



# **Keswick PAR Advanced Works, Keswick, Cumbria**

## **Archaeological Watching Brief**



**Oxford Archaeology North**

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**Halcrow Group Ltd, on behalf of  
the Environment Agency**

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## SUMMARY

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Halcrow Group Ltd, on behalf of the Environment Agency, commissioned Oxford Archaeology North (OA North) to undertake a programme of archaeological watching brief associated with exploratory groundworks ahead of the flood alleviation scheme in Keswick, Cumbria. A total of 39 exploratory holes were excavated across two areas, under permanent archaeological presence; 30 trial pits, window samples, hand dug pits and inspection pits preceding boreholes were positioned within five locations in the historic town centre in Keswick (NGR centred NY 2635 2393); and nine trial pits and inspection pits preceding boreholes were excavated at St Johns in the Vale, in the Upstream Storage Area (NGR centred NY 3143 2407). The watching brief was undertaken during November and December 2008, the purpose of which was to enable any archaeological remains disturbed during the groundworks to be recorded in mitigation of the exploratory works.

The watching brief recorded no archaeological features, structures or deposits from any of the six sites investigated. Although some evidence of a river wall prior to the modern defence wall was observed in BH01 but its date is unknown. The size of the excavations for archaeological recording purposes was restrictive. Therefore, should any more extensive additional work be undertaken in these areas further watching brief is recommended.

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## ACKNOWLEDGEMENTS

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Oxford Archaeology North (OA North) would like to thank James Goad of Halcrow Group Ltd for commissioning the project on behalf of the Environment Agency. Thanks are also due to the staff of Ian Farmer Associates, who undertook the geotechnical site work.

The watching brief was undertaken by Ric Buckle, who also wrote this report. The drawings were produced by Marie Rowland and the project was managed by Emily Mercer, who also edited the report.

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## 1. INTRODUCTION

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### 1.1 CIRCUMSTANCES OF PROJECT

1.1.1 Halcrow Group Ltd, on behalf of the Environment Agency, commissioned Oxford Archaeology North (OA North) to undertake a programme of archaeological work associated with exploratory groundworks for the flood alleviation scheme in Keswick, Cumbria. In total, 39 exploratory holes were excavated across two areas (Fig 1) under permanent archaeological presence; 30 trial pits, window samples, hand dug pits, and inspection pits preceding boreholes were located over five sites within the historic town centre in Keswick (NGR centred NY 2635 2393, Fig 2); and nine trial pits and inspection pits preceding boreholes were excavated at the one site at St Johns in the Vale, in the Upstream Storage Area (NGR centred NY 3143 2407, Fig 3). The purpose of the watching brief was to enable any archaeological remains disturbed during the groundworks to be recorded in mitigation of the exploratory works. The work was undertaken in November and December 2008.

### 1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

1.2.1 Keswick lies 18 miles to the south-west of Penrith within the Cumbria High Fells ([www.countryside.gov.uk](http://www.countryside.gov.uk)), in an area of spectacular and rugged mountain scenery. The area consists mainly of open fells and a mosaic of high craggy peaks and screes, heaths, mires, peatland, heather moorland, acid grassland, bracken and remote valleys with fast-flowing streams and tarns (*ibid*). The landscape around Keswick comprises a radiating pattern of deep glaciated valleys with extensive lakes, reed beds, carr woodlands, meadows and other lakeshore vegetation, rivers and semi-improved and improved grazing land. Farmland and sheltered valley landscapes dominate the lower altitudes with woodland, dry stone walls, hedgerows, copses, pollarded trees and scrub vegetation (*ibid*).

1.2.2 The geology of the Keswick area comprises superficial deposits of glacial till and diamicton rock with pockets of alluvium comprising clay, silt and sand ([www.bgs.ac.uk/education/geology\\_of\\_britain](http://www.bgs.ac.uk/education/geology_of_britain)). The bedrock consists of Llanvirn and Arenig geology with palaeozoic, Ordovician sedimentary rocks (*ibid*).

### 1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

1.3.1 This background is compiled primarily from secondary sources and records consulted on the National Monuments Record (NMR) online database (English Heritage). It is intended only as a brief summary to the archaeological background of the study area and to provide an illustration of the diversity and nature of remains around Keswick.

- 1.3.2 **Prehistoric Period:** an extensive Palaeolithic flint industry with numerous handaxes and flakes was revealed in gravel pit workings at Keswick. A large collection of Palaeolithic finds have been retrieved from Mill Gravel Pit, immediately to the east of Keswick Mill House. The finds include 175 handaxes, seven roughouts, two cores, 49 retouched flakes, 48 flakes, one Levallois core and two Levallois flakes. These were all recovered during the 1960s and 1970s and are currently held in various repositories (NMR No 132496).
- 1.3.3 Evidence for Neolithic activity in the Keswick area can be seen at Castlerigg Stone Circle (SM No 9828), to the east of Keswick. The monument includes an oval enclosure of stones, which contains a smaller enclosure and two barrows, and an outlying stone. The oval enclosure includes thirty-eight large stones, some standing up to 3m high and some of which have fallen. It encloses an area approximately 32m north/south by 29m east/west (Dymond 1881, 50). There is an entrance between the two tallest stones on the northern side. Castlerigg is also believed to be one of the earliest stone circles in the British Isles (Hodgson and Brennand 2006, 38).
- 1.3.4 The greater stone circles located in the lowlands that skirt the Lake District fells are regularly, but not invariably, placed in areas of good agricultural land. They are usually close to obvious lines of communication and approximately 15-30km apart. The possibility of their association with the 'axe' trade has been proposed, and it is reasonable to assert that the axe factories would have been exploited by the same communities who constructed and utilised the stone circles (Higham 1986, 72). The stone circles are characterised by having a large numbers of stones set relatively close together enclosing a relatively flat area, roughly circular, and of 27-110m diameter. They usually have a recognisable single entrance, or break, in the circle that, in some cases, is picked out by an outlying stone or portal stone (*ibid*). Concentrations of 'finishing sites' for Neolithic axes have also been identified in the Keswick area (*op cit*, 57), and various findspots of Neolithic flint axes have been recorded as being found in Keswick on the English Heritage (NMR) database.
- 1.3.5 On St John's and Threlkeld Commons, approximately 6km from Keswick, is a prehistoric stone hut circle settlement (SM No 23791) thought to date from the Bronze Age. This site also comprises an irregular aggregate field system, five enclosures, a well, a cairnfield and trackways. It is located on a north-facing slope of fellside immediately above Threlkeld Granite Quarry, just over 1km to the east of the Upper Storage Area ground investigation (GI) works. The hut circle settlement consists of the drystone wall foundations of six small sub-rectangular enclosures, the northern three of which are very distinct. A trackway enters the western of the three southern enclosures and continues through the adjacent enclosure, passing in front of a well, before continuing in a south-easterly direction passing through the field system. To the north and east of the settlement the extensive field system consists of lengths of turf-covered drystone wall banks and field boundaries, possibly marking stock pens. A second trackway runs along the northern edge of the settlement. On the edge of the field system, to the north and east of the settlement is a cairnfield, thought to represent field clearance (Robinson and Millward 1970).

The site contains one of the most complex and diverse groups of prehistoric monument classes to be found on the Cumbrian fells, representing evidence for the long term management and exploitation of the landscape and indicating the importance of this area during prehistory (*ibid*).

- 1.3.6 **Roman Period:** approximately 11km to the east of Keswick is Troutbeck Roman fort and annexe (SM No 23755). The SM entry records that the fort was located at a strategic position, on high ground at the head of the river Glenderamakin and the Trout Beck where it commanded extensive views westwards towards Keswick, north through the Caldew Valley, and south over Matterdale and Threlkeld commons. The fort is crossed by the old Penrith-Keswick road and is divided into two areas. A combination of aerial photographs and field survey undertaken by the Royal Commission of the Historical Monuments of England identified a possible annexe on the south-eastern side of the fort and traces of a road and earthworks on the western side. The fort is thought to date from the late first to early second century AD, although the lack of a vicus or civilian settlement suggests that the length of occupation was limited.
- 1.3.7 To the south of Field Head Farm, also located on high ground at the head of the valley of Glenderamakin and Trout Beck, is a Roman camp (SM No 23752). The camp is thought to date to the late first century AD when the Roman army was consolidating its position in northern England. There are a series of earthworks, mounds and ditches of uncertain function within the site. The camp is rectangular, with rounded corners and measures approximately 220m by 190m internally. It has defences consisting of a rampart and ditch with entrances on the south-east and north-west sides. Limited excavation in the 1950s and 1970s found the rampart measured up to 3.8m wide and 0.6m high. The two entrances were defended by an internal clavicula, that is a curving continuation of the rampart and ditch which partially obstructs access through the entrance (Philpott 2006, 62). The camp is now divided into two separate areas by a modern road, although the defensive earthworks, in particular, remain well-preserved.
- 1.3.8 **Medieval period:** the abundance of Scandinavian place names in the area indicates a significant Norse settlement of the area, for example Threlkeld, in the vicinity of St Johns in the Vale (Armstrong *et al* 1971). There has been a market in the town of Keswick (from 'Cese-wic' - the cheese town) from 1276, and fairs were held regularly until the early 1900s (Beresford and Finberg 1973, 84). Medieval Keswick had been planned as a ribbon development along either side of the market place, although by the nineteenth century these plots had been filled in as Yards supporting small workshops and cottage industries, based on wool and leather (*ibid*).
- 1.3.9 In the mid 1500s a period of prosperity was brought on by mining, one example of which was copper mining, when German miners were brought to Keswick in the 1560s following the founding of the Company of Mines Royal (copper), with the Company of Mineral and Battery works (brass), by Elizabeth I (Raistrick 1973, 28). The Mines Royal were primarily concerned with mining, smelting and refining copper, the charter for which was issued in 1568 (*op cit*, 202). This introduced a new scale into industry and the new

smelt-mill at Brigham Forge, to the north-east of the town of Keswick, was 78ft by 54ft and had three smelting furnaces, producing 12-15 hundredweights of refined copper per day (*ibid*). The only obvious remains of the smelt-mill is a mill leat cut into the bedrock (Marshall and Davies-Shiel 1969, 247), although the mill subsequently became an important nineteenth century water-power centre, using the Greta, with a woollen mill, a brewery and a bobbin mill (closed in 1953), to which some buildings remain (*ibid*).

- 1.3.10 Working alongside the smelt-mill were the copper mines in the Newlands Valley, south of Keswick, and by 1567 Keswick had become a thriving industrial town (Rollinson 1967, 106). It was ideally situated at the junction of several valleys, enabling ore, fuel and building stone to be readily assembled, and communication with all parts of Lakeland and beyond could be easily maintained (*op cit*, 107). Great quantities of charcoal were required for smelting the ore and, consequently, woods were purchased in many of the surrounding dales, including St Johns in the Vale (*ibid*). Ultimately, the Newlands and Borrowdale mines declined due to a number of economic factors, such as rising costs and a depression in England, but also to other factors such as a decline in fuel. Nevertheless, the mill at Brigham Forge and mines continued working until they were eventually destroyed during the Civil War in 1651 (Raistrick 1973, 202). By the beginning of the eighteenth century the decline in mining had reduced Keswick to just one street, being much poorer, less inhabited and frequented (Rollinson 1967, 108).
- 1.3.11 However, this was not the end of mining in the Keswick area. Threlkeld Quarry provided a century of employment. The first records for quarrying at Honister Slate Mines are in 1643 (Blood 1997).
- 1.3.12 **Post-Medieval period:** the chief industrial monument within the town of Keswick is the Greta Pencil Mill (Fig 2), which is now disused (Marshall and Davies-Shiel 1969, 247). It was one of a line of buildings that used water power from the nearby weir (through which BH1 is located, Fig 2), including a corn and saw mill (*ibid*). Raw material for pencil making, was purportedly discovered by a shepherd in Seathwaite in the Borrowdale Valley in 1550. The substance, known as black lead or graphite, was initially used to brand sheep, leading to Borrowdale's claims to have made the first pencils in the world (Marshall and Davies-Shiel 1969, 248). The pencil mill was originally a late eighteenth century textile mill but was transformed in 1832 (*ibid*). This is reflected by the description of pencil maker beginning to appear in the Crosthwaite Parish Registers in the early 1800s (*ibid*).
- 1.3.13 Keswick is one of the major tourist centres in the Lake District and this was kick-started with the opening of the Cockermouth, Keswick and Penrith Railway to passengers in January 1865 (*ibid*). The Grade II Listed railway station at Keswick opened in 1865 still stands although it was closed in 1972 and is currently disused.

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## 2. METHODOLOGY

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### 2.1 WATCHING BRIEF

- 2.1.1 A permanent archaeological presence was maintained during the excavation of inspection pits for 14 window samples (WS), nine boreholes (BH) and five hand dug pits (HDP), and the excavation of 11 trial pits (TP). These were divided across five sites around the River Greta to the north-west of the town centre of Keswick: Site A, High Hill Wall; Site B, Pencil Museum; Site C, Crosthwaite Wall; Site D, Fitz Park; Site E, Southey Hill Embankment; and at one site at St Johns in the Vale (Fig 2). The numbering system for each of the excavations is in accordance with that provided by the client.
- 2.1.2 **Boreholes:** inspection pits were hand excavated prior to drilling, and measured approximately 0.3m in diameter, to a depth of 1.2m.
- 2.1.3 **Window samples:** the window sample pits were excavated to a depth of 1.2m, with a diameter of 0.3m.
- 2.1.4 **Hand dug pits:** these were excavated to a depth of 1.2m, with a width of 0.3m and length of 0.85m.
- 2.1.5 **Trial pits:** these were the only pits to be mechanically excavated. They measured 0.5m wide by 2.0m long, to a depth of 4.5m.
- 2.1.6 A daily record of the nature, extent and depths of groundworks was maintained throughout the duration of the project. All archaeological contexts were recorded on OA North's *pro-forma* sheets, using a system based on that of the English Heritage Centre for Archaeology. A monochrome and digital photographic record was maintained throughout

### 2.2 ARCHIVE

- 2.2.1 A full professional archive has been compiled in accordance with current IFA and English Heritage guidelines (English Heritage 1991). The paper and digital archive will be provided in the English Heritage Centre for Archaeology format and will be submitted to the Carlisle Record Office on completion of the project. Copies of the report will also be submitted to the Historic Environment Record. The Arts and Humanities Data Service (AHDS) online database *Online Access index of Archaeological Investigations* (OASIS) will be completed as part of the archiving phase of the project.

### 3. WATCHING BRIEF RESULTS

#### 3.1 INTRODUCTION

3.1.1 The objective of the watching brief was to identify and record any archaeological features or deposits that may be present during the excavation of boreholes, hand dug pits, trial pits and window samples. Hand excavation of the inspection pits for the window samples, boreholes and hand dug pits proceeded to a maximum depth of 1.2m, and either deposits of topsoil were encountered immediately above natural geology or made ground. The trial pits were carried out wholly by mechanical excavator.

#### 3.2 RESULTS

3.2.1 The table below provides details of the stratigraphy observed during the watching brief. The location of the exploratory holes is plotted in Figures 2 and 3. No finds or archaeological deposits were encountered during any of the excavations undertaken.

LOCATION	TYPE	NATURE OF DEPOSIT
Site A - High Hill Wall	BH01	Tarmac: 0.4m Rubble hardcore: 0.8m Part of previous river defence prior to construction of modern flood defence wall seen at southern edge.
	WS01	Concrete: 0.3m Masonry rubble 0.9m Through modern concrete river bank.
	WS02	Concrete: 0.3m Masonry rubble: 0.9m. Through modern concrete river bank.
	WS03	Concrete: 0.3m Masonry rubble: 0.9m Through modern concrete river bank.
	WS04	Tarmac: 0.2m Modern made ground, comprising rubble and gravel: 1.0m
	WS05	Topsoil: 0.23m Naturally deposited, mid brown, river silt and cobbles: 0.97m
	WS06	Topsoil: 0.24m Naturally deposited, mid brown, river silt and cobbles: 0.96m
	WS07	Tarmac: 0.2m Modern made ground, gravel foundation for pavement: 1.0m
	HDP1	Tarmac: 0.25m

		Made ground, sandy-gravel: 0.95m
	HDP2	Tarmac: 0.25m Made ground, sandy-gravel: 0.95m
	HDP3	Tarmac: 0.3m Stone rubble footing for adjacent flood wall.
<b>Site B - Pencil museum</b>	BH02	Tarmac: 0.25m Gravelly-sandy-silt: 0.95m
	HDP4	Topsoil: 0.12m Made ground, mid brown, sandy-silt and gravel: 1.08m
	HDP5	Tarmac: 0.25m Stone rubble footing for modern wall: 0.95m
<b>Site C - Crosthwaite Wall</b>	BH05	Topsoil: 0.15m Made ground, consisting of gravelly-silt, heavily disturbed by root action: 1.05m
	BH06	Topsoil: 0.15m Made ground, consisting of gravelly-silt: 1.05m
	WS08	Topsoil: 0.2m Mid brown, sandy-silt, densely packed with roots: 1.0m
	WS09	Topsoil: 0.2m Mid brown, sandy-silt, densely packed with roots: 1.0m
	WS10	Topsoil: 0.2m Mid brown, sandy-silt, densely packed with roots: 1.0m
	WS11	Topsoil: 0.2m Mid brown, sandy-silt, densely packed with roots: 1.0m
<b>Site D - Fitz Park</b>	TP01	Topsoil: 0.2m Natural, mid brown, sandy-silt: 1.0m
	TP02	Topsoil: 0.15m Natural, mid brown, sandy-silt: 1.05m
	TP03	Topsoil: 0.23m Natural, mid brown, sandy-silt: 0.97m
	TP04	Topsoil: 0.18m Natural, mid brown, sandy-silt: 1.02m
	BH04	Topsoil: 0.2m Natural, mid brown, sandy-silt: 1.0m
<b>Site E - Southey Hill Embankment</b>	TP05	Topsoil: 0.22m Natural mid brown clayey-silt: 0.98m
	BH03	Topsoil: 0.15m Mid brown sandy-silt: 1.05m
	WS13	Topsoil: 0.15m

		Mid brown sandy-silt: 1.05m
	WS14	Topsoil: 0.15m Mid brown sandy silt:1.05m
	WS15	Topsoil: 0.15m Mid brown sandy-silt: 1.05m
<b>St Johns in the Vale</b>	TP101	Topsoil: 0.1m Natural, greyish clay: 1.1m
	TP102	Topsoil: 0.11m Natural, mid brown, silty-clay: 1.09m
	TP103	Topsoil: 0.15m Natural, mid brown, sandy-clay: 1.05m
	TP104	Topsoil: 0.2m Natural, greyish clay: 1.0m
	TP105	Topsoil: 0.1m Natural, orangey-brown silty-clay: 1.1m
	TP106	Topsoil: 0.1m Natural, orange sandy-clay:1.1m
	BH101	Topsoil: 0.1m Orangey clay: 1.1m
	BH103	Topsoil: 0.15m Mid brown sandy-clay: 1.05m
	BH104	Topsoil: 0.2m Grey clay: 1.0m

Table 1: Summary of results

### 3.3 CONCLUSIONS

- 3.3.1 The watching brief recorded no archaeological features, structures or deposits from any of the six areas investigated. Although some evidence of a river wall prior to the modern defence wall was observed in BH01 but its date is unknown. However, the size of the excavations for archaeological recording purposes was restrictive. Therefore, should any more extensive additional work be undertaken in these areas further watching brief is recommended.

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## ILLUSTRATIONS

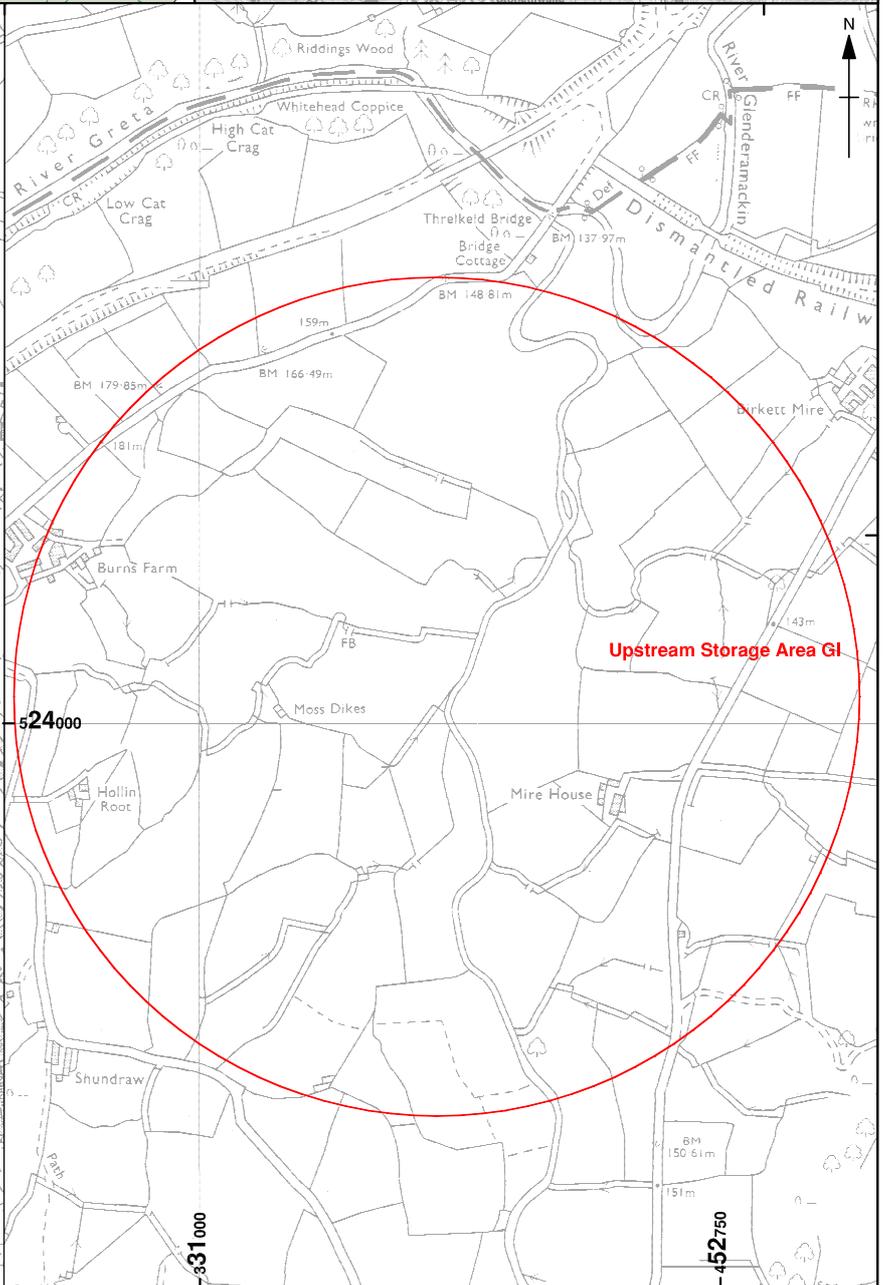
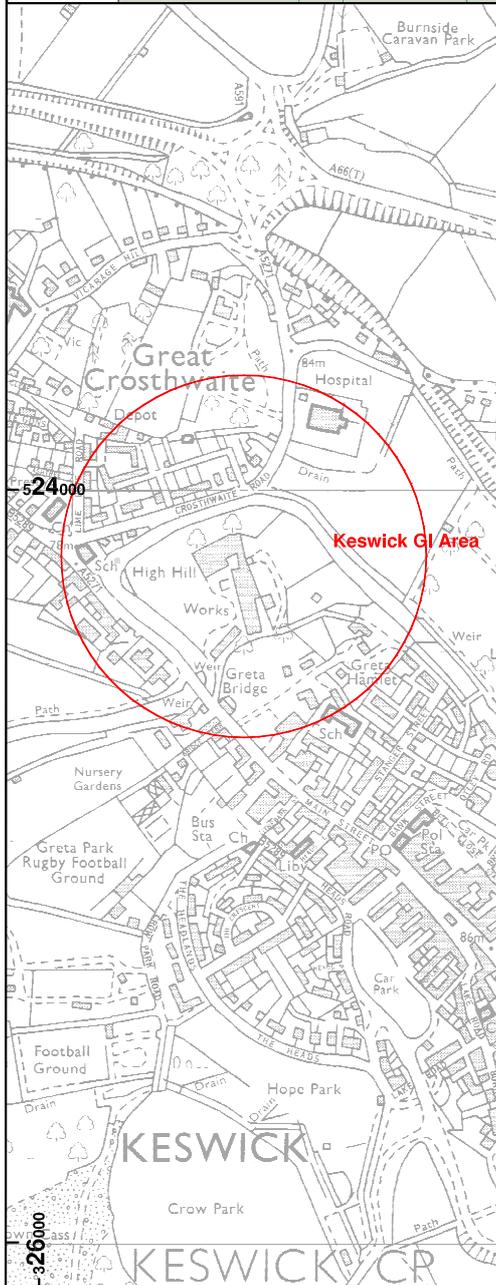
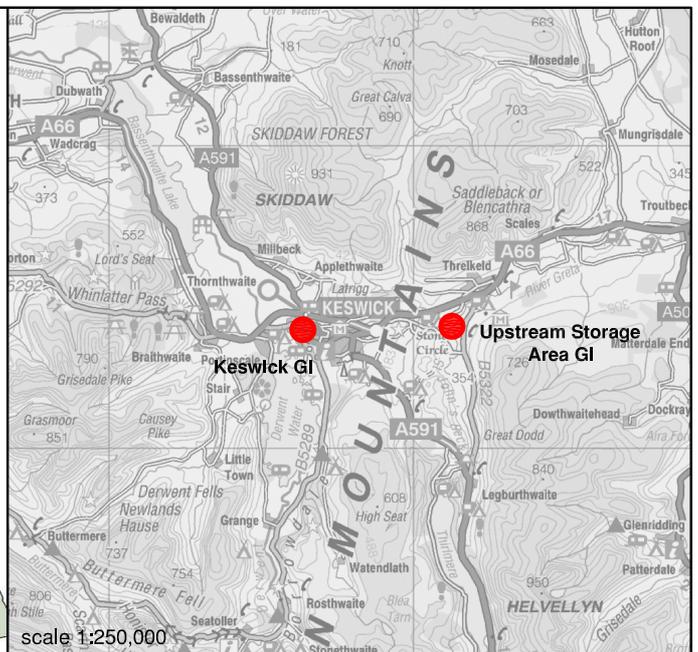
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- Plate 3: Site A, High Hill Wall. A north-facing view of HDP03, showing stone rubble footing for the adjacent flood wall
- Plate 4: Site D, Fitz Park. An example trial pit. East-facing view of TP02
- Plate 5: St Johns in the Vale. An example borehole inspection pit, showing BH101

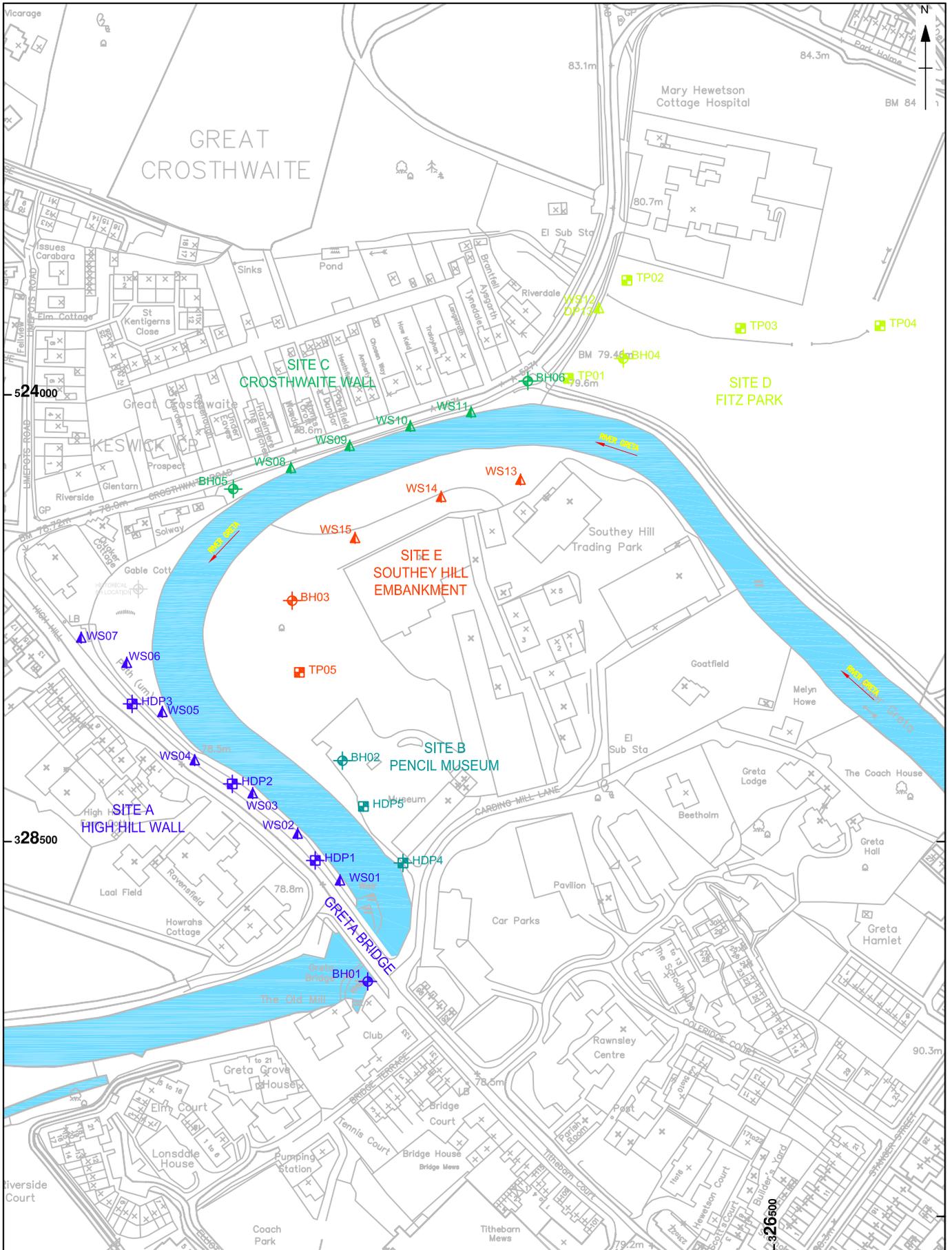


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Figure 1: Site location



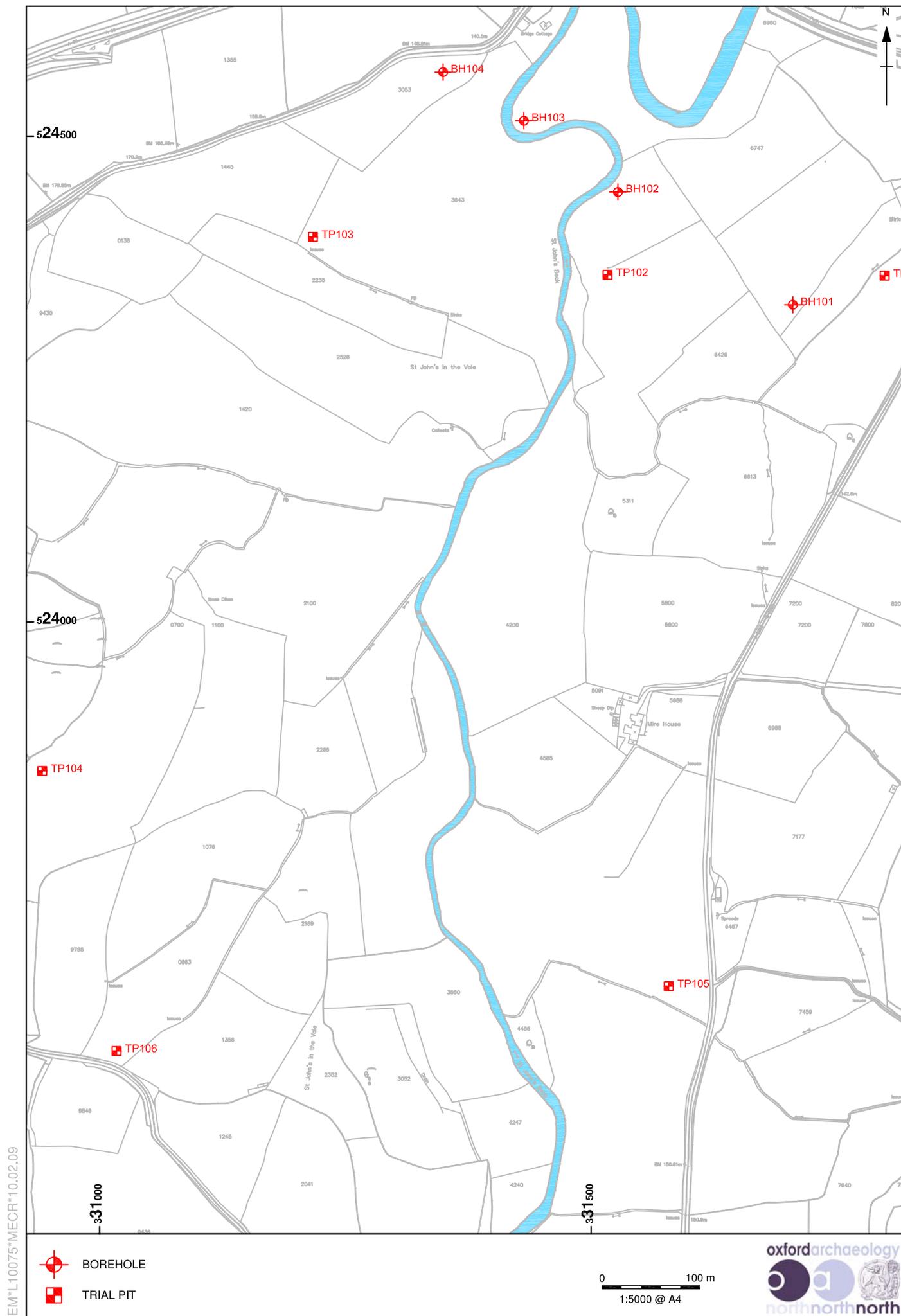
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- SITE A - HIGH HILL WALL
- SITE B - PENCIL MUSEUM
- SITE C - CROSTHWAITE WALL
- SITE D - FITZ PARK
- SITE E - SOUTHEY HILL EMBANKMENT
- ⊙ BOREHOLE
- TRIAL PIT
- ▲ WINDOW SAMPLE
- ⊞ HAND EXCAVATED PIT

0 50 m  
1:2500 @ A4



Figure 2: Location of exploratory holes for Keswick GI watching brief



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Figure 3: Location of exploratory holes for Upstream Storage Area GI watching brief



Plate 1: Site A, High Hill Wall. A south-facing view of BH01, showing the river wall that existed prior to the modern defence wall



Plate 2: Site A, High Hill Wall. A north-facing view of WS07, showing the modern gravel foundation layer for the pavement



Plate 3: Site A, High Hill Wall. A north-facing view of HDP03, showing stone rubble footing for the adjacent flood wall



Plate 4: Site D, Fitz Park. An example trial pit. East-facing view of TP02



Plate 5: St Johns in the Vale. An example borehole inspection pit, showing BH101

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## APPENDIX 1: PROJECT DESIGN

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### 1. INTRODUCTION

#### 1.1 PROJECT BACKGROUND

1.1.1 Halcrow Group Ltd (hereafter the 'client'), on behalf of their client the Environment Agency, has requested that Oxford Archaeology North (OA North) prepare a Written Scheme of Investigation (WSI) for a programme of archaeological watching brief associated with exploratory hole groundworks for the flood alleviation scheme in Keswick, Cumbria. A total of 17 test pits across two areas of the ground investigation (GI) work will be carried out under permanent archaeological presence; seven test pits are located within the historic town centre (Keswick GI, NGR centred NY 263240) and ten upstream from the town at St Johns in the Vale (Upstream Storage Area GI, NGR centred NY 315243). The watching brief will be maintained during the excavation of the test pits and will enable any archaeological remains disturbed during the groundworks to be recorded in mitigation of the exploratory works.

### 2. OXFORD ARCHAEOLOGY

#### 2.1 QUALITY ASSURANCE

2.1.1 OA is a Registered Archaeological Organisation with the **Institute of Field Archaeologists (no 17)**. OA is not at present ISO certified but operates an internal QA system governed by standards and guidelines outlined by English Heritage and the Institute of Field Archaeologists. The following quality assurance and QA procedures are illustrated in the organograms presented in *Appendix 2*.

2.1.2 **Standards:** it is OA's stated policy to adhere to current professional standards set by IFA, English Heritage, Association of Local Government Archaeological Officers, Museums Organisations. OA helps the profession to develop and establish standards by serving on national working parties (eg recently on archives), and conforms with current legislation and national and local policy standards for archaeology health and safety and other relevant matters.

2.1.3 OA has established technical manuals, procedures and policies which control its work covering field recording, finds retention and discard, finds storage and handling, environmental sampling and processing, archiving and post-excavation. These have been developed to conform with best professional practice.

2.1.4 **Staff:** OA ensures that its staff are fairly recruited, fairly employed, and properly qualified for their work whether by formal qualification or by established and verifiable experience. OA have established terms and conditions of employment and a system of staff representation to ensure regular consultation on employment matters.

2.1.5 OA ensures that staff remain committed and enhance their abilities using annual staff appraisals, supporting formal and informal training and educational courses.

2.1.6 **Procurement of services and materials:** OA procures subcontracted work on the basis of value for money, considering quality, track record and service, as well as cost. OA regularly reviews quality of subcontracted work and uses tendering procedures for major sub-contracts.

2.1.7 Procurement of materials is on the basis of quality and availability, as well as cost, especially in respect of long-term storage of archives (OA adheres to archive quality photographic materials and processes, archive quality boxes etc).

2.1.8 **Working Practices:** management procedures ensure that all work conducted within the Company and all end product reports to clients are monitored and evaluated whilst they are in progress, during compilation, and after completion.

- 2.1.9 **Data Acquisition and Security:** for fieldwork projects OA always removes records and finds from site every day, and ensures equipment is secured.
- 2.1.10 **Experience:** OA North has considerable experience of sites of all periods, having undertaken a great number of small and large scale projects throughout Northern England during the past 24 years. Evaluations, assessments, watching briefs and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables.

## 2.2 KEY STAGES IN QA PROCEDURES

2.2.1 The following procedures cover technical aspects of OA's work:

- critical review of previous work;
- analysis of how archaeological issues are dealt with in the brief, including consideration of uncertainty and risk, and consideration of whether different approach would be more cost-effective;
- development of method statements (Project Designs/Written Schemes of Investigations);
- detailed consideration and documentation of logistical aspects, including H + S procedures, plant logistics, staff logistics;
- compilation of Briefing Document for site director/supervisor to include all relevant background data and information, procedures, technical specifications and logistics;
- execution of field work guided by technical Manual, incorporating unique site codes and numbering systems;
- recording systems on *pro formas* cross-referenced and identified to individuals dealing with descriptions, finds, samples, drawings, photographs;
- finds system designed to track where objects are, and to establish museum destination and legal ownership of finds;
- PX Assessment procedures to establish exactly how much work needs to be done to achieve academic objectives within budget;
- no automatic writing of interminable PX reports: tasks and methods focussed on aims and objectives;
- constant review and monitoring to ensure objectives are being met, with the flexibility to reassess priorities in light of important discoveries;
- monitoring of progress of PX projects by members of staff not directly involved, as well as project manager.

## 3. OBJECTIVES

- 3.1 The following programme has been designed to identify any archaeological deposits or features that may be present during the excavation of 17 machine-excavated test pits. The work will be undertaken in order to mitigate the impact by means of preservation by record of any such archaeological features or deposits. The work will be carried out in line with current IFA guidelines and in line with the IFA Code of Conduct.
- 3.2 **Archaeological Watching Brief:** to maintain a permanent archaeological presence during excavation of the exploratory holes. The purpose is to identify, investigate and record any archaeological remains that may be encountered. Where such remains cannot be adequately recorded under watching brief conditions it will be necessary to undertake consultation with all interested parties to determine and implement the appropriate mitigation.
- 3.3 **Report:** the results of the fieldwork and any post-excavation assessment will culminate in a final report to be submitted within eight weeks of completion of the fieldwork (subject to any specialist reports outstanding).

3.4 **Archive:** a site archive will be produced to English Heritage guidelines (MAP 2 (1991)). The information will be finally disseminated through the deposition of the archive at a local museum, and report at the Historic Environment Record (HER) Office in Kendal.

#### 4. METHOD STATEMENT

##### 4.1 HEALTH AND SAFETY

4.1.1 **Risk assessment:** OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). OA North will liaise with the client to ensure all health and safety regulations are met. The outline risk assessment to accompany these proposals will be updated in advance of any on-site works, with continuous monitoring during the fieldwork.

4.1.2 **Services:** full regard will, of course, be given to all constraints (services etc) during the evaluation trenching as well as to all Health and Safety considerations. It is assumed that the client and main contractor on site will have identified and hold full information as to the location of services.

4.1.3 **Contamination:** any contamination issues must also be made known to OA North in order that adequate PPE can be supplied prior to commencement. Should any presently unknown contamination be discovered during excavation, it may be necessary to halt the works and reassess the risk assessment. Any specialist safety requirements may be costed as a variation.

##### 4.2 ARCHAEOLOGICAL WATCHING BRIEF

4.2.1 **Introduction:** a programme of field observation will accurately record the location, extent, and character of any surviving archaeological features and/or deposits during the ground disturbance for the excavation of 17 test pits over two areas (Keswick town centre, and St Johns in the Vale). These will be carried out under constant archaeological observation unless, with consultation and agreement of the client and other interested parties, it is identified that a more targeted and timetabled archaeological investigation would be more appropriate.

4.2.2 **Methodology:** the work will comprise archaeological observation during the excavation, to include the systematic examination of any subsoil horizons exposed during the course of the groundworks, and the accurate recording of all archaeological features and horizons, and any artefacts, identified.

4.2.3 Discovery of archaeological remains will require stoppage of the excavation. Areas of potential archaeological remains will require fencing-off from any construction works, preferably with netlon-type fencing, to allow OA North archaeologists sufficient time to undertake adequate recording under safe conditions. This will be carried out as efficiently as possible in order to minimise disruption. Depending on the deposits revealed, it is anticipated that the average time for the suspension of works will be approximately 2-4 hours.

4.2.4 Clearance will be given for construction to proceed once the archaeologist is satisfied that either no remains are present, or that they have been adequately recorded, or that the level of impact will not disturb any deeper remains that can be preserved *in situ*.

4.2.5 **Complex or extensive remains:** should the remains be too complex or extensive to be investigated and recorded under watching brief conditions then the area will be fenced-off and the client will be immediately contacted in order to determine the requirements for further investigation. All further construction works within the marked area will cease until clearance is given to proceed. All further works would be subject to a variation to this project design.

4.2.6 **Investigation and recording:** putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, will be

cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and where appropriate sections will be studied and drawn. Any such features will be sample excavated (i.e. selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal).

- 4.2.7 During this phase of work, recording will comprise a full description and preliminary classification of features or materials revealed, and their accurate location (either on plan and/or section, and as grid co-ordinates where appropriate). Features will be planned accurately at appropriate scales and annotated on to a large-scale digital plan provided by the client. A photographic record will be undertaken simultaneously.
- 4.2.8 Levels will be recorded and reduced to their OD heights, with all benchmark and TBMS to be shown. The location of all features excavated will be recorded by Total Station with appropriate spot heights and tied into the OS grid. Altitude information will be established with respect to OS Datum. The location of the remains within the areas of construction will be based on site plans provided by the client containing OS information.
- 4.2.9 A plan will be produced of the areas of groundworks showing the location and extent of the ground disturbance and one or more dimensioned sections will be produced.

### 4.3 GENERAL PROCEDURES

- 4.3.1 **Environmental Sampling:** samples (bulk samples of 40 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches). Monolith samples will be collected from freshly exposed sections through all buried soils/old ground surfaces by trained staff. These will be returned to OA North's offices for processing.
- 4.3.2 Deposits of particular interest may incur additional sampling, on advice from the appropriate in-house specialist.
- 4.3.3 The location of all samples will be recorded on drawings and sections with heights OD etc.
- 4.3.4 Between 50%-100% of bulk samples shall be selected for processing, based on the advice from OA North's in-house environmental manager. However, the basis of the advice will be agreed with the client prior to processing commences, which will be included in the final report. An assessment of the environmental potential would include soil pollen analysis and the retrieval of charred plant macrofossils and land molluscs from former dry-land palaeosols and cut features. In addition, the samples would be assessed for plant macrofossils, insect, molluscs and pollen from waterlogged deposits.
- 4.3.5 In order to achieve the aims of the programme of work, it may be required to obtain dating evidence through radiocarbon dating, dendrochronological or other such techniques. This would only be undertaken in consultation with the client.
- 4.3.6 **Human Remains:** any human remains uncovered will be left *in situ*, covered and protected. No further investigation will continue beyond that required to establish the date and character of the burial. The client, curator and the local Coroner will be informed immediately. If removal is essential the exhumation of any funerary remains will require the provision of a Home Office license, under section 25 of the Burial Act of 1857. An application will be made by OA North for the study area on discovery of any such remains and the removal will be carried out with due care and sensitivity under the environmental health regulations. Any delays caused by unforeseen and complex excavation of inhumations may be subject to a variation to the cost of the contract and will be agreed with the client.
- 4.3.7 **Finds:** all finds recovered during the evaluation investigation (metal detecting and trial trenching) will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) and the recipient museum's guidelines.

- 4.3.8 Finds recovery and sampling programmes will be in accordance with best practice (current IFA guidelines) and subject to expert advice. OA has close contact with Ancient Monuments Laboratory staff at the Universities of Durham and York and, in addition, employs in-house artefact and palaeoecology specialists, with considerable expertise in the investigation, excavation, and finds management of sites of all periods and types, who are readily available for consultation. Finds storage during fieldwork and any site archive preparation will follow professional guidelines (UKIC). Emergency access to conservation facilities is maintained by OA North with the Department of Archaeology, the University of Durham.
- 4.3.9 Neither artefacts nor ecofacts will be collected systematically during the mechanical excavation of the topsoil unless significant deposits, for example clay pipe waster dumps, are encountered. In such an eventuality, material will be sampled in such a manner as to provide data to enhance present knowledge of the production and dating of such artefacts, although any ensuing studies will not be regarded as a major element in any post-excavation analysis of the site. Other finds recovered during the removal of overburden will be retained only if of significance to the dating and/or interpretation of the site. It is not anticipated that ecofacts (eg unmodified animal bone) will be collected during this procedure.
- 4.3.10 Otherwise, artefacts and ecofacts will be collected and handled as per specification. All material will be collected and identified by stratigraphic unit during the evaluation trenching process. Hand collection by stratigraphic unit will be the principal method of collection, but targeted on-site sieving could serve as a check on recovery levels. Objects deemed to be of potential significance to the understanding, interpretation and dating of individual features, or of the site as a whole, will be recorded as individual items, and their location plotted in 3-D. This may include, for instance, material recovered from datable medieval pit groups.
- 4.3.11 All finds will be treated in accordance with OA standard practice, which is cognisant of IFA and UKIC Guidelines. In general this will mean that (where appropriate or safe to do so) finds are washed, dried, marked, bagged and packed in stable conditions; no attempt at conservation will be made unless special circumstances require prompt action. In such case guidance will be sought from OA North's consultant conservator.
- 4.3.12 All waterlogged finds will be treated as appropriate. In the case of large deposits of waterlogged environmental material (eg unmodified wood), advice will be sought with the OA North consultant with regard to an appropriate sampling strategy.
- 4.3.13 Where possible, spot dates will be obtained on pottery and other finds recovered from the site. Artefacts will be examined and commented upon by OA North in-house specialists. Initial artefact dating shall be integrated into the site matrix.
- 4.3.14 Any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.

#### 4.4 REPORT

- 4.5.1 **Final Report:** one bound and one unbound copy of a written synthetic report will be submitted to the client, and three copies to the Cumbria HER within eight weeks of completion of the completion of the survey fieldwork, unless an alternative deadline is agreed with the client beforehand. It will present, summarise, and interpret the results of the programme detailed above in order to come to as full an understanding as possible of the archaeology of the development area. The report will include;
- a site location plan related to the national grid
  - a front cover to include the planning application number and the NGR
  - a concise, non-technical summary of the results
  - the circumstances of the project and the dates on which the fieldwork was undertaken

- description of the methodology, including the sources consulted
- a summary of the historical background of the study area if available
- appropriate plans showing the location and position of features or sites located
- a statement, where appropriate, of the archaeological implications of the proposed development
- illustrative photographs as appropriate
- a copy of this project design, and indications of any agreed departure from that design
- the report will also include a complete bibliography of sources from which data has been derived, and a list of any further sources identified but not consulted
- plans and sections showing the positions of deposits and finds
- an index to the project archive

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

#### 4.6 ARCHIVE

4.6.1 The results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, Appendix 3, 2nd edition, 1991). The archive will contain site matrices, and summary reports of the artefact record, context records, and any other records or materials recovered.

4.6.2 This archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the Cumbria HER (the index to the archive and a copy of the report). OA North will deposit the original record archive of projects (paper, magnetic and plastic media), and a full copy of the record archive (microform or microfiche), together with the material archive (artefacts, ecofacts, and samples) with an appropriate museum, probably Tullie House.

#### 5. WORK TIMETABLE

5.1 **Archaeological Watching Brief:** the duration of the archaeological presence for the watching brief will be dictated by the client's schedule of works.

5.2 **Report:** the client report will be completed within approximately eight weeks following completion of the fieldwork, subject to any outstanding specialist reports.

5.3 **Archive:** the archive will be deposited within six months.

#### 6. STAFFING

6.1 The project will be under the direct management of **Emily Mercer BA (Hons) MSc AIFA** (OA North Senior Project Manager) to whom all correspondence should be addressed.

6.2 The fieldwork will be undertaken by an OA North supervisor or assistant supervisor experienced in this type of project, who will be responsible for liaison with the site contractors and the client, and other relevant interested parties with regards to on-site work and procedures.

6.3 The site teams will be supported by specialist staff based both on site and in the office in Lancaster. Finds management will be undertaken by **Christine Howard-Davis** who will also

provide specialist input on certain finds categories. Environmental management will be undertaken by **Elizabeth Huckerby**, who will also provide specialist input on charred remains and pollen. Elizabeth will advise on site sampling procedures and co-ordinate the processing of samples and organise internal and external specialist input as required.

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