



**Archaeological Watching Brief on Geotechnical Site Investigation works
Forth & Clyde Canal, Port Dundas Canal Basin, Glasgow
Index No 6689**

**Written Scheme of Investigation (WSI)
19 October 2015**

CFA Archaeology Ltd

1. Background

Farrans Construction are procuring and managing a programme of Geotechnical Site Investigation works on the Forth & Clyde Canal, Port Dundas Canal Basin, Glasgow. This is a Scheduled Monument (Index No 6689) so a watching brief is required on the excavations necessary to undertake the site investigation. A number of the site investigation trenches have been targeted to identify the presence of absence of features of potential archaeological significance.

The locations of the proposed site investigation interventions are shown on the Waterman Drawing that has been submitted in support of the application for SMC. The following table provides details of the size and reason for the site investigation Interventions.

SI Type	Size / Depth (No greater than)	Reason for location
BH1	250mm	To establish below ground geological properties to inform master planning and foundation design.
BH2	250mm	To establish below ground geological properties to inform master planning and foundation design
BH3	250mm	To establish below ground geological properties to inform master planning and foundation design
BH4	250mm	To establish below ground geological properties to inform master planning and foundation design
BH5	250mm	To establish below ground geological properties to inform master planning and foundation design
BH5	250mm	To establish below ground geological properties to inform master planning and foundation design
BH7	250mm	To establish below ground geological properties to inform master planning and foundation design
BH8	250mm	To establish below ground geological properties to inform master planning and foundation design
TP1	2m wide x 3m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the timber basin to inform master planning and foundation design. Specifically this trench is targeted to identify the inner edge of the basin.
TP2	2m wide x 3m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the timber basin to inform master planning and foundation design.
TP3	2m wide x 3m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the timber basin to inform master planning and foundation design.
TP4	2m wide x 3m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the timber basin to inform master planning and foundation design. Specifically this trench is targeted to identify the inner edge of the basin
TP5	2m wide x 3m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the timber basin to inform master planning and foundation design. Specifically this trench is targeted to identify the inner edge of the basin.
TP6	2m wide x 3m long x5m deep	To establish the make up and depth of the infill of the former timber basin.
TP7	2m wide x 3m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the timber basin to

		inform master planning and foundation design.
TP8	2m wide x 3m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the timber basin to inform master planning and foundation design. Specifically this trench is targeted to identify the inner edge of the basin.
TP9	2m wide x 3m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the proposed cooling tower foundations to inform master planning and foundation design.
TT1	2m wide x5m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the proposed cooling tower foundations to inform master planning and foundation design.
TT2	2m wide x 10m long x5m deep	To identify the structural make up and depth from the surface of any surviving remains of the proposed cooling tower foundations and the formation of the canal side edge to the in-filled former timber basin.
TT3	2m wide x5m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the proposed cooling tower foundations to inform master planning and foundation design.
TT4	2m wide x5m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the proposed cooling tower foundations to inform master planning and foundation design.
TT5	2m wide x5m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the known cooling tower foundations to inform master planning and foundation design.
TT6	2m wide x5m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the known cooling tower foundations to inform master planning and foundation design.
TT7	2m wide x5m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the known cooling tower foundations to inform master planning and foundation design.
TT8	2m wide x5m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the known cooling tower foundations to inform master planning and foundation design.
TT9	2m wide x10m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the coke kilns to inform master planning and foundation design.
TT10	2m wide x10m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the coke kilns to inform master planning and foundation design.
TT11	2m wide x10m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the coke kilns to inform master planning and foundation design.
TT12	2m wide x10m long x5m deep	To establish the structural make up and depth from the surface of any surviving remains of the coke kilns to inform master planning and foundation design.
CC1	250mm	To identify below ground physical properties of proposed cooling tower foundations and strata beneath this infrastructure.
CC2/CP1	250mm	To identify below ground physical properties of proposed cooling tower foundations and strata beneath this

		infrastructure.
CC3/CP2	250mm	To identify below ground physical properties of existing cooling tower foundations and strata beneath this existing infrastructure.
CC4	250mm	To identify below ground physical properties of existing cooling tower foundations and strata beneath this existing infrastructure.
BH2/CP2	250mm	To identify below ground physical properties of proposed cooling tower foundations and strata beneath this infrastructure.

The extents given are maximum extents. Where in situ archaeological features are identified including, but not limited to, canal walls, coke kilns, canal furniture and remains of the cooling tower(s) they will be preserved in situ and further excavation that may damage such features will cease. However, rotary bore holes may have to drill through features to achieve their purpose, but this will be limited to the size of the bore hole.

This Written Scheme of Investigation (WSI) has been prepared by CFA Archaeology Ltd on behalf of Farrans Construction for an archaeological watching brief during the site investigation works. Its content is based on communication between Farrans Construction, CFA Archaeology and John Malcolm of Historic Environment Scotland (HES).

The Historic Environment Assessment undertaken by Waterman (2015), and submitted in support of SMC, contained a map regression; the 1861 OS map indicated that the site was timber basin and that coke kilns were located around the sides of the basin. By the time of the 1913 OS map the coke kilns are no longer shown and a boat repair yard was shown on the northern side of the site. The 1960 OS map showed that the timber basin had been backfilled and that the site was occupied by a cooling tower for the adjacent power station. The cooling tower was demolished in 1982 and the site has been undeveloped ever since. It is therefore possible that remains associated with the use of the site as a canal basin including the remains of the boat yard and coke kilns will be preserved and that later remains such as the footings of the cooling tower will also be preserved. Land registry plans show the location of a second cooling tower but it is not known if this ever existed.

2 Objectives

The objectives of the programme of archaeological works are:

- To conduct an appropriate programme of archaeological investigation (watching brief) to monitor all ground breaking works as described above;
- To record any archaeological features or deposits uncovered during the site investigation works and wherever possible to ensure that they are preserved in situ during this phase of work;
- To produce a report on the results of the watching brief to inform the future design of the development and any future mitigation that may be required.

3. Method Statement

3.1 General

CFA follows the Chartered Institute for Archaeologists' Code of Conduct, Standards and Guidelines as appropriate.

All staff will be suitably qualified and experienced for their project roles.

All staff will familiarise themselves with the archaeological background of the site, and the results of any previous work in the area, prior to the start of work on site. All staff will be aware of the work required under the specification, and will understand the project's aims and methodologies.

No ground-breaking works will take place without the presence of CFA personnel. The archaeological work shall be open to monitoring by HES, who shall be kept informed of the timescale of fieldwork by CFA.

The techniques to be used in excavating the site investigation interventions are provided in the Farrans document *Methodology for site clearance and site investigation methodology* which has been submitted in support of this application for SMC. Due to the nature of the deposits in places (concrete and tarmac) a toothed bucket may have to be used on the excavator.

Any alteration to this methodology will need to be agreed in advance with Historic Scotland and would require an amendment/variation of Scheduled Monument Consent.

3.2 Watching brief

All excavations within the scheduled area will be monitored by an appropriately qualified archaeologist. The boreholes and cores themselves will not be monitored.

We provide the following code of practice to allow the Watching Brief to be conducted as efficiently as possible.

To enable proper monitoring, the client will ensure that CFA are timeously informed of the work programme.

The client will appoint a representative to liaise with CFA. All communications will be directed through this individual. The archaeological work shall be open to monitoring by HES.

If, during the course of the excavation of a site investigation intervention, any features of potential archaeological interest are revealed, the archaeologist will prevent further excavation that might cause damage to the identified remains. The identified remains will be fully recorded as exposed.

If any features of potential archaeological interest require excavation in order to establish their likely date, nature, extent and condition the samples will be limited to only removing sufficient of the deposits to characterise the preservation, quality, complexity and date of any archaeological remains that are identified.

CFA uses the Museum of London's single context recording system, with minor adaptations. Full details of CFA's on site recording strategy are contained within the document *CFA Archaeology Ltd – On Site Recording*. All CFA staff are issued with this document. Details of CFA's recording system have previously been submitted to HES.

All artefacts will be retained for further analysis. Post-excavation storage requirements will be assessed by Dr Melanie Johnson, CFA's Post Excavation Manager. Sensitive artefacts will be lifted in a block of soil and sent for detailed excavation during conservation, but if an artefact is discovered which needs conservation in the field or immediate laboratory treatment, an appropriately qualified conservation specialist will be contacted by telephone for advice on appropriate treatment.

Given the nature of the archaeological features and deposits soil samples will not be taken.

The locations of features and trenches will be recorded using industry standard electronic surveying equipment. CFA uses Trimble GNSS/GPS systems to produce digital survey data. This equipment provides centimetre-accurate RTK corrections using the Trimble VRS Now RTK GNSS service. The survey data and any hand-drawn plans will be accurately tied in to the Ordnance Survey National Grid and Ordnance Datum.

4. Products

The Products of the project will comprise:

- An illustrated Data Structure Report describing the results of the Watching brief will be produced.
- A summary report for *Discovery and Excavation in Scotland*.
- An *OASIS Scotland* entry
- A Costed Assessment for post-excavation and publication (as appropriate).

The Data Structure Report will be produced within the timescale allowed for the completion of the geotechnical site investigation report as it requires some of the results of the site investigation for its completion.

It is considered unlikely that sufficient significant remains will be uncovered to merit further post excavation and publication. However, if required a programme of work will be undertaken by CFA in agreement with the client and HES.

The project archive, comprising all CFA record sheets, plans and reports, will be deposited with the National Monuments Record of Scotland within six months of completion of fieldwork and any relevant post-excavation analyses. Finds will be

subject to the Scots laws of Treasure Trove and Bona Vacantia, and will be reported to the Crown Agent for disposal. Appropriate conservation of finds will be conducted before disposal.

A digital copy of the full report with plans and DES entry on CD - in PDF and doc formats will be supplied to Historic Scotland and a copy will also be sent to the relevant local authority SMR. The inclusion of photographs, plans and illustrations will fall within the current guidelines for archival standards set by the Archaeology Data Service and HES. A minimum of 3-4 photographs will be provided in a digital format to give an overall impression of the site and to illustrate the archaeological remains discovered. The project will be archived with HES.

6. Monitoring

HES will be given a minimum of two weeks' notice of the commencement of on site works. The work shall be open to monitoring by HES.

CFA will liaise with HES to ensure they are aware of fieldwork dates and so able to schedule any monitoring visits. A mobile phone will be present on site at all times and its number will be notified to HES.

Important or unexpected discoveries will be communicated to the client and HES.

CFA recognises that it is vital for HES to be closely involved with the project and we will use our best endeavours to ensure that HES requirements in this matter are a priority in our conduct of the project.

7. Resources

7.1 Project Personnel

Bruce Glendinning BSc PgDip MCIfA will manage this project. Mr Glendinning graduated from the University of Glasgow in 1993 with a BSc in Archaeology. Since then he has worked as a professional archaeologist with many units throughout Scotland and England. He has extensive experience of managing large-scale archaeological projects in both rural and urban environments. In addition to project management he has acted as a consultant for Morrison Homes, Robertson Homes, Apex Hotels, Wimpey Homes and Persimmon Homes. Mr Glendinning is also the archaeological project manager on the ARUP lead framework team for providing professional services to Scottish Canals. This included managing the excavation works on the adjacent Pinkston Watersports Centre where remains of coke kilns were uncovered and excavated.

Field Director for CFA will be selected from CFA's pool of Project Officers, all of whom have appropriate experience.

Shelly Werner BA MPhil PhD MCIfA is CFA's Graphic's Manager. Shelly is responsible for the organisation and management of all GIS, CAD and Illustrative material. She is an experienced illustrator with specialist knowledge in GIS consultancy.

CVs of relevant staff can be provided on request.

7.2 Health and Safety

All CFA staff have been inducted into CFA's Health and Safety Policy. All work for the project will be subject to Risk Assessment procedures, a copy of which can be provided.

8. Bibliography

Waterman 2015, Port Dundas Glasgow, Historic Environment Assessment