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The Results of an Archaeological Field Evaluation by Trial Trenching at Dundas Castle Farms (Land Parcel 13)

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Report Status: Approved



Executive Summary

Headland Archaeology conducted an archaeological evaluation by trial trenching on the Forth Replacement Crossing at Dundas Castle Farms (Land Parcel 13), Dalmeny, NGR: NT 1297 7696 (centred), to assess the presence/absence of archaeological remains or deposits in an area identified as having good archaeological potential in the Forth Replacement Crossing Environmental Statement (Jacobs Arup, 2009a). The work was commissioned by Transport Scotland, managed and monitored by Jacobs Arup and undertaken in advance of the proposed commencement of construction works. .

Three trenches totalling 216m² were excavated comprising a 5% sample across the field. With the exception of rubble field drains and a geotechnical pit from earlier investigations, no archaeological remains or deposits were identified during the evaluation.

ARCHAEOLOGICAL EVALUATION

Forth Replacement Crossing: Land Parcel 13, Dundas Castle Farms, Dalmeny

PROJECT SUMMARY SHEET (FRCE10)

Client Transport Scotland

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National Grid Reference NT 1297 7696

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Schedule

Fieldwork 18th April 2011

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1 Introduction

1.1 General

1.1.1 This draft Data Structure Report is submitted as a report on the results of a programme of archaeological trial trenching undertaken on behalf of Jacobs Arup and Transport Scotland in respect of the proposed Forth Replacement Crossing (hereinafter 'FRC'), and in accordance with the mitigation measures recommended in the FRC Environmental Statement Chapter 14 (Cultural Heritage; Jacobs Arup 2009a) wherein the requirement for a programme of trial trenching was identified.

1.1.2 On 18th April 2011, Headland Archaeology (UK) Ltd. undertook a programme of archaeological evaluation by trial trenching on Land Parcel 13 on the southern side of the landfall for the FRC (Illus 1). The project was managed by Edward Bailey (Project Manager), the fieldwork and reporting was overseen by Liz Jones. One additional staff member was involved throughout the evaluation.

1.2 Project Background

1.2.1 In December 2007, following the completion of the FRC Study as part of the Strategic Transport Project Review (hereinafter 'STPR'), the Scottish Government confirmed the intention to provide a new cable-stayed bridge to the west of the existing Forth Road Bridge. Jacobs Arup (as a joint venture) was commissioned in January 2008 to assist Transport Scotland to develop the FRC proposals, to undertake an Environmental Impact Assessment (hereinafter 'EIA') and to prepare an Environmental Statement (hereinafter 'ES') (Jacobs Arup, 2009a).

1.2.2 The purpose of the cultural heritage component of the EIA was to identify the cultural heritage baseline, evaluate the likely significant impacts that the proposed development would have on this resource, and recommend measures to mitigate identified impacts.

1.2.2 The cultural heritage baseline data for the EIA was obtained via a desk-based assessment and walkover survey undertaken in 2008-2009 in accordance with the principles set out in DMRB Volume 11, Section 3 Part 2 'Cultural Heritage' (HA 208/07; Highways Agency 2007). Further information was also gathered during archaeological watching briefs on Ground Investigations for the proposed scheme carried out during 2008 and 2009 by variously Jacobs Arup, Glasgow University Archaeology Research Division and Headland Archaeology Ltd in accordance with the requirements of Historic Scotland to whom the results were reported (Transport Scotland 2010, 30).

1.2.3 The ES recommended that a programme of invasive and non-invasive archaeological works be undertaken, to include trial trenching. (Jacobs Arup 2009a).

1.3 Aims and Objectives of the Archaeological Works

1.3.1 The general objectives of the programme of archaeological works (Transport Scotland 2010) were to:

- ensure that significant archaeological or palaeoenvironmental remains shall be neither needlessly destroyed, nor destroyed without record;
- identify any unknown archaeological remains that may be affected by the scheme;
- enable a more confident assessment of the impact of construction of the proposed scheme on archaeological remains;
- enable the identification and design of any measures that may be necessary to mitigate the impact of the proposed scheme on newly identified archaeological remains, and
- enhance available information about known archaeological remains, where existing information is insufficient to enable a full assessment of impact or the design of mitigation measures.

2 Site Background

2.1 *Archaeological and Historical Background*

2.1.1 Within a study area ranging in extent from 500m from the proposed route to 6km from the proposed main crossing a total of 356 cultural heritage sites were identified by the ES, whilst a desk-based assessment of a wider study area undertaken at route selection stage, identified a total of 1200 cultural heritage sites (Transport Scotland 2010, 30). The results from these studies show that the scheme is located in a landscape containing archaeological evidence dating from the Mesolithic period, through the prehistoric and medieval periods, up to post-medieval and modern times.

2.1.2 A number of archaeological sites were identified by the ES in and around South Queensferry. These included sites dating to prehistoric, Roman and early historic periods, with the Royal Burgh of South Queensferry originating in the medieval period.

2.1.3 The land parcel lies near Dundas Castle, the present keep of which dates to the 15th century, although the castle may originate as early as the 12th century (Jacobs Arup 2009, 32). It is bounded on its northern side by the old Newbigging to Dalmeny road.

2.2 *Site Topography and Land Use*

2.2.1 The site is located to the south of South Queensferry and is bounded by the B800 to the west and by the old Newbigging to Dalmeny road to the north. The ground was generally flat and at the time of the evaluation the field was under young crop. The site is under the ownership of the Trustees of Sir J Stewart-Clark and M J Floyd.

2.3 *Site Geology*

2.3.1 The results of geotechnical investigations (Jacobs Arup 2009b) demonstrate that the subsurface stratigraphy underlying the development corridor generally constitutes glacial till deposits of varying thickness; these are predominantly comprised firm to very stiff boulder clay deposits with occasional granular till deposits. The trial

trenching (below) has identified small patches of free-draining sands and larger bands of bedrock.

- 2.3.1 The solid geology of the site is typified by igneous alkali dolerite (British Geological Survey 2008). The alkaline nature of the bedrock geology has the effect of breaking up the structure of clays within the soil matrix which negatively affects its water holding capacity, similar to the effect agricultural lime has on arable soils.

3 Methodology

- 3.1.1 All works were undertaken in accordance with the specification in the contract documents (Transport Scotland 2010), which had been agreed with Historic Scotland and Transport Scotland. The total area to be evaluated was 4204 m², of which a 5% sample (216 m²) was evaluated through trial trenching. An indicative trench plan was agreed with the consultant archaeologists, Jacobs Arup. No trenches were excavated on the far western side of the site due to overhead power lines running parallel to the B800.

- 3.1.2 All trenches were individually numbered and located using a pole-mounted Trimble G6 differential GPS programmed with the trench coordinates. The trenches were excavated using a JCB back actor fitted with a 1.6 m wide ditching bucket. The machine operated under continuous archaeological supervision and topsoil and subsoil were removed down to the first archaeological horizon or clean geological deposits, whichever was met first. Topsoil and subsoil were stored separately. Any potential features identified were hand cleaned and investigated appropriately. Archaeological features and deposits were hand excavated and recorded using standard archaeological methods and pro-forma record sheets. The excavated trenches and any archaeological contexts were recorded using a Trimble G6 differential GPS, as well as hand drawing where appropriate. Photographs were taken using colour slide and black and white film and digital.

4 Results of Fieldwork (Illus 2)

4.1 Trial Trenching

- 4.1.1 Three trenches were excavated across Land Parcel 13 (Illus 2) with a combined total area of 216 m² comprising a 5% sample of the Parcel. Full detailed descriptions of each trench are provided in Appendix 1 and individual contexts are presented in Appendix 2. The results of the evaluation are summarised below.

- 4.1.2 The natural geology (001) seen in the trenches was greyish brown clay in Trenches 1 and 2 on the eastern side of the site, which changed to orange brown gravelly clay in Trench 3 on the western side of the site. This was overlain by 0.3 – 0.4 m of dark greyish brown clayey silt topsoil (002). The topsoil contained occasional recent ceramic material.

- 4.1.3 Trench 1 contained a rubble field drain running north to south across the field.

- 4.1.4 Trench 2 contained a machine-dug pit with vertical sides, filled with topsoil and modern ceramic.
- 4.1.5 Trench 3 contained one rubble drain running east to west and two running north-east to south-west across the field.

5 Conclusions

- 5.1.1 The pit in Trench 2 relates to the geotechnical investigations associated with the current works. The rubble drains are typical of those uncovered in many of the other land parcels subject to archaeological site investigations within the road corridor. The evaluation has demonstrated that there are no archaeological remains or deposits within the 5% sample evaluated.
- 5.1.2 Based on the results of the fieldwork in which no environmental samples or finds were retrieved, the archaeological archive is assessed as having no potential and therefore no further works are recommended.

6 References

6.1 *Bibliographic References*

Highways Agency *et al* 2007 *DMRB Volume 11 Cultural Heritage, Section 3, Part 2, Revision HA 208/07*. The Highways Agency, Transport Scotland, Welsh Assembly Government and the Department for Regional Development Northern Ireland, August 2007.

Jacobs Arup 2009a *Forth Replacement Crossing: Environmental Statement*. November 2009.

Jacobs Arup 2009b *Transport Scotland Forth Replacement Crossing: Network Connections – South Ground Investigations Report*. Jacobs Arup November 2009.

Transport Scotland 2010 *Forth Replacement Crossing*. ‘Competition for the Land Based Invasive and Non-Invasive Archaeological Survey and Evaluation Contract Volume 2: Tender Document.

6.2 *Cartographic References*

British Geological Survey 2008 *Linlithgow, S032W, (version B&Sup), 1: 50 000*.

7 Appendices

Appendix 1: Trench Register

Trench No	Length (m)	Maximum Depth (m)	Description
1	50	0.3	E-W, contains a rubble drain.
2	50	0.3	NW-SE, contains geotechnical pit.
3	35	0.4	NW-SE, contains 3 rubble drains.

Appendix 2: Context Register

Context No.	Area	Description
001	All	Natural Geology
002	All	Topsoil

Appendix 3: Trench Matrices

All Trenches

Topsoil	
Natural	

Appendix 4: Photographic Register

Photo No.	Direction	Description
656	W	LP13 General shot of Trench 1
657	SE	LP13 General shot of Trench 2
658	NW	LP13 General shot of Trench 3