

**An Archaeological Watching Brief at St. Robert of Newminster School,  
Biddick Lane, Washington, Tyne and Wear**

**Central National Grid Reference: NZ 3082 5477**

**Site Code: SRW 09**

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September 2009**

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## **1. NON-TECHNICAL SUMMARY**

- 1.1 An archaeological monitoring and recording exercise was undertaken in August 2009 close to the southern boundary of St. Robert of Newminster School, Biddick Lane, Washington, Tyne and Wear. The central National Grid Reference of the site is NZ 3082 5477.
- 1.2 The investigation, undertaken by Pre-Construct Archaeology Limited and commissioned by Northern Electric Distribution Limited, involved monitoring groundworks associated with the installation of an underground electricity supply for St. Robert of Newminster School. The supply route began to the east on Biddick Lane, running northwards along the pavement before turning south-westwards to run along the northern edge of a former railway embankment, now a cycle path skirting the southern boundary of the school, and then turning to the north to enter the school grounds.
- 1.3 The work was carried out following a recommendation by the Tyne and Wear Archaeology Officer. The cycle path to the south of the school follows the route of the former Stanhope and Tyne Railway. This was constructed in 1834 to transport coal to limestone kilns at Stanhope Quarry and convey limestone from the quarry but was subsequently used for passenger and freight services, before closing in 1981. With the route of the electricity supply crossing the line of the former railway at Biddick Lane and then running south-westwards alongside its embankment, the work was considered to have potential to disturb archaeological remains of the industrial era.
- 1.4 No deposits of archaeological significance were recorded during the work. In the area where the cable trench crossed the line of the former railway on Biddick Lane, modern disturbance associated with existing services was recorded. For most of the section of cable trench running along the northern edge of the railway embankment, a thin deposit of coal waste overlay natural boulder clay, this possibly related to the embankment. In the south-westernmost portion of the trench, modern disturbance was recorded.

## **2. INTRODUCTION**

### **2.1 General Background**

- 2.1.1 This report describes the methodology and results of an archaeological monitoring and recording exercise (hereafter 'watching brief') carried out close to the southern boundary of St. Robert of Newminster School, Biddick Lane, Washington, Tyne and Wear (Figure 1).
- 2.1.2 The watching brief was undertaken 24-26 August 2009 by Pre-Construct Archaeology Limited (PCA) and the work was commissioned by Northern Electric Distribution Limited (NEDL). The investigation took place in association with the installation of an underground electricity supply for St. Robert of Newminster School.
- 2.1.3 The archaeological work was undertaken following a recommendation by the Tyne and Wear Archaeology Officer (TWAO). The supply route crosses and runs alongside the line of the former Stanhope and Tyne Railway, so that the installation had the potential to disturb important archaeological remains of the industrial era.
- 2.1.4 A Specification for the undertaking of the watching brief was issued by the TWAO.<sup>1</sup> The broad aim of the work was to allow preservation by record of archaeological remains encountered during intrusive groundworks, namely the excavation of the trench to house a cable to carry the electricity supply.
- 2.1.5 At the time of writing, the project archive is housed at the Northern Office of PCA, at Unit N19a, Tursdale Business Park, Durham. The completed project archive, comprising written, drawn, and photographic records will be ultimately deposited at Tyne and Wear Museums, Arbeia, South Shields, under the site code SRW 09. The **Online Access** to the **Index of Archaeological InvestigationS** (OASIS) reference number is: preconst1-64383.

### **2.2 Site Location and Description**

- 2.2.1 The site is located adjacent to the southern boundary of St. Robert of Newminster School, Biddick Lane, Washington, Tyne and Wear. Its central National Grid Reference is NZ 3082 5477 (Figure 1). The school is situated on the north edge of Fatfield, one of the villages that form the modern conurbation of Washington.
- 2.2.2 The route of the electricity cable began to the west on Biddick Lane, running northwards along the pavement along the west side of the highway for c. 50m. It then turned to the south-west to run c. 150m along the northern edge of the former railway embankment that skirts the southern boundary of the school. The route then turned to the north, running for c. 20m and entering the school grounds (Figure 2).
- 2.2.3 The portion of the former Stanhope and Tyne Railway running through Washington forms part of the Consett & Sunderland Railway Path, part of the 'C2C', a National Cycle Network route. Woodland and shrubbery bounded the portion of the cycle path where the work herein described took place.

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<sup>1</sup>Newcastle City Council, 2009. The document is included as Appendix A to this report.





Figure 1. Site location  
Scale 1:25,000





Figure 2. Areas of investigation  
Scale 1:12,500

## 2.3 Geology and Topography

- 2.3.1 The site lies within the eastern central portion of the Durham Coalfield, west of the late Permian age Magnesian Limestone escarpment that runs north-south through Sunderland. The solid geology of this lower lying ground below the Limestone outcrop is the Carboniferous age Upper and Middle Coal Measures, consisting of a succession of mudstones, siltstones, sandstones and coals.<sup>2</sup>
- 2.3.2 Across much of the wider area, bedrock is concealed beneath a mantle of superficial or drift deposits of Quaternary age. These largely comprise boulder clay, known locally in the Washington area as Pelaw Clay. Boulder clays are typically extensive, c. 10m thick in most places. Relatively thick deposits of laminated clay occur locally in buried valley locations, such as Birtley to the west of the study site, where such deposits were extensively exploited for brick-making. Pockets of sand and gravel are also known in the Washington area.
- 2.3.3 The main geographical feature in the wider area is the River Wear, which flows c. 1km to the south and c. 1.2km to the east of the site, carving a meandering path through the Carboniferous rock and then, further east, through the Permian Magnesian Limestone towards its outlet at Sunderland.

## 2.4 Planning Background

- 2.4.1 The Tyne and Wear Specialist Conservation Team, part of the Historic Environment Section of Newcastle City Council, undertakes archaeological development control - including consultations on the archaeological implications of utility schemes - throughout Tyne and Wear. As the cable installation crosses the route of the former Stanhope and Tyne Railway, the TWAO, part of the Specialist Conservation Team, considered that there was potential for important archaeological remains to be disturbed by the work.
- 2.4.2 In considering the archaeological implications of any utility scheme, the Specialist Conservation Team is mindful of the policy framework set by government guidance, in this instance the document 'Planning Policy Guidance Note 16: 'Archaeology and Planning' (PPG 16),<sup>3</sup> as well as existing Development Plan policy. At a local level, the Sunderland City Council Unitary Development Plan, adopted in 1998,<sup>4</sup> contains several policies relating to archaeology, of which the following are most relevant:

***B11. THE CITY COUNCIL WILL PROMOTE MEASURES TO PROTECT THE ARCHAEOLOGICAL HERITAGE OF SUNDERLAND AND ENSURE THAT ANY REMAINS DISCOVERED WILL BE EITHER PHYSICALLY PRESERVED OR RECORDED.***

***B13. THE CITY COUNCIL WILL SEEK TO SAFEGUARD SITES OF LOCAL ARCHAEOLOGICAL SIGNIFICANCE. WHEN DEVELOPMENT AFFECTING SUCH IS ACCEPTABLE IN PRINCIPLE, THE COUNCIL WILL SEEK TO ENSURE MITIGATION OF DAMAGE THROUGH PRESERVATION OF THE REMAINS IN SITU AS A PREFERRED SOLUTION. WHERE THE PHYSICAL PRESERVATION OF REMAINS IN THE ORIGINAL SITUATION IS NOT FEASIBLE, EXCAVATION FOR THE PURPOSE OF RECORDING WILL BE REQUIRED.***

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<sup>2</sup> Smith 1994.

<sup>3</sup> Department of the Environment 1990. PPG16 is currently under review as part of a consultation paper (July 2009) on a new planning policy statement on the historic environment.

<sup>4</sup> From the Sunderland City Council website.

- 2.4.2 The aforementioned Specification for the archaeological investigation was prepared by the TWAO. In broad terms, the investigation aimed to record archaeological remains exposed during the cable installation.

## **2.5 Archaeological and Historical Background**

*The Specification prepared by the Tyne and Wear Specialist Conservation Team is the source of much the following information - the research and writing of those responsible is gratefully acknowledged. The online version of the Tyne and Wear Historic Environment Record (HER) has also been consulted.*

- 2.5.1 Prehistoric finds from the Washington area on the HER include a flint dagger and microlith (HER 329 and 330) of probable Mesolithic date and Neolithic polished axes (HER 342, 345 and 355). A Bronze Age round barrow (HER 318) was excavated at the turn of the 20th century in Fatfield.
- 2.5.2 There is little evidence for any Roman activity in the general vicinity, with a hoard of 60 coins of 4th century date (HER 341) being the only substantial evidence for the Roman period. The area was probably farmed by the native population throughout this period with no major military or civilian centres of population known.
- 2.5.3 The village of Washington (HER 352) is mentioned in the Boldon Book in 1183, but the name itself is thought to indicate an Anglo-Saxon origin. Although the size of the village is not known, it is thought that, by the 12th century, the church and the manorial hall lay within the interior of a moat, which defined the limits of the village. Early maps show two scattered rows of buildings separated by a wide green street.
- 2.5.4 Mining is first recorded at Washington in 1702 and developed on an industrial scale in the mid 18th century with waggonways built to transport the coal, notably the Washington waggonway from 1764. Coal workings are the most numerous class of site listed on the HER for the area. After the last colliery was closed in 1968, Washington was redeveloped as a New Town. Collieries and waggonways were also opened in Fatfield from the 18th century onwards, including Fatfield waggonway (HER 3018).
- 2.5.5 The Stanhope and Tyne Railway (HER 2290) originally opened in 1834. It was built by the Stanhope and Tyne Railway Company following an Act of Parliament, although the company quickly went bankrupt and the railway had several subsequent owners. The line was designed to carry coal from collieries to the kilns in the limestone quarries at Stanhope, and limestone back again. Construction utilised iron fish-bellied rails on stone blocks and the gauge of the line was 4ft 8 inches.
- 2.5.6 Passenger services between South Shields and Durham commenced in 1835, this being the first public railway on Tyneside. Passenger services on this line ceased east of Washington in 1853 and west of Washington in 1869. Latterly, the National Coal Board used the line until it was closed to freight traffic in 1966 and the line finally closed in 1981. The track was lifted and the section from Consett to Washington East became part of the cycle route along the Consett & Sunderland Railway Path. Much of the dismantled railway line remains unused.
- 2.5.7 A coke depot (HER 303) was also noted within the area on the North Eastern Railway Pontop and South Shields Railway.



## 2.6 Aims and Objectives

- 2.6.1 In broad terms, the aim of the watching brief was to record the character of any archaeological remains exposed as a result of groundworks for the electricity supply to St. Robert of Newminster School, Biddick Lane, Washington.
- 2.6.2 The specific objective was to record any archaeological remains of the original trackbed, stone blocks or rails of the Stanhope and Tyne Railway.
- 2.6.3 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)*,<sup>5</sup> a document that highlights the importance of research as a vital element of development-led archaeological work, identifies the following key priority within the research agenda for the post-medieval (PM) period that is likely to be of direct relevance to the project:

### **PM2. Early railways.**

Ongoing research needs to recognise the role of the North East in the development of the early railways, with several key areas of investigation having been identified.

Investigations should focus on the early waggonways and pre-locomotive hauled lines, whilst also recognising the potential archaeological importance of terminals, and specifically the development of coal staithes. Existing landscape features along the course of known early waggonways require survey, which if possible, should include railway formations, track beds and gradients.

The routes of early railways should be plotted on the HERs of the region, through archival research on early documentary and cartographic sources.

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<sup>5</sup> Petts and Gerrard 2006.

### **3. ARCHAEOLOGICAL METHODOLOGY**

#### **3.1 Fieldwork**

- 3.1.1 The fieldwork was undertaken in accordance with the Specification compiled by the TWAO and in accordance with the relevant standard and guidance document of the Institute for Archaeologists (IfA).<sup>6</sup> PCA is an IfA-Registered Organisation (RO 23).
- 3.1.2 The groundworks comprised excavation of an open-cut trench to house the underground cable for the electricity supply. The trench, which was mechanically excavated using a tracked 'mini-digger', measured on average 0.25m wide and 0.55m deep. The westernmost portion of the trench ran northwards along the pavement of Biddick Lane for a distance of c. 50m before turning to run south-westwards, along the northern edge of the former railway embankment for a distance of c. 150m. The final, south-westernmost, portion ran northwards for c. 20m into the school grounds, although archaeological monitoring of this section was not required as it extended away from the former railway embankment at right angles.
- 3.1.3 Archaeological deposits revealed in the cable trench were recorded using the 'single context recording' method on the PCA *pro forma* 'Context Recording Sheet'.

#### **3.2 Post-excavation**

- 3.2.1 The stratigraphic data for the project is represented by the written, drawn and photographic records. In total, five archaeological contexts were defined during the watching brief. Post-excavation work involved checking and collating site records. A written summary of the archaeological sequence was then compiled, as described below.
- 3.2.2 No artefactual or organic material was recovered and no bulk samples for palaeoenvironmental remains were collected during the watching brief.
- 3.2.3 The complete Site Archive, in this case comprising written, drawn and photographic records (including all material generated electronically during post-excavation) will be packaged for long-term curation. In preparing the Site Archive for deposition, all relevant standards and guidelines documents referenced in the Archaeological Archives Forum guidelines document<sup>7</sup> will be adhered to, in particular a well-established United Kingdom Institute for Conservation (UKIC) document<sup>8</sup> and a forthcoming IfA publication.<sup>9</sup> No material was recovered that required specialist stabilisation or an assessment of potential for conservation research.
- 3.2.4 At the time of deposition of the Site Archive, the depositional requirements of the receiving body, in this case the Tyne and Wear Museum Archives at Arbeia, will be met in full.

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<sup>6</sup> IfA 2001.

<sup>7</sup> Brown 2007.

<sup>8</sup> Walker 1990.

<sup>9</sup> IfA forthcoming.

## **4. RESULTS: THE ARCHAEOLOGICAL SEQUENCE**

### **4.1 Phase 1: Natural**

4.1.1 The earliest deposit to be recorded during the investigation was a layer, [5], of mid orange brown clay, visible at c. 0.40m below ground level along the majority of the NE-SW aligned portion of the cable trench, *i.e.* the part of the route running along the northern edge of the former railway embankment. The clay deposit was not observed along the south-westernmost c. 30m of this part of the cable trench nor in the section of the trench on Biddick Lane. The clay has been interpreted as the natural Boulder Clay sub-stratum of the area.

### **4.2 Phase 2: Undated**

4.2.1 Overlying natural clay along the majority of the NE-SW aligned portion of the cable trench was a thin layer, [4], of dark brownish black silt and crushed coal with an average thickness of 70mm. This deposit could relate to the structure of the railway embankment, although given the limited degree to which it was possible to expose this material any conclusive interpretation is impossible.

4.2.2 The basal deposit recorded within the south-westernmost c. 30m of the NE-SW aligned portion of the cable trench was a layer, [3], of compact mid orange brown clay, with frequent inclusions of crushed and fragmented stone and brick and occasional small fragments of coal. It was exposed, on average, at a depth of 0.50m below existing ground level. This material has been interpreted as dump deposit of likely modern origin, possibly related to landscaping activity at the time of the abandonment of the railway line in the 20th century.

### **4.3 Phase 3: Modern**

4.3.1 Recorded cutting through both layers [3] and [4] was a linear trench, [2], observed for a distance of c. 25m at the south-western extent of the NE-SW aligned portion of the cable trench and seen intermittently beyond this running to the north-east. Backfilled with loose yellow sand, the feature housed an existing electricity supply cable.

4.3.2 Topsoil, [1], of varying depth formed the uppermost deposit to be recorded along the length of the NE-SW aligned portion of the cable trench.

4.3.3 The portion of the cable route on Biddick Lane and across the line of the former railway embankment followed the line of an existing electricity supply cable so rubble backfill formed the only deposit recorded along that portion of the route, below the present pavement surface.



## **5. CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Conclusions**

- 5.1.1 No deposits of archaeological significance were recorded during the investigation and no artefactual material was recovered. The portion of the cable trench with most potential for archaeological remains of interest was that where the route crossed the line of the former Stanhope and Tyne Railway. However, at this point, modern backfill associated with an existing electricity supply route was observed and no evidence of features or deposits derived from 19th century railway activity was recorded.
- 5.1.2 Natural clay was recorded along the majority of the portion of the cable route running along the northern edge of the railway embankment. A layer of silt and coal waste overlying the boulder clay may have been related to the railway embankment, but this is uncertain. In the southwesternmost section of this portion of the trench, an extensive, compact clay deposit may have been related to landscaping at the time of the abandonment of the railway line in the 20th century.

### **5.2 Recommendations**

- 5.2.1 No further work is required on the information recovered during the watching brief, with the Site Archive, including this report, being the permanent record of the remains encountered.

## 6. REFERENCES

### Bibliography

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Newcastle-upon-Tyne City Council, 2009. *Specification for an Archaeological Watching Brief at St. Robert of Newminster School, Biddick Lane, Washington*, NCC unpublished.

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Smith, D. B., 1994. *Geology of the country around Sunderland*, Memoir of the British Geological Survey, Sheet 21 (England and Wales).

Walker, K., 1990. *Guidelines for the preparation of excavation archives for long-term storage*, UKIC, United Kingdom Institute for Conservation.

### Online Sources Consulted

The Sunderland City Council website: [www.sunderland.gov.uk/](http://www.sunderland.gov.uk/)

*Sitelines*, the online Tyne and Wear HER: <http://www.twsitelines.info/>

## 7. **ACKNOWLEDGEMENTS AND CREDITS**

### **Acknowledgements**

Pre-Construct Archaeology Limited would like to thank NEDL for commissioning the project herein described. The liaison role of Caroline Gray is acknowledged.

The role of the Tyne and Wear Specialist Conservation Team, part of the Historic Environment Section, Newcastle City Council, is acknowledged.

### **PCA Credits**

*Fieldwork and Report:* Amy Roberts

*Project Management:* Robin Taylor-Wilson

*CAD:* Adrian Bailey



**APPENDIX A**  
**PROJECT SPECIFICATION**

## TYNE AND WEAR SPECIALIST CONSERVATION TEAM

### **Specification for an Archaeological Watching Brief at St. Robert of Newminster School, Biddick Lane, Washington**

#### ***Introduction***

NEDL need to install an underground electric cable across the embankment of the former Stanhope and Tyne railway to serve a new school.

#### **HER 2290 Stanhope and Tyne Railway**

Originally the Stanhope and Tyne Railway, the line opened in 1834. The Stanhope and Tyne Railway Company quickly went bankrupt, and the railway had several subsequent owners. Built by an Act of Parliament. In the west, between Stanhope and Vigo, where it was steeper, there were stationary engines, self-acting inclines and horsepower. In the east locomotive engines were used. At South Shields the three drops (HER 2336) each had a vibrating frame and counterbalance weight, which allowed vessels to receive their cargoes even at low tide. The line was designed to carry coal from collieries to the kilns in the limestone quarries at Stanhope, and limestone back again. Construction utilised iron fish-bellied rails on stone blocks. The gauge of the line was 4ft 8 inches. Passenger services between South Shields and the Durham turnpike commenced in 1835 - this was the first public railway on Tyneside. From 1842-1846 the line was run by the Pontop and South Shields Railway Company, which included many of the original shareholders. George Stephenson was Chairman. Coal freight was the main traffic. In 1844 part of the line was run by the Newcastle and Darlington Junction Railway Company as part of the east coast route from London to Gateshead. In 1847 the Pontop and South Shields Railway Company was absorbed by the Newcastle and Darlington Junction Railway Company, run by George Hudson. The company changed its name to the York, Newcastle and Berwick Railway Company in 1848, and to the North Eastern Railway Company in 1854. Passenger services ceased east of Washington in 1853 and west of Washington in 1869. The National Coal Board used the line until it was closed to freight traffic in 1966. The line finally closed in 1981. The track was lifted and the section from Consett to Washington East became the Sustrans cycle route, which opened in 1990. Much of the dismantled railway line remains unused however.

#### **HER 3031 Coke depot**

Coke Depot on the North Eastern Railway Pontop and South Shields Railway, (HER 2290).

The work on and crossing the embankment must therefore be monitored by an archaeologist as a Watching Brief, in order that any archaeological remains of the original trackbed, stone blocks or rails can be recorded. The work to the north of the embankment does not need to be monitored.

The watching brief must be carried out by a suitably qualified and experienced archaeological organisation.

All work must be carried out in compliance with the codes of practice of the Institute of Field Archaeologists and must follow the IFA Standard and Guidance for Watching Briefs (revised 2001).

The work will record, excavate and environmentally sample (if necessary) any archaeological deposits of importance found on the plot. The purpose of this brief is to obtain tenders for this work. The report must be the definitive record for deposition in the Tyne and Wear HER.

**A toothless bucket will be used on the plant employed on site to reduce damage to archaeological remains.**

The North-East Regional Research Framework for the Historic Environment (2006) notes the importance of research as a vital element of development-led archaeological work. It sets out key research priorities for all periods of the past allowing commercial contractors to demonstrate how their fieldwork relates to wider regional and national priorities for the study of archaeology and the historic environment. The aim of NERRF is to ensure that all fieldwork is carried out in a secure research context and that commercial contractors ensure that their investigations ask the right questions. The relevant key research theme for this work is PM2.

The commissioning client will provide plans indicating the location of the proposed work.

### ***Notification***

**The County Archaeologist needs to know when archaeological fieldwork is taking place in Tyne and Wear so that he can inform the local planning authority and can visit the site to monitor the work in progress. The Archaeological Contractor must therefore inform the County Archaeologist of the start and end dates of the Watching Brief. He must also keep the County Archaeologist informed as to progress on the site. The CA must be informed of the degree of archaeological survival. The Client will give the County Archaeologist reasonable access to the development to undertake monitoring.**

### ***The tasks***

1 A construction timetable has yet to be agreed. Tenders for the Watching Brief should therefore be a cost per day including overheads such as travel costs and equipment. Contingency costs will be provided for environmental sampling and scientific dating per sample and for finds analysis. Any variation on the agreed timetable will be notified by the client, who will give a minimum of 48 hours notice of a change on the days of site attendance. Close liaison between the parties involved will be needed to co-ordinate this element of the work.

2 The work involves undertaking a structured watching brief to observe and record any archaeological deposits and finds from this locality. The absence of deposits and finds must be recorded as negative evidence. **The Watching Brief will not aim to hinder the construction programme, however should archaeological remains be found, the appointed archaeologist must be allowed sufficient time to fully record (by photograph and scale plan and section), excavate and environmentally**



**sample (if necessary) the archaeological deposits.** Within the course of the Watching Brief, it may be possible to record sections through the stratigraphy exposed during the construction work.

### ***General Conditions***

All staff employed by the Archaeological Contractor shall be professional field archaeologists with appropriate skills and experience to undertake work to the highest professional standards.

The Archaeological Contractor must maintain a Site Diary for the benefit of the Client, with full details of Site Staff present, duration of time on site, etc. and contact with third parties.

The Archaeological Contractor must be able to provide written proof that the necessary levels of Insurance Cover are in place.

### ***Environmental Sampling and Scientific Dating***

Scientific investigations should be undertaken in a manner consistent with "The Management of Archaeological Projects", English Heritage 1991 and with "Archaeological Science at PPG16 Interventions: Best Practice for Curators and Commissioning Archaeologists", English Heritage, 2003.

Aims of environmental sampling – to determine the abundance/concentration of the material within the features and how well the material is preserved, to characterise the resource (the site) and each phase, to determine the significance of the material and its group value, what crop processing activities took place on the site? What does this tell us about the nature of the site? Is there any evidence for changes in the farming practice through time? How did people use this landscape? Can we place certain activities at certain locations within the site? Function and date of individual features such as pits, hearths etc. Are the charred assemblages the result of ritual deposition or rubbish? Is the charcoal the result of domestic or industrial fuel?

Advice on the sampling strategy for environmental samples and samples for scientific dating etc. must be sought from Jacqui Huntley, English Heritage Regional Advisor for Archaeological Science (0191 3341137 or 07713 400387) **before** the evaluation begins. The sampling strategy should include a reasoned justification for selection of deposits for sampling.

Deposits should be sampled for retrieval and assessment of the preservation conditions and potential for analysis of biological remains (English Heritage 2002). Flotation samples and samples taken for coarse-mesh sieving from dry deposits should be processed at the time of fieldwork wherever possible. Sieving recovers fish, amphibian, small bird and mammal bone, small parts of adult mammals and young infused bones which may be under-represented otherwise. However it is noted that clay soils in this region make sieving difficult. Discuss the potential for sieving with Regional Advisor for Archaeological Science.

Environmental samples (bulk soil samples of 30 litres volume, to be sub-sampled at a later stage) will be collected by the excavator from suitable (i.e. uncontaminated) deposits. It is suggested that a large number of samples be collected during evaluation from which a selection of the most suitable (uncontaminated) can be processed. All tenders will give a price for the full analysis, report production and publication per sample.

Deposits will be assessed for their potential for radiocarbon, archaeomagnetic (guidance is available in the Centre for Archaeology Guideline on Archaeometallurgy 2001) and Optically Stimulated Luminescence dating.



Timbers will be assessed for their potential for dendrochronology dating. Sampling should follow procedures in "Dendrochronology: guidelines on producing and interpreting dendrochronological dates", Hillam, 1998. All tenders will quote the price of these techniques per sample.

The following information should be provided with the environmental samples to be processed – brief account of nature and history of the site, aims and objectives of the project, summary of archaeological results, context types and stratigraphic relationships, phase and dating information, sampling and processing methods, sample locations, preservation conditions, residuality/contamination etc.

Laboratory processing of samples shall only be undertaken if deposits are found to be reasonably well dated, or linked to recognisable features and from contexts the derivation of which can be understood with a degree of confidence.

A range of features, and all phases of activity, need to be sampled for charred plant remains and charcoal. Ceramic features should not be avoided as the plant remains from these features may help to date them. Deep features should be sampled in spits to pick up changes over time. Part, or all of each of the contexts should be processed. In general samples should be processed in their entirety. All flots should be scanned, and some of the residues.

Pollen samples can be taken from features such as lakes, ponds, palaeochannels, estuaries, saltmarshes, mires, alluvium and colluvium, and from waterlogged layers in wells, ditches and latrines etc. Substances such as honey, beer or food residues can be detected in vessels. Activities such as threshing, crop processing and the retting of flax can be identified. When taken on site, pollen samples should overlap. Your regional science advisor can advise on the type of corer or auger which would be most appropriate for your site. Samples need to be wrapped in clingfilm and kept dark and cool. Make a description of the sediments in which the pollen was found, and send this with the sample to be assessed.

Coastal or estuary sites (even those which are now well drained) are suitable for sampling for foraminifera. Diatoms can also be found on marine sites, but also in urban settings (sewers, wells, drains, ditches etc). They only survive in waterlogged conditions. These aquatic microfossils are used as proxy indicators of the former aquatic ecological conditions on site, changes in sea levels and temperature, salinity, PH and pollution. Forams are taken from cores, monolith tins or bulk samples. Diatoms are cut from monolith tins or cores or taken as spot samples.

Insects, which are useful as palaeoenvironmental indicators, survive best in waterlogged deposits such as palaeochannels and wells. They can provide information on climate change and landscape reconstruction as some species are adapted to particular temperatures, habitats or even particular trees. Certain insects can indicate the function of a feature or building (eg. Weevils, which were introduced by the Romans, often indicate granary sites, parasites will indicate the presence of particular animals such as sheep or horse, latrine flies survive in the mineral deposits in latrines, or in the daub of medieval buildings etc). Samples need to be sealed (eg. in a plastic box).

Where there is evidence for industrial activity, macroscopic technological residues should be collected by hand. Separate samples should be collected for micro-slugs (hammer-scale and spherical droplets). Guidance is available in the English Heritage "Archaeometallurgy" guidelines, 2001.

Buried soils and sediment sequences should be inspected and recorded on site by a recognised geoarchaeologist. Procedures and techniques in the



English Heritage document "Environmental Archaeology", 2002 and "Geoarchaeology", 2004 should be followed.

Sampling strategies for wooden structures should follow the methodologies presented in "Waterlogged wood. Guidelines on the recording, sampling, conservation and curation of waterlogged wood" R. Brunning, 1996. If timbers are likely to be present on your site, contact a wood specialist beforehand. Pre-excavation planning – determine questions to ask, agree on a sampling strategy, allocate reasonable time and budget. Soil samples should be taken of the sediments surrounding the timber. Keep the timbers wet! Record them asap on-site – plan, photograph, record the size and orientation of the wood (radial, tangential, transverse), any toolmarks, joints, presence of bark, insect damage, recent breaks, and if another piece of wood was on top of or below the piece sampled. Both vertical and horizontal positioning of wattling must be recorded. Wood samples can provide information on woodland management such as medieval coppicing, type of taxa (native or foreign), conversion technology (how the wood was turned into planks), building techniques and type of tools used.

Waterlogged organic materials should be dealt with following recommendations in "Guidelines for the care of waterlogged archaeological leather", English Heritage and Archaeological Leather Group 1995.

### ***Animal Bone***

Animal bone can explore themes such as hunting and fowling, fishing, plant use and trade, seasonality, diet, age structures, farrowing areas, species ratios, local environment.

Animal bone assemblages should be assessed by a recognised specialist.

The specialist will need to know a brief account of the nature and history of the site, an account of the purpose, methods (details of sampling) for recovery of animal bones, and the main aims and results of the excavation, details of any specific questions that the excavator wants the animal bone specialist to consider, information about other relevant finds from the excavation (e.g. bone tools, fishing equipment, weaving equipment), specific information about each context that has produced significant quantities of animal bone (recovery method, phase, context type, position in relation to major structures, contamination by more recent material, some indication of the amount of bone (by weight or by container size). See "Ancient Monuments Laboratory Advisory Note, "Assessment of animal bone collections from excavations", Sebastian Payne, 1991 and "The Assessment of a collection of animal bones", S. Davis, n.d., Ancient Monuments Laboratory.

### ***Human Remains***

Human remains must be treated with care, dignity and respect.

Excavators must comply with the relevant legislation (essentially the Burial Act 1857) and local environmental health concerns. If found, human remains must be left in-situ, covered and protected. The archaeological contractor will be responsible for informing the police, coroner and County Archaeologist. If it is agreed that removal of the remains is essential, the archaeological contractor will apply for a licence from the Home Office and their regulations must be complied with.

Site inspection by a recognised osteologist is desirable for isolated burials and essential for cemeteries. The remains will be recorded in-situ and subsequently lifted, washed in water (without additives). They will be marked and packed to standards compatible with "Excavation and post-excavation



treatment of cremated and inhumed human remains", McKinley and Roberts, 1993. After excavation, the remains will be subject to specialist assessment.

Analysis of the osteological material should take place according to published guidelines "Human Remains from Archaeological Sites, Guidelines for producing assessment documents and analytical reports, English Heritage, 2002.

Some of the potential benefits from the study of human skeletons – demography, growth profiles, patterns of disease, genetic relationships, activity patterns, diet, burial practices, human evolution. New scientific techniques available include DNA and stable isotope analyses.

The final placing of the remains after scientific study and analysis will be agreed beforehand.

Further guidance is available in:

"Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England", The Church of England and English Heritage, 2005 ([www.english-heritage.org.uk/upload/pdf/16602\\_HumanRemains1.pdf](http://www.english-heritage.org.uk/upload/pdf/16602_HumanRemains1.pdf))

"Church Archaeology: its care and management", Council for the Care of Churches, 1999

The Advisory Panel on the Archaeology of Christian burials in England can provide free well-informed advice with consideration of relevant religious, ethical, legal, archaeological and scientific issues. Panel's website: <http://www.britarch.ac.uk/churches/humanremains/index.html> or email the secretary [simon.mays@english-heritage.org.uk](mailto:simon.mays@english-heritage.org.uk)

### ***Treasure***

Defined as:

- Any metallic object, other than a coin, provided that at least 10% by weight of metal is precious metal and that is at least 300 years old when found
- Any group of two or more metallic objects of any composition of prehistoric date that come from the same find
- All coins from the same find provided that they are at least 300 years old when found, but if the coins contain less than 10% gold or silver there must be at least ten
- Any object, whatever it is made of, that is found in the same place as, or had previously been together with, another object that is Treasure
- Any object that would previously have been treasure trove, but does not fall within the specific categories given above. Only objects that are less than 300 years old, that are made substantially of gold or silver, that have been deliberately hidden with the intention of recovery and whose owners or heirs are unknown will come into this category

If anything is found which could be Treasure, under the Treasure Act 1996, it is a legal requirement to report it to the local coroner within 14 days of discovery. The Archaeological Contractor must comply with the procedures set out in The Treasure Act 1996. Any treasure must be reported to the coroner and to The Portable Antiquities Scheme Finds Liaison Officer, Rob Collins (0191 2225076 or [Robert.Collins@newcastle.ac.uk](mailto:Robert.Collins@newcastle.ac.uk)) who can provide guidance on the Treasure Act procedures.

### ***Finds Processing and Storage***

Finds shall be recorded and processed in accordance with the IFA Guidelines for Finds Work

Finds will be assessed by an experienced finds specialist.

The Archaeological Contractor will process and catalogue the finds in accordance with Museum and Galleries Commissions Guidelines (1992) and the UKIC Conservation Guidelines, and arrange for the long term disposal of the objects on behalf of the Client. A catalogue of finds and a record of discard policies, will be lodged with the finds for ease of curation.

Assessment should include x-radiography of all iron objects (after initial screening to exclude recent debris) and a selection of non-ferrous artefacts (including all coins). Refer to "Guidelines on the x-radiography of archaeological metalwork, English Heritage, 2006.

If necessary, pottery sherds and bricks should be recommended for Thermoluminescence dating.

Finds processing, storage and conservation methods must be broadly in line with current practice, as exemplified by the IFA "Standard and guidance for the collection, documentation, conservation and research of archaeological materials", 2001. Finds should be appropriately packaged and stored under optimum conditions, as detailed in the RESCUE/UKIC publication "First Aid for Finds" (Watkinson and Neal 1998). Proposals for ultimate storage of finds should follow the UKIC publication "Guidelines for the Preparation of Excavation Archives for Long-term Storage" (Walker 1990). Details of methodologies may be requested from the Archaeological Contractor.

Other useful guidance – "A Strategy for the Care and Investigation of Finds", English Heritage, 2003, "Finds and Conservation Training Package", English Heritage, 2003.

All objects must be stored in appropriate materials and conditions to ensure minimal deterioration. Advice can be sought from Jacqui Huntley of English Heritage (0191 3341137 or 07713 400387) where necessary.

### **The report**

The production of Site Archives and Finds Analysis will be undertaken according to English Heritage Guidelines (Managing Archaeological Projects 2nd Edition).

The archaeological contractor will provide a report of archaeological operations, including:

- a site location plan and grid reference
- brief description of recording procedures
- plans and sections of stratigraphy recorded (if practical)
- report on the finds (if any)
- environmental report (if relevant)
- colour photographs of the site and any significant archaeological features/finds
- a summary of the results of the work
- copy of this specification

The report will form an addition to the *Short Reports* files in the Tyne and Wear Historic Environment Record.



- 7 Two bound and collated paper copies of the report need to be submitted:
- one for the commissioning client
  - and one for deposition in the County HER at the address below. A digital copy of the report on CD is also required by the HER, in a plastic case and not attached to the report.

***The report and CD for the HER must be sent by the archaeological consultant or their client directly to the address below. If the report is sent via the planning department, every page of the report will be stamped with the planning application number which ruins the illustrations. The HER is also often sent a photocopy instead of a bound colour original which is unacceptable.***

### ***Site Archive***

The archive should be a record of every aspect of an archaeological project – the aims and methods, information and objects collected, results of analysis, research, interpretation and publication. It must be as complete as possible, including all relevant documents, records, data and objects {Brown, 2007, 1}.

The site archive (records and materials recovered) should be prepared in accordance with Managing Archaeological Projects, Second Edition, 5.4 and appendix 3 (HBMC 1991), "Archaeological documentary archives" IFA Paper No. 1, "Archaeological Archives – creation, preparation, transfer and curation" Archaeological Archives Forum etc., Guidelines for the Preparation of Excavation Archives for Long Term Storage (UKIC 1990) and "Archaeological Archives – A guide to best practice in creation, compilation, transfer and curation" by Duncan H. Brown, Archaeological Archives Forum, July 2007.

### ***Documentary Archive***

The documentary archive comprises all records made during the archaeological project, including those in hard copy and digital form.

This should include written records, indexing, ordering, quantification and checking for consistency of all original context sheets, object records, bulk find records, sample records, skeleton records, photographic records (including negatives, prints, transparencies and x-radiographs), drawing records, drawings, level books, site note-books, spot-dating records and conservation records, publication drafts, published work, publication drawings and photographs etc.

A summary account of the context record, prepared by the supervising archaeologist, should be included.

All paper-based material must at all times be stored in conditions that minimise the risk of damage, deterioration, loss or theft.

Do not fold documents

Do not use self-adhesive labels or adhesive or tape of any kind

High quality paper (low-acid) and permanent writing materials must be used.

Original drawings on film must be made with a hard pencil, at least 4H.

Do not ink over original pencil drawings.

Use polyester based film for drawings (lasts longer than plastic).

Store documents in acid-free, dust-proof cardboard boxes

Store documents flat

All documents must be marked with the project identifier (e.g. site code) and/or the museum accession number.

All types of record must use a consistent terminology and format.

Use non-metal fastenings, and packaging and binding materials that ensure the longevity of documents.

Copies of reports and appropriate drafts, with associated illustrative material, must be submitted for inclusion with the archive.

### *Material Archive*

The material archive comprises all objects (artefacts, building materials or environmental remains) and associated samples of contextual materials or objects.

All artefacts and ecofacts retained from the site must be packed in appropriate materials.

All finds must be cleaned as appropriate to ensure their long-term survival

All metal objects retained with the archive must be recorded by x-radiograph (except gold or lead alloys or lead alloys with a high lead content and objects too thick to be x-rayed effectively e.t.c. )

All finds must be marked or labelled with the project and context identifiers and where relevant the small-finds number

Use tie-on rot-proof labels where necessary

Bulk finds of the same material type, from the same context, may be packed together in stable paper or polythene bags

Mark all bags on the outside with site and context identifiers and the material type and include a polyethylene label marked with the same information

Use permanent ink on bags and labels

Sensitive finds must be supported, where appropriate, on inert plastic foam or acid-free tissue paper. It is not advisable to wrap objects in tissue as the unwrapping could cause damage.

The archive will be placed in a suitable form in the appropriate museum (typically Museum of Antiquities for Newcastle and Tyne and Wear Museums for the rest of Tyne and Wear (check with these institutions) with the landowner's permission.

A letter will be sent to the County Archaeology Officer within six months of the report having been submitted, confirming where the archive has been deposited.

### *Monitoring*

The Archaeological Contractor will inform the County Archaeologist of the start and end dates of the Watching Brief to enable the County Archaeologist



to monitor the work in progress. The Client will give the County Archaeologist reasonable access to the development to undertake monitoring.

### **OASIS**

The Tyne and Wear County Archaeologist supports the Online Access to the Index of Archaeological Investigations (OASIS) project. This project aims to provide an online index/access to the large and growing body of archaeological grey literature, created as a result of developer-funded fieldwork.

The archaeological contractor is therefore required to register with OASIS and to complete the online OASIS form for their watching brief at <http://www.oasis.ac.uk/>. Please ensure that tenders for this work takes into account the time needed to complete the form.

Once the OASIS record has been completed and signed off by the HER and NMR the information will be incorporated into the English Heritage Excavation Index, hosted online by the Archaeology Data Service.

The ultimate aim of OASIS is for an online virtual library of grey literature to be built up, linked to the index. The unit therefore has the option of uploading their grey literature report as part of their OASIS record, as a Microsoft Word document, rich text format, pdf or html format. The grey literature report will only be mounted by the ADS if both the unit and the HER give their agreement. The grey literature report will be made available through a library catalogue facility.

Please ensure that you and your client understand this procedure. If you choose to upload your grey literature report please ensure that your client agrees to this in writing to the HER at the address below.

For general enquiries about the OASIS project aims and the use of the form please contact: Mark Barratt at the National Monuments Record (tel. 01793 414600 or [oasis@english-heritage.org.uk](mailto:oasis@english-heritage.org.uk)). For enquiries of a technical nature please contact: Catherine Hardman at the Archaeology Data Service (tel. 01904 433954 or [oasis@ads.ahds.ac.uk](mailto:oasis@ads.ahds.ac.uk)). Or contact the Tyne and Wear Archaeology Officer at the address below.

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Ref: MON7270  
9<sup>th</sup> June 2009