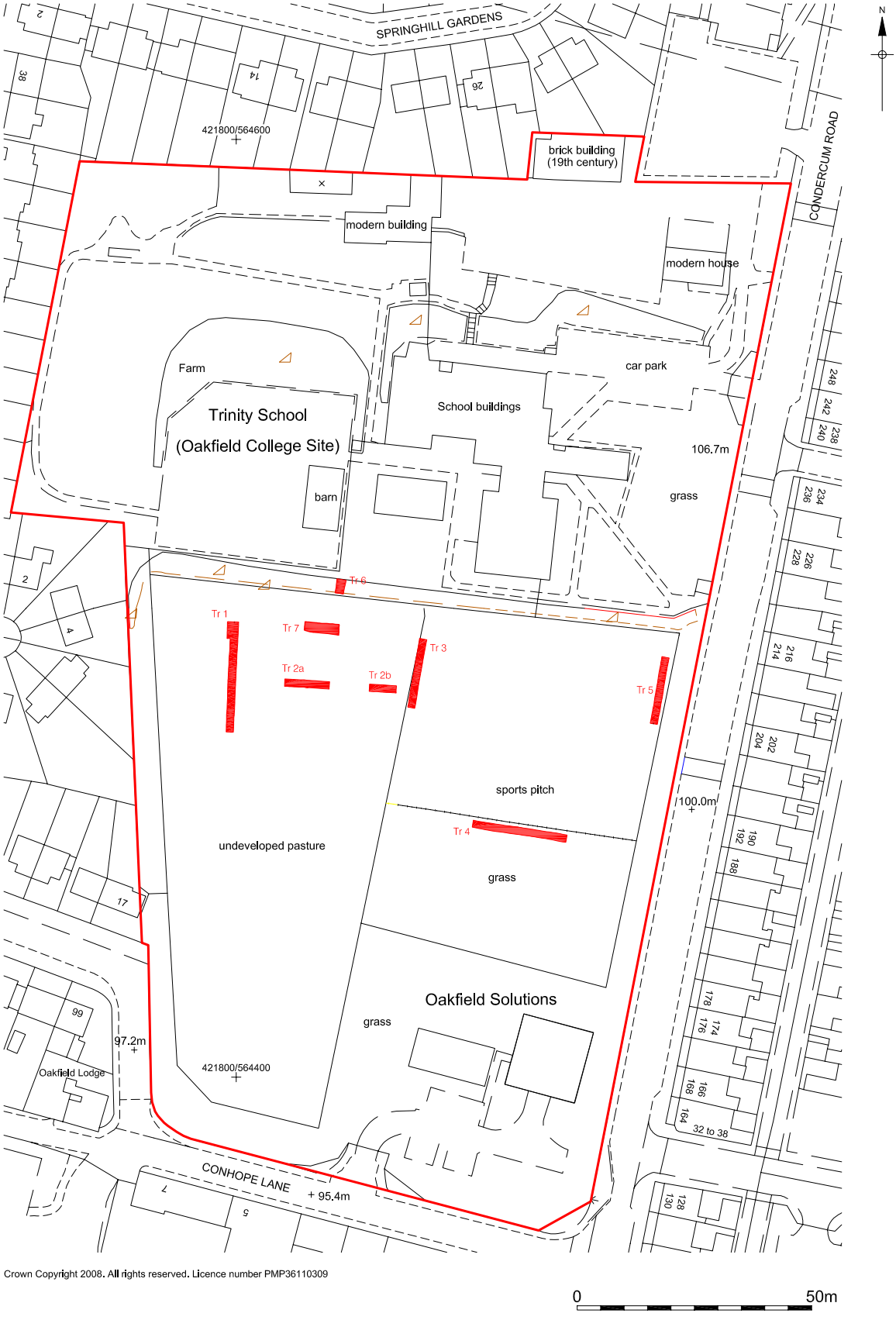





Figure 2. Trench location
Scale 1:1,250

2.2.2 Trinity School (Oakfield College Site) lies in the north-eastern portion of Benwell and occupies a roughly rectangular area of land, with maximum dimensions of *c.* 230m north-south and *c.* 150m east-west. It covers *c.* 2.70 hectares and is centred at National Grid Reference NZ 2185 6450. It is occupied by the school buildings and associated grounds, including a community farm (Figure 2).

2.2.3 The site is bounded to the north by housing along Springhill Gardens. To the west, it is bounded by housing along Heyburn Gardens and Weidner Road, while to the south it is bounded by Conhope Lane, beyond which lie commercial units. To the east, it is bounded by Condercum Road, beyond which lies the late 19th century 'North Benwell Terraces'.

2.2.4 The north-eastern portion of the site is occupied by the existing school buildings, along with access routes, grassed areas and car parks. The school is of two-storeys and of late 20th century date, having replaced the former Lower Condercum House (Special School), which was established in a former dwelling of late 19th century origin. The community farm occupies the north-western portion of the site, and includes various animal pens, yards and outbuildings, including one large barn, set out on the terraced ground.

2.2.5 Much of the southern portion of the site is effectively undeveloped, the majority in use as rough pasture for animal grazing. One area on the eastern side is used as a sports pitch. Two modern buildings occupy the south-eastern portion of the site, these used by 'Oakfield Solutions', a learning/employment training establishment for young school leavers, accessed through a gate in the southern perimeter. The eastern site boundary is delineated by a high stone wall.

## 2.3 Geology and Topography

2.3.1 The solid geology of the site comprises material of the Middle Coal Measures, being predominantly alternations of sandstone, mudstone, productive coal seams and ironstones.[3] Quaternary glacial drift deposits of variable depth, predominantly Glacial Till, are known to overlie solid geology across the Benwell area.[4]

2.3.2 Geotechnical site investigations[5] undertaken in 2008 indicate that geological material lies at a depth of up to 0.90m below existing ground level in the north-eastern portion of the site, generally 0.10-1.50m below existing ground level in the central part of the site (in the vicinity of the new build footprint) and generally 0.25m below existing ground level towards the southern site boundary. These investigations also recorded a mined coal seam, this being representative of the High Main seam, recorded at a minimum depth of *c.* 11.50m below existing ground level, as well as a square mine entry shaft towards the south-western site boundary, close to Conhope Lane. The shaft had been excavated through underlying sandstone to the coal seam and after abandonment of the working had been backfilled with recompacted clayey material with no concrete capping present.

[3] Arc Environmental 2008.
[4] Johnson 1997.
[5] Arc Environmental 2008.

2.3.3 The site lies on the northern valley side of the River Tyne, with land falling from a height of *c*. 120m OD along West Road, at the top of the valley, to around sea level at the river. Across the site, ground level drops from *c*. 110.30m OD along its northern edge, to *c.* 96.0m OD in the south-eastern corner, broadly reflecting the topography of the valley side. In general terms, therefore, the study site has a gently sloping, south-facing aspect. However, the northern portion of the site has clearly been landscaped, probably at the time of the construction of the existing school in the late 20th century. Terracing is evident in the area of the school complex and, particularly, in the area to the west which is occupied by the community farm. The sports pitch and pasture occupying the southern portion of the site fall away gently, with relatively little evidence of terracing.

## 2.4 Planning Background

2.4.1 The archaeological evaluation herein described was commissioned by SRM in advance of development of Trinity School (Oakfield College Site). The scheme is an element of Phase 2 of the Newcastle BSF Project and will be funded as part of the Newcastle Schools PFI Project, which is being delivered and partly funded by Newcastle City Council's private sector partner, Aura. SRM is Principal Contractor for the Newcastle BSF Project.

2.4.2 Government guidance on archaeology and heritage conservation is set out in *Planning Policy Guidance Note 16: 'Archaeology and Planning'* (PPG16).[6] Statutory protection for archaeological remains is principally enshrined in the *Ancient Monuments and Archaeological Areas Act* 1979, as amended by the *National Heritage Act* 1983 and subsequent. Nationally important sites are listed in a schedule of monuments and are accorded statutory protection.

2.4.3 At a local level, the Local Planning Authority (LPA), Newcastle City Council, has various policies within its Unitary Development Plan (UDP) concerning archaeology and cultural heritage. Of particular relevance are:

> ***POLICY C04. DEVELOPMENT THAT WOULD HARM SITES OR AREAS OF ARCHAEOLOGICAL INTEREST AND THEIR SETTINGS WILL NOT BE ALLOWED.***
>
> ***POLICY C04.1. THE FOLLOWING SITES AND AREAS OF ARCHAEOLOGICAL INTEREST IDENTIFIED FOR THE PURPOSE OF POLICY C04 INCLUDE:***
>
> ***Scheduled Ancient Monuments***
> *7. Hadrian's Wall, Vallum and associated works*
>
> ***Other sites and areas of archaeological interest, as defined on the Proposals Map***
>
> *18. Unscheduled areas of the known and presumed line of Hadrian's Wall, Vallum, Ditch and fortifications.*
>
> *49. Benwell – Roman area*
>
> This policy not only deals with sites, monuments and areas which have scheduled monument status - these being worthy of preservation because of their national significance – but also other important known sites, monuments and areas **and** sites and areas which have considerable potential archaeological interest.
>
> ***POLICY C04.2. WHERE A PROPOSAL MAY AFFECT A SITE OR AREA OF ARCHAEOLOGICAL INTEREST, THE DEVELOPER WILL BE REQUIRED TO SUBMIT AN APPROPRIATE ASSESSMENT OF ITS POTENTIAL IMPACT UPON THE ARCHAEOLOGICAL REMAINS AND WHERE NECESSARY UNDERTAKE AN ARCHAEOLOGICAL EVALUATION.***

[6] Department of the Environment 1990.

This policy highlights the need to take archaeological considerations into account at the pre-planning stage before the development control process and stresses that potential conflict between the needs of archaeology and development can be reduced if developers discuss their preliminary plans with the City Council and County Archaeologist in advance. It emphasises that an archaeological assessment will be needed to support a planning application should it require the loss of remains or the removal of artefacts from the site and underlies that it should clearly state the means of preservation or recording if that is the agreed intention

***POLICY C04.3. WHERE ASSESSMENT AND EVALUATION HAVE ESTABLISHED THAT PROPOSED DEVELOPMENT WILL ADVERSELY AFFECT A SITE OR AREA OF ARCHAEOLOGICAL INTEREST, DEVELOPERS WILL BE REQUIRED TO PRESERVE ARCHAEOLOGICAL REMAINS IN SITU UNLESS THIS IS CLEARLY INAPPROPRIATE OR THE DESTRUCTION OF THE REMAINS IS DEMONSTRABLY UNAVOIDABLE, IN WHICH CASE A PROGRAMME OF ARCHAEOLOGICAL WORKS SHALL BE SUBMITTED TO AND AGREED WITH THE COUNCIL BEFORE THE START OF DEVELOPMENT.***

This policy deals with the category of site which includes the numerous known sites of archaeological interest and sensitivity which do not have the status of scheduled monuments but which may still be worthy of preservation because of their national or local significance. These may be known only from aerial photographs, or comprise sites of industrial or post-medieval archaeology such as collieries, railways or farm buildings (some of which may also be listed buildings).

The policy notes that when an application is made to develop such a site, the Council, in consultation with English Heritage and the County Archaeologist, will weigh up its relative importance (national/ local) against other material considerations including the actual need for the proposed development in that particular location. Should permission be granted and it is not possible to preserve the remains *in situ*, then the developer should make appropriate and satisfactory provision for their excavation and recording. If this has not already been secured through a voluntary agreement, planning permission may be granted subject to conditions which provide for excavation and recording before development takes place, again in consultation with the County Archaeologist.

***POLICY C04.4. WHERE PROPOSED DEVELOPMENT WOULD INVOLVE LARGE SCALE GROUND DISTURBANCE IN CURRENTLY UNDEVELOPED AREAS DEVELOPERS WILL BE REQUIRED TO SUBMIT A PRELIMINARY ARCHAEOLOGICAL ASSESSMENT TO IDENTIFY ANY SITES OR POTENTIAL AREAS OF ARCHAEOLOGICAL INTEREST.***

This policy highlights that large-scale works, which cause extensive disturbance of ground such as open casting, the construction of major highways and substantial areas of new development may affect areas with as yet unidentified archaeological interest. The City Council will be guided by the advice of the County Archaeologist in this matter.

2.4.4 The Tyne and Wear Specialist Conservation Team attached to the Historic Environment Section of Newcastle City Council undertakes archaeological development control in the city. Because of the archaeological sensitivity of the site, the County Archaeologist, as part of the Specialist Conservation Team, advised that an archaeological evaluation should be undertaken in order to inform the planning process of the Local Planning Authority, the City Council. The 'Roman area' of Benwell is designated as an area of archaeological interest within the Newcastle UDP, as described above.

2.4.5 The input of the English Heritage Hadrian's Wall Archaeologist was required in this instance since that individual advises on all development proposals in the vicinity of scheduled sections of the Roman frontier. Approximately 100m to the north of the site are two scheduled sections of the Wall (SAM 28(10)), these being sub-surface remains along the West Road frontage of the City Learning Centre and the Centre for Sport.

## 2.5 Archaeological and Historical Background

*The aforementioned archaeological DBA has provided the summary below. The 'wider study area' referred to below was an area designated in the DBA as being of radius 1km around the site. Tyne and Wear Historic Environment Record (HER) numbers are included, as appropriate.*

### *2.5.1 Prehistoric*

2.5.1.1 There are no HER entries relating to any of the prehistoric eras for the study site and just one within the wider study area. A perforated axe-hammer of probable Neolithic or Early Bronze Age date (HER 1376) was found in the vicinity of *Condercum* Roman fort. However, a single object cannot be considered as evidence of significant prehistoric activity in the area.

### *2.5.2 Roman*

2.5.2.1 The site lies within the assumed eastern limit of the *vicus* associated with the fort of *Condercum* (HER 5262). The fort lay *c.* 200m to the north-west of the site, on the line of Hadrian's Wall (HER 206 & 207), with the Wall corridor running *c.* 100m to the north of the site. Unsurprisingly, therefore, there are numerous HER entries for the Roman period within the wider study area.

2.5.2.2 Constructed on the orders of the Roman Emperor Hadrian, from AD 122, Hadrian's Wall marked the northern frontier of the Roman Empire. The significance of the Wall corridor in archaeological terms lies both in its complexity and the degree of survival of the Roman military and civilian remains. This was recognised by UNESCO through the designation of the Hadrian's Wall Military Zone as a World Heritage Site in 1987. Although the Wall corridor in the urban areas of Newcastle was initially excluded from the World Heritage Site, in 1997 the scheduled portions of the Wall within the city were included in the World Heritage Site. This followed the production of a management plan by English Heritage in 1996,[7] which identified, for the first time, three distinct areas for the Wall in general: the 'archaeological core' of the Wall and Vallum (the World Heritage Site), the surrounding 'buffer zone' and the outer 'visual envelope'.

2.5.2.3 Benwell lies in a stretch of the frontier between Newcastle and the River North Tyne, where the Wall was of typical 'Broad Wall' stone construction, *c*. 3m wide on a broad foundation of similar width and *c*. 5m high. To the north, at a distance of *c.* 6m, ran a substantial V-shaped ditch, *c*. 10m wide and *c*. 4m deep. The line of the Wall is closely reflected in the line of West Road through Benwell. As previously described, two sub-surface sections of the Wall immediately to the east of *Condercum* are scheduled (SAM 28(10)), while five land parcels in and around the area of the fort itself comprise another Scheduled Ancient Monument (SAM 28(12)).

2.5.2.4 From its inception, the Wall was planned with regularly spaced fortlets ('milecastles') at intervals of about 1 mile and the original design also planned for two equally spaced towers ('turrets') between each milecastle. At some point, a fundamental change of plan occurred and more substantial forts were constructed. Sixteen such forts are now known either attached to the Wall or in close association with it. *Condercum*, meaning 'the Place with the Fine Outlook', was the fort on the line of the Wall at Benwell.

[7] English Heritage 1996.

2.5.2.5 A further defensive element - the Vallum - was added to the Wall after the decision had been taken to construct the forts. It comprised a broad flat-bottomed ditch flanked by a pair of linear banks, formed from the upcast from the excavation of the ditch. The ditch was *c*. 6.5m wide, up to *c*. 3m deep, with banks *c*. 6m across by 2m high. The standard width of the Vallum – including all the above elements – is 36.60m (this distance is the equivalent of 120 feet, the Roman surveying unit known as an *actus*). The commonly accepted interpretation for the function of the Vallum is that it represented a demarcation of the militarised zone from civilian land to the south.

2.5.2.6 The Vallum was constructed at a variable distance to the south of the Wall, sometimes adjacent to it, and in some places up to 1km to its south. In many locations, including north of the study site, the Vallum is now buried below post-medieval and modern development. The probable course of the Vallum runs only *c.* 50m to the north of the site, while the site of the Vallum crossing (HER 5264) south of *Condercum*, this *c.* 200m north-west of the study site, has scheduled monument status, as does a section of the Vallum to the west of the fort, in the grounds of Pendower Hall, a teacher training centre, both being parts of composite scheduled monument SAM 28(12). A road known as the Military Way, built to link all elements of the Wall defence, ran from fort to fort across the corridor between the Wall and Vallum.

2.5.2.7 All the forts along the Wall eventually had civilian settlements (*vici*) associated with them; they were usually positioned to the south of the Wall, within the area directly protected by the fort, Wall and Vallum. At *Condercum*, the *vicus* probably occupied land on both sides of the Vallum and, like the majority of *vici* along the Wall, it was probably abandoned after the end of the 3rd century AD. At *Condercum*, the *vicus* probably developed initially alongside the road (HER 5273) that ran southwards from the fort. Although the precise extent of the *vicus* has not been established, the study site is located within its presumed limits; to the east it is assumed to have extended as far as Condercum Road.[8] It has been previously suggested that two parallel ditches (HER 5270) observed running southwards from the south-eastern corner of the fort delimited the eastern extent of the *vicus*.

2.5.2.8 *Condercum* fort covered 5.64 acres and was built on a flat hill top overlooking the Tyne to the south and the valley of the Denton Burn to the west. Garrisoned during the reign of Hadrian by a cavalry regiment of 500 troops, it was occupied from the mid-late 2nd century by a 1,000 strong cavalry unit from the upper Rhineland. Known features within the fort include the Commanding Officer's house, the headquarters building, granaries, workshops, barracks and possibly stable blocks and a hospital. A reservoir was constructed over the northernmost third of the fort in 1858 and has since been enlarged, while much of the remainder is covered by West Road and, to the south, the Denhill Park housing estate.

[8] Tyne and Wear Museums 1991.

2.5.2.9 In the area of *Condercum* fort, both the Vallum and Wall ditch were once visible as earthworks either side of a turnpike road, which has now been widened to form the modern West Road through Benwell. Various antiquarian records, including those of Horsley in 1732, Bruce in 1851 and MacLauchlan in 1852, give descriptions of the earthworks visible at the time. Excavations to the west of Condercum Road in 1928 located the Vallum and traced the line of its diversion around the southern boundary of the fort.

2.5.2.10 Recording of *Condercum* fort began as early as 1751, with a more detailed survey carried out by MacLauchlan in 1855, in advance of housing development. Excavations by Petch in 1926 aimed to clarify the size and location of the fort and also examined the defences, *vicus* and buildings within the fort. Work by Birley, Brewis and Charlton in 1933 concentrated on the Vallum crossing to the south of the fort and part of the *vicus* situated on a section of infilled Vallum. It was this work which established that the aforementioned Vallum crossing comprised a stone causeway and an arched gateway with double doors. The scheduled remains of the Vallum crossing (part of SAM 28(12)) have been consolidated and are now on display to the general public.

2.5.2.11 Recent investigations targeting the Vallum ditch or the *vicus* in Benwell have met with relatively little success. Archaeological monitoring in 2004 on Springhill Gardens and Broomridge Avenue, did, however, identify the north side of the Vallum ditch.[9] Another programme of archaeological monitoring in 2005, on Weidner Road and Oakfield Gardens, found no evidence of the Vallum or the *vicus*.[10] A field evaluation in 2004 at Bowland Lodge, Benwell, *c.* 0.7km east of the site, tested the postulated line of the Vallum, but found no evidence of any Wall related features or any other Roman activity.[11]

2.5.2.12 The discovery at *Condercum* of a dedication slab (HER 5308) to the *Matres Campestres* (the Campestres are generally known as the 'Goddesses of the Parade Ground') has previously been interpreted as being indicative of the presence of a military parade ground (HER 5328) in the area to the east of the fort. There is, however, no strong archaeological evidence to support this theory.

2.5.2.13 The fort itself has produced two altar stones (HER 5306 & 5310), one dedicated to Jupiter, while there is strong evidence that land to the south-east of the fort, towards the site, contained a zone of cemetery, and particularly, temple activity. The Temple of Antenociticus (HER 5266) lay *c.* 100m beyond the south-eastern defences of the fort; excavated initially in 1862, its consolidated remains (part of SAM 28(12)) are now displayed to the general public in Broomridge Avenue. A cremation burial recorded just south of the temple, suggests a combined temple and cemetery, while *c.* 50m south-west of the temple, a stone-lined grave containing a small lead coffin (HER 5271) was found in the 1930s, also indicating that the area to the east of the fort was set aside for cemetery activity. The discovery of pottery and coins (HER 5267, 5268 & 5272) in the area to the south-west of the fort, broadly suggests that the *vicus* was a substantial and widespread settlement.

[9] Tyne and Wear Museums 2004.
[10] Tyne and Wear Museums 2005.
[11] Pre-Construct Archaeology 2004.

2.5.2.14 In summary, the site lies within the eastern limit of the presumed extent of the *vicus* attached to *Condercum* fort*,* which may have extended as far to the east as Condercum Road, as indicated by the HER.[12] Significant evidence of Roman occupation, including the Hadrian's Wall corridor and the fort itself, lies within relatively close proximity search area. Archaeological investigations and chance finds suggest that the *vicus* was of considerable size, and that associated activity, such as cemetery areas or field systems, could extend into the site.

### *2.5.3 Anglo-Saxon*

2.5.3.1 No HER entries relating to Anglo-Saxon or early medieval activity are known for the site or for the wider study area. Neither is there any documentary evidence to suggest settlement or exploitation of the land in the vicinity of the study site during this era. A square-headed bronze brooch (HER 1498) of Anglo-Saxon form was discovered to the east of *Condercum* fort in the 1950s. However, a single object like this cannot be considered as evidence for significant Anglo-Saxon activity in the area.

### *2.5.4 Medieval*

2.5.4.1 There are no records in the HER for the medieval period within the limits of the site. There are, however, five HER entries for this period within the wider study area.

2.5.4.2 Benwell was originally a small village in its own right, prior to absorption into the urban west end of Newcastle. It lay *c.* 0.8km west of the site (HER 140). The earliest reference to the village of 'Bynnewalle' (referring to its position on Hadrian's Wall) comes from *c.* 1050, the time immediately before the Norman Conquest. The settlement certainly formed part of the Barony of Bolbec in the medieval period and the village was of 'two-row' form, with the rows separated by a wide street or green running west from the manor house. While the overall street pattern survives in general form today, no medieval buildings remain.

2.5.4.3 The course of the ancient roadway (HER 3945) from Carlisle to Newcastle lies *c.* 100m to the north of the site, effectively following the course of Hadrian's Wall. The earliest reference to 'Westgate' is 1163-80 and by the late 13th century, following construction of the Newcastle town wall, the West Gate provided access to this main route. In 1751 a toll road - the Military Road - was constructed on the same alignment as the ancient roadway.

2.5.4.4 The site itself was probably utilised for agricultural land throughout the medieval period and any remains from this date, if present, could include improved agricultural soils, drainage gullies or boundary ditches.

[12] Based upon the 1991 survey by Tyne and Wear Museums.

### *2.5.6 Post medieval and Early Modern/Industrial*

2.5.6.1 There are no HER entries for the post-medieval period upon the site itself, however the wider study area has several entries for the post-medieval period, two of which actually refer to early industrial sites in the immediate vicinity of the site, including Charlotte Pit, Benwell Colliery (HER 4081), *c.* 50m to the south. Opened in 1766 it was worked until 1939. The site of a pit shaft (HER 4100) lies *c.* 0.5km to the east of the study site. This shaft, presumed to have been sunk during the 18th century, is first shown on a plan drawn by Isaac Thompson in 1743. Other shafts were probably sunk in the area and not all have detailed records.

2.5.6.2 In general, mapping from the late 16th century to the late 18th century is not of sufficient scale to be of relevance to research into the site. However, a plan of the manor of Benwell dated 1637 shows the site lying in an area of defined fields, meadows and closes to the south of the Wall. A composite plan, depicting the estates of Robert Shafto in 1780 and Andrew Bowes in 1808, shows the site probably occupying a land parcel named 'Middle Close' alongside what would become Condercum Road, with what was presumably Charlotte Pit within a land parcel 'Low Close' to the south. Cartographic evidence of the early-mid 19th century is of note in that it conveys what was still - despite increasing industrialisation along the Tyne - generally an agricultural landscape south of the line of Hadrian's Wall in the Benwell area.

2.5.6.3 There is one HER entry for the early modern period upon the site itself, this being the former dwelling of 'Lower Condercum' (HER 6352), which lay within the north-eastern portion of the site, adjacent to the northern boundary. It dates from the second half of the 19th century.

2.5.6.4 Within the wider search area there are numerous HER entries for the early modern period, with the vast majority simply reflecting 19th century development of the Benwell area generally.

2.5.6.5 The 1st edition Ordnance Survey map of 1858 shows the site in detail. At the time, the site occupied the entirety of a single field within what was still an essentially rural landscape on the south side of the West Road. The north-westernmost portion of the site encroached into an adjacent field, while a small pond on the southern edge of land occupied by properties fronting onto West Road also lay within the northern boundary of the site. Immediately to the north of the site, fronting onto the south side of West Road, stood Condercum Villa (HER 6350). Immediately south of the site, is the isolated site of the aforementioned Charlotte Pit ('Charley Pit') of Benwell Colliery, set within a long-established field system on the valley side.

2.5.6.6 The 2nd edition Ordnance Survey map of 1898 shows the north-eastern portion of the site occupied by the grounds of the aforementioned house, Lower Condercum. To the north, on the site of the aforementioned pond, is an associated outbuilding, which survives today, although in altered form. The land within the site is depicted as being sub-divided. The road to the east of the site is named 'Charlotte Pit Lane', with the colliery complex of that name to the south showing substantial development from the 1st edition. The line of the Vallum is indicated on the 2nd edition, running parallel to West Road and skirting the northern edge of the study site. Land along both sides of West Road had been increasingly developed by this time.

2.5.6.7 The 3rd edition Ordnance Survey map of 1919 shows the study site largely unchanged from the 2nd edition. However, the area to the east has been significantly altered. What was previously, for the most part, an area of fields delimited to the west by the previously named

Charlotte Pit Lane, now Condercum Road, and to the north by West Road, had been infilled with a street grid of terraced housing, the ‘North Benwell Terraces’.

2.5.6.8 By the time of the 1939 Ordnance Survey map, Lower Condercum House was annotated as a ‘Special School’ and the southern portion of the site was annotated ‘Playing Fields’, these reflecting the change of use from a dwelling to an educational establishment. The 1963 edition annotated the school as ‘Lower Condercum House (Special School for Boys)’. A building had been added adjacent to the northern site boundary, to the west of the main school building; this survives today and serves as an administration block. This map depicts the shaft of Charlotte Pit as ‘disused’.

2.5.6.9 The exact date of demolition of Lower Condercum House is not known. The existing school buildings (with the exception of the northernmost workshop/storeroom) of Trinity School (Oakfield College Site) date from the late 20th century.

# 3. PROJECT AIMS AND RESEARCH OBJECTIVES

## 3.1 Project Aims

3.1.1 The project is threat-led with potential to disturb or destroy important sub-surface archaeological remains of the Roman period in particular. The broad aim of the project was therefore to inform on the character, date, extent and degree of survival of archaeological remains in the proposed development area, with particular emphasis on evidence of Roman activity associated with the *vicus* of *Condercum* fort and the Hadrian's Wall frontier in general.

3.1.2 With such information available the aim was either to conclude that the site does not contain archaeological remains of significance or to make recommendations regarding further mitigation measures necessary either to preserve archaeological remains *in situ* or to preserve archaeological remains by record through detailed excavation and then post-excavation analysis and publication of the results.

3.1.3 An evaluation programme comprising geophysical survey and trial trenching was considered the most appropriate methodology to test the archaeological potential of the proposed development area. The main element of the proposals is extensive new build in the central northern portion of the site, connecting into the existing complex of buildings in the northern portion of the site, with a new multi-use games area to the south-east (Figure 10).

3.1.4 Additional aims of the project were:

- to compile a Site Archive consisting of all site and project documentary and photographic records, as well as artefactual and palaeoenvironmental material recovered;
- to compile an Evaluation Report that contains an assessment of the nature and significance of the stratigraphic, artefactual, and palaeoenvironmental data.

## 3.2 Research Objectives

3.2.1 The project had the potential to make a significant contribution to archaeological knowledge of the area. *Shared Visions: The North-East Regional Research Framework for the Historic Environment* (NERRF),[13] a document that highlights the importance of research as a vital element of development-led archaeological work, identifies the following key priorities within the research agenda for the Roman period which could be of direct relevance to the project:

- **Riii. The Roman military presence**

  When discussing the northern Roman forts, it is stated: '*It is also important to establish the number and extent of associated vici*' and '*Forts should not be studied separately from their vici and vice versa; the populations and economies of these two site types would have been closely integrated and their development closely linked*'.

- **Riv. Native and civilian life**

  When discussing the relationship between the Roman military and civilian populations, it is stated: '*There is a need to improve our knowledge of the chronology of the vici, particularly the date at which they fall out of use. Who were the vicani?*

[13] Petts and Gerrard 2006.

*What was their relationship between the vici and their forts?*' and '*For populations living in villas and vici, what do artefactual and ceramic assemblages tell us? How do they relate to assemblages at military sites? This artefactual material will also help improve our chronological understanding of these sites.'*

- **Rv – Material culture**
- **Rvii – Religion**
- **Rviii – Burial**

3.2.2 The Hadrian's Wall Research Framework (HWRF) (draft sections available online) underlines a significant gap – in general - in existing understanding of extramural settlement along the Wall. The Draft Research Agenda of the HWRF highlights the shortage of information regarding who lived in, worked in or used the *vici* and also underlines the need to determine the end date of the Wall *vici,* as well as addressing the questions of if, why and when the Wall forts were abandoned.

3.2.3 Given that the site lies within the assumed extent of *Condercum vicus*, a specific research objective of the evaluation was to assess whether any sub-surface archaeological remains can provide evidence of Roman settlement or associated religious or funerary activity?

# 4. ARCHAEOLOGICAL METHODOLOGY

## 4.1 Geophysical Survey

4.1.1 Geophysical survey – by fluxgate magnetometer - was undertaken 6 January 2009 across the open southern portions of the site. A full report on the work is included as Appendix D to this report. In sum, however, the survey data was dominated by strong anomalies arising from underground services, inspection hole covers and probable ferrous litter in the topsoil, which potentially masked more subtle anomalies of archaeological interest. Several service runs were clearly identified however and this assisted in positioning some of the trial trenches.

4.1.2 In light of the findings of the geophysical survey, a programme of trial trenching was designed in order to test the archaeological potential of the new build area, taking into account existing site usage and relevant constraints. The scope of work and the methodologies to be employed to achieve the aims of the project were described in the aforementioned Project Design.

## 4.2 Trial Trenching

4.2.1 The trial trenching was undertaken in accordance with the approved Project Design and the relevant standard and guidance document of the Institute for Archaeologists (IfA).[14] PCA is an IfA-Registered Organisation. The work was undertaken between the 19th and the 29th January 2009.

4.2.2 Initially a total of five trial trenches were investigated (Trenches 1–5), as proposed in the Project Design. These were sited within or immediately adjacent to the main new build footprint or within an area to the south-east proposed for a games area. Selection of these locations was designed to maximise the potential of the site to provide the most productive archaeological information and address the research objectives of the project.

4.2.3 The trial trenching fieldwork was extended to allow two additional trial trenches (Trenches 6 and 7) to be investigated. This work was required by the Tyne and Wear County Archaeologist following a site-monitoring visit on 22nd January 2009, also attended by the English Heritage Hadrian's Wall Archaeologist and a representative of SRM. The additional trenches were sited specifically to investigate any possible continuation of archaeological features encountered in Trenches 1 and 2, as well as more generally to investigate ground conditions on what appeared to be landscaped ground towards the existing school buildings, north of Trench 2.

4.2.4 Trench 1 was aligned roughly north-south and measured *c.* 23.50m x 1.60m at ground level. It was sited to test the western end of the main new build footprint.

4.2.5 Trench 2 comprised two sections (Trench 2a and 2b), aligned roughly east-west. Trench 2a measured *c.* 10m x 1.60m at ground level and Trench 2b measured *c.* 6.0m x 1.60m. The trench was sited to test the central western portion of the main new build footprint and was sub-divided due to the presence of a known north-south service run.

4.2.6 Trench 3 was aligned roughly north-south and measured *c.* 15m x 1.60m at ground level. It was sited to test the central northern portion of the main new build footprint, extending into the northern extension.

[14] IfA (then IFA) 2001.

4.2.7 Trench 4 was aligned roughly east-west and measured *c.* 20m x 1.60m at ground level. It was sited to test the area proposed for the new games area to the south-east of the main new build.

4.2.8 Trench 5 was aligned roughly north-south and measured *c.* 15m x 1.60m at ground level. It was sited to test the area of the eastern end of the main new build footprint, but was positioned slightly to the east of the eastern elevation to avoid the playing area of an existing sports pitch.

4.2.9 Trench 6 was aligned roughly north-south and measured *c.* 2.80m x 1.90m at ground level. It was sited along the line of the north elevation of the main new build footprint.

4.2.10 Trench 7 was aligned roughly east-west, measuring *c.* 7m x 2m at ground level. It was sited towards the western elevation of the northern extension to the main new build, but specifically to investigate ground conditions on sloping ground at the south-eastern corner of the farm.

4.2.11 Trenches 3 and 5, sited on the margins of an existing sports pitch, were carefully de-turfed prior to excavation in order that the ground surface could be reinstated on completion of the work. All trenches were excavated with a tracked 360$^{o}$ mechanical excavator utilising a wide-blade ditching (non-toothed) bucket under the direct supervision of the supervising archaeologist. Overburden and archaeologically insignificant material were gradually removed by the machine, in spits of approximately 100mm thickness, down to the natural sub-stratum. Spoil was mounded away from the edge of each trench.

4.2.12 Subsequent excavation and recording was undertaken in accordance with recognised archaeological practice and following methodology set out in PCA's *Field Recording Manual*.[15] Following machine clearance, the sections and the base of the trenches were cleaned using appropriate hand tools. Sections in each trench were drawn at a scale of either 1:10 or 1:20 and the base of each trench was planned at a scale of 1:20 relative to a baseline established along the trench, which was then located relative to the Ordnance Survey grid.

4.2.13 Archaeological deposits were recorded using a 'single context recording' system. Features and deposits were recorded on *pro forma* context record sheets. A 'Harris Matrix' stratification diagram to record stratigraphic relationships was compiled and checked during the fieldwork.

4.2.14 Within appropriate archaeological horizons, partial excavation, the recovery of dating evidence or cleaning and recording of deposits was preferred to full excavation, and was practised wherever possible.

[15] PCA 1999.

4.2.15 A photographic record of the investigations was compiled using SLR cameras. This comprised black and white prints and colour transparencies (on 35mm film), illustrating in both detail and general context the principal features and finds discovered. All photographs included a graduated metric scale. Digital photographs were taken to supplement the photographic record and a selection of these form Appendix C to this report.

4.2.16 A series of Temporary Bench Marks (TBMs) were established across the site from existing survey data. All trenches were levelled and the heights of all principal strata and features were calculated in metres above Ordnance Datum (m OD) with the values indicated on the appropriate paperwork.

## 4.3 Post-Excavation

4.3.1 The stratigraphic data for the project is represented by the written, drawn and photographic records. A total of 60 archaeological contexts were defined during the evaluation (Appendix B). Post-excavation work involved checking and collating site records and phasing the stratigraphic data (Appendix A). A written summary of the site data was then compiled, as set out below in Section 5.

4.3.2 The artefactual assemblage comprised a total of four sherds of pottery, three fragments of ceramic building material and one fragment of glass or glass-making waste. Due to the small size of the assemblage, brief specialist comment on the material was obtained and the results incorporated into Section 5, below, with no formal assessment report being prepared. No other categories of inorganic artefactual material were represented.

4.3.3 The projects palaeoenvironmental sampling strategy was to recover bulk samples where appropriate, from well-dated (where possible), stratified deposits covering the main periods or phases of occupation and the range of feature types represented, with specific reference to the objectives of the evaluation. To this end, two bulk samples were recovered, although these remain in storage and assessment for biological remains would form part of any further phase of work undertaken by PCA. No other biological material was recovered.

4.3.4 The complete Site Archive, in this case comprising written, drawn and photographic records (including all material generated electronically during post-excavation) and the small artefactual assemblage, will be packaged for long-term curation. No material was recovered that required specialist stabilisation or an assessment of potential for conservation research. In preparing the Site Archive for deposition, all relevant standards and guidelines documents referenced in the Archaeological Archives Forum guidelines document[16] will be adhered to, in particular a well-established United Kingdom Institute for Conservation (UKIC) document[17] and a forthcoming IfA publication.[18] The depositional requirements of the receiving body, in this case the Tyne and Wear Museum Archive, Arbeia, South Shields, will be met in full.

[16] Brown 2007.
[17] Walker, UKIC 1990.
[18] IfA forthcoming.

# 5. RESULTS: THE ARCHAEOLOGICAL SEQUENCE

## 5.1 Phase 1: Natural Sub-stratum (Figures 3-9)

5.1.1 Natural sub-stratum was exposed in the base of all seven trenches, Trenches 1-7, [105], [207], [213], [305], [404], [508], [607] and [709], respectively. In general, it comprised firm mid brownish yellow clay or silty clay. This material, generally known as 'boulder clay', is the Glacial Till geological drift deposit that is typical of the area.

5.1.2 The maximum and minimum heights at which natural sub-stratum was recorded during the evaluation were 101.62m OD in Trench 6 and 98.20m OD in Trench 4, respectively. While this fall away to the south broadly reflects the natural sloping ground on which the site lies, it is of note that natural sub-stratum in the trenches located in the westernmost portion of the new build footprint, generally lay at around twice the depth seen in the trenches further east, due to a greater thickness of modern overburden. For example, boulder clay in Trenches 1, 2a and 7 lay at *c.* 1.10m below existing ground level, while in Trenches 3 and 5 the same material was exposed at only *c.* 0.55m below existing ground level, with there being little or no slope at ground level across the site from west to east. This indicates that there was originally a natural fall in ground level, down to the west, across the westernmost portion of the site, this prior to early modern/modern landscaping.

5.1.3 It is also of note that in Trench 6, this located in the highest part of the site in which trenches were investigated, the natural sub-stratum was encountered at a maximum depth of *c.* 0.90m below existing ground level. This was the result of a relatively substantial depth of modern overburden at this location, the material again undoubtedly derived from early modern/modern landscaping which has significantly masked the natural form of the ground surface in this part of the site.

## 5.2 Phase 2: Roman (Figures 3 and 8; Plates 1, 3 and 4)

5.2.1 In Trench 1, a NE-SW aligned linear feature, [104], was recorded cutting into the natural sub-stratum on its south-eastern side at a maximum height of 98.93m OD. The main element of this feature was *c.* 4.0m wide and up to *c.* 0.55m deep. Its single sandy clayey silt fill, [103], yielded a very small, worn sherd of Roman Samian pottery and a fragment of ceramic building material with a dark orange fabric and of possible Roman date. This feature is interpreted as a boundary ditch, which given its relatively substantial size, may have also fulfilled a defensive function. More detailed possible interpretations are that the feature may have delimited the south-eastern boundary of the vicus of *Condercum* fort or even that the feature represents one of the ditches of the Vallum on a diverted course. A thin deposit, [110], of the same composition as the infill of the ditch was situated on its north-western side, extending for a distance of *c.* 6.50m, possibly overlain by the infill. This deposit may represent trample material and/or the remnants of upcast material created during the digging of the ditch.

5.2.2 Part of a possible NNW-SSE aligned linear feature, [608], was recorded in the eastern side of Trench 6, cutting into the natural sub-stratum at a maximum height of 101.94m OD. It was at least 1.40m wide and 0.50m deep. Although no artefactual material was recovered from its lowermost silty sand and clayey silt fills, [604] and [605], respectively, its upper fill, [605], was of very similar composition to that of the fill of ditch [104] in Trench 1. On this basis and considering its stratigraphic position, the feature has been broadly assigned a Roman period origin. In terms of function, it is interpreted as a possible ditch, although since only a small portion could be exposed within the confines of the evaluation trench, further excavation would be needed to demonstrate if this were indeed the case.

### 5.3 Phase 3: Medieval? (Developed Soil) (Figures 3, 4, 5 and 9)

5.3.1 Overlying ditch [104] in Trench 1 and extending along the full length of the trench were two developed soils, [106] and [102], comprising brownish yellow and greyish brown clayey silt, respectively. They had a combined maximum thickness of up to *c.* 0.50m and the uppermost deposit, layer [102], was recorded at a maximum height of 100.68m OD. No artefactual material was recovered from either deposit and they have been assigned a possible medieval or earlier period of origin based on their stratigraphic position. The accumulation of such deposits probably represents a lengthy period - perhaps several centuries - during which the site was utilised for agricultural activity.

5.3.2 Two developed soils, [202] and [708], recorded in Trenches 2a and 7, respectively, have been interpreted as one and the same deposit. In each case the deposit was recorded along the full length of each trench, overlying the natural sub-stratum. Comprising greyish brown clayey silt, up to 0.40m thick, the deposit was recorded at a maximum height of 101.10m OD, this in Trench 7. A single worn fragment of ceramic building material, probably roof tile but of uncertain period of origin, was recovered from layer [708]. This horizon has been assigned a likely medieval or earlier period of origin based on its stratigraphic position, having been cut by a feature of probable medieval date.

5.3.3 Two other developed soils, [212] and [302], recorded in Trenches 2b and 3, respectively, have been interpreted as probably representing the same horizon as layers [202] and [708], as described above. Again comprising greyish brown clayey silt and again extending along the length of the trench in each case, the overall deposit had a maximum thickness of 0.16m and a maximum recorded height of 100.58m OD. Although no artefactual material was recovered from the deposit, its similarity, in terms of composition and stratigraphic position, to the developed soil in Trenches 2a and 7, suggests that these probably represent the same medieval or earlier horizon. Again, the accumulation of such material probably reflects a lengthy period of site usage for agricultural activity.

## 5.4 Phase 4: Medieval (Figures 4, 8 and 9; Plates 4, 5 and 6)

5.4.1 A north-south aligned linear feature, [707], was recorded in Trench 7, cutting into developed soil [708] at a maximum height of 101.04m OD. It was 1.70m wide and 0.84m deep and its single clayey silt fill, [706], yielded a single sherd of pottery with a buff fabric and of 13th to early 14th century date. Therefore, based on its form and the recovered dating evidence, this feature is interpreted as a drainage or boundary ditch of medieval origin.

5.4.2 In Trench 2a, a north-south aligned linear feature, [205], can be reasonably interpreted as being a further portion of the boundary ditch recorded in Trench 7, as described above. This element was 1.20m wide and 0.94m deep and was recorded at a maximum height of 100.14m OD. Two clayey silt fills, [214] and [206], were recorded, with fill [206] yielding a small fragment of ceramic building material with an orange fabric but of uncertain period of origin. The suggested concordance between features [205] and [707] is based on their similar stratigraphic position, form and alignment.

5.4.3 Part of a possible east-west aligned linear feature, [609], was recorded in section towards the southern extent of Trench 6, where it cut the upper fills of putative Roman feature [608]. It was at least 0.40m wide and 0.46m deep. Although no artefactual material was recovered from its single clayey silt fill, [606], the similarity in composition of this deposit to that of the fill of ditch [707], as described above, is considered to be reasonable evidence of a medieval origin. This feature has tentatively been interpreted as a possible ditch, although as only such a small portion could be exposed in the confines of the evaluation trench, further excavation would be needed to demonstrate conclusively that this was indeed the case.

## 5.5 Phase 5: Post-medieval/Early Modern (Figures 3, 4, 6 and 7)

5.5.1 A substantial deposit, [101], up to 0.62m thick and comprising a brownish grey clayey silt, was recorded extending across Trench 1 at a maximum height of 101.14m OD. No datable artefactual material was recovered from the deposit, which is interpreted as a ground raising and levelling layer of likely 19th century date, in an area that appears to have been naturally lower lying than the area to the east, as previously described.

5.5.2 A sandstone structure, [215], was recorded in section in the central portion of Trench 2a. It was built within a narrow vertical-sided construction cut, [203], which to the west truncated the upper part of Phase 3 ditch [205]. The structure comprised two parallel, NW-SE aligned, walls, *c.* 0.20m high and up to *c.* 0.33m wide, with an internal gap of *c.* 0.15m. The walls were constructed using one course of roughly hewn sandstone blocks measuring up to 0.60m x 0.50m, these capped by large roughly hewn sandstone blocks and overlain by a clayey silt infill, [204], *c.* 0.50m thick. This structure appeared in both sections of the trench, confirming its NW-SE alignment. The highest level at which it survived was 99.72m OD and its base was recorded at 99.52m OD. This structure is interpreted as a stone-lined culvert of probable later post-medieval or early modern origin.

5.5.3 A brick-lined structure, [209], was encountered in the central portion of Trench 2b. It was built within a narrow vertical-sided construction cut, [210], this cut through developed soil [212]. The structure comprised two parallel, north-south aligned, walls, *c*. 0.12m high and up to *c*. 0.25m wide, with an internal gap of *c*. 0.10m. The walls were constructed using one course of bricks and brick fragments varying in size from 120mm x 120mm x 80mm to 220mm x 120mm x 80mm, these capped by bricks and overlain by a clayey silt infill, [208], *c*. 0.28m thick. The structure ran across the trench confirming its north-south alignment. The highest level at which the structure was recorded was 100.35m OD. This structure is interpreted as a brick-lined culvert of probable later post-medieval or early modern origin.

5.5.4 Part of a substantial, irregularly-shaped feature, [403], was recorded in Trench 4. Measuring at least 19.80m east-west by at least 1.70m north-south and being at least 0.74m deep, the feature was detected by the geophysical survey as part of substantial anomaly occupying the south-eastern portion of the site. Its single silty clay fill, [402], contained frequent crushed and fragmented coal and ash. This feature is interpreted as being probably associated with known colliery workings located in the south-eastern portion of the site and beyond.

5.5.5 Two parallel, NNW-SSE aligned, linear features, [503] and [505], were recorded crossing the central and northern portions of Trench 5, respectively, cutting into natural sub-stratum. The northernmost feature, [505], was 0.57m wide and 0.10m deep and had a generally shallow U-shaped profile. Located *c*. 3.50m to the south was feature [503], this 0.61m wide and 0.15m deep and of similar profile. At the western limit of excavation it appeared to adopt a roughly north-south alignment. No artefactual material was recovered from the fill of either feature, [504] and [502], respectively, these deposits differing significantly in composition. Fill [504] comprised clayey silt, while fill [502] was a cinder and ash-rich deposit, suggesting that the features were not in use at the same time. Based on their form, both features have been interpreted as drainage features of likely later post-medieval or early modern period of origin.

### 5.6 Phase 6: Modern (Figures 3, 5, 7 and 9)

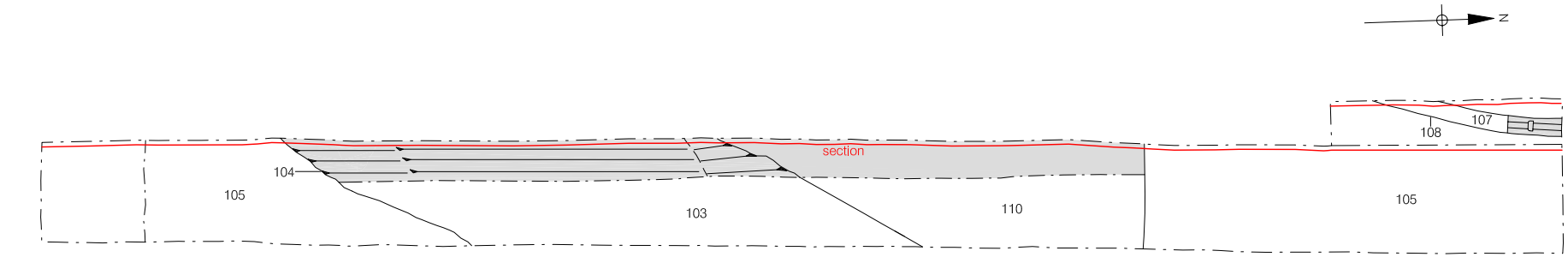
5.6.1 Variously aligned linear features, [108], [304], [703] and [705], were recorded within Trenches 1, 3 and 7. Each had a salt-glazed ceramic pipe running along its base and thus comprised part of an extensive system of drainage at the site.

5.6.2 In Trench 5, part of a shallow, possibly circular, feature, [507], was recorded. The exposed portion measured at least 0.42m east-west by 0.69m north-south and was only 5mm deep. Modern pottery and brick fragments were observed within its single clayey silt fill, [506]. Based on form and fill composition, this feature is interpreted as a shallow ‘scoop’ of modern origin.

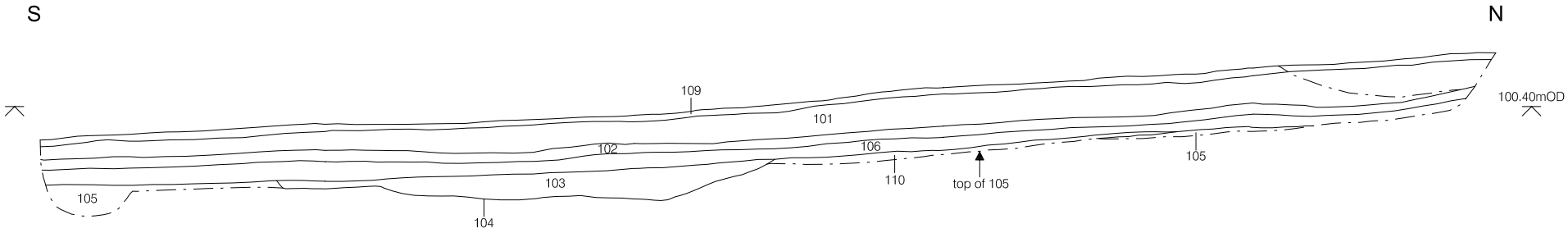
5.6.3 Two deposits, [603] and [602], were recorded extending across Trench 6. With a combined thickness of up to 1m, they were encountered at a maximum height of 102.94m OD, sloping away to the south. The lowermost deposit, [603], comprised dark grey clayey silt with frequent large patches of redeposited natural clay and modern debris throughout. It also produced a sherd of medieval pottery (Tyneside buff-white ware), of 13th or early 14th century date, this residual in context. It was overlain by deposit [602], comprising dark grey clayey silt also with frequent modern debris throughout. Both deposits are interpreted as ground raising deposits derived from landscaping activity associated with the construction of the existing school during the 20th century.

## 5.7 Phase 7: Modern (Topsoil) (Figures 3–9)

5.7.1 Topsoil was recorded in Trenches 1–7, [109], [201], [211], [301], [401], [501], [601] and [701], respectively. It generally comprised friable dark grey clayey silt. The maximum thickness recorded for any such deposit was 0.60m in Trench 2a and the minimum thickness was 0.10m, recorded in Trench 1. Layer [701] produced a large base from a grey salt-glazed vessel in a pink and buff very hard fabric. This is probably from a ‘Bellarmine-type’ vessel and thus of likely late 17th to 18th century date. The same deposit produced a solid ‘stem’ of white glass, with many impurities visible within it and thus probably production waste rather than part of a vessel; it is of likely post-Roman origin.




Trench 1. Plan.

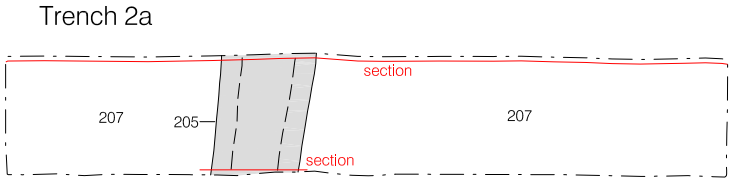


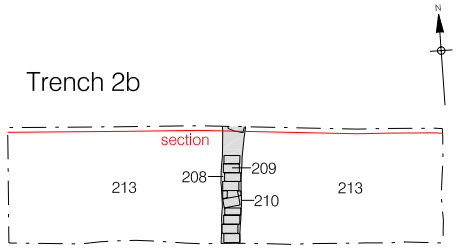

Trench 1. East facing section.

excavated portion

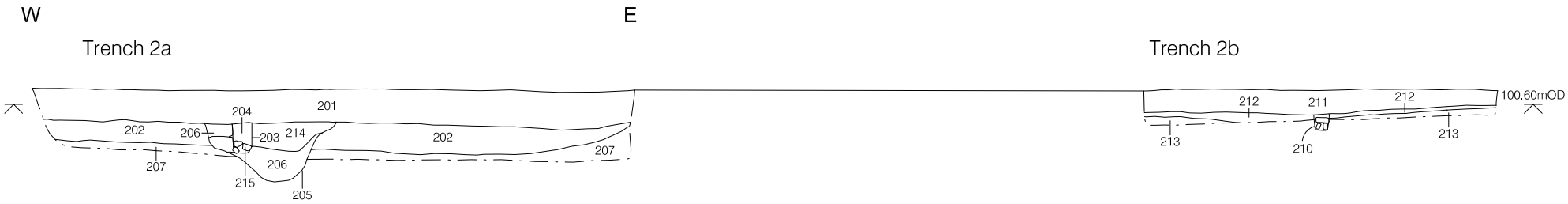
0 5m

Figure 3. Trench 1, plan and section
Scale 1:100

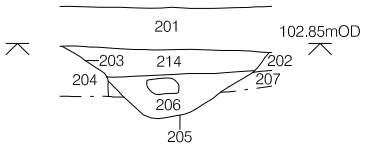



Trench 2a and 2b. Plan.



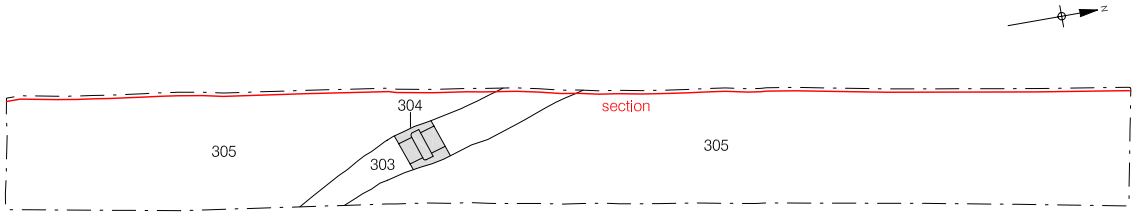

Trench 2a and 2b. South facing section.



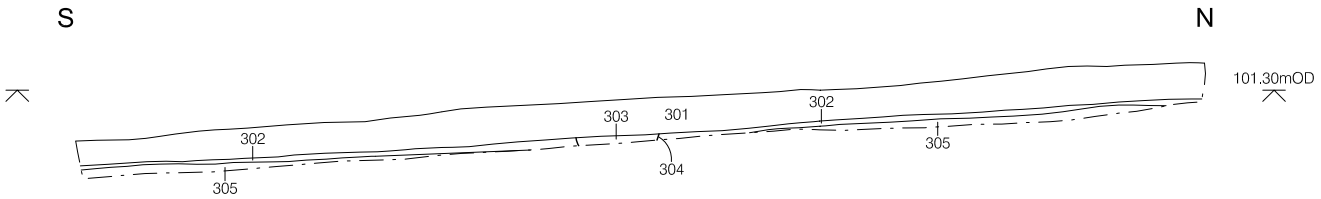

North facing section across [205].

excavated portion


Figure 4. Trench 2a and 2b, plan and section
Scale 1:100




Trench 3. Plan.

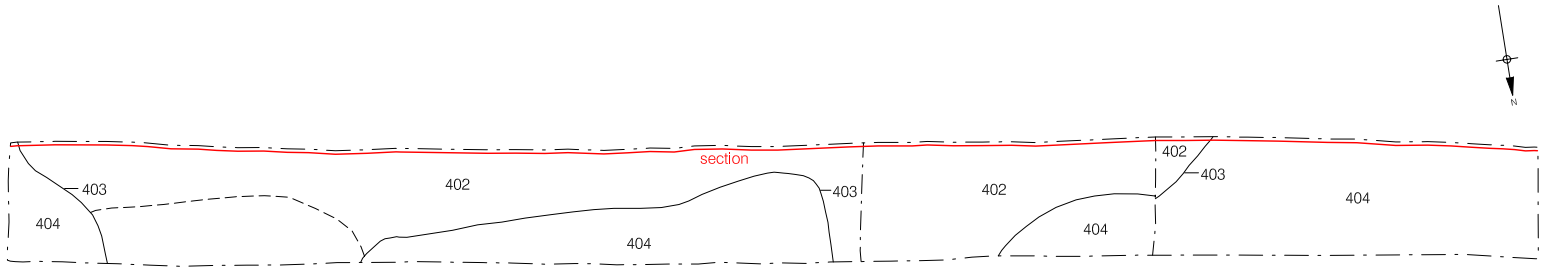



Trench 3. East facing section.

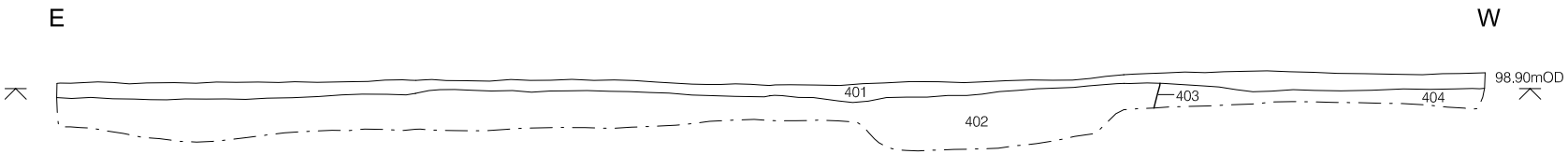
excavated portion

0 5m

Figure 5. Trench 3, plan and section
Scale 1:100



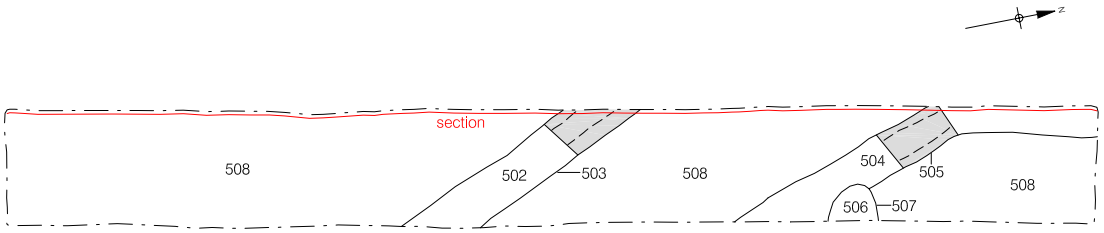

Trench 4. Plan.



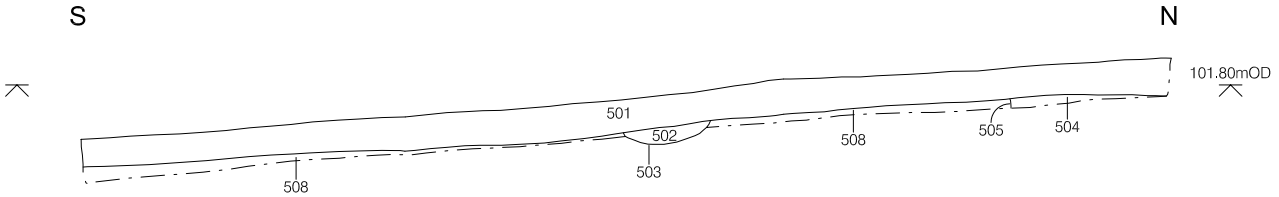

Trench 4. North facing section.

0 5m

Figure 6. Trench 4, plan and section
Scale 1:100




Trench 5. Plan.

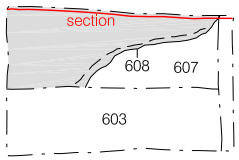



Trench 5. East facing section.

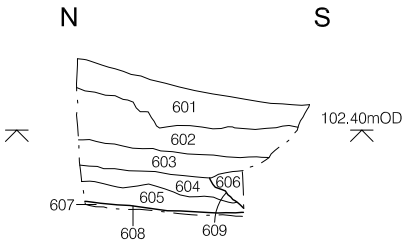
excavated portion

0 5m

Figure 7. Trench 5, plan and section
Scale 1:100




Trench 6. Plan.



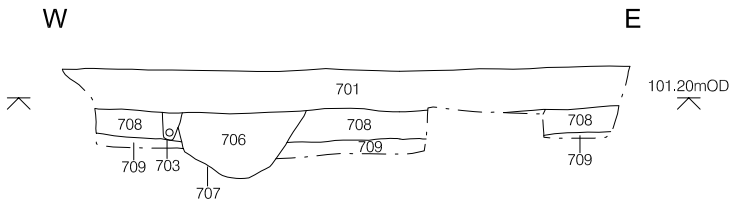

Trench 6. West facing section.

excavated portion

0 5m

Figure 8. Trench 6, plan and section
Scale 1:100


Trench 7. Plan.




Trench 7. South facing section.

excavated portion

0 5m

Figure 9. Trench 7, plan and section
Scale 1:100

# 6. CONCLUSIONS AND RECOMMENDATIONS

## 6.1 Conclusions

6.1.1 The archaeological evaluation at Trinity School (Oakfield College Site) identified archaeological remains of significance within the area of the proposed development. These remains appear to be derived from occupation of the site during the Roman and medieval periods. The remains of importance are located, for the most part, in and around the western end of the proposed new build footprint, this evidently being a naturally lower-lying area that has seen significant ground-raising in recent centuries.

6.1.2 All archaeological remains recorded during the evaluation have been assigned to seven different phases of activity, ranging from the earliest, Phase 1, comprising naturally derived geological material through to the latest, Phase 7, comprising modern topsoil.

6.1.3 Phase 2 represents likely Roman period activity, these remains being of the greatest significance amongst those recorded during the evaluation. A substantial linear NE-SW aligned ditch was recorded in Trench 1, this the westernmost trench, positioned to test the western end of the main new build footprint. The ditch yielded a small sherd of Roman Samian pottery and a fragment of possible Roman building material. The dimensions of the ditch, up to 4.0m in width, suggest a possible defensive function, rather than it being a simple drainage feature. Since the site lies within the assumed eastern limit of the *vicus* associated with the Roman fort *Condercum*, it is perhaps plausible to suggest that the feature defined this eastern limit. A NW-SE aligned linear feature, interpreted as possibly part of another ditch, was recorded in Trench 6. Although this yielded no artefactual material, its stratigraphic position and its fill composition suggest that it may also be of Roman date. Any Roman period remains at the site would be of **high** archaeological significance.

6.1.4 Phase 3 represents developed soil horizons recorded in Trenches 1, 2a, 2b, 3 and 7, in the central and western portions of the site. None yielded datable artefactual material, although a medieval or earlier date is assumed, since, in Trenches 2a and 7, features of probable medieval date cut through the Phase 3 deposit. Remains at the site such as those assigned to Phase 3 would be of **low** to **moderate** archaeological significance.

6.1.5 Phase 4 represent archaeological remains of probable medieval date. Two parts of probably the same north-south aligned ditch were recorded in Trenches 2a and 7; a sherd of pottery recovered indicates a 13th century to early 14th century date. The ditch may have been just one element of an extensive system of land boundary and/or drainage features set out on the northern valley side during the medieval period. A feature recorded in Trench 6 may also have been part of a ditch and a medieval date for this is possible. Medieval remains in the form of cut features, structures or occupation deposits at the site would be of **moderate** or **high** archaeological significance.

6.1.6 Phase 5 activity comprised features and deposits attributed to the later post-medieval or early modern period. Such remains include ground raising material, various drainage features, including stone- and brick-lined culverts, and a substantial feature possible related to colliery workings in the vicinity. All are considered to be of **negligible** or **low** archaeological significance.

6.1.7 Phase 6 was assorted activity of the modern period, including several drain runs and substantial ground raising deposits recorded in Trench 6, these probably derived from landscaping associated with construction of the existing school during the 20th century. All such remains are considered to be of **negligible** archaeological significance.

6.1.8 The main conclusion of the evaluation is that, in its present form, the proposed development will impact upon important archaeological remains at the site. The evaluation suggests that such remains are located only in and around the western portion of the new build footprint. For example, important archaeological remains were encountered at a depth of *c*. 0.50m to 0.80m below existing ground surface in Trenches 1, 2a and 7, these within the westernmost portion of the main new build footprint, and at a depth of *c*. 0.90m to 1.40m below existing ground surface in Trench 6, this on landscaped ground further north, close to the proposed western elevation of a northern extension to the main new build footprint. The extent of impact on these important archaeological remains will certainly depend upon the form and extent of pre-construction groundworks. Existing proposals require a corridor of substantial 'cut' into existing ground levels to allow the construction of a retaining wall along the line of the north elevation of the main new build footprint (Figures 10 and 11). Thus it is concluded that archaeological remains within and around this corridor of impact will be destroyed.

## 6.2 Recommendations

6.2.1 The archaeological evaluation described in this report has identified the presence of important archaeological remains of probable Roman and medieval date at the site. Where such remains will be impacted upon by development groundworks they must be preserved by record through the processes of archaeological excavation and recording, conducted ahead of the development, with subsequent adequate reporting and, if necessary, publication of the findings. The Tyne and Wear County Archaeologist, in discussion with the English Heritage Hadrian's Wall Archaeologist, indicated during a site-monitoring visit that the LPA will be advised along these lines in order to mitigate the impact of the development on the archaeological resource.

6.2.3 It is recommended that open area archaeological excavation be undertaken across the indicative area shown on Figure 10 prior to the main phase of development groundworks. This area encompasses the corridor of substantial 'cut', as described above, in order to achieve preservation by record of important archaeological remains prior to their destruction.

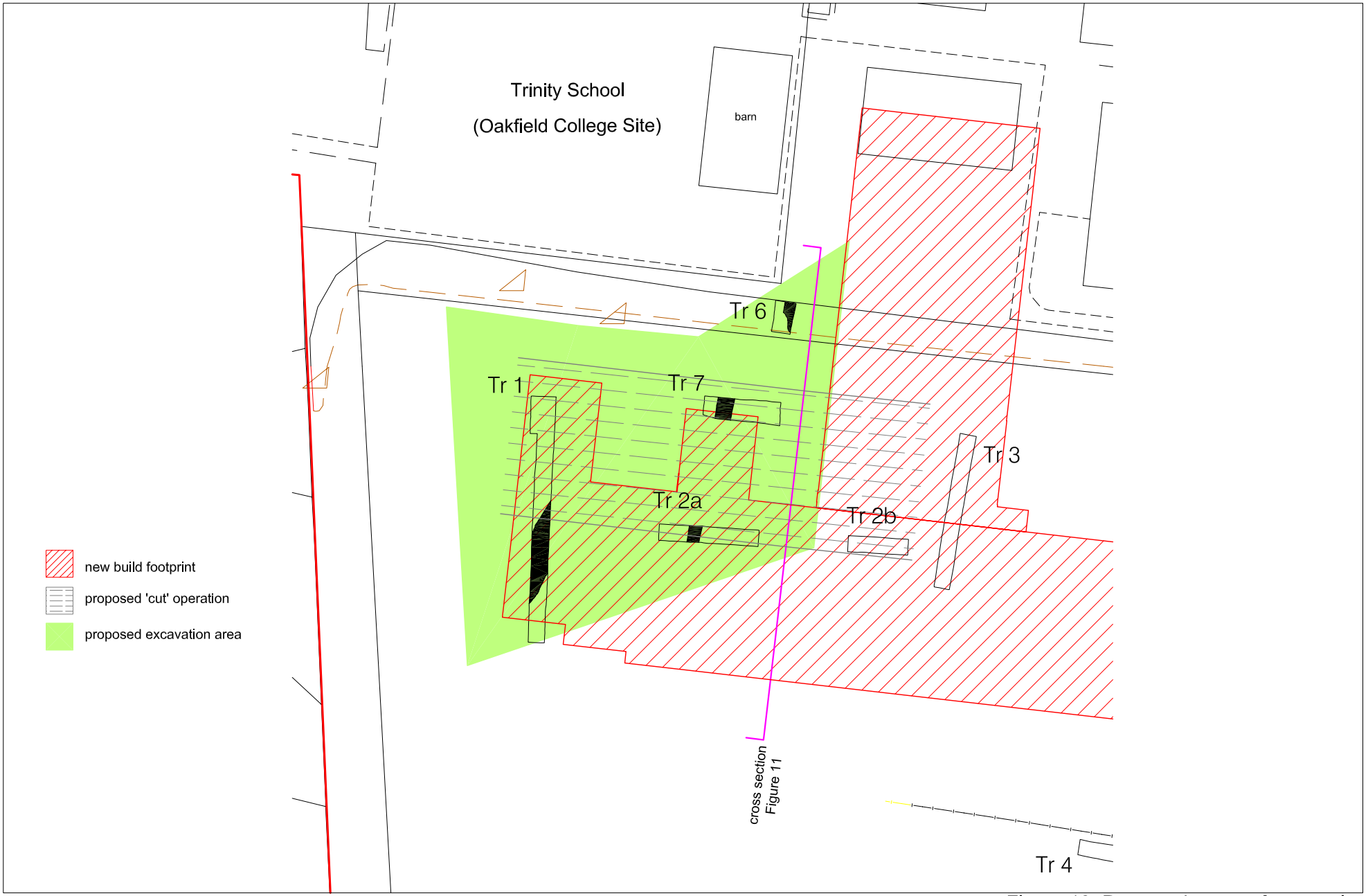



Figure 10. Proposed areas of excavation
Scale 1:500

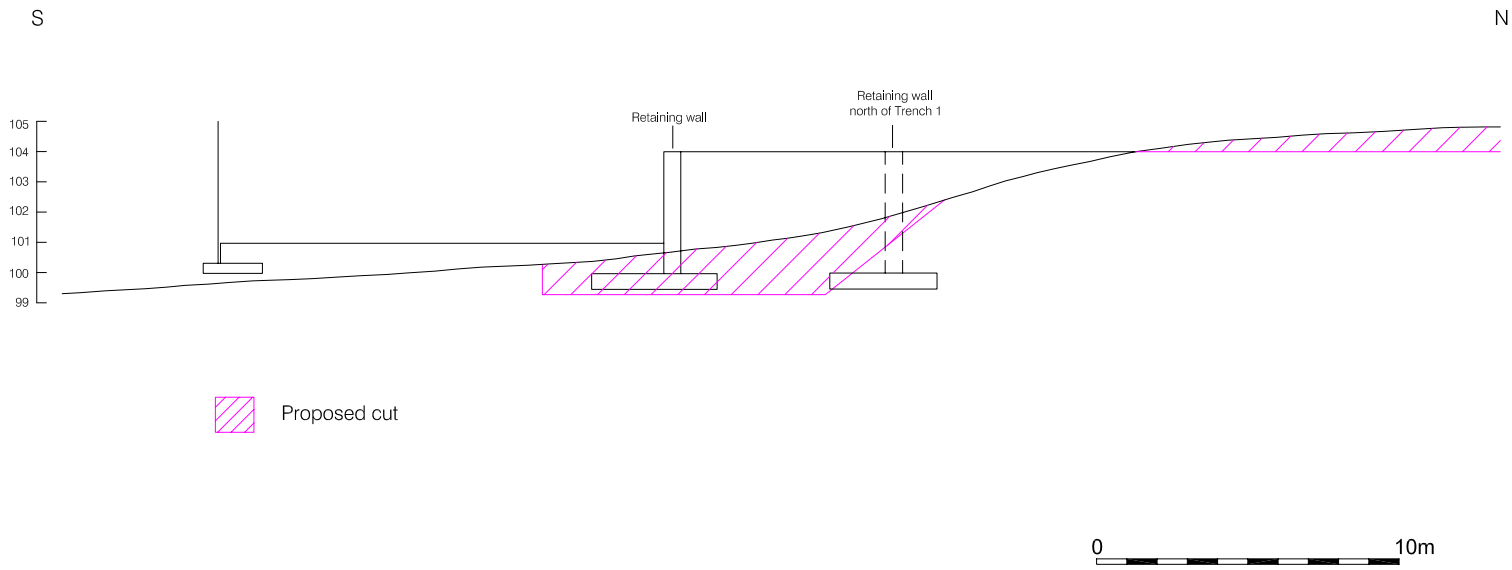



Figure 11. Cross-section of 'cut' for main new build
Scale 1:250

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# 8. ACKNOWLEDGEMENTS AND CREDITS


## Acknowledgements

Pre-Construct Archaeology would like to thank Sir Robert McAlpine Limited for commissioning and funding the work described in this report. The liaison roles of Eddie Dolphin and Sean Took are particularly acknowledged.

The curatorial roles of David Heslop, the Tyne and Wear County Archaeologist, and Mike Collins, English Heritage's Hadrian's Wall Archaeologist, are also acknowledged.


## PCA Credits

*Field evaluation*: Aaron Goode (Site Supervisor), Mike Coates, Amy Roberts

*Report:* Aaron Goode and Robin Taylor-Wilson

*Project Manager*: Robin Taylor-Wilson

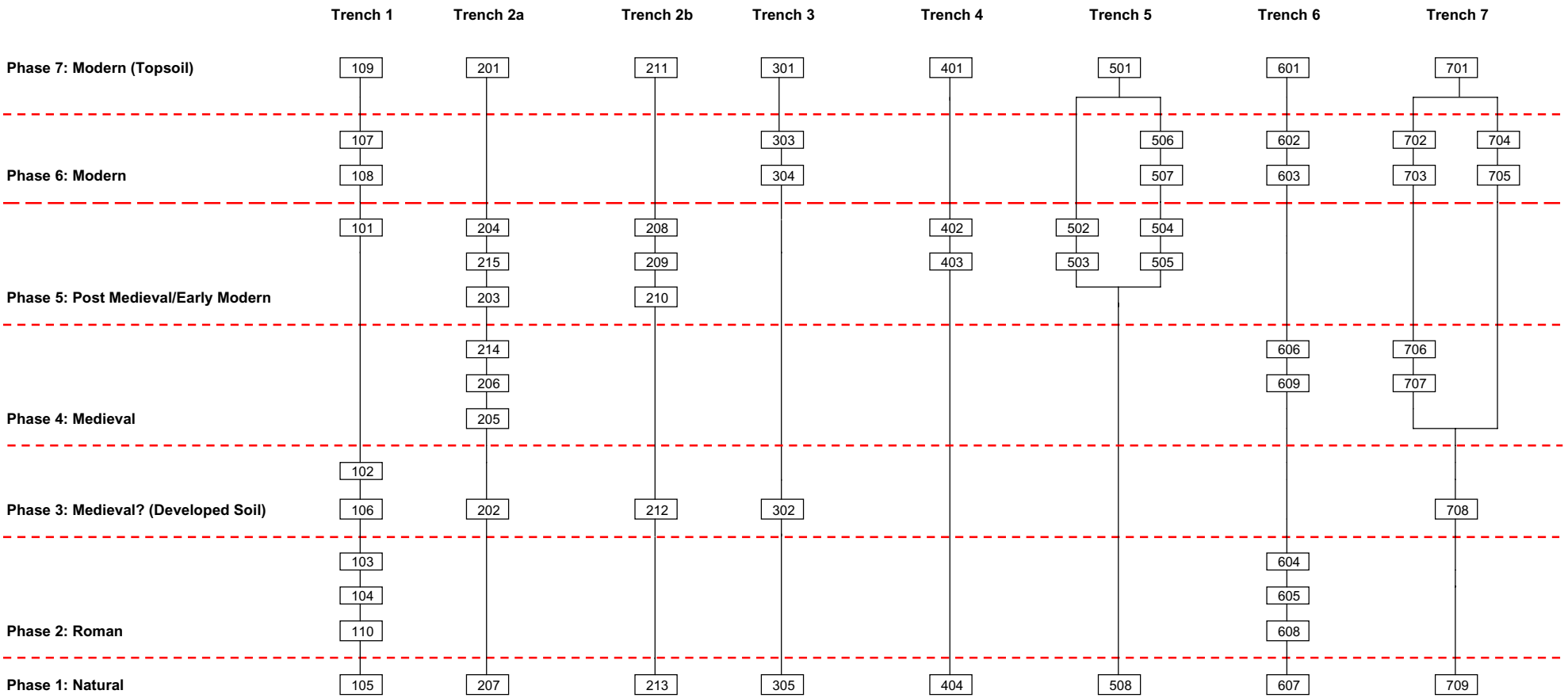
*CAD*: Adrian Bailey

## Other Credits

*Geophysical Survey:* Professor Mark Noel, GeoQuest Associates

*Artefacts Comment:* Jenny Vaughan, Northern Counties Archaeological Services

# APPENDIX A
## STRATIGRAPHIC MATRICES


Trench 1
Trench 2a
Trench 2b
Trench 3
Trench 4
Trench 5
Trench 6
Trench 7
Phase 7: Modern (Topsoil)
Phase 6: Modern
Phase 5: Post Medieval/Early Modern
Phase 4: Medieval
Phase 3: Medieval? (Developed Soil)
Phase 2: Roman
Phase 1: Natural
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# APPENDIX B
## CONTEXT INDEX

***TSB 09: CONTEXT INDEX***

| *Context* | *Trench* | *Phase* | *Type 1* | *Type 2* | *Interpretation* |
|---|---|---|---|---|---|
| 101 | 1 | 5 | deposit | layer | ground-raising/levelling deposit |
| 102 | 1 | 3 | deposit | layer | developed soil |
| 103 | 1 | 2 | deposit | fill | fill of ditch [104] |
| 104 | 1 | 2 | cut | linear | ditch; filled by [103] |
| 105 | 1 | 1 | deposit | layer | natural sub-stratum in Trench 1 |
| 106 | 1 | 3 | deposit | layer | developed soil |
| 107 | 1 | 6 | deposit | fill | fill of drain [108] |
| 108 | 1 | 6 | cut | linear | drain; filled by [107] |
| 109 | 1 | 7 | deposit | layer | topsoil in Trench 1 |
| 110 | 1 | 2 | deposit | layer | trample/ditch upcast? |
| 201 | 2a | 7 | deposit | layer | topsoil in Trench 2a |
| 202 | 2a | 3 | deposit | layer | developed soil |
| 203 | 2a | 5 | cut | linear | construction cut for culvert [215]; filled by [204] |
| 204 | 2a | 5 | deposit | fill | fill of construction cut [203] |
| 205 | 2a | 4 | cut | linear | ditch; filled by [206], [214] |
| 206 | 2a | 4 | deposit | fill | fill of ditch [205] |
| 207 | 2a | 1 | deposit | layer | natural sub-stratum in Trench 2a |
| 208 | 2b | 5 | deposit | fill | fill of construction cut [210] |
| 209 | 2b | 5 | structure | culvert | brick-lined culvert |
| 210 | 2b | 5 | cut | linear | construction cut for culvert [209]; filled by [208] |
| 211 | 2b | 7 | deposit | layer | topsoil in Trench 2b |
| 212 | 2b | 3 | deposit | layer | developed soil |
| 213 | 2b | 1 | deposit | layer | natural sub-stratum in Trench 2b |
| 214 | 2a | 4 | deposit | fill | fill of ditch [205] |
| 215 | 2a | 5 | structure | culvert | stone-lined culvert |
| 301 | 3 | 7 | deposit | layer | topsoil in Trench 3 |
| 302 | 3 | 3 | deposit | layer | developed soil |
| 303 | 3 | 6 | deposit | fill | fill of drain [304] |
| 304 | 3 | 6 | cut | linear | drain; filled by [303] |
| 305 | 3 | 1 | deposit | layer | natural sub-stratum in Trench 3 |
| 401 | 4 | 7 | deposit | layer | topsoil in Trench 4 |
| 402 | 4 | 5 | deposit | fill | fill of feature [403] |
| 403 | 4 | 5 | cut | discrete | substantial feature; filled by [403] |
| 404 | 4 | 1 | deposit | layer | natural sub-stratum in Trench 4 |
| 501 | 5 | 7 | deposit | layer | topsoil in Trench 5 |
| 502 | 5 | 5 | deposit | fill | fill of ditch [502] |
| 503 | 5 | 5 | cut | linear | ditch; filled by [502] |
| 504 | 5 | 5 | deposit | fill | fill of ditch [505] |
| 505 | 5 | 5 | cut | linear | ditch; filled by [504] |
| 506 | 5 | 6 | deposit | fill | fill of pit [507] |
| 507 | 5 | 6 | cut | discrete | pit; filled by [506] |
| 508 | 5 | 1 | deposit | layer | natural sub-stratum in Trench 5 |
| 601 | 6 | 7 | deposit | layer | topsoil in Trench 6 |
| 602 | 6 | 6 | deposit | layer | ground-raising/levelling deposit |
| 603 | 6 | 6 | deposit | layer | ground-raising/levelling deposit |
| 604 | 6 | 2 | deposit | fill | fill of ditch [608] |
| 605 | 6 | 2 | deposit | fill | fill of ditch [608] |
| 606 | 6 | 4 | deposit | fill | fill of possible ditch [609] |
| 607 | 6 | 1 | deposit | layer | natural sub-stratum in Trench 6 |
| 608 | 6 | 2 | cut | linear | ditch; filled by [604], [605] |
| 609 | 6 | 7 | cut | linear | possible ditch; filled by [606] |
| 701 | 7 | 7 | deposit | layer | topsoil in Trench 7 |
| 702 | 7 | 6 | deposit | fill | fill of drain [703] |
| 703 | 7 | 6 | cut | linear | drain; filled by [702] |
| 704 | 7 | 6 | deposit | fill | fill of drain [705] |
| 705 | 7 | 6 | cut | linear | drain; filled by [704] |
| 706 | 7 | 4 | deposit | fill | fill of ditch [707] |
| 707 | 7 | 4 | cut | linear | ditch; filled by [706] |
| 708 | 7 | 3 | deposit | layer | developed soil |
| 709 | 7 | 1 | deposit | layer | natural sub-stratum in Trench 7 |

# APPENDIX C
# PLATES

Plate 1. Trench 1, ditch [104], looking north-west *(2m scale)*.

Plate 2. Trench 1 overview, looking north *(2m scale)*.

Plate 3. Trench 6, ditch [608], looking north *(1m scale)*.

Plate 4. Trench 6, west facing section *(1m scale)*.

Plate 5. Trench 7, south facing section *(1m scale)*.

Plate 6. Trench 7 overview, looking east *(1m scale)*.

# APPENDIX D
## GEOPHYSICAL SURVEY REPORT

# GEOPHYSICAL SURVEY OF AREAS AT TRINITY SCHOOL (OAKFIELD COLLEGE SITE), CONDERCUM ROAD, BENWELL, NEWCASTLE UPON TYNE

Site Code : TSB 08
Grid Ref.: NZ 2185 6450 (Centre)

A programme of research carried out on behalf of

**Pre-Construct Archaeology Ltd**

by

**GeoQuest Associates**

# 1 INTRODUCTION

1.1 This report describes the results of an archaeological geophysical survey on four grassed areas in the grounds of Trinity School to the west of Condercum Road, in Benwell, Newcastle upon Tyne (Figure 1). Proposals are being prepared for the re-development of the site with new school buildings, a sports pitch, car parking and associated landscaping, as part of the national Building Schools for the Future (BSF) programme. The aim of the survey was to test for the presence of subsoil archaeological features for which mitigation may be required prior to the development.

1.2 The research was carried out by GeoQuest Associates on behalf of Pre-Construct Archaeology Limited (PCA) who are acting as archaeological consultants to Sir Robert McAlpine Limited. PCA have compiled an archaeological desk-based assessment (DBA) of the scheme which has evaluated the likely impact of the development on the archaeological resource. Both the DBA and present geophysical survey are a requirement of the Tyne and Wear County Archaeologist, who identified that the site is of potential archaeological interest.

1.3 The site is located about 50m south of Hadrian's Wall, with *Condercum* Roman Fort within 150m to the northwest, and it is thought that the site lies within the area of civilian settlement associated with the Roman fort. There are no known prehistoric or medieval features of significance within the proposal area, the main potential being for the survival of archaeological remains dating from the Roman period. Therefore, since construction of the new buildings and other facilities may impact on the archaeological resource, a geophysical investigation was proposed as part of an assessment strategy.

1.4 Geophysical survey was carried out by staff from GeoQuest Associates on 6th January 2009, encompassing four separate areas (Figure 1). These comprised two adjoining grassed paddocks used by the school farm, a sports pitch of improved grassland and a small area of lawn immediately east of the main school building. It is worthwhile noting that the study area contains numerous inspection covers for underground services and an area of disturbed ground in the southwest part of the larger paddock.

# 2 THE GEOPHYSICAL SURVEY

2.1 A baseline for the geophysical survey of the main block was constructed coincident with the post and wire fence that bisects this part of the site. The origin of this baseline was a substantial round straining post at the end of the fenceline and Figure 1 provides an exact definition of this baseline position. The geophysical survey block on the lawns was located with reference to the school building. Coordinates of features detected by the survey can be determined relative to the main baseline or OS detail by extraction from the associated CAD file that forms part of the site archive.

2.2 Measurements of vertical geomagnetic field gradient were recorded using a Geoscan FM36 fluxgate gradiometer with 0.05nT/m resolution. A zig-zag traverse scheme was employed and data were logged in grid units of 20x20m at 1.0x0.5m intervals, thus providing 800 measurements per grid.

2.3 Data obtained from the survey were downloaded on-site into a portable graphics computer for quality checks and initial processing. These data were subsequently transferred to a laboratory computer for final processing, interpretation and archiving.

2.4 The GeoQuest InSite® software was used to process the gridded geophysical data and thus convert the field readings into two continuous-tone grey-scale images. In Figure 2 a convention has been used that shows positive magnetic anomalies as dark grey and negative magnetic anomalies as light grey. Further details of the data processing procedures are given in Appendix A.

2.5 An archaeological interpretation of the geophysical survey is presented in Figures 3 and 4. A key defines the colours and fill styles used in these drawings, while feature codes **f1** and **f2**, etc, are included in Figure 4 for reference in the discussion below.

## 3 INTERPRETATION

3.1 **f1** & **f8**: Geophysical anomalies throughout the study area were found to be very intense, largely due to major concentrations of ferrous litter, inspection covers and buried iron pipes. Unfortunately, strong magnetic anomalies arising from these targets may have obscured the more subtle geophysical expression of subsoil archaeological features. In addition, magnetic fields arising from the school building and steel-framed shelter have contributed additional interference to geophysical data obtained on the lawns in the northeast of the site.

3.2 **f2**, **f3** & **f4**: Several chains of strong magnetic dipoles (paired black-white, Figure 2) provide convincing evidence for the existence of buried iron pipes beneath the larger paddock on the western side of the site. The longest of these pipes is oriented approximately north-south, apparently extending from Conhope Lane to the main school building. It may be possible to confirm the existence and nature of these pipelines by reference to a local utility plan.

3.3 **f5** & **f6**: Further chains of strong dipoles have been detected within the sports pitch, suggesting that 2 or more buried iron pipes or land drainage services may exist here also. However, the presence of other strongly magnetic features has prevented the exact delineation and interpretation of these features.

3.4 **f7**: The major geophysical anomaly mapped by the survey comprises a 30x50m rectangular block in the southeast corner of the site where the magnetisation was sufficiently intense to saturate the fluxgate magnetometer (i.e. exceeding 250nT/m field gradient). Such intense magnetic anomalies are usually associated with buried steel tanks, sets of closely-spaced iron pipes or fired archaeological features containing *in situ* thermoremanent magnetisation. When this region is examined under lower image contrast a rectilinear pattern of magnetic dipoles is apparent, suggesting that buried iron pipes, tank(s) or covers, rather than fired archaeological structures is the underlying source. However, it may be prudent to test this interpretation by means of trial trenching under archaeological supervision.

3.5 No further geophysical anomalies of archaeological or geotechnical interest have been detected in the study area.

## 4 SUMMARY AND CONCLUSIONS

4.1 A fluxgate magnetometer was used to carry out an archaeological geophysical survey on areas of proposed re-development at Trinity School, Condercum Road, Benwell in the city of Newcastle upon Tyne. The survey data were found to be dominated by strong anomalies arising from buried iron pipes, inspection covers and ferrous litter in the topsoil, to the extent that more subtle anomalies (of possible archaeological interest) may have been obscured. Hence further site investigation by trial trenching may be warranted in order to fully assess the archaeological potential of the site. In particular, there is a small possibility that an area of very intense magnetisation in the southeast corner comprises a fired structure, although the general structure of the magnetic anomaly appears to be more consistent with a set of pipes or buried metal tanks.

## 5 CONFIDENCE LIMITS

5.1 The following are the levels of confidence which we assign to the features inferred from the geophysical data:

| FEATURE | INTERPRETATION | CONFIDENCE LEVEL, % | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| **f1, f8** | Ferrous litter | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| **f2, f3, f4** | Iron pipes | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | |
| **f5, f6** | Iron pipes | ■ | ■ | ■ | ■ | | | | | | |
| **f7** | As pipes, tanks, etc | ■ | ■ | ■ | ■ | | | | | | |
| **f7** | As fired structure | ■ | ■ | | | | | | | | |

## 6 CREDITS

Survey & Report: M. J. Noel PhD, FRAS
Date: 8th January 2009

**Note**: Whilst every effort has been taken in the preparation and submission of this report in order to provide as complete an assessment as possible within the terms of the brief, GeoQuest Associates cannot accept any responsibility for consequences arising as a result of unknown and undiscovered sites or artefacts.

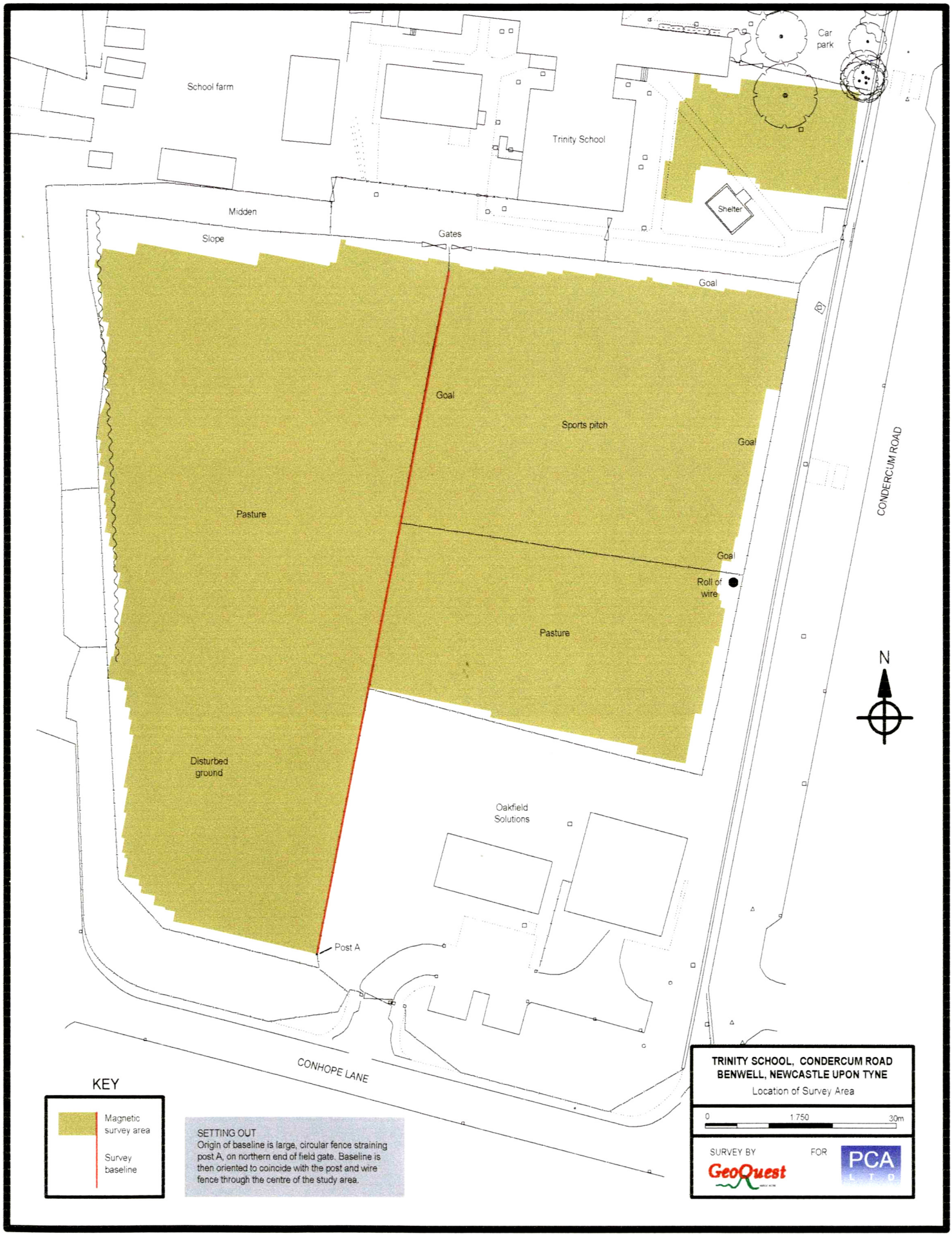
School farm
Trinity School
Car park
Shelter
Midden
Slope
Gates
Goal
Goal
Sports pitch
Goal
Goal
Roll of wire
Pasture
Pasture
CONDERCUM ROAD
N
Disturbed ground
Oakfield Solutions
Post A
CONHOPE LANE
KEY
Magnetic survey area
Survey baseline
SETTING OUT
Origin of baseline is large, circular fence straining post A, on northern end of field gate. Baseline is then oriented to coincide with the post and wire fence through the centre of the study area.
TRINITY SCHOOL, CONDERCUM ROAD
BENWELL, NEWCASTLE UPON TYNE
Location of Survey Area
0
1:750
30m
SURVEY BY
GeoQuest
FOR
PCA
LTD

FIGURE 1


School farm
Trinity School
Car park
Shelter
Midden
Slope
Gates
Goal
CONDERCUM ROAD
N
Oakfield Solutions
Post A
CONHOPE LANE
ANOMALIES, nT/m
-23.6 -2.6 0.0 2.7 23.6
TRINITY SCHOOL, CONDERCUM ROAD
BENWELL, NEWCASTLE UPON TYNE
Results of Geophysical Survey
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30m
SURVEY BY
GeoQuest
FOR
PCA

FIGURE 2

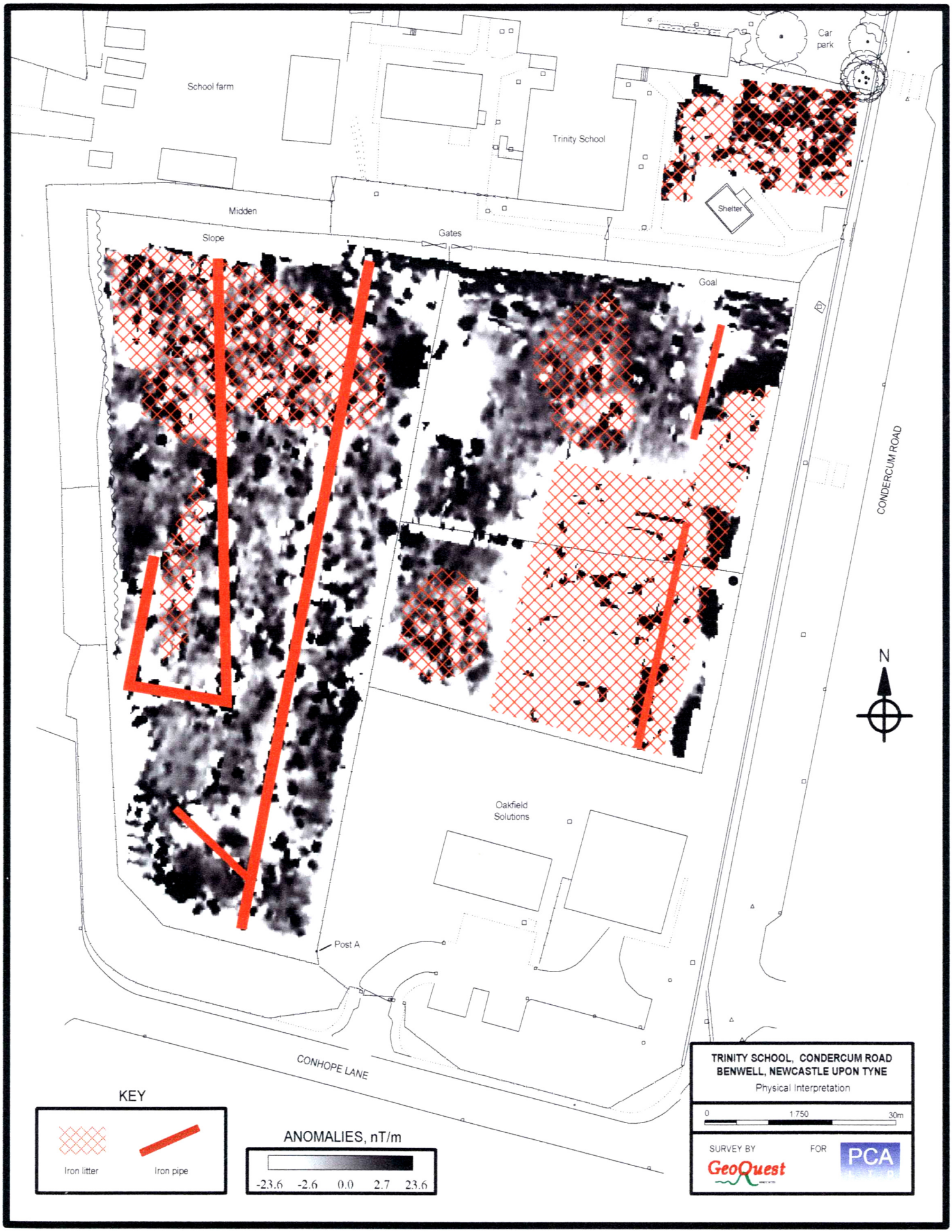
School farm
Trinity School
Car park
Shelter
Midden
Slope
Gates
Goal
CONDERCUM ROAD
N
Oakfield Solutions
Post A
CONHOPE LANE
KEY
Iron litter
Iron pipe
ANOMALIES, nT/m
-23.6 -2.6 0.0 2.7 23.6
TRINITY SCHOOL, CONDERCUM ROAD
BENWELL, NEWCASTLE UPON TYNE
Physical Interpretation
0
1:750
30m
SURVEY BY
GeoQuest
FOR
PCA

FIGURE 3

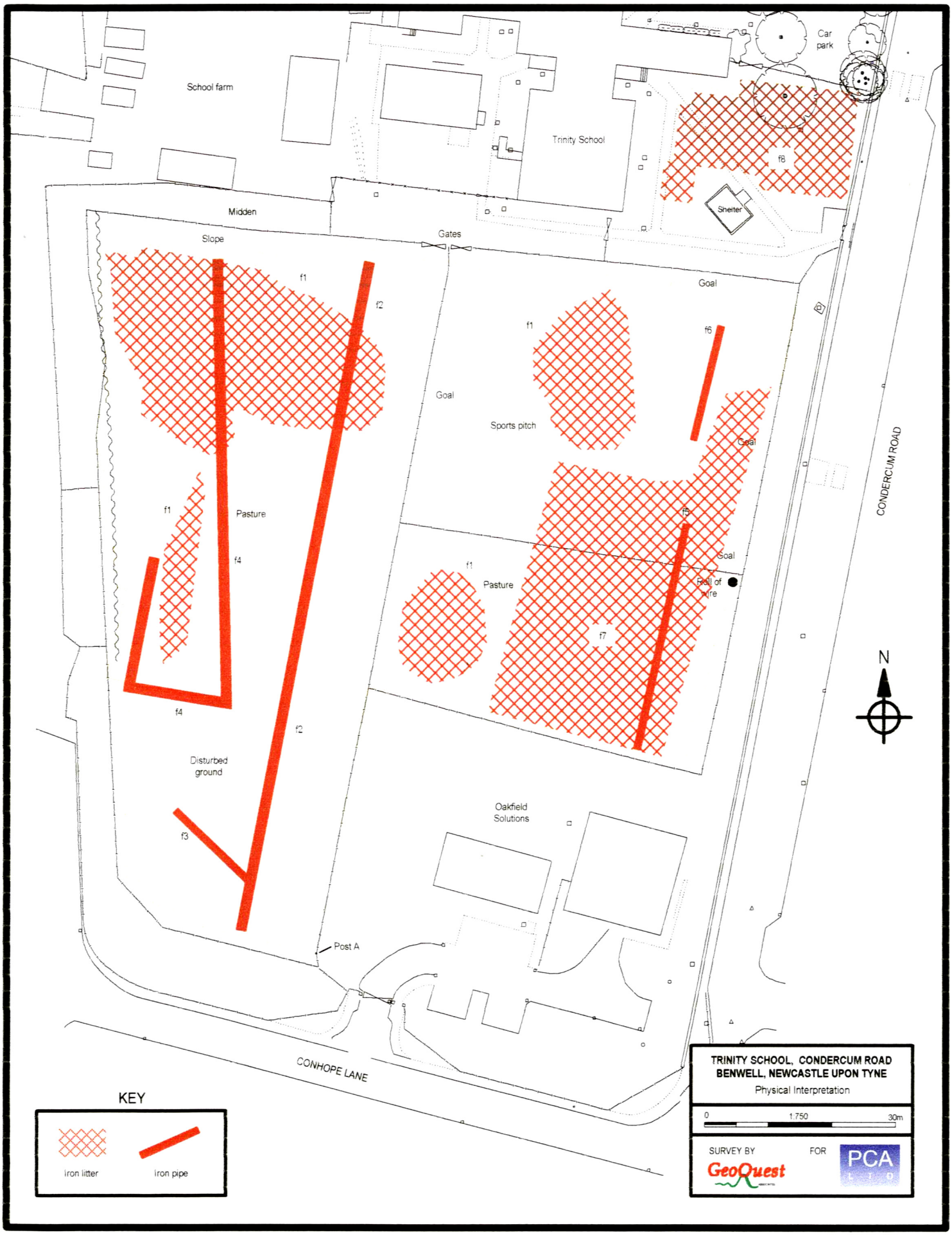
School farm
Trinity School
Car park
f8
Shelter
Midden
Slope
Gates
Goal
f1
f2
f6
Goal
Sports pitch
Goal
CONDERCUM ROAD
f1
Pasture
f4
f5
Goal
f1
Pasture
Roll of wire
f7
f4
f2
Disturbed ground
f3
Oakfield Solutions
Post A
CONHOPE LANE
N
KEY
Iron litter
Iron pipe
TRINITY SCHOOL, CONDERCUM ROAD
BENWELL, NEWCASTLE UPON TYNE
Physical Interpretation
0
1:750
30m
SURVEY BY
GeoQuest
FOR
PCA

FIGURE 4