Archaeological Evaluation at Baileyfield Road, Portobello: Archaeological Method Statement

AOC 21418
15th August 2014

AOC Archaeology Group

ARCHAEOLOGY | HERITAGE | CONSERVATION

1 INTRODUCTION

1.1 Project Background

1.1.1 A programme of archaeological works is required by GVA James Barr on behalf of their clients to inform a planning application for a mixed use re-development adjacent to Baileyfield Road, Portobello The archaeological works were conducted in accordance with the principles as set out in Sc*ottish Planning Policy* (2014) & *Planning and Archaeology 2/2011* (2011).

1.1.2 The site is located within the Local Authority administrative area of the City of Edinburgh Council. The Council is advised on archaeological matters by the City of Edinburgh Council Archaeology Service (CECAS). A programme of works that fully satisfies and meets the anticipated requirements of City of Edinburgh Council, as advised by CECAS, is required. This archaeological method statement sets out the fieldwork methodology and reporting criteria to be employed in ascertaining the archaeological significance of the proposed development area, to inform decision-making within the planning process.

1.1.3 The body of this method statement is site specific while the Appendices detail AOC Archaeology Group's operating procedures and standards.

1.2 Location

1.2.1 The site comprises a single, triangular-shaped site, centred approximately at National Grid Reference NT 3007 7421. It was formerly an integral part of the potteries of Portobello. The site is bounded on the north-east by Portobello High Street, on the south by Fishwives Causeway and on the west by Baileyfield Road. The proposed development site covers an area of approximately 3.55 hectares (shown in Figure 1). The site occupies flat ground on the Firth of Forth Coast. The Figgate Burn flows in a north-easterly direction past the southern edge of the proposed development and in to the Forth with the solid geology of the site comprising carboniferous and Old Red Sandstone sedimentary rocks (Bown & Shipley 1982). The area was used as a source for clay for industrial use throughout the 19th century.

1.3 Archaeological and historical background

1.3.1 Fishwives Causeway (NT 2975 7402) runs along the south side of the proposed development site, and continues further to the west. The causeway is said to be the outcome of a programme of land improvement which was encouraged during the reign of Queen Mary.

1.3.2 During the later Medieval period the proposed development site belonged to the Nisbets of

Craigentinny. Craigentinny House, a baronial mansion, was built in the 16th century by the Nisbets. After the Nisbet Family line died out in 1764, the house and its surrounding lands were bought by William Miller as shown on Wood's 1824 map. The house wassubsequently modernised for Christie Miller by David Rhind between 1849 and 1850. During the early 1800s, the proposed development site was used as pastureland associated with the Craigentinny Estate.

1.3.3 The area of Portobello reputedly got its name from a house built around 1750 by a sailor who had been present at the taking of the town of Portobello in Panama ten years earlier. The house was built on the desolate Figgate Whins, an otherwise undeveloped section of the coast between Leith and Musselburgh. In 1765, rich clay deposits were discovered just to the west of the Figgate Burn and this led to the establishment of brick, glass and pottery works, a soapworks, a white lead works and associated workers' houses.

1.3.4 The industries of Portobello were stimulated by the founding of a small harbour at at the mouth of the Figgate Burn in 1787. The Westbank Pottery which occupied the area currently underlying the Westbank Estate, was erected in 1770 for Anthony Hillcoat by William Jamieson, an Edinburgh contractor. At first the pottery only produced roof and drain tiles but later added brown ware, domestic pottery and Prussian Blue ware to its sales. From the 1850s the proposed development site had become an integral part of the industrial potteries of Portobello, as a supply of clay to the Westbank Pottery. The two sites were connected by a tunnel which ran under the High Street. In 1890 the Westbank firm was taken over by Peter Mitchell, eventually becoming the largest red pottery works in Scotland, producing bricks, tiles, drain pipes and a large amount of terracotta ware. The proposed development site continued to supply the pottery with clay throughout the 1890s as the clay pit and pottery extended. However, by 1908 the clay supply had been exhausted and the works closed.

1.3.5 A second pottery, Waverly Pottery, which occupied the area between Bridge Street and Pipe Street was also started in 1770, being enlarged in 1786 and produced bone china until it closed after lack of business. In 1830 the works were bought by John Tough, who specialised in coarse brown ware water jugs, becoming specialists in this ware. In 1867 the business was sold to AW Buchan, who was later joined by JF Murray to form the Murray and Buchan Company. In 1877 the firm was renamed AW Buchan and Co, also known as the Thistle Pottery. Three kilns were added between 1903 and 1911, two of which still survive and are both listed and scheduled. The pottery remained at the site until 1972, when it relocated to Crieff.

1.3.6 The Midlothian Pottery was founded in 1778 by Rathbone, in a spot adjacent to the Waverly Pottery, along with a dedicated harbour. A flint mill was built to grind material for glazes in

1775, and a second was in use by the 1790s. A further business making Prussian blue dye was established by 1885.

1.3.7 By 1886, a clay pit south of the development site had been filled in and the Abercorn Brick and Tile Works and Baileyfield Glass Works had been built over it (Johnson 1888). By the early 1900s the clay supply within the proposed development site itself had been exhausted, leading to the closure of the Westbank Pottery. The clay bed in the development site seems to have been replaced by one to the immediate east across the Baileyfield Road, shown on the 1908 OS map. Between 1910 and 1920 housing began to be constructed on the eastern and western edges of the development site. It was at around this time that the NBR opened their Lothian Lines linking the Waverly route and Suburban lines at Niddrie North to Seafield and Leith docks, passing along the western edge of the development. The red-brick, coal-fired Portobello Power Station was built over the eastern part of the Westbank Pottery between 1919-1923. The Ordnance Survey maps show that the clay pit on the development site was disused by 1908 and had been filled in by the 1930s. Subsequently a transforming station for Portobello Power Station was built on the site (see OS Map from 1932). It is highly likely that the clay pit was back-filled using wasters from the potteries (John Lawson, pers comm).

1.3.8 The Baileyfield Bottle Works, south of the proposed development site, remained open until the 1960s but were closed and replaced by the 1980s by the Baileyfield Industrial Estate.. In 1980 the Portobello bypass, known as the Sir Harry Lauder Road was constructed along the western edge of the development, taking the place of the former Lothian Lines Railway. In the same year the power station and associated pumping station became obsolete and were subsequently demolished with the resulting closure of the outdoor swimming pool. A group of offices were built over the proposed development site at this time and housed among other firms Scottish Power.

2 OBJECTIVES

2.1 The objectives of the archaeological works are:

i) to determine the character, extent, condition, quality, date and significance of any buried archaeological material within the proposed development area;

ii) to advise on an appropriate form of mitigation, such as excavation, post-excavation analyses and publication, should significant archaeological material be encountered that cannot be preserved *in situ*.

3 PROGRAMME OF WORKS

3.1 Introduction

3.1.1 The principal aim of the evaluation will be to establish the presence of significant material within the back-filled clay pit relating to the development of the late post-medieval/early modern ceramic industry in Portobello.

3.1.2 The evaluation works will comprise three elements

- Evaluation fieldwork
- Assessment of significance of recovered archaeological materials
- Preparation of data structure report presenting the findings of the evaluation (the report will include mitigation proposals should an adverse impact on the archaeological resource be identified.

3.2 Evaluation fieldwork

3.2.1 The evaluation test-pitting programme is designed to investigate the presence and three-dimensional location of artefactual evidence (ceramic sherds, saggers, kiln furniture, wasters, etc), as derived from the infilling of the 19th century clay pit.

3.2.2 The evaluation will comprise the excavation of 29 test-pits (each measuring approximately 8.0 m by 2.0 m. (Figure 1). Trenches of these dimensions will allow a maximum depth of 5.0 m to be reached using a 360 tracked excavator equipped with a toothless c. 2.0 m wide ditching bucket. Machining will cease on the first significant archaeological horizon, a trench depth of 5.0 m or natural subsoil.

3.2.3 All test-pitting will be supervised by an experienced field archaeologist. The test-pit distribution will be non random with test-pit located determined by the following factors:

- The need to avoid standing structures;
- A skewing of the distribution towards those parts of the development where the greater construction impacts will occur – such as building footprints and underground parking facilities;
- The location of test-pits outwith the known cartographic limits;

3.2.4 No specialised re-instatement will be undertaken. Test-pits will be backfilled with spoil and then compacted by driving over using the mechanical excavator. Given the anticipated depth of the test-pits (in excess of 4.0 m) no test-pit will be left open over-night.

3.3 Assessment of ceramic materials

3.3.1 *Strategy for retention* (George Haggarty: Research Associate National Museums Scotland) On the 12th of July 1765 William Jamieson an Edinburgh speculative builder feud his first plot (10 acres at Portobello) from Baron William Muir of Caldwell (SRO 3/251 (2) f, 208 Rd 2/631). There are a number of other contracts listed in the same folder which show how William Jamison quickly built up his considerable holdings in Portobello: over 43 acres. Allowing a year for construction this suggests that the earliest possible date for the production of bricks, tiles and pottery in the area is c. 1766.

Jamison's first 10 acres lay to the east and adjacent to the Frigate burn and was bounded to the north by the sea and to the south by the Kings highway. It was in this area that he built both a (Redware) brick and tile manufactory and extracted red firing clays. Later some of this ground was called Brick field. Jamieson's also constructed a pottery to manufactured coarse red earthenware, but it is uncertain this was a separate establishment as some later documents suggest.

More importantly Jamieson built a white ware pottery, either for the manufacture of White Salt Glazed Stoneware or Creamware or possibly both and later almost certainly Pearlware, Prattware and possibly printed wares. Where exactly and for how long he operated it is not known, but the evidence from a letter shows that it was in operation by 1784, **(**Town Council Minutes 15.12.1784**).** We also know that by 1795 the white ware pottery had been leased to Cookston & Jardine, Edinburgh china retailers. At present, we know next to nothing about what they produced. ***Therefore any white firing shard material of this period will be kept, if possible in its entirety, but only a very small selection of the ubiquitous saggars and kiln furniture.***

During the fourth quarter of the 18th century a number of other potteries began production in Portobello. A Mr. George Dawson had in 1782 taken out a 99 year lease on the three acres of land bounded by the sea on the opposite side of the Frigate burn from Jamieson, and it allowed him to make bricks tiles and pottery from the local clay which he was allowed to dig for, with the only proviso being that he could not sell the clay to other potters and he had to backfill his clay holes. From this one might assume that Dawson planned to set up a brick and tile works, but an inventory of his possessions taken only two years latter show that he was in fact running a pottery and that he may have been producing cream ware as among his possessions were ten dozen plate moulds, five dozen dish moulds and a mill and a half mill of saggars. He also had the use the mouth of the burn and the sea for exporting goods, "or if he so chose to make a harbour".

Anthony Hilcot was a redware potter, who had moved from Morrison's Haven to Portobello

c. 1779 and where he operated both a pottery and brickworks (see house on left of yellow area on map). Later he was involved in the manufacture of a substitute, for very expensive cobalt, at his nearby blood works, and this must have been sold for use in the decoration of Porcelain or white earthenware. Jamieson who was against this operation because of the noxious smell kept up merciless pressure, with further litigation against Hilcote (S.R.O CS 271 Box 546). Hilcote disappears from the Portobello records at the beginning of the 19th century. If at all possible all 18th century press moulded redwares especially if it is decorated with white slip-trailing should be retained, but again only a very small selection of kiln furniture. Hilcot was also producing a range of other redware vessels such as Dairy bowls, crocks, chimney pots and garden furniture. ***Only the garden furniture and any strange forms would be of real interest and should be retained.***

By 1805 one of Jamieson potteries was in the hands of Thomas Yool and it was his daughter Grace, who married in Glasgow, Thomas Rathbone a pottery from Staffordshire, and whose offspring were involved after his death in 1826, with the running of the pottery until 1853. During the Rathbone period of ownership, we know that a large range of high quality ceramics in a number of different forms, fabrics and decoration were being produced, of which only a very few can be identified from extant, marked examples. Presently have only one fragment of Rathbone's Black Basalt, but a fair range of his transfer-printed wares. By this time the quantities of pottery waste being dumped could be considerable but probably still manageable ***all the decorated (especially rouletted) or marked shards (either with a backstamp or impressed) will be kept, and a sample of any bisque shards. Again only only a small selection of any kiln furniture will be kept.***

The published records become a bit vague at this point, but it is almost certain that the whiteware pottery lay empty for a few years, before being opened again in 1859, probably as the Midlothian Pottery, with W. A. Grey as proprietor and a Mr John Ward as manager. From this period on Stoneware becomes the dominant ware and huge amounts of it were produced including salt glazed, Bristol dipped and the new once fired white feldspar glazed cream jars, ginger beer, ale and other bottles etc. ***It's possible to find hundreds of these. If this does only a small selection of forms and a couple of any printed or marked examples will be kept.***

The second large pottery at Portobello had been rum as soap works for a while, but was purchased by Thomas Tough in 1840. It was a John Tough who later sold the firm of T. Tough & Co to Murray and Buchan. John Tough had been running a hitherto unrecorded pottery in Musselburgh, but little is known of his output at either establishment. There is however attributed to him, in a private collection, two fine jugs in what looks like a high fired porcelainious type body and which suggests he was an accomplished potter. The Tough's

certainly began the manufacture of high quality stoneware at Portobello (of which we know little). However they may have quickly began the mass production of more utilitarian stoneware such as bottles and spirit crocks etc, the manufacture of which grew exponentially for the next 100 plus years. In 1867 the Pottery was acquired by Thomas Murray and A. W. Buchan who were in partnership until 1878, when it became A.W. Buchan & Co (National Register of Archives Scotland: Messrs A.W. Buchan & Co Thistle Potteries: 818). This was the beginning of a relationship with Portobello and the Buchan family, which lasted until the closure of the Thistle pottery, as it had become, on the 29th June 1972 when they moved to Crieff.

A great deal is known about the Stoneware production of the latter period, as most of the output was marked but much of its c 1840-60 production is still obscure. ***Bottles and shards with transfers and fragments of crocks etc. with impressed names of customers will be kept. Also a selection of the common rouletted patterns commonly found on stoneware.*** We have enough kiln furniture of this period. During the period 1840-80 this pottery was also producing white earthenware sinks and toilets, often decorated with both blue and white and polychrome sheet transfer prints. ***All this material should be retained until reviewed..*** We are woefully ignorant of the range of form being produced.

A third Stoneware pottery at Portobello was that of Hugh and Arthur Cornwell were if functioned under different names including Milne and Cornwell c. 1830-45. Little is known about the products of these firms but there is a superb huge water filter in the National Museums Scotland dated 1837. ***All material with these marks should be retained.***

By 1812 a William Creelman was in Portobello running the Abercorn Brick works which is still in operation as Creelman G & Co. in 1839. We know that during that time this factory was producing both salt glazed and red earthenware garden furniture of which we have know very little. ***Any evidence of this production should be retained***. It's possible that Creelman's salt glazed stoneware was being manufactured in the small pottery later that of Hugh and Arthur Cornwell but this needs more research.

In the third quarter of the century Buchan's began what can only be called a ceramic upheaval as the British public began to find Spain and the Mediterranean, our taste in pottery began to expand. It could be argued that Buchan's of Portobello were in the forefront of this revolution. Many of these new forms and decoration are common but many were not successful and did not make it into production ***so we need to retain as many as we can but only a couple of any fabric, form, decoration or mark.***

Bricks - ***retain no more than a couple of brick's with different marks***

3.3.2 Assessment of Significance

The recovered ceramic artefact and kiln furniture assemblage will be quantified and assessed for its potential in determining chronological, functional, design, industrial, economic and cultural indicators of Portobello's pottery industry as undertaken on nearby manufacturing sites.

The assessment will also determine those parts of the development site where significant artefact concentration exist with the ultimate aim of informing a mitigation strategy in ameliorating any adverse archaeological impact which may be created by the development proposals.

The component tasks for the assessment will comprise:

i. An assessment of the significance of the recovered assemblage;
ii. An assessment of the potential of the assemblage in providing greater information, that that already known, on the development of the ceramic industry in Portobello;
iii. An assessment of the for pertinent level of analysis;
iv. recommendations for inclusion in any second phase fieldwork strategy in identifying those areas of the site where significant material is distributed (should any adverse impacts by the development proposals be identified);
v. identification of any specific or innovative preliminary research issues connected with the assemblage;
vi. completion of an *assessment of potential* report for inclusion in the evaluation data structure report;

3.3 Reporting

3.3.1 Within four weeks of the completion of all fieldwork the results of the evaluation will be presented to the client in the form of a written report for distribution to the relevant bodies.

3.3.2 The report will synthesize the results of the fieldwork and determine the significance and extent of any archaeological features or artefactual material identified.

3.3.3 The report will take the form of a Data Structure Report (4 copies), prepared in accordance with current standard Historic Scotland procedural requirements and AOC Archaeology standard procedures (Appendix 8). Specifically the Data Structure Report will contain the following:

i) a full descriptive text detailing the features identified and an interpretation of their date and purpose

ii) a location map and a topographic plan of the site within its landscape at a scale of at least 1:10 000

iii) plans and sections at an appropriate scale showing evaluation test-pits and features located

iv) a ground plan at an appropriate scale showing the evaluation test-pits and features located;

v) appropriate lists and diagrams summarising the contexts and artefacts recovered and the records made of them

vi) an assessment of potential of recovered ceramic artefacts

vii) a strategy to mitigate the impact of the development on any archaeological deposits revealed by evaluation

3.3.4 In addition a Summary Report on the works and its findings will be submitted to *Discovery and Excavation in Scotland* and via the OASIS on-line archaeological reporting facility.

3.4 Potential further archaeological works

3.4.1 Should significant archaeological material be encountered, and in accord with SPP 23 (Scottish Government 2008), any planning consent granted will require a mitigation strategy which will identify the means to preserve them *in situ*, or with the agreement of the City of Edinburgh Council acting on advise rendered by CECAS, will propose a scheme of excavation and/or recording sufficient to ensure their *preservation by record*.

3.5 Archive deposition

3.5.1 The archive from these works will be prepared for deposition in the National Monuments Record of Scotland within 6 months of the completion of fieldwork, or, if appropriate, post-excavation analysis and publication.

3.5.2 The disposal of small finds will be conducted in accordance with Scottish legal requirements and according to the standard procedure, Appendix 7.26 -7.29.

4 OPERATIONAL FACTORS

4.1 Timetable

4.1.1 At least one week's notice prior to the start of fieldwork will be required by CECAS to enable the scheduling of monitoring visits. It is anticipated that the field evaluation will take approximately 2 weeks to complete. The data structure report would be produced within

six weeks of the completion of the evaluation fieldwork.

4.2 Monitoring

4.2.1 CECAS will be kept informed of the progression of fieldwork by the Project Officer. A mobile phone will be present on site at all times.

4.3 Health & Safety

4.3.1 The Project Officer will prepare a Risk Assessment for inclusion in the site's Health & Safety Plan. The Project Officer will liaise with the client to ensure that the works are conducted in a manner that is safe for staff, contractor staff and members of the public.

4.4 Project Team and facilities

4.4.1 Mr. Martin Cook, MIFA, AOC Fieldwork Project Manager, will manage the project. Mr. Martin Cook has been provisionally identified to direct the evaluation in the field. The ceramic artefact assessment will be undertaken by Mr. George Haggarty, Research Associate at the National Museum of Scotland.

5 CONDITIONS AND CLARIFICATIONS

5.1 AOC Archaeology would prefer to only undertake ground breaking works on land where services have been cut or neutralised. AOC Archaeology recognises that for many reasons this is frequently impractical. Where live services are present, every care will be taken to avoid striking these services. AOC Archaeology will be entitled to rely on the service information provided by the utility authority or client, subject to seeking to ascertain the exact location of any services marked on that information prior to excavation. However, AOC Archaeology's seeking to ascertain the exact location of marked services or, where in its risk assessment AOC has stated that it will scan for unmarked services, shall not relieve the client of responsibility under this paragraph, to the extent that it is impracticable for AOC Archaeology to ascertain the presence of services by electronic means prior to excavation by reason of overgrowth, the presence of structures or any other condition which make such investigation impracticable. It should also be noted that not all services are detectable by electronic means for example gas or water services.

5.2 Where previous works have identified the presence of contaminated ground, AOC Archaeology must be notified of the nature and extent of the contamination and be given guidance to the appropriate health and safety precautions required. Where these precautions comprise more than the use of thin over-suits and nitrile gloves AOC Archaeology will provide the necessary equipment for an additional cost.

5.4 Where AOC Archaeology is not the Main Contractor we expect the Main Contractor to induct AOC Archaeology team members into their H&S Scheme.

5.5 AOC Archaeology will not accept liability for damage to any road surface, paved or metalled area, or crop while undertaking the archaeological works or in gaining access to land.

5.6 No specialised reinstatement of trenches will be undertaken. Test-pits will be backfilled and compacted by mechanical excavator. Trial trenches will not be backfilled under archaeological supervision, other than in areas of significant archaeological findings.

5.7 AOC Archaeology reserves the right to discuss the archaeological works directly with CECAS where appropriate, but will inform the client of this in advance.

5.8 The client is solely responsible for all aspects of site security.

5.9 AOC Archaeology will not accept liability for any damage caused by vandalism or theft. This includes all hired equipment, plant stores etc and any property or equipment owned or hired by the client.

5.10 All deep archaeologically sterile trenches will be backfilled the same day as opening.

6 REFERENCES

Bown, CJ and Shipley, BM 1982. *South-East Scotland. Soil Survey of Scotland.* The Macauley Institute for Soil Research. Aberdeen.

Johnston. W. 1888 *Johnston's Plan of Edinburgh, Leith, Portobello and Environs, Constructed from the Latest Surveys with Additions by the Local Surveyors of these towns* W and K Johnston.

Scottish Government 2011 *2/2011 Planning and Archaeology.*

Scottish Government 2014 *Scottish Planning Policy.*

APPENDIX 1
Desk-top assessment

The sources consulted as part of the desk-top study will depend on the type and level of data required and the material that is available to provide that information. Sources used may include, where available, all or some of the following listed below:

i) Walkover survey (Appendix 5).
ii) The relevant Local Sites and Monuments Record(s) and the National Monuments Record.
iii) British Geological Survey maps.
iv) Ordnance Survey maps of the site and its locality.
v) Tithe, Apportionment and Parish maps.
vi) Historic (pre-Ordnance Survey) and Estate maps of the area.
vii) Appropriate archaeological and historical journals and books.
viii) Historical documents held in local museums, libraries, record offices and other archives. This may be a selective survey given the scope of potential historic documentation for some sites.
ix) Unpublished material held by local professional and amateur archaeological organisations and museums.
x) Aerial photographs held by local authorities, Sites and Monuments Record, the National Library of Aerial Photographs, Cambridge University Collection of Aerial Photographs and other local parties.
xi) Scheduled Ancient Monuments Lists; listed building lists; registers of parks and gardens and battlefields; any local authority constraint designations (eg conservation Areas).
xii) All available borehole, trial pit and geotechnical data from the site and its immediate environs.
xiii) Plans of services locations held by statutory undertakers.
xiv) Fire insurance maps.
xv) Old and New Statistical Accounts (in Scotland).
xvi) Building Control Records.
xvii) Standing Building Assessment (Appendix 10).

APPENDIX 2
Geophysical survey

2.1 All geophysical survey work will be sub-contracted to an appropriate professional organisation but directly managed by AOC Archaeology.
2.2 Selection of techniques will be made in consultation with the survey organisation taking into account land use, geology, complicating factors (eg metal pipes and fences), known and/or suspected archaeology.
2.3 The report will contain background information on the site (as above) and a description of any anomalies located. An interpretation of the anomalies will also be given.
2.4 At least one plot of the data will be included, normally of dot density or grey scale type. Any enhancement of the image will be explicitly stated and the likely affect of the processing described.
2.5 Clear interpretative plans will be provided in a form that a non-technical reader can understand.
2.6 Plots and interpretative diagrams will be reproduced at a scale from which exact measurements can be taken. These will normally be 1:1000 for detailed survey and 1:2500 for other plans.
2.7 The basic computerised data will form part of the site archive.

APPENDIX 3
Surface collection survey (fieldwalking)

3.1 This type of survey will only be carried out in suitable ground visibility conditions. This effectively restricts the technique to arable land which has been ploughed, harrowed and left to weather for several weeks in autumn to early spring.

3.2 The collection grid will align with the Ordnance Survey grid unless surveying for a linear scheme when the transects will be parallel to the centre of the scheme. The grid will be established using measured survey techniques.

3.3 The spacing of transects and length of collection units will be as specified in the main part of the Written Scheme of Investigation. Each transect will be 2m wide. Collection units will be logged using a numeric 12 figure National Grid Reference which will identify the southern end of the unit.

3.4 Transects will be measured cumulatively on the ground using fixed-length strings to avoid variation in individual pace. Sighting poles will be placed at opposite ends of the land parcel to mark transects.

3.5 All material considered to be man-made or not local to the area will be collected and recorded by the individual collection unit. The exception to this is where dense concentrations of building material are present when a representative sample is retained per collection unit.

3.6 Stone scatters, areas of soil discolouration and outcrops of natural substrata will be recorded and plotted by stint.

3.7 Pro-forma sheets will be used to record details of walker, soil/crop conditions, slope/topography, and lighting/weather conditions for each transect and presence/absence of finds for each collection unit.

3.8 Finds will be washed and sorted into groups in order to facilitate identification. Finds will be bagged according to artefact class within each collection unit.

3.9 Finds will be identified, quantified and recorded directly on to computer. The results will be plotted using a CAD graphics programme.

3.10 All significant artefact distributions will be plotted by field, group of fields or appropriate length for a linear scheme, at 1:2500, with separate plans for each period or relevant subdivision, indicating the numbers of artefacts per stint.

3.11 The pottery and other relevant artefacts will be scanned to assess the date range of the assemblage.

3.12 All finds and samples will be treated in a proper manner and to standards agreed in advance with the recipient museum or other body. These will be cleaned, conserved, bagged and boxed in accordance with the guidelines set out in UKIC's "*Conservation Guidelines No 2*".

APPENDIX 4
Earthwork surveys

4.1 Base points will be established using a Total Station.
4.2 Hachured plans will normally be prepared at 1:1250 or 1:2500 for most classes of earthwork. In certain cases more detailed survey by contouring will be carried out.
4.3 Appropriately experienced personnel will undertake the survey work.
4.4 All prepared plans will be presented with an accompanying descriptive text.

APPENDIX 5
Walkover Survey

5.1 The proposed study area will be walked over in a systematic manner. Approximately 30m wide transects will be used, although this can be reduced where conditions demand.
5.2 All features identified (including modern features) will be given a unique number. The location of each feature will be marked on a 1:10,000 map. A photographic and written record will be compiled.

APPENDIX 6
Test pits

6.1 Spacing and size of test pits will vary according to local topography, geology, and known or potential archaeology. Spacing and size will be as specified in the Written Scheme of Investigation.
6.2 Test pits will be laid out in relation to the Ordnance Survey national grid.
6.3 The most appropriate tools will be used taking into account the prevailing conditions at the time of the work.
6.4 A specified volume of topsoil from each test pit will be sieved through a 10mm mesh.
6.5 Conditions, contexts and artefact totals will be recorded on pro-forma sheets.
6.6 Subdivisions within the excavated material will be based on soil stratigraphy and spits of 100mm within each stratigraphical unit.
6.7 All artefact totals will be recorded by class.
6.8 Finds will be washed and sorted into groups in order to facilitate identification. Finds will be bagged according to artefact class within each collection unit.
6.9 Finds will be identified, quantified and recorded directly onto computer where appropriate. The results will be plotted using a CAD graphics programme when appropriate.
6.10 All significant artefact distributions will be plotted by field, group of fields or appropriate length for a linear scheme at 1:2500, with separate plans for each period or relevant subdivision, indicating the numbers of artefacts per test pit.
6.11 The pottery and other relevant artefacts will be scanned to assess the date range of the assemblage.
6.12 All finds and samples will be treated in a proper manner and to standards agreed in advance with the recipient museum or other body. These will be cleaned, conserved, bagged and boxed in accordance with the guidelines set out in UKIC's "*Conservation Guidelines No 2*".

APPENDIX 7
Machine excavated trenches

Excavation

7.1 The entire site will be visually inspected before the commencement of any machine excavation. This will include the examination of any available exposures (eg recently cut ditches and geo-technical test pits).

7.2 Normally trench positions will be accurately surveyed prior to excavation and related to the National Grid. It may be necessary to survey the positions after excavation in some instances.

7.3 All machining will be carried out by plant of an appropriate size. Normally, this will be a JCB 3CX (or similar) or 360^{o} tracked excavator with a 1.4 or 1.8m wide toothless bucket. Where access or working space is restricted a mini excavator such as a Kubota KH 90 will be used.

7.4 All machining will be carried out under direct control of an experienced archaeologist.

7.5 Undifferentiated topsoil or overburden of recent origin will be removed in successive level spits (approximately <0.5m) down to the first significant archaeological horizon.

7.6 Excavated material will be examined in order to retrieve artefacts to assist in the analysis of the spatial distribution of artefacts.

7.7 On completion of machine excavation, all faces of the trench that require examination or recording will be cleaned using appropriate hand tools.

7.8 All investigation of archaeological horizons will be by hand, with cleaning, inspection, and recording both in plan and section.

7.9 Within each significant archaeological horizon a minimum number of features required to meet the aims of the project will be hand excavated. Pits and postholes normally will be sampled by half-sectioning although some features may require complete excavation. Linear features will be sectioned as appropriate. Features not suited to excavation within the confines of narrow trenches will not be sampled. No deposits will be entirely removed unless this is unavoidable. As the objective is to define remains it will not necessarily be the intention to fully excavated all trenches to natural stratigraphy. However, the full depth of archaeological deposits across the entire site will be assessed. Even in the case where no remains have been located the stratigraphy of all evaluation trenches will be recorded.

7.10 Any excavation, whether by machine or by hand, will be undertaken with a view to avoiding damage to any archaeological features or deposits which appear to be demonstrably worthy of preservation *in situ*.

7.11 For palaeoenvironmental research different sampling strategies will be employed according to established research targets and the perceived importance of the strata under investigation. AOC Archaeology conventionally recovers three main categories of sample;

i) Routine Soil Samples; a representative 500g sample from every excavated soil context on site. This sample is used in the characterisation of the sediment, potentially through pollen analysis, particle size analysis, pH analysis, phosphate analysis and loss-on-ignition;

ii) Standard Bulk Samples; a representative 10 litre sample from every excavated soil context on site. This sample is used, through floatation sieving, to recover a sub-sample of charred macroplant material, faunal remains and artefacts;

iii) Purposive or Special Samples; a sample from a sediment which is determined, in field, to either have the potential for dating (wood charcoal for radiocarbon dating or *in situ* hearths for magnetic susceptibility dating) or for the recovery of enhanced palaeoenvironmental information (waterlogged sediments, peat columns, etc).

7.12 Any finds of human remains will be left *in situ*, covered and protected. In Scotland the local police will be informed. If removal is essential this will only take place with police approval, and in compliance with Historic Scotland's Operational Policy Paper '*The Treatment of Human Remains in Archaeology*'. In England and Wales the coroner's office will be informed. If removal is essential it will only take place under the relevant Home Office licence and local authority environmental health regulations.

7.13 All finds of gold and silver will be moved to a safe place. Where removal cannot be effected on the same working day as the discovery, suitable security measures will be taken to protect the artefacts from theft or damage. In Scotland the recovery of such material, along with all other

finds, will be reported to the Queen's and Lord Treasurer's Remembrancer. In England and Wales the recovery of such material will be reported to the coroner's office according to the procedures relating to Treasure Trove.

7.14 After recording, the trenches will be backfilled with excavated material.

Recording

7.15 For each trench, a block of numbers in a continuous sequence will be allocated.

7.16 Written descriptions, comprising both factual data and interpretative elements, will be recorded on standardised sheets.

7.17 Where stratified deposits are encountered a 'Harris'-type matrix will be compiled during the course of the excavation.

7.18 The site grid will be accurately tied into the National Grid and located on the 1:2500 or 1:1250 map of the area.

7.19 Plans will normally be drawn at a scale of 1:100, but on urban or deeply stratified sites a scale of 1:50 or 1:20 will be used. Burials will be drawn at 1:10. Other detailed plans will be drawn at an appropriate scale.

7.20 Long sections of trenches showing layers and any cut features will be drawn at 1:50. Sections of features or short lengths of trenches will be drawn at 1:20.

7.21 Generally all sections will be accurately related to Ordnance Datum. There may, occasionally, be instances where this is unnecessary when it will be agreed with the local authority's archaeological representative in advance.

7.22 Registers of sections and plans will be kept.

7.23 A full colour print and colour transparency photographic record will be maintained. This will illustrate the principal features and finds both in detail and in a general context. The photographic record will also include working shots to represent more generally the nature of the fieldwork.

7.24 A register of all photographs taken will be kept on standardised forms.

7.25 All recording will be in accordance with the standards and requirements of the *Archaeological Field Manual* (Museum of London Archaeology Service 3rd edition 1994).

Finds

7.26 All identified finds and artefacts will be collected and retained. Certain classes of material, ie post-medieval pottery and building material, may on occasion be discarded after recording if a representative sample is kept. No finds will be discarded without the prior approval of the archaeological representative of the local authority and the receiving museum.

7.27 Finds will be scanned to assess the date range of the assemblage with particular reference to pottery. In addition the artefacts will be used to characterise the site, and to establish the potential for all categories of finds should further archaeological work be necessary.

7.28 All finds and samples will be treated in a proper manner and to standards agreed in advance with the recipient museum. Finds will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the guidelines set out in United Kingdom Institute for Conservation's *Conservation Guidelines No. 2*.

7.29 In England and Wales, at the beginning of the project (prior to commencement of fieldwork) the landowner and the relevant museum will be contacted regarding the preparation, ownership and deposition of the archive and finds. In Scotland all archaeological material recovered belongs to the Crown and its disposal is administered by the Queen's and Lord Treasurer's Remembrancer.

APPENDIX 8
Evaluation reports

8.1 The style and format of the evaluation report will be determined by AOC Archaeology, but will be compliant with Historic Scotland's issued guidance on Data Structure Reports. The report will include as a minimum the following;

i) A location plan of the site.
ii) A location plan of the trenches and/or other type of fieldwork strategy employed.
iii) Plans and sections of features and/or extent of archaeology located. These will be at an appropriate scale.
iv) A summary statement of the results.
v) A table summarising per trench the deposits, features, classes and numbers of artefacts encountered and spot dating of significant finds.
vi) Consideration to the methodology will be given along with a confidence rating for the results.

8.2 When an evaluation is followed by an excavation the procedures defined in English Heritage's *Management of Archaeological Projects* 2nd edition 1991 will be followed for immediate post-field archive preparation and initial assessment. It will then be agreed with the local authority's archaeological advisor which aspects will need to be taken forward to the report stage.

APPENDIX 9
Area excavation

9.1 Prior to the stripping of any area excavation, all appropriate surveys (eg geophysical, earthwork, contour) or sampling strategies (eg for topsoil artefact densities, metal detecting, phosphate analysis) will be undertaken.

9.2 In most cases sites will be mechanically stripped of topsoil and other overburden. An appropriate machine will always be used. This will normally be a 360^{o} tracked excavator with a between 1.4 and 2.4m wide toothless bucket. In other cases a JCB 3CX (or similar), or for work with restricted access or working room a mini-excavator such as a Kubota KH 90 will be used. Suitably sized dumpers or lorries will be employed to remove spoil. No plant will be allowed to cross stripped areas.

9.3 All machining will be undertaken under the direct control of experienced archaeologists.

9.4 All undifferentiated topsoil or overburden will be removed down to the first significant archaeological horizon in level spits. The archaeological horizon to which the material will be cleared will have first been established by an evaluation or by the digging of test pits.

9.5 Depending on the aims of the project, the excavated spoil may be monitored in order to recover artefacts. Where their findspots are plotted this will usually be on a 2m grid.

9.6 The surface exposed by the stripping will be cleaned using appropriate hand tools.

9.7 Should the site grid not have already been established it will be done at the cleaning stage. The grid will normally be based on a 10m spacing and related to the National Grid. A temporary bench mark related to Ordnance Datum will be founded

9.8 After the cleaning and planning of the excavation area the sampling strategy will be finalised. This will take into account the project aims (which may need modifying at this stage) and the type, quality and quantity of remains revealed. The sampling strategy will normally seek to maintain at least the following levels;

i) all structures and all zones of specialised activity (eg funerary, ceremonial, industrial, agricultural processing) will be fully excavated and all relationships recorded;
ii) ditches and gullies will have all relationships defined, investigated and recorded. All terminals will be excavated. Sufficient lengths of the feature will be excavated to determine the character of the feature over its entire course; the possibility of re-cuts of parts of the feature, and not the whole, will be considered. This will be achieved by a minimum 10% sample of each feature (usually a 1m section every 10m).
iii) Sufficient artefact assemblages will be recovered (where possible) to assist in dating the stratigraphic sequence and for obtaining ample ceramic groups for comparison with other sites;

iv) all pits, as a minimum, will be half-sectioned. Usually at least 50% (by number) of the pits will be fully excavated. Decisions as to which pits will be fully excavated will be taken in the light of information gained in the half-sectioning taking into consideration, amongst other things; pit function, artefact content and location;

v) for post and stake holes where they are clearly not forming part of a structure (see above) 100% (by number) will be half-sectioned ensuring that all relationships are investigated. Where deemed necessary, by artefact content, a number may demand full excavation;

vi) for other types of feature such as working hollows, quarry pits, etc the basic requirement will be that all relationships are ascertained. Further investigation will be a matter of on-site judgement, but will seek to establish as a minimum their extent, date and function;

vii) for layers, an on-site decision will be made as to the limits of their excavation. The factors governing the judgement will include the possibility that they mask earlier remains, the need to understand function and depositional processes, and the necessity to recover sufficient artefacts to date the deposit and to meet the project aims.

9.9.1 For palaeoenvironmental research different sampling strategies will be employed according to established research targets and the perceived importance of the strata under investigation. AOC Archaeology conventionally recovers three main categories of sample;

i) Routine Soil Samples; a representative 500g sample from every excavated soil context on site. This sample is used in the characterisation of the sediment, potentially through pollen analysis, particle size analysis, pH analysis, phosphate analysis and loss-on-ignition;

ii) Standard Bulk Samples; a representative 10 litre sample from every excavated soil context on site. This sample is used, through floatation sieving, to recover a sub-sample of charred macroplant material, faunal remains and artefacts;

iii) Purposive or Special Samples; a sample from a sediment which is determined, in field, to either have the potential for dating (wood charcoal for radiocarbon dating or *in situ* hearths for magnetic susceptibility dating) or for the recovery of enhanced palaeoenvironmental information (waterlogged sediments, peat columns, etc).

9.10 Any finds of human remains will be left *in situ*, covered and protected. In Scotland the local police will be informed. If removal is essential this will only take place with police approval, and in compliance with Historic Scotland's Operational Policy Paper '*The Treatment of Human Remains in Archaeology*'. In England and Wales the coroner's office will be informed. If removal is essential it will only take place under the relevant Home Office licence and local authority environmental health regulations.

9.11 All finds of gold and silver will be moved to a safe place. Where removal cannot be effected on the same working day as the discovery, suitable security measures will be taken to protect the artefacts from theft or damage. In Scotland the recovery of such material, along with all other finds, will be reported to the Queen's and Lord Treasurer's Remembrancer. In England and Wales the recovery of such material will be reported to the coroner's office according to the procedures relating to Treasure Trove.

Recording

9.12 All on-site recording will be undertaken in accordance with the standards and requirements of the *Archaeological Site Manual* (Museum of London 1994).

9.13 A continuous unique numbering system will be employed.

9.14 Written descriptions, comprising both factual data and interpretative elements, will be recorded on standardised sheets.

9.15 Where stratified deposits are encountered a 'Harris'-type matrix will be compiled during the course of the excavation.

9.16 The site grid will be accurately tied into the National Grid and located on the 1:2500 or 1:1250 map of the area.

9.17 Plans will normally be drawn at a scale of 1:100, but on urban or deeply stratified sites a scale of 1:50 or 1:20 will be used. Burials will be drawn at 1:10. Other detailed plans will be drawn at an appropriate scale.

9.18 Long sections of trench edges or internal baulks showing layers and any cut features will be drawn at 1:50 or 1:20 depending on amount of detail contained. Sections of features will be drawn at 1:20.

9.19 All sections will be accurately related to Ordnance Datum.

9.20 Registers of sections and plans will be kept.

9.21 A full colour print and colour transparency photographic record will be maintained. This will illustrate the principal features and finds both in detail and in a general context. The photographic record will also include working shots to represent more generally the nature of the fieldwork.

9.22 A register of all photographs taken will be kept on standardised forms.

Finds

9.23 All identified finds and artefacts will be collected and retained. Certain classes of material, ie post-medieval pottery and building material may on occasion be discarded after recording if a representative sample is kept. No finds will be discarded without the prior approval of the archaeological representative of the local authority and the receiving museum.

9.24 All finds and samples will be treated in a proper manner and to standards agreed in advance with the recipient museum. Finds will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the guidelines set out in United Kingdom Institute for Conservation's *Conservation Guidelines No. 2*.

9.25 In England and Wales, at the beginning of the project (prior to commencement of fieldwork) the landowner and the relevant museum will be contacted regarding the preparation, ownership and deposition of the archive and finds. In Scotland all archaeological material recovered belongs to the Crown and its disposal is administered by the Queen's and Lord Treasurer's Remembrancer.

Archiving, post-excavation and publication

9.26 Following completion of each stage or the full extent of the fieldwork (as appropriate) the site archive will be prepared in the format agreed with the receiving institution.

9.27 On completion of the archive a summary report will be prepared. This will include;

i) an illustrated summary of the results to-date indicating to what extent the project aims were fulfilled;

ii) a summary of the quantities and potential for analysis of the information recovered for each category of site, artefact, dating and palaeoenvironmental data;

iv) proposals for analysis and publication.

9.28 The proposals for analysis and publication will include;

i) a list of the revised project aims arising from the fieldwork and post-excavation assessment;

ii) a method statement which will make clear how the methods advocated are those best suited to ensuring that the data-collection will fulfil the stated aims of the project;

iii) a list of all tasks involved in meeting the stated methods to achieve the aims and produce a report and research archive in the stated format;

iv) details of the research team and their projected work programmes in relation to the tasks. Allowance will be made for general project-related tasks such as project meetings, management, editorial and revision time;

v) a publication synopsis indicating publisher, report format and content shown by chapters, section and subheadings with the anticipated length of text sections and proposed number of illustrations.

9.29 The summary report embracing the analysis and publication proposals will be submitted to the client and the local authority's archaeological representative for approval.

9.30 Any significant variation in the project design, including timetables, proposed after the agreement of the proposals must be acceptable to the local authority's archaeological representative.

9.31 The results of the project will be published in an appropriate archaeological journal or monograph. The suitable level of publication will be dependent on the significance of the project results, but as a minimum the basic requirements of Appendix 7.1 of *Management of Archaeological Projects* (English Heritage 1991) will be met.

APPENDIX 10
Standing Building Assessment

10.1 A standing building assessment will normally take place in concordance with a Conservation Plan, but may also form part of a Desk-Based Assessment if required.

10.2 A visual inspection will be made of both the interior and exterior of the building(s) with a view to establishing the extent of the architecturally important elements that should be included in a later phase of historic building recording work.

10.3 A brief written record will be made in addition to digital photography of areas of interest to support recommendations and outline architectural features within the building(s).

APPENDIX 11
Historic Building Recording: The Written Record (Levels 0-6)

11.1 Pro forma building recording sheets will be used for the basic written record of the building(s) including comments on the condition, construction techniques, materials, fixtures and fittings and interpretation of function. A competent analysis will be made of all building phases and any relationship between buildings. Day Book records will also be kept for any levels of recording above Level 1.

11.2 At Level 4, the written record will encompass a thorough context description of each broad phase of construction and alteration with a view to formulating a stratigraphic matrix of the site.

APPENDIX 12
Historic Building Recording: Photography (Levels 1-5)

12.1 Photography will take place at all levels of building recording, and will be undertaken with a single lens reflex camera with through-the-lens (TTL) light metering. A standard 28-90mm lens will be used at all times except where wider or shorter angle lenses are required for longer elevation photography and detailed photography.

12.2 The camera will be placed at mid-height to the subject with due care and attention to lighting situations. Two shots will be taken of each feature, undertaken by a light-meter reading of a two-step change in aperture. This change up or down will depend on light conditions.

12.3 Interior photography will be undertaken with appropriate lighting conditions and the use of a tripod. Where light access is still quite minimal, an automatic flash will be used.

12.4 All photography will be taken on colour slide and black & white negative film, such as Kodak PLUS-X or Ilford FP4, or approved equivalent. It should be exposed and processed to an archival standard, i.e., fix and wash in accordance with the manufacturers specifications.

12.5 The use of a digital camera may be used as a reference to survey and drawn elevations and ground plans on-site.

APPENDIX 13
Historic Building Recording: Rectified Photography and Photogrammetry (Level 3)

13.1 An external contractor will carry out rectified photography and photogrammetry in compliance with the following guidelines:

i) All photography will be carried out with an approved type of camera. Details of the camera used may be supplied on completion of the project.

ii) The smallest permissible photographic negative scale will normally be defined as follows: for 1:50 scale plotting, negative scale should be no more than 1:200 and for 1:20 scale plotting, negative scale should be no more than 1:200.

iii) All rectified photography will be taken on black & white negative film, such as Kodak PLUS-X or Ilford FP4, or approved equivalent. It should be exposed and processed to an archival standard, i.e., fix and wash in accordance with the manufacturers specifications.

APPENDIX 14

Historic Building Recording: Elevation Recording (Level 2)

14.1 All elevations drawn or surveyed will be a 'preservation by record' of the current state of the building. The following categories will be recorded:

i) All architectural features with associated decorative detail including windows, doors, quoin stones, string courses, roof lines and other structural stonework and jointing.

ii) Fixtures and fittings such as drainpipes and guttering, signs, brackets and vents.

iii) Later modifications and/or damage to the building such as structural cracks, areas of erosion, patches of rendering, blocked doorways, windows and other openings.

14.2 Large or small repetitive features such as windows, capitals, mouldings, etc. sampling will be undertaken as appropriate.

14.3 Where the façade is of stone construction each individual stone may be recorded. However, in most instances, a representative area, usually 1m², will be sufficient, although windows, corner stones and other architectural details will always be fully recorded. The degree of recording for ashlar will be depend upon the scale with which the elevation is to be produced and will be determined in advance of the start of works. When drawings are carried out at 1:50, a single line between the joints of the stone will normally be considered satisfactory. However, if there is a considerable gap between the stones, both sides of the stone will be shown. At a scale of 1:20 or larger, then all joints will normally be shown except where the stone is very fine ashlar.

14.4 Elevation recording by hand will normally take place if it is inappropriate to do so by survey. The size and complexity of an elevation will determine what on-site scale will be required. In general, a scale of 1:50 will be deemed appropriate with a larger scale adopted if portions of this elevation are more complex. For highly detailed architectural detail a scale of 1:1 may be appropriate.

14.5 All hand-drawn measured elevations and detail will be drawn using water-resistant paper with a hard 4H – 6H pencil. A levelled datum line will be taken through the centre of the elevation with offset measurements. All datum points will be accurately positioned within the site either by hand or by survey.

APPENDIX 15

Historic Building Recording: Elevation Recording – By Survey (Levels 2-4)

15.1 Where appropriate, elevations may be recorded by radiation survey using a reflectorless EDM (REDM) Leica TCR 705. This method of survey allows the accurate capture of data of upper floor levels. If more than one elevation is to be recorded, then a traverse will be created around each building or group of buildings. Extra stations may be set up in places where there is limited access. Values in the traverse will be adjusted by Bowditch adjustment to compensate for any errors in measurement. The adjusted values will then be calculated using LisCAD Plus v5.0 (Surveying and Engineering Module). Co-ordinates will be located by resection from existing traverse points. The survey data will be downloaded to a laptop computer on-site via Leica Office software. All measurements taken by survey will consist of three-dimensional co-ordinates relating to the Ordnance Survey National Grid.

15.2 The recording of an elevation will not be carried out by survey equipment if:

i) There are too many obstructions;

ii) The surface of the building is too dark or mossy;

iii) There is too much curved architectural detail;
iv) The distance required to set up the survey equipment in front of the elevation is too large (i.e., more than 25m) or too short to capture data from the upper levels of the elevation.

15.3 Where appropriate, elevations carried out by survey will be supplemented by detail measured by hand.

APPENDIX 16
Historic Building Recording: Interior Recording (Levels 2-4)

16.1 The recording of the interior(s) of the building(s) will consist of a written record and, where appropriate, measured sketch plans of the ground plan and the roof elevations based on the following guidelines:
i) Critical analysis of the interior condition, construction, materials, fixtures and fittings will be made using *pro forma* recording sheets.
ii) Measured interior ground plans of each room of the interior will be carried out using tapes and a Leica Disto™ Classic electronic distance measurer.
iii) All measured plans will contain: notes on the size of structural members, and finishes; floor levels, change in levels, and ceiling heights; direction of stair rises in plan with each riser numbered; the positions of service entry points, plant and machinery and sanitary fittings; below-ground drainage; soil and vent stacks and rainwater pipes where appropriate.

APPENDIX 17
Historic Building Recording: Standard Report Illustrations (Level 6)

17.1 All final illustrations for archive will be produced digitally on the Computer-Aided Drawing package, AutoCAD 2000i/2000LT and/or Adobe Illustrator v9/v10. A standard methodology will be used with all drawings adhering to the following guidelines:

17.2 Line Weight. The appropriate line weight will depend on anticipated plot scale and may need editing if the output scale is to change. The degree of detail used will affect the line weight utilised in the finished drawing. All fine architectural detail (stonework, moulded stonework, brickwork, etc.) will be produced at a line weight of 0.05mm. More general architectural features (outlines of doors and windows, etc.) will be produced at a line weight of 0.09mm. A much heavier line will indicate the changing of plane in complex elevations.

17.3 Text. Text will be made clear and informative, with orientation, position, size and letter spacing remaining appropriate to the layout of the plotted sheets.

17.4 Scale. No archaeological or historic building survey will be carried out without a particular scale or range of scales in mind.

17.5 Layers. The layering system in Computer Aided Drawing packages allow the separation of data into specified criteria. To achieve this, there is an AOC standard layering system. This system is largely based on the coding system inherent in the use of the reflectorless EDM Leica TCR705.

17.6 Digital Archiving. All drawings are produced at a 1:1 scale for easy scaling in .dxf or .dwg format. At the end of a project, all data is stored on CD-ROM.

APPENDIX 18
Historic Building Recording: Dendrochronological Analysis (Level 3)

18.1 Dendrochronological analysis of timbers from standing building is primarily undertaken to provide accurate dates for its construction. Where appropriate, samples may be taken for analysis to provide information on the source and quality of the timber, thus informing on the social and economic context of the building.

18.2 Samples for analysis will take place under the following conditions:

i) That the timber sample taken is from a species where date chronologies already exist, namely oak and pine.
ii) A minimum of eight timbers per phase or building are required to cross-match results.
iii) The ring patterns inherent in a timber sample must be over a certain length, usually seventy rings.

18.3 The method of the removal of samples of timber will be to use a corer attached to a power-driven drill, removing a core leaving a hole in the timber 10mm in diameter. The core will be taken so that a maximum radius from pith to bark is taken, thus ensuring the maximum numbers of growth rings for analysis. Timbers will be selected which have retained a full ring sequence as possible (i.e., those where the outermost rings have not been trimmed off or destroyed by woodworm).

18.4 Where it is impossible to use this intrusive method of sample, for example, in the case of painted ceilings and carved panels, the ring sequence can be measured *in situ* using a hand lens. Silicone rubber casts can also be taken where the end grain is exposed.

APPENDIX 19
Historic Building Recording: Paint and Wallpaper Analysis (Level 3)

19.1 Paint and/or wallpaper analysis will usually only take place where layers that have been applied over the years have not been removed. Where appropriate, paint analysis can take place by methods of scraped samples or thin section analysis. Cross-sections may also be obtained from samples of paint to reveal a stratigraphy of paint layers.

APPENDIX 20
Historic Building Recording: Reporting (Levels 0-6)

20.1 The style and format of the final report on historic building recording works will be determined by AOC Archaeology, but will be compliant with Historic Scotland's issued guidance on Data Structure Reports. The content of this report will depend greatly in the level of works that have taken place but at minimum will include:

i) A location plan of the site showing the areas under investigation numbered and cross-referenced in the text;
ii) A summary statement of the results;
iii) An introduction, methodology and results of the works;
iv) Photographic plates to illustrate the text.

20.2 Where a programme of historic building recording has taken place at Level 2 or above, the Data Structure Report will contain a number of illustrations, the format of which is outlined in more detail in Appendix 17.

APPENDIX 21
Watching Briefs

21.1 Where the archaeologist (Watching Brief Officer) has no remit over the working methodology of the site (specification of machine or depth of excavation). The Watching Brief Officer will simply observe the works and record their nature and form. Where the Watching Brief Officer specifies the site methodology, ie type of machine and depth of excavation. AOC Archaeology's preferred approach is to consider the Watching Brief Area as a large evaluation trench and follows in general, Appendix 7.

21.1 It is important to stress that the client determines the area affected and unless instructed by a curator the Watching Brief Officer has no power to extend the area unless it is to fully excavate a human body that otherwise would have been truncated by the works.

21.2 In addition to the general principles outlines in Appendix 7 the following approaches will be undertaken:

i) a record will be made of all site attendances;
in general a written and photographic record will be kept of the excavated sediments;

ii) where archaeological features are identified and they can be dealt with in less than two hours this work will be undertaken by the Watching Brief Officer. Recording and excavation protocols will follow Appendices 7.9 –7.11;

iii) where archaeological remains requiring more than two hours of excavation and recording, the Watching Brief Officer will stop the works and both the curator and the client will be contacted to devise a mitigation strategy. All delays will be kept to a minimum. Any resultant excavation and recording work will be in keeping with the methods outlined in Appendix 9;

iv) the extent of the watching brief area will not be recorded unless specifically required by either the client or the curator. Where such recording is required the area will be accurately recorded by total station and linked into the Ordnance Datum;

v) Reporting of Watching Briefs will follow methods specified in Appendix 8.

APPENDIX 22
General

22.1 The requirements of the Brief will be met in full where reasonably practicable .

22.2 Any significant variations to the proposed methodology will be discussed and agreed with the local authority's archaeological representative in advance of implementation.

22.3 The scope of fieldwork detailed in the main part of the Written Scheme of Investigation is aimed at meeting the aims of the project in a cost-effective manner. AOC Archaeology Group attempts to foresee all possible site-specific problems and make allowances for these. However there may on occasions be unusual circumstances which have not been included in the programme and costing. These can include;

i) unavoidable delays due to extreme weather, vandalism, etc;

ii) trenches requiring shoring or stepping, ground contamination, unknown services, poor ground conditions;

iii) extensions to specified trenches or feature excavation sample sizes requested by the local authority's archaeological advisor;

iv) complex structures or objects, including those in waterlogged conditions, requiring specialist removal.

Health and Safety

22.4 All relevant health and safety legislation, regulations and codes of practice will be respected.

22.5 With the introduction of the Construction, Design and Management Regulations 1994, AOC Archaeology works with Clients, Main Contractors, and Planning Supervisors to create a Health and Safety Plan. Where CDM regulations apply, each project will have its own unique plan.

Insurances

22.6 AOC Archaeology holds Employers Liability Insurance, Public Liability Insurance and Professional Indemnity Insurance. Details can be supplied on request.

22.7 AOC Archaeology will not be liable to indemnify the client against any compensation or damages for or with respect to;

i) damage to crops being on the Area or Areas of Work (save in so far as possession has not been given to the Archaeological Contractor);

ii) the use or occupation of land (which has been provided by the Client) by the Project or for the purposes of completing the Project (including consequent loss of crops) or interference whether temporary or permanent with any right of way light air or other easement or quasi easement which are the unavoidable result of the Project in accordance with the Agreement;

*iii)*any other damage which is the unavoidable result of the Project in accordance with the Agreement;

iv) injuries or damage to persons or property resulting from any act or neglect or breach of statutory duty done or committed by the client or his agents servants or their contractors (not being employed by AOC Archaeology) or for or in respect of any claims demands proceedings damages costs charges and expenses in respect thereof or in relation thereto.

22.8 Where excavation has taken place evaluation trenches will be backfilled with excavated material but will otherwise not be reinstated unless other arrangements have previously been agreed. Open area excavations normally will not be backfilled but left in a secure manner unless otherwise agreed.

Copyright and confidentiality

22.9 AOC Archaeology will retain full copyright of any commissioned reports, tender documents or other project documents under the Copyright, Designs and Patents Act 1988 with all rights reserved; excepting that it will provide an exclusive licence to the Client in all matters directly relating to the project as described in the Written Scheme of Investigation.

22.10 AOC Archaeology will assign copyright to the client 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.

22.11 AOC Archaeology will advise the Client of any such materials supplied in the course of projects which are not AOC Archaeology's copyright.

22.12 AOC Archaeology undertake to respect all requirements for confidentiality about the Client's proposals provided that these are clearly stated. In addition AOC Archaeology further undertakes to keep confidential any conclusions about the likely implications of such proposals for the historic environment. It is expected that Clients respect AOC Archaeology's and the Institute of Field Archaeologists' general ethical obligations not to suppress significant archaeological data for an unreasonable period.

Standards

22.13 AOC Archaeology conforms to the standards of professional conduct outlined in the Institute of Field Archaeologists' Code of Conduct, the IFA Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology, the IFA Standards and Guidance for Desk Based Assessments, Field Evaluations etc., and the British Archaeologists and Developers Liaison Group Code of Practice.

22.14 Project Directors normally will be recognised in an appropriate Area of Competence by the Institute of Field Archaeologists.

22.15 Where practicable AOC Archaeology will liaise with local archaeological bodies (both professional and amateur) in order that information about particular sites is disseminated both ways (subject to client confidentiality).

APPENDIX 23
Specialist staff

The following specialist staff may be used on this project depending on the type of artefacts and soil samples recovered during the course of the fieldwork.

AOC Archaeology Staff:

Dr. Clare Ellis	Soils and sediments analysis
Dr. Anne Crone	Dendrochronology, charcoal and timber analysis
Dr. Coralie Mills	Pollen analysis, dendrochronology
Dr. Ciara Clarke	Pollen analysis

Mr. Rob Engl	Lithics & coarse stone
Mr. Murray Cook	Mammal bone
Dr. Lindsey Thompson	Stone condition survey
Ms. Melissa Melikian	Human bone
Ms Alys Vaughan-Williams	Macroplant specialist
Mr Robin Inglis	Soil analysis
Mr Alan Duffy	Charcoal identification
Mr Fred Van de Walle	Artefact conservation

Sub-contractors

Mr. Bob Clark	Industrial archaeology & coal-mining
Ms Marta McGlynn	Historic designed landscapes
Dr. Ruby Ceron-Carasco	Marine shell and fish bone
Dr. Ann MacSween	Prehistoric pottery
Ms. Naomi Crowley	Building material, medieval and post-medieval pottery Ms.Amanda
Clydesdale	Plaster, paint and wallpaper analysis

APPENDIX 24
Post-excavation

24.1 *Sample Flotation*

Sample flotation is a water recovery technique designed to separate organic remains from the soil matrix. A Siraf style system of flotation and wet-sieving will be operated by the archaeological contractor. This system comprises an enclosed area of water into which the soil samples are deposited and agitated. Due to the difference in densities of organic and inorganic remains the light fractions will float, the heavy fractions will sink and the silt fraction will be washed away. The resulting floating material (flot) is collected in sieves of 0.3 mm and 1 mm, the non-floating residue (retent) is wet-sieved through a 1 mm mesh.

All flots and retents are air dried, bagged and labelled accordingly. Throughout this process all equipment is kept clean to prevent contamination of the samples. For each sample, a Sieving Assessment sheet is completed. This gives basic information about the sample, retent and flot. Prior to flotation and wet-sieving, the volume of each sample is measured by means of a graduated bucket.
If in a sample a high concentration of clay can be observed and therefore separation of the different fractions of the soil is difficult, an aqueous solution of defloculant ‘Calgon’ is added and the sample is left to soak overnight, before processing by flotation and wet-sieving.
Sample flotation will be carried out on site and/or at the premises of the archaeological contractor.

24.2 *Sample Wet sieving*
Sample wet sieving, also a water recovery technique, is carried out in laboratory conditions and is designed to recover waterlogged material. For the recovery of waterlogged botanical material, small soil samples (0.5 to 1.0 litre) are processed through a 0.3 mm sieve. The sediment is placed in a bucket with water and agitated before being washed through the 0.3 mm sieve. This process is repeated until the sample is totally disaggregated. The resulting material is stored in water or ethanol depending on the length of the storage period. Sample wet sieving can also be used to recover larger waterlogged material such as leather and wood in which case larger volumes of soil are processed.

24.3 *Sample Dry sieving*

Sample dry sieving is carried out to retrieve smaller artefacts that might be missed during normal excavation procedure, eg. small sherds of pottery and bone . Done in laboratory conditions, all samples are air dried in the first instance. Done in the field, the samples are processed with the sample in a field-moist state. In both cases the sample is passed through a 4 mm mesh and any items of interest are recovered and recorded.

24.4 *Residue sorting*

All residue (retent) sorting is carried out in laboratory conditions, and is designed to recover not only material that might be missed during normal excavation procedure (see dry sample sieving), but also material that would be impossible to recover during normal excavation procedure eg. charred and uncharred plant remains, insect remains and small fragments of charcoal.

The volume of the residue is recorded and then passed through a set of sieves (mesh sizes 8 mm, 4 mm, 2 mm and 1 mm). Each fraction is spread out onto a separate tray, is scanned with the naked eye and all items of interest are recovered. Under normal circumstances all identifiable material from all fractions is recovered. The only exception to this is burnt wood (charcoal) which is only retrieved from the > 4 mm fractions. All material recovered is bagged individually by material type and the material types and weights recorded on the Retent Sorting Sheet. Also recorded on this sheet are the project number, context number, area, sample number, the sorters initials, date, sample volume, retent volume and percent of the retent sorted. Under normal circumstances 100 % of all fractions are sorted. In those instances where this is not the case, this will be recorded. Where no material is recovered from a retent, the Retent Sorting Sheet will be filled out as usual, with the word sterile written across it.

24.5 *Flot sorting*

All flot sorting is carried out in laboratory conditions. The volume of each flot is measured. The flots are sorted by means of a low powered binocular microscope. The macro plant remains and other archaeological or ecological material are extracted from the flots and put into gelatine capsules or glass tubes. An estimate of the number of items recovered and the species represented are recorded. The charcoal larger than 4mm is extracted from the flots and weighed. All extracted items are bagged and labelled accordingly.

24.6 *Routine Soils Analysis*

All the samples taken on-site will have a routine partner. Four standard routine soil tests will be carried out by the archaeological contractor. These are pH analysis, Loss on Ignition, Calcium Carbonate content and Easily available phosphate content.

The pH value is the measure of the acidity (H+) or alkalinity (OH+) of the sample. Dissolving a portion of the soil in distilled water, then measuring the sample using pH meter carries this out. This is to allow us to estimate the potential for preservation within the sediment.

Loss on Ignition is the measure organic content of the sample. This is measured by burning a small amount of the sediment in a furnace at 400^0C for four hours. By measuring the weight before and after burning the organic content can be calculated. The organic content allows us to examine whether manuring or treatment of the natural soil has taken place.

Calcium Carbonate content can be measured by dissolving a few grains of the sample using Hydrochloric acid. If calcium carbonate is present then a small amount of Carbon Dioxide is given off, the greater the amount of CO_2 released the greater the amount of $CaCO_2$. The Calcium Carbonate content shows us if there is any natural calcium carbonate within the sediment, or if not, any mortar or shell has been included artificially.

The amount of phosphate within a sample is examined at the same time as $CaCO_2$. After the CO_2 has been released Ascorbic acid is applied, if Phosphate is present a colour change will occur. The

phosphate content may show the presence of animals or to a lesser degree indicate where animals were kept.

24.7 *Soil Micromorphological Analysis*

Micromorphology is the study of undisturbed soils and loose sediments and other materials at a microscopic scale. A 25-30 micron thick slice of soil or sediment is mounted on glass and studied using a petrographic microscope. The samples are prepared for thin section analyses at the Department of Environmental Science, University of Stirling using the methods outlined by Murphy (1986). The samples are analysed using the descriptive terminology of Bullock *et al* (1985) and FitzPatrick (1993).

Bullock, P., Fedoroff , N., Jongerius, A., Stoops, G., Tursina, T. & Babel, U.1985 *Handbook for soil thin section description*. Wolverhampton: Waine research Publications.

FitzPatrick, E.A.1993. *Soil microscopy and micromorphology.* Chichester: John Wiley & Sons.

Murphy, C. P. 1986. *Thin section preparation of soils and sediments*. Berkhamsted: AB Academic Press.

24.8 *Charcoal ID*

Only charcoal retrieved from the 4mm sieve (see Sieving and Sorting procedures) is used for species identification, mainly because fragments below that threshold are too small to identify. If there is no charcoal larger than 4mm present then attempts will be made to identify the largest fragments present for the purpose of C14 samples.

Surfaces are prepared for identification by using a surgical blade to prise off flakes of charcoal revealing fresh surfaces on which diagnostic features can be identified. The charcoal fragment is bedded in sand for examination under a reflected-light microscope.

On average, up to 10 fragments of charcoal are identified per bulk sample. If a single species is present then identification can stop at 5 fragments. However, if a great variety of species is present, ie more than four, then identification should continue until the analyst is happy that a representative sample has been examined. Unusual or exotic species should be bagged and labelled separately within the bulk sample.

Other variables, such as whether the fragment is young roundwood, with sub-bark surfaces intact, whether it has come from a large piece of wood and whether it is fast or slow grown, should be noted.

Species identification is undertaken with reference to Schweingruber's (1982)

24.9 *Wood ID*

Waterlogged wood; Surfaces on waterlogged wood are prepared for identification by using a cut-throat razor or a double-sided razor blade to pare off thin-sections which are cell-thick and transparent so that diagnostic features can be identified. It is consequently difficult to identify fragments of waterlogged wood smaller than 10 mm^2. The thin-sections are temporarily mounted in water on slides for examination under a transmitted-light microscope.

Sampling for identification is carried out on the same basis as that for charcoal. Species identification is undertaken with reference to Schweingruber's (1982) *Microscopic Wood Anatomy* and the in-house reference collection of the archaeological contractor.

24.10 *Non-charcoal charred plant macrofossil analysis and Waterlogged plant analysis*

Analysis of the charred plant macrofossils and waterlogged plants involves identification, quantification and interpretation. Identification of the macro plant remains is done using a low power binocular microscope with x10 and x40 magnifications. The modern reference collection of the archaeological contractor and various seed atlases (Beijerinck 1947, Berggren 1969 & 1981

and Anderberg 1994) will be used to ease identification. The botanical nomenclature follows Flora Europaea (Tutin *et al* 1964-1981). A standardised counting method is used for quantification. Habitat information for the plant species will be taken from Hanf (1983).

24.11 *Dendrochronological analysis*

*Sample size and species type;*Three conditions are necessary to ensure the successful dating of a building or archaeological site. The timber must be a species for which there are already dated chronologies which in the UK usually means oak. Cross-matching is a statistical process, and therefore a number of timbers are required, usually at least 8 per building or phase. Finally, and for the same reasons the ring-patterns must be over a certain length, usually 70 rings. With these conditions observed it can be relatively straightforward to obtain a date for a building.

*On-site sampling**;*** *In situ* timbers in a standing building are usually sampled using a corer, which is attached to a power-driven drill and removes a core leaving a hole in the timber 10 mm in diameter. The core must be taken so that the maximum radius from pith to bark is sampled, thus ensuring the maximum number of growth-rings for analysis. It is also important to select those timbers which have retained as full a ring sequence as possible, ie those where the outermost rings have not been trimmed off or destroyed by woodworm.

Coring is an intrusive method of sampling and it is occasionally impossible to use this method, as in the case of painting ceilings and carved panels. If the end-grain is exposed the ring sequence can be measured *in situ* using a hand lens. Silicone rubber casts can also be taken.

If structural timbers have been removed during the renovation of a building then slices, approximately 50 mm thick can be sampled by saw, usually a chainsaw, from a point along the timber where the maximum radius survives.

Timbers only survive below ground in waterlogged conditions. Waterlogged timbers are sampled as above, by the removal of a 50 mm slice by sawing.

Sample preparation;

Cores are mounted in angle moulding and then the surface is prepared by paring with a Stanley knife followed by fine sanding with Wet&Dry sandpaper until the ring-pattern is clear and measurable.

Slices (dry); The surface of the slice is sanded, usually with a power sander, using progressively finer sandpaper until the ring-pattern is clear and measurable. It is often necessary to finish off the surface with W&D sandpaper.

Slices (wet); The slice is usually frozen for 24 hours and then the surface is planed flat using a Surform plane. This often achieves the necessary clarity of ring-pattern but where the wood is particularly hard it will be necessary to use a razor blade to pare the surface to achieve a clear ring-pattern.

Silicone rubber casts; These are fixed to battens of wood using silicone rubber, for ease of measurement.

*Measurement and analysis;*The samples are measured on a custom-made measuring table and the data logged onto the computer using DENDRO (Tyers 2000). Data graphing and statistical analysis are also carried out using the same package.

APPENDIX 25
Conservation

25.1 *Conservation principles*

The principles, ethical codes and techniques of conservation are under constant review by both practitioners and professional bodies. The archaeological contractor's approach to conservation will reflect current theory and practice, as recommended by the United Kingdom Institute for

Conservation, the Scottish Museums Council, Resources for Museums and Galleries, the International Council on Museums and the International Institute for Conservation.

25.2 *Security*

The archaeological contractor will take all reasonable precautions to ensure the security of items brought in for conservation. The building will be protected by intruder detector systems; all conservation items will be kept in a secure locked store when not being worked on, and will not be left unattended. Particularly valuable items will be stored in a safe where required. A heat and smoke detection system will also be in operation 24 hours a day.

25.3 *Insurance*

Artefacts for conservation will not covered by the contents insurance of the archaeological contractor. Insurance cover can be arranged for individual items and collections, but this is expensive. Clients are normally advised that the cheapest option is to extend their own insurance for these items for a fixed period. If required, the archaeological contractor could arrange additional insurance, and these costs would be passed on.

The archaeological contractor will have full professional indemnity cover for all its staff.

25.4 *Health and safety*

All relevant Health and Safety legislation, Regulations, Guidelines and Codes of Practice will be respected; Health and Safety plans will be compiled where Construction, Design and Management Regulations 1994 apply.

25.5 *Conservators and allied specialist services*

Professionalism: The conservators of the archaeological contractor will be graduates of approved conservation courses, and will have a thorough knowledge of current conservation practices in their particular specialist fields. The conservators will have been actively encouraged to broaden their skills and experience, and to obtain professional accreditation through the United Kingdom Institute for Conservation or PACR.

25.6 *Specialist post-excavation analyses*

Other services which the archaeological contractor will be able to offer are:

wood identification and woodworking analysis
tree ring dating
pollen analysis
building materials analysis
metal artefacts
metalworking and glass working debris
materials analysis
textile analysis
insects
fish and shells
bird bones
plant remains
bone identification
soils specialist/geologist
artefact specialist
fibre identification
leather identification

25.7 *Documentation*

Conservation complements the work of other professionals by preventing the deterioration of the artefact, and by ensuring that the wider community benefits from the additional information recovered about an artefact in the course of conservation work.

Conservation reports are normally supplied as a hard copy, but can also be supplied on disc in a variety of formats, according to the client's requirements. Reports are normally printed on paper with a guaranteed life expectancy of 150 years; photographic materials are processed to professional industry standards such as Q-Lab.

25.8 *Archival considerations*

The archaeological contractor will endeavour to ensure that the materials used to document artefacts undergoing treatment have a reasonable life span. Paper used will have an estimated lifetime of 150 years (HMSO specification), and all photographic films will be processed to industry standards by a processing company that specialises in high quality work for professional photographers. Radiography films and chemicals will be fresh and well within their expiry dates. All labelling of boxes etc. will be carried out with archival quality inks; labels will generally be duplicated for safety's sake.

Wherever possible, the archaeological contractor will consider the archiving requirements for the site, and may consult the receiving museum or archive about their requirements; the archaeological contractor will follow guidelines proposed by the Association of Museum Archaeologists.

The archaeological contractor will abide by current guidelines on the care and disposal of artefacts and human remains, as set out in:

The Disposal and Allocation of Finds
Publication and Archiving of Archaeological Projects
Treatment of Human Remains in Archaeology
Archaeological Project Design, Implementation and Archiving

25.9 *Museum of London Guidelines*

Museum of London requirements for conservation, recording, documentation, packing and archiving will be applied where these are a pre-condition.

25.10 *Assessment and estimating*

The assessment determines the condition of the artefact and the best means to ensure its survival. Radiography (x-raying) of the object is normally carried out at an early stage, and is compulsory for iron objects, which have poor survival prospects, and for some copper alloy artefacts.

The estimate for the work normally applies for six months; it may be necessary to review it thereafter. Conservation rates are agreed by negotiation.

25.11 *Recording*

Text and image records (paper, digital and/or film as appropriate) will be made of all artefacts before conservation commences. Any information recovered during cleaning and conservation (eg associated material, residues, corrosion products, manufacturing techniques) will be carefully recorded, with samples taken where necessary. Soil removed from an artefact during the process will normally be retained and returned with the object, unless the excavator and/or client decides that it is not required. Where necessary, experts will be consulted on the nature of any material discovered during cleaning or conservation of artefacts. All samples and slides will become part of the site archive and remain with the artefact.

The conservation report will also include recommendations for the care and curation of the assemblage; special finds with particular packing requirements will have clear handling and lifting instructions on the outside of any packaging.

25.12 *Conservation Record*

The conservation assessment sets out the proposed treatments for each type of artefact or material: these treatments can be discussed with the client, and with the museum, to take into account any priorities and display requirements. (See Section 9, Assessment)

25.13 *Radiography*

The archaeological contractor will x-ray all excavated iron objects, as well as some of the copper alloy, and any other items as requested by the excavator: information from the x-rays are incorporated into the conservation report. All metal artefacts can be x-rayed if required; only film and chemicals within their expiry date are used, washing periods are the optimum to maximise film preservation.

X-rays normally become part of the archive, and are returned to the client, with full details of exposure time and voltages used.

25.14 *Record photography*

All artefacts selected for conservation will be photographed (on colour slide film) at least once; usually before and after conservation, with a label and scale in the frame. Unusual artefacts, noteworthy features or modified conservation treatments will be photographed whenever appropriate.

All images will be recorded in the conservation report, and each slide labelled with the context and find number. The archaeological contractor will use Professional grade film, and a professional developing service to ensure maximum film stability. The slides form part of the conservation archive, and will remain with the artefact.

25.15 *On-site conservation and conservation on call*

A conservator can be available on site if required, and the conservators of the archaeological contractor can provide immediate advice over the phone at any time (specific arrangements must be made for out of hours working).

Advice on packing, lifting and transporting artefacts may be given in the early stages of a project.

25.16 *Conservation treatments*

The requirements of each artefact will be considered individually, and any remedial treatments carried out will use only recognised conservation treatments and approved materials. The archaeological contractor will be committed to CPD, which ensures that its conservation staff are fully cognisant with new developments in the field.

25.17 *Post-excavation storage*

It is recognised that budgetary arrangements may mean considerable time can elapse between excavation and conservation or Finds Disposal. All finds will be examined by a conservator on receipt; packing and storage materials will be renewed as necessary, and the archaeological contractor will ensure that all finds will be kept in a secure, stable environment until conservation treatments begin. Any finds that require immediate treatment will undergo conservation as soon as the conservators have consulted the Project Field Officer. Large volume storage at 1^{o} C and -20^{o} C; and storage for waterlogged material will be available in-house.

25.18 *Packing*

All artefacts will be packed in suitable inert materials, with silica gel if required. Fragile objects will be supported by Ethafoam, or similar, and lifting and handling instructions on the container. Especial care will be taken for artefacts, which will be going into long term storage. All containers will be carefully labelled, and box lists supplied.

APPENDIX 26
Archiving and finds disposal

26.1 *Finds disposal*

All artefacts and ecofacts recovered during an excavation sponsored by Historic Scotland (HS) are reported directly to HS via their own collections registrar. If all material has been fully analysed at this point, it is in most cases, transferred to an HS store. HS's Finds Disposal Panel (FDP) with permission of the Queen and Lord Treasurers Remembrencer (Q&LTR) then allocates the material to the appropriate museum for long term storage and possible display.

Artefacts and ecofacts recovered from excavations sponsored by other funding bodies are reported to the Crown via the Treasure Trove Advisory Panel (TTAP). The TTAP with permission of the Q&LTR then allocates the material to the appropriate museum for long term storage and possible display. Once the material has been allocated, it is then the museum's responsibility to arrange collection from the archaeological contractor.

26.2 *Archiving*

All archiving will be undertaken according to standards and guidelines set out by the National Monuments Record of Scotland (NMRS), located at the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS). The archives of all archaeological works will be deposited to the NMRS.

APPENDIX 27
Publications

27.1 *General*

All publications by the archaeological contractor will be clear, correct and concise accounts of what was done and will reach standards acceptable to the archaeological profession. Final reports will be published within five years of the end of fieldwork. Publications should be published in popular archaeological, general and specialist formats to inform a wide readership of what work was done and must be made available to both lay and professional audiences for the foreseeable future. Publications must also provide good value for money in terms of the content and style of the publications. In DES entries and journal publications the role of the client will be fully acknowledged. In the popular publications and monographs suggested below the role of the client will be more fully promoted, with the display of the client's logo on the cover and a foreword by their representative. The over-riding aim of the procedures outlined in this section is to ensure that, during the duration of the project, a continuous stream of information about the archaeological works is made available for peer review and public consumption. The following stages and publication vehicles are envisaged;

27.2 *DES entries*

After the completion of each piece of on-site work, whether it be a watching brief, evaluation, set-piece excavation or building recording exercise a Data Structure Report (DSR) will be produced (see Fieldwork procedures). These are not reports intended for publication but they usually include a short summary which will be submitted for publication in *Discovery and Excavation Scotland* (DES), an annual summary of fieldwork published by the Council for Scottish Archaeology. It is proposed that an individual entry for each piece of on-site work will not be submitted; rather a single entry summarising all the works carried out in any one year will be compiled by the Project Manager. The DES summary is a standard requirement of planning authority archaeologists and ensures that notice of ground-breaking works is disseminated throughout the archaeological community.

27.3 *Journal publications*

Reports on the results of excavations are normally published either as an article in an academic journal or as a monograph in an appropriate series, depending on the scale of the results. The results of the set-piece excavations will be published as journal articles with reference to other on-site works such as watching briefs and building recording, where appropriate. The publication of these articles will follow on timeously from the completion of post-excavation works.

27.4 *Monograph publications*

The results of all the on-site works will be drawn together in a single volume, a monograph designed primarily for academic consumption. This will be published within 5 years of the completion of on-site works.

27.5 *Popular publications*

The results of all the on-site works will also be drawn together in 'popular' publications that augment the academic publications in making the results available to a wider public. This is a method of providing 'community gain' to the local and national community in return for its consent, through the planning process, to alter or demolish elements of the archaeological heritage. Popular publications may include, as deemed appropriate by the client, Internet reports within the web site of the archaeological contractor, printed colour booklets, leaflets, on-site interpretative panels and exhibitions.

27.6 *Editorial procedures*

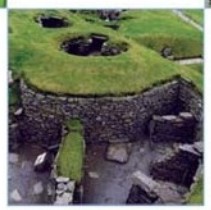
The archaeological contractor will apply their in-house editorial policy and procedures, through which any projects nominated for publication are normally submitted.











AOC Archaeology Group

AOC Archaeology Group, Edgefield Industrial Estate, Loanhead, Midlothian EH20 9SY
tel:0131 440 3593 | fax:0131 440 3422 | e-mail:admin@aocarchaeology.com