

Project code: FRCE10
Client: Transport Scotland
Date: 20th April 2011

**The Results of an Archaeological Field Evaluation by Trial
Trenching near Builyeon Road, South Queensferry,
(Land Parcel 7)**

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Report Authors: Donald Wilson
Report Status: Approved



Executive Summary

Headland Archaeology conducted an archaeological evaluation by trial trenching on the Forth Replacement Crossing on land adjacent to Builyeon Road near South Queensferry (Land Parcel 7), NGR: NT 1163 7782 (centred), to assess the presence/absence of archaeological remains or deposits in an area identified in the Forth Replacement Crossing Environmental Statement (Jacobs Arup, 2009a) as having good archaeological potential for the presence of unknown archaeological remains. The work was commissioned by Transport Scotland, managed and monitored by Jacobs Arup and undertaken in advance of the proposed commencement of construction works.

A total of 3 trenches totalling 203 m² were excavated comprising a 5% sample of this land parcel. Trenches were sited to ensure good spatial coverage and to avoid existing areas of hard standing used by the farmer. No archaeological remains or deposits were identified during the evaluation.

ARCHAEOLOGICAL EVALUATION
Forth Replacement Crossing: Land Parcel 7, near Builyeon Road

PROJECT SUMMARY SHEET (FRCE10)

<i>Client</i>	Transport Scotland
<i>Consultant</i>	Jacobs Arup
<i>National Grid Reference</i>	NT 1163 7782
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<i>Schedule</i>	
Fieldwork	15 th April 2011
Report	20 th April 2011

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1 Introduction

1.1 General

1.1.1 This Data Structure Report is submitted as a report on a programme of archaeological trial trenching to 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 the 15th April 2011, Headland Archaeology (UK) Ltd. undertook a programme of archaeological evaluation by trial trenching across Land Parcel 7 to the south of Builyeon Road, 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 Don Wilson. Two additional staff members were 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 provide mitigation measures to ameliorate any impacts.

1.2.3 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).

1.2.4 The ES recommended that a programme of invasive and non-invasive archaeological works be undertaken, to include resistivity survey and 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 include prehistoric, Roman and early historic activity, with the Royal Burgh of South Queensferry originating in the medieval period.

2.1.3 Land Parcel 7 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 2009a, 32).

2.1.4 Land Parcel 4 which is situated a short distance to the north-west contained evidence of human activity dating from the Mesolithic period onwards (approx 10,000 to 4,000 BC).

2.2 *Site Topography and Land Use*

2.2.1 The parcel comprised a long E-W aligned corridor along the northern edge of a large field. The area was bounded to the north by a stone wall aligned along the edge of Builyeon Road and was open to the south. A narrow unclassified road marked the western limit of the area and a small copse of trees formed the eastern boundary. The field was relatively flat and under a young crop at the time of evaluation. The site is under the ownership of The City of Edinburgh Council and the Trustees of S N M Bowlby.

2.3 *Site Geology*

2.3.1 The results of geotechnical investigations (Jacobs Arup 2009b) carried out demonstrate that the subsurface stratigraphy 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 bands of bedrock.

2.3.2 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 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 of the Land Parcel measured 4025 m², of which a 5% sample (203 m²) was investigated by trial trenching. An indicative trench plan was agreed with the consultant archaeologists, Jacobs Arup. Trenches were sited to provide good spatial coverage of the entire site. At the request of the farmer it was ensured that no trenches were placed close to made ground that formed a vehicle track along the northern boundary of the field. As a result of the presence of this track the original locations of the trenches had to be altered.

3.2 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 13 ton 360° tracked mechanical excavator, fitted with a 2m wide flat-bladed 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 encountered 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 film, 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 7 (Illus 2) with a combined total area of 203 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 [004] seen in the trenches was largely yellowy grey clay with frequent stone inclusions, although outcropping of limestone bedrock was seen at the west end of Trench 2. In Trenches 1 and 2 this was overlain by between 0.10 m and 0.15 m of subsoil [003] – an orangey brown sandy silt. Topsoil [002] was between 0.30 m and 0.50 m deep and contained little in the way of recent ceramic material. A single rubble drain was recorded in Trench 2 with the topsoil becoming increasingly stone rich towards the east.
- 4.1.3 The overlying material in Trench 3 comprised made ground [001] with a mix of tarmac, fine gravel and stone to a maximum depth of 0.45 m. The base of the trench included a series of small stone filled hollows and a layer of dumped stone and gravel. These anomalies were thought to be associated with modern disturbance, such as road construction and/or repair, due to the made ground above and occasional fragments of red ceramic tile within the pits. The area surrounding this trench was also heavily disturbed, with undulating ground and rough grass predominating.

5 Conclusions

- 5.1 The evaluation has established that this area appears not have been used for human settlement. The only archaeological remains or deposits identified relate to either Post-medieval agricultural activity in the area, with a single field drain on a north-south alignment, or more modern disturbance.
- 5.2 Based on the results of the fieldwork in which no finds or environmental samples were retrieved, the archaeological archive is assessed as having no potential and therefore no further works are recommended.

6 References

6.1 *Bibliographic References*

Harrison, S and Lyons, D 2010 *Results of an Earth Resistance Survey of Echline Fields, South Queensferry*. Unpublished client report. Headland Archaeology (UK) Ltd.

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

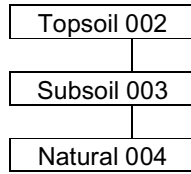
Trench No	Length (m)	Depth (m)	Description
1	20	0.45	Trench aligned E-W with a single field drain cutting the subsoil.
2	70	0.35	Trench aligned E-W close to the northern limit of the field. An area of bedrock outcropped at the W end with the natural becoming very stone rich towards the E end.
3	15	0.45	Trench was aligned E-W across an area of waste ground and comprised 0.40 m of made ground [001] with areas of stone filled pits and dumped material all of modern origin.

Appendix 2: Context Register

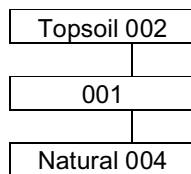
Context No.	Area	Description
001	Tr 2	Dumped material made up of tarmac and bricks, up to 0.45m deep
002	All	Topsoil. Greyish brown sandy silt loam, 0.3 – 0.5 m.
003	1 & 2	Subsoil. Orange brown sandy silt, 0.1 – 0.15 m.
004	All	Natural. Yellowish grey clay with limestone bedrock outcrops.

Appendix 3: Trench Matrices

Trench 1 and 2



Trench 3



Appendix 4: Photographic Register

Photo No.	Direction	Description
01	-	ID shot
02	E	General view of Trench 1
03	E	General view of Trench 2
04	E	General view of Trench 3