Archaeological Research & Consultancy at the University of Sheffield
Graduate School of Archaeology
West Court
2 Mappin Street
Sheffield S1 4DT Phone 0114 2225106 Fax 0114 2797158

Project Design 844d.1

# Project design for archaeological reporting of the mitigation works at Broad Street, Sheffield


June 2008

by Helen Holderness

Prepared For:
WATKIN JONES CONSTRUCTION
Matthew House
Llys Edmund Prys
St. Asaph Business Park
St. Asaph
Denbighshire
LL17 0JA

# Contents

## Illustrations



| Checked by: | Passed for submission to client: |
|---|---|
| Date: 26th September 2006 | Date: 26th September 2006 |
| Helen Holderness<br>*Project Archaeologist* | James Symonds<br>*Executive Director* |

# 1 INTRODUCTION

A planning application for redevelopment of a site at the junction of Broad Street and Park Square, Sheffield has been approved by Sheffield City Council. As part of the planning submission a desktop assessment of the site was commissioned by Watkin Jones Student Accommodation and carried out by ARCUS (Ball and May 2004). On the basis of this document, South Yorkshire Archaeology Service (SYAS) determined that the site required a programme of archaeological evaluation in advance of the development, and that depending on the results of the evaluation exercise a further programme of mitigation may be required.

An archaeological evaluation was carried out in August 2006 by ARCUS and most of the trenches on site exposed a small amount of archaeological remains. In Trench 6 however, the remains of a probable palaeo-channel were discovered that contained two horn cores from cattle. There was no other dating evidence with the horn cores. The trench was 3m deep so no detailed investigation could take place.

The discovering of the channel has prompted SYAS to request that further investigation are carried out in its vicinity to established the length, breadth and depth of the feature along with any dating evidence from it.

This requirement is in line with government guidance as set out in DOE Planning Policy Guidance - Archaeology and Planning (PPG16, 1990). ARCUS have been commissioned by Watkin Jones Student Accommodation to carry out the required archaeological programme. This document is a project design outlining detailed methodologies for mitigation.

The site (centre SK 3618 8758) lies immediately to the south of the elevated track of the Sheffield Supertram, to the east of the Park Square roundabout. The site is a sub-rectangular area currently in use as a temporary car park, all remaining buildings having been demolished in 2002. Part of the upper eastern end of the site is covered by semi-mature trees. The area is bounded on the south side by Broad Street, with the former Broad Street Lane and part of the former Blast Lane running through the central part of the site.

# 2 ARCHAEOLOGICAL BACKGROUND

An archaeological desktop assessment of the application area was undertaken by ARCUS in 2004 (Ball and May 2004). The conclusions of this report are briefly summarised here.

In medieval times the proposal area was part of the ancient deer park of the manor of Sheffield, and the road which became Broad Street led out eastwards from the medieval town past the Shrewsbury Hospital, heading towards Park Gate and Park Hill.

Coal reserves under the hunting park had begun to be exploited by the end of the sixteenth century, and a 'coal yard' occupied the approximate area of the site by the time of Gosling's plan of 1736. These collieries were worked out during the course of the eighteenth century, and the area was laid out for urban expansion from about 1780, with Broad Street established, and houses constructed along the street frontage, some with workshops in the back yards. The north side of Broad Street Lane appears to have remained undeveloped, with fields and gardens present.

The Park Steel Works was built in 1833, with the rear part of the works located within the northern part of the proposal area, north of Broad Street Lane. The Park Works included cementation furnaces and crucible furnaces. The area east of the Park Works and north of

Broad Street Lane was infilled by courtyard housing before 1850, and a cutlery works was present among the courtyards by 1889. The Shrewsbury Works had been built at the western end of the site by 1850. Along Broad Street east of Blast Lane, the domestic and retail premises established in the late eighteenth century appear to have continued throughout the nineteenth century, with infilling of rear yard areas. The Blue Ball Inn was shown on the Fairbank plan of the 1780s and was still extant in 1960.

The Park Steel Works was demolished in 1898, and the railway sidings of the LNWR were built over the northern part of the site. Some truncation may have occurred during this process: hachures on the 1923 map indicate a cutting down to the sidings. The Park Rope and Canvas Works is shown south of Broad Street Lane in 1954, by which time the Shrewsbury Works had been partially rebuilt as the Howard Works, occupied by several small firms including silversmiths, cutlers and manufacturers of electro-plate.

The railway sidings and most of the buildings on the eastern part of the site had been demolished by 1970, and further demolition occurred during construction of the Park Square roundabout and Parkway dual carriageway in 1976. Construction of the Sheffield Supertram in 1993 involved demolition of the rear range of the Howard Works, and probably further truncation of the northern part of the site to create the steep slope present today. The rest of the Howard Works was demolished in 2002 following a rapid survey by RCHME in 1998.

Ten boreholes were bored on the site as part of the determination of ground conditions by Watkin Jones. Examination of the borehole logs shows substantial depths of demolition rubble over the entire site, although the sloping northern area was not tested. Depths of rubble varied from 1.20m to 3.20m. The area of the Howard Works appears to have been comprehensively demolished during 2002, and no structures were identified in the borehole logs. Evidence for infilled cellarage with surviving structures was encountered in the central area along Broad Street. To the north of Broad Street Lane up to 3.20m of rubble was encountered, somewhat surprisingly in the light of probable truncation in this area. Borehole records should not however be considered an adequate substitute for archaeological evaluation, due to the small areas tested.

During the archaeological field evaluation 7 trial trenches were excavated. Generally the level of archaeological preservation was poor, trenches 1 and 2 were archaeologically sterile, trenches 3, 4 and 5 contained fragmentary cellar walls, and trench 7 contained a shadow of a cellar that had been demolished and removed. Trench 6 contained that most substantial archaeological remains with the probable palaeo-channel and the remains of a cellar. Following consultation with Dinah Saich of the South Yorkshire Archaeology Service it was determined that further work would be appropriate on the probable palaeo-channel.

# 3 PROJECT AIMS

The requirement for archaeological fieldwork arises from the evaluation trial trenching which identified a probable palaeo-channel:

- to gather sufficient information to establish the date, extent and character of the putative palaeo-channel;
- to determine if any related features exist adjacent to the palaeo-channel;
- to provide sufficient information to understand and interpret the archaeology in its wider context.

# 4 DEVELOPERS ACTIVITIES

The development will involve the construction of a number of blocks of flats of which Block C will be next to the location of Trial Trench 6 (**illustration 3**). This building will have a basement under the footprint of the building which will require the bulk excavation of the footprint of the building and possibly a small extent beyond the footprint.

The bulk excavation will lower the ground to the level required for the basement slab of the building, this will vary but will be approximately 4m below present ground level: see **illustration 4 and 5**). The watching brief will be carried out primarily in the area of the Block C Basement floor plan (**illustration 6**) and machining will cease at the top of the palaeo-channel.

Watkins Jones will undertake the bulk dig and will be responsible for ensuring that all services are disconnected and that shoring is provided as required to make the excavation safe.

# 5 METHODOLOGY

The mitigation programme will consist of three potential elements of work.:

- a watching brief on the bulk dig of the basement of block C;
- sample excavation, sampling and recording of the putative palaeo-channel;
- a contingency to excavate any unexpected archaeological feature discovered during the bulk dig.

This strategy has been developed to maximise the area of potential palaeo-channel exposed, it also limits disturbance to the area that will be disturbed by the development thereby preserving *in situ* any deeply buried archaeological remains beyond the footprint of the building.. This strategy also means that the area will only require excavation once and not twice as would be needed if a separate phase of archaeological works was undertaken prior to construction commencing on site.

## 5.1 Watching Brief

The first element of the mitigation works will be the watching brief carried out on the bulk dig. This is required to lower the ground level to the level required for the basement slab. The depth of excavation will vary but will generally be around 3m (**illustration 4 and 5**). The watching brief will be carried out in the area of the Block C Basement floor plan (**illustration 6**). Machining will be monitored by an archaeologist and will cease at the top of the palaeo-channel where this is located. If other unexpected archaeological features are uncovered that require use of the contingency machining will cease in the vicinity of these features until these have been excavated and recorded.

## 5.2 Sample excavation

Once the level of the channel is reached an archaeological investigation will be carried out to determine its limits, a section will be cut across the feature to allow its section to be recorded and sampled.

Trenches will be cleaned by hand and photographed in the first instance. Archaeological features and deposits will be hand excavated, in an archaeologically controlled and stratigraphic manner, to a safe manageable level.

Any archaeological features associated with the palaeo-channel will be sample excavated and recorded. Discrete cut features will be excavated in half-section as a minimum; a sample section will be excavated across linear cut features; sample excavation will be carried out to elucidate the dating and sequence of structures. Linear features will be sampled a minimum 20% along their length (each sample section to be not less than 1m), or a minimum of a 1m sample section, if the feature is less than 10m long. The deposits at junctions or interruptions in linear features will be sufficiently excavated for the relationship between components to be established.

Features will be drawn, photographed, and described on *pro forma* sheets. Colour transparency and monochrome negative photographs will be taken at a minimum format of 35mm. Trench and appropriate sections will be drawn at 1:50, with individual features being planned at 1:20 where additional detail is required. Sections and profiles of each feature sampled will be drawn at 1:10 or 1:20, depending on the size of the feature. All plans, sections and profiles will be related to Ordnance Datum, in metres.

Should a significant depth of archaeology be suspected then, after appropriate recording, further machine excavation may be carried out to the necessary depth in order to record the full stratigraphic sequence on site.

## 5.3 Excavation Contingency

An excavation contingency will be required beyond the provision for sample excavating and recording the probable palaeo-channel. This contingency will be used to excavate and record unexpected or more extensive archaeological than are expected. This would cover the discovery of major features associated with the possible palaeo-channel such as waterlogged wooden structure or unexpected features unrelated to the palaeo-channel. The field contingency will allow for an additional week of excavation for a team of archaeologists on site.

A contingency will also be required for post-excavation analysis and will be called upon in the event of any additional specialist advice being required, e.g. finds analysis or conservation, palaeoenvironmental or industrial residue analysis, scientific dating, analysis or conservation of human remains.

Contingencies will only be drawn upon after discussion between ARCUS, SYAS and Watkin Jones Construction.

## 5.4 Finds collection policy

Artefactual material will be collected according to an explicit sampling strategy. Material which is obviously modern in date, and derived from unstratified contexts, will not be kept unless it is of exceptional intrinsic interest. Preference will be given to the collection and retention of stratified assemblages from in-situ deposits.

Material discarded as a consequence of this policy will be described and quantified in the field. This will involve basic analyses such as counting artefacts, and assigning finds to broad categories, e.g. ceramic building material.

All other finds will be cleaned, marked, catalogued and packed in materials suitable for long term storage in accordance with the UKIC's document 'Guidelines for the preparation of excavation archives for long term storage'. Appropriate tests and analyses will be undertaken as necessary, by qualified archaeologists. All finds will be treated in accordance with the English Heritage guidance document 'A strategy for the care and investigation of finds' (1995).

Any human remains which are discovered will initially left in-situ, covered and protected, and the Coroner informed. If removal is necessary, this will comply with the relevant legislation and any Home Office and local government health regulations.

All finds that are defined as 'treasure' under the terms of the Treasure Act 1997 will be reported to the Coroner and appropriate procedures then followed.

## 5.5 Sampling

### 5.5.1 Palaeoenvironmental samples

If appropriate deposits are identified a soil-sampling programme will be undertaken for the identification and recovery of carbonised and waterlogged remains. Soil samples of approximately 30 litres will be removed from excavated contexts. Particular attention will be paid to the sampling of the deposit sequence in the possible palaeo-channel. Environmental material removed from site will be stored in appropriate controlled environments. The collection and processing of environmental samples will be undertaken in accordance with guidelines set out in the Association for Environmental Archaeology (1995) *Working Paper No. 2, Environmental Archaeology and Archaeological Evaluations - Recommendations concerning the environmental archaeology component of archaeological evaluations in England*.

### 5.5.2 Industrial samples

If deposits are identified that relate to nineteenth century or earlier industrial activities that took place on the site, these will be sampled. Bulk samples will be taken of any deposit of material and/or primary contexts that appear to be related to the industrial activity on site but are not classed as artefacts. This may include deposits of fuels (such as charcoal, coke, coal), original working floors, ash, etc.

The amount of sample taken will depend upon the quantity of material encountered, and its nature. Normally, 10 litres of the deposits will be retained, however, 100% of the visible deposit will be sampled where this equates to 10 litres or less.

All artefacts, including pieces of ingots, worked/processed metal, scrap metal, moulds, patterns, crucible fragments etc. will normally be collected as 'bulk' or 'small' finds, as per standard archaeological practice.

Slags, crucible waste, metal off-cuts and other materials often occur in large numbers on industrial sites. Any such items will be classed as artefacts (even though they could also be classed as deposits or structures in their own right). Normally, 100% of artefacts will be retrieved from any given context, but where this exceed 10 litres (especially where the context is large, for example a dumped deposit of crucible fragments) the nature of the context will be assessed, and a only a percentage may be retained, with emphasis being on retaining a representative selection of material.

Artefacts **not** retained as part of this policy (including twentieth century material) will be quantified and described before discarding.

### 5.5.3 Other

Other samples will be taken, as appropriate, in consultation with specialists (e.g. dendrochronology, C14, etc.)

### 5.6 Monitoring of fieldwork

Arrangements will be made between ARCUS and the SYAS to monitor site works at appropriate intervals. ARCUS will notify the curatorial archaeologist of any discoveries of archaeological significance so that additional site visits can be made, as necessary.

### 5.7 Timetable and staffing

The mitigation will be carried out during the bulk reduction phase of Watkin Jones site work. Due to the uncertainty of the features under investigation the project will be costed on a week-to-week basis. During the watching brief phase of the mitigation one or two professional archaeologists will be on site to monitor bulk soil removal: once the level of the channel has been reached then the number of the team will be increased as appropriate.

ARCUS will not be responsible for the back filling of the areas excavated as it is understood that the spoil will be removed by Watkin Jones.

All site facilities will be supplied by Watkin Jones. These will include welfare facilities for the excavation team comprising, as a minimum, toilet and hand-washing, mess, and tool storage.

## 6 REPORTING THE RESULTS OF THE FIELDWORK

An assessment report will be produced that will discuss both the evaluation and the excavation and may recommend further analysis of finds and/or documentary research, leading to production of a final report (see below). If the results are of regional or national significance, then SYAS may recommend publication in an appropriate journal.

It is not possible to provide a fixed costing for the whole reporting process in advance. We have included prices for the assessment report. If further reporting is required (final report or publication), then we will be able to provide a firm costing at the time, before undertaking the required work.

### 6.1 Assessment report

Upon completion of the mitigation stage, if required, the artefacts, ecofacts and stratigraphic information will be assessed as to their potential and significance for further analysis and an Assessment Report produced within twelve weeks. This report will be produced in accordance with English Heritage guidelines as outlined in *Management of Archaeological Projects* (1991), IFA standards and current best archaeological practice.

The post–excavation assessment report will include the following:

i) National Grid reference of the site;

ii) detailed location map;

iii) a site plan;

iv) date and duration of fieldwork;

v) name of Project Manager and Project Officer;

vi) author of report, and report date;

vii) a non-technical summary and introductory statement;

viii) a detailed account of the techniques employed during the project;

ix) detailed plans of the position and layout of the trenches, related to fixed points; plans and sections of all stripped areas and excavated trenches; an overall (phased) site plan showing the archaeological features recorded; detailed plans and sections of features, select artefact illustrations and a selection of scanned photographs of work in progress.

x) a full record of all artefactual material recovered or recorded;

xi) assessment palaeoenvironmental and other samples recovered and results of any scientific dating;

xii) analysis of the nature and significance of material recovered or recorded;

xiii) examination of the results of the work in a regional context;

xiv) a phased interpretation of the site, if possible;

xv) a detailed context index

A summary of the report will be submitted to SYAS in digital format.

## 6.2 Full report

Depending on the recommendations of the Assessment Report, the compilation of a full report may be required. This will be carried out by project staff in consultation with appropriate specialists.

The draft of a fully illustrated analytical report will be submitted to the client and the South Yorkshire Archaeology Service within an agreed period. This will contain as a minimum:

i) a non-technical summary of the results;

ii) a detailed and illustrated description of the site;

iii) a full analysis of the data, complemented by relevant historical sources;

The final report will be completed once comments on the draft have been received and considered. Copies of the final report will then be forwarded to the client and SYAS. As well as a paper copy of the report, SYAS will receive a digital version, for the Sites & Monuments Record.

## 6.3 Publicity and dissemination of results

Provision for the results to be disseminated to the public, for example by talking at the annual 'South Yorkshire Archaeology Day', to local societies etc., will be made.

Publicity notices (illustrated, not less than A3 and with text at an easily readable font size, e.g. 16 point) relating to the background and progress of the excavation will be maintained by ARCUS during the course of the works.

An online OASIS form will also be completed at http://ads.ahds.ac.uk/project/oasis/.

A summary (of appropriate length, to be discussed with SYAS) of the findings of the work, accompanied by appropriate illustrations, will be submitted to SYAS in digital format for inclusion in the South Yorkshire Archaeology Annual Review. Text will be in ASCII format and any images in .tif form at 300dpi.

Provision for publication of the results in a regional or national journal will be allowed for, should the results be of significance – to be decided in discussion with SYAS.

### 6.4 The project archive

The archive including any finds will be deposited with Sheffield City Museum. This will be done according to the requirements for such depositions outlined by the South Yorkshire Sites and Monuments Record and the museum.

The project archive will be prepared by the project staff in accordance with the requirements specified in *Management of Archaeological Projects*, Appendix 3 (1991) and the *Guideline for the Preparation of Excavation Archives for Long Term Storage* (United Kingdom Institute of Conservation 1990).

The archive will contain the following:

i) a summary of the project;

ii) a guide to the archive;

iii) the project design;

iv) the complete site archive, including all data, records and correspondence, produced during the programme of fieldwork;

v) all artefactual and environmental material, appropriately indexed, conserved and packaged.

# 7 HEALTH AND SAFETY

If other contractors are working on site at the same time as ARCUS, the client will ensure that no machines are working within the area demarcated for the archaeological intervention, other than those under archaeological supervision.

The results of ground contamination studies will be made available to ARCUS in good time before the start of fieldwork. Fieldwork will not commence until this information have been received, and if necessary until the appropriate protective equipment has been acquired. ARCUS will not be liable for delays to the archaeological works caused by ground contamination or by failure of the client to provide information.

ARCUS adheres to the University of Sheffield Health and Safety Policy, and observes the recommendations of the SCAUM (Standing Conference of Archaeological Unit Managers) Health and Safety manual. A copy of the ARCUS Health & Safety Manual for Archaeological Excavation is available on request.

# 8 WELFARE

The client will supply welfare facilities for the archaeological team, and these are not included within our costing. These are to include mess space, toilets and hand washing facilities, and secure tool storage.

# 9 INSURANCE

ARCUS is fully insured as part of the University of Sheffield. The University currently maintains insurance cover as follows :

| | |
|---|---|
| Employers Liability | £25 million |
| Professional Indemnity | £25 million |
| Public Liability | £25 million |

# 10 VARIATIONS CLAUSE

Variations to the brief and agreed specifications will only be made by prior agreement between all appropriate parties.

# 11 COPYRIGHT

ARCUS will assign copyright of any reports produced in connection with this commission to Watkin Jones Construction upon written request, but retains the right to be identified as the author of all project documentation and reports as defined in the *Copyright, Designs and Patents Act 1988* (Chapter IV, s.79).

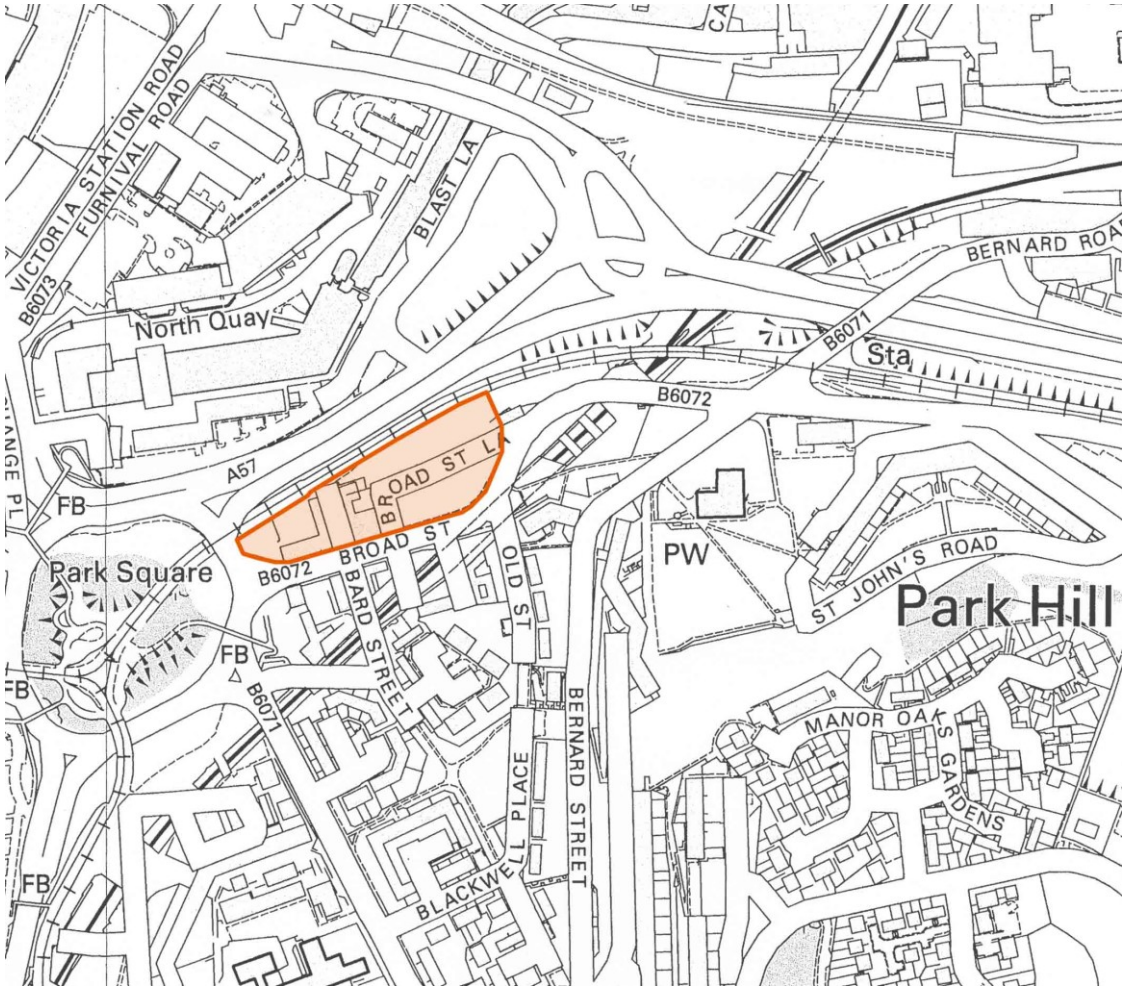
# 12 REFERENCES

Ball, C. and May, R. 2004: *Archaeological desk-based assessment of land at Broad Street/Park Square Car Park, Sheffield, South Yorkshire*. Unpublished ARCUS report 844.1, August 2004

Department of Environment (1990), *'PPG 16 – Planning Policy Guidance: Archaeology and Planning.'*

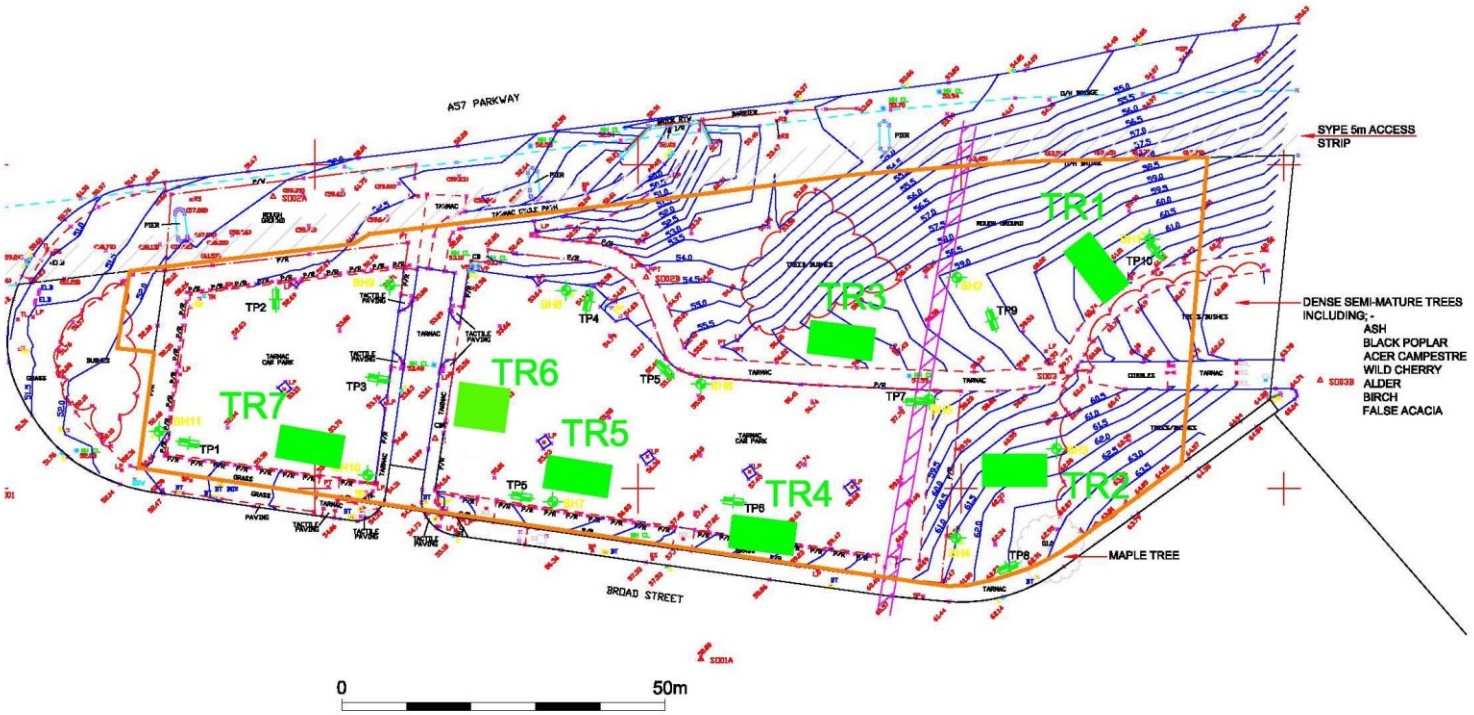
English Heritage (1991) *Management of Archaeological Projects*.

United Kingdom Institute of Conservation (1990). *Guideline for the Preparation of Excavation Archives for Long Term Storage*.




| | | |
|---|---|---|
| Reproduced from the Ordnance Survey's 1:25000 Explorer map sheet 279 with the permission of the Controller of Her Majesty's Stationary Office. © Crown Copyright Licence No. AL 50228A | Project:<br>Broad Street car park, Sheffield | |
| | Title:<br>Site location plan | |
| | Scale:<br>1:25000 | Date:<br>August 2006 |
| | NGR:<br>SK 3618 8758 | Drawn:<br>S. Baker |
| | Project No.:<br>**844c** | Illustration No.:<br>**1** |

ARCUS
Research School of Archaeology
Westcourt
2 Mappin St
Sheffield UK S1 4DT
Tel 0114 2225106 Fax 0114 2797158

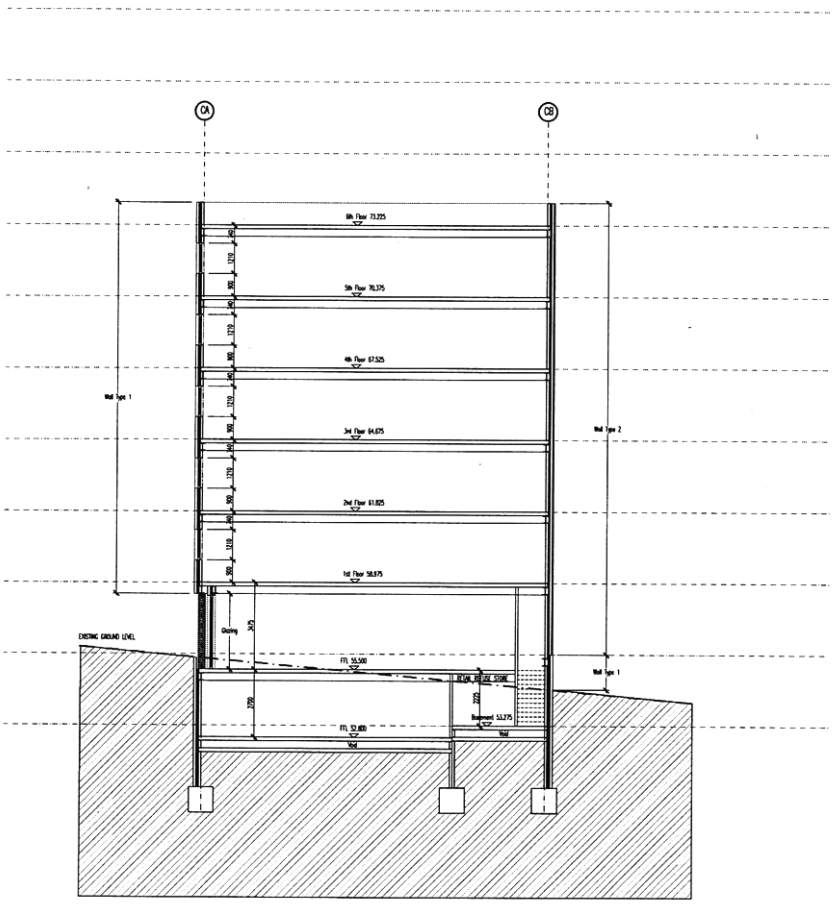



| | |
|---|---|
| Project: **Broad Street car park. Sheffield** | |
| Title: **Evaluation trench locations** | |
| Scale: As shown | Date: September 2006 |
| NGR: SK 3618 8758 | Drawn: Helen Holderness |
| Project No.: **844c** | Illust. No.: **02** |

ARCUS
Research School of Archaeology
Westcourt
2 Mappin St
Sheffield S1 4DT
Tel 0114 2225106
Fax 0114 2797158

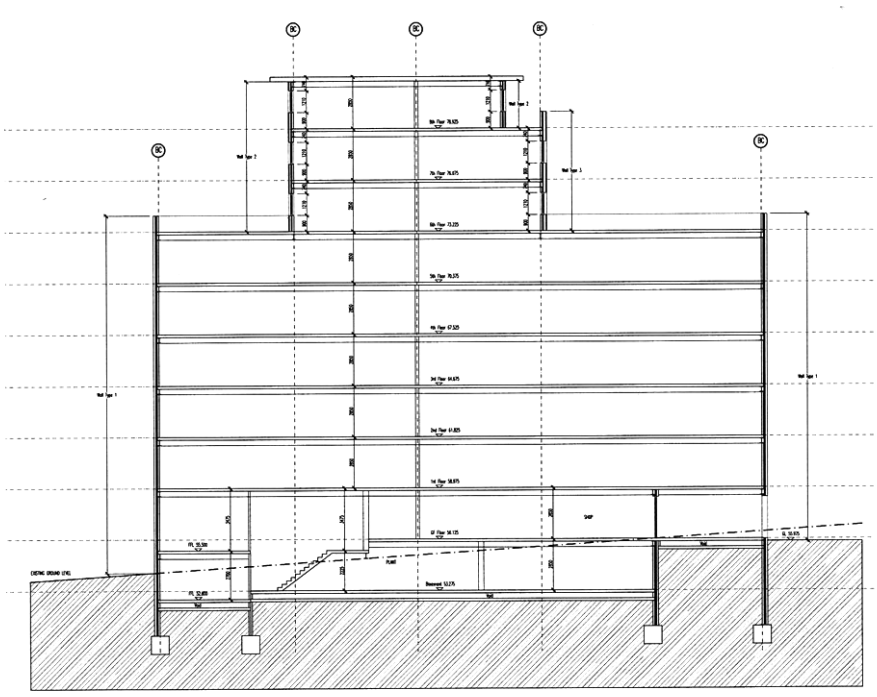

| | |
|---|---|
| Project: **Broad Street car park. Sheffield** | |
| Title: **Trench 6 and Block C locations** | |
| Scale: As shown | Date: September 2006 |
| NGR: SK 3618 8758 | Drawn: Helen Holderness |
| Project No.: **844c** | Illust. No.: **03** |

ARCUS
Research School of Archaeology
Westcourt
2 Mappin St
Sheffield S1 4DT
Tel 0114 2225106
Fax 0114 2797158



SECTION : SC 9 - 1:100 @ A1

| | | |
|---|---|---|
| ARCUS<br>Research School of Archaeology<br>Westcourt<br>2 Mappin St<br>Sheffield UK S1 4DT<br>Tel 0114 2225106 Fax 0114 2797158 | Project:<br>Broad Street car park, Sheffield | |
| | Title:<br>Section through Block C elevation showing depth of excavation | |
| | Scale: | Date:<br>September 2006 |
| | NGR:<br>SK 3618 8758 | Drawn:<br>Helen Holderness |
| | Project No.:<br>**844c** | Illustration No.:<br>**4** |



SECTION : SC 5 - 1:100 @ A1

| | | |
|---|---|---|
| ARCUS<br>Research School of Archaeology<br>Westcourt<br>2 Mappin St<br>Sheffield UK S1 4DT<br>Tel 0114 2225106 Fax 0114 2797158 | Project:<br>Broad Street car park, Sheffield | |
| | Title:<br>Section through Block C elevation showing depth of excavation | |
| | Scale: | Date:<br>September 2006 |
| | NGR:<br>SK 3618 8758 | Drawn:<br>Helen Holderness |
| | Project No.:<br>**844c** | Illustration No.:<br>**5** |


Block C - Basement Floor Plan 1:100@A1

| | | |
|---|---|---|
| | Project:<br>Broad Street car park, Sheffield | |
| | Title:<br>Plan of Block C basement | |
| | Scale: | Date:<br>September 2006 |
| ARCUS<br>Research School of Archaeology<br>Westcourt<br>2 Mappin St<br>Sheffield UK S1 4DT<br>Tel 0114 2225106 Fax 0114 2797158 | NGR:<br>SK 3618 8758 | Drawn:<br>Helen Holderness |
| | Project No.:<br>**844b** | Illustration No.:<br>**6** |