DESIGN & ACCESS STATEMENT

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South West Devon Waste Partnership
&
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FOR

Installation and Testing of Test Piles

DOCUMENT HISTORY

DATE	ISSUE	COMMENTS	ORIGINATOR	CHECKED BY	APPROVED BY
13/06/11	1	First Issue	JD		
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CONTENTS

1. Scope

This document describes the procedures for design, site access and installation and testing of test piles to provide information to support potential development of land at North Yard, Devonport for future uses. This information will be useful for evaluating the development potential of this land for any purpose but particularly for the proposed Energy from Waste Combined Heat and Power (EfW CHP) facility.

The site is set within the boundaries of Her Majesty's Naval Base, Devonport and as such, is subject to the usual protocols for access onto the site. The immediate surroundings consist of the watercourse known as Weston Mill Creek and the surrounding inter-tidal and terrestrial habitats including Blackies Wood. Adjacent to the site are densely populated residential areas.

The format of this document is intended to follow that described in the Commission for Architecture and the Built Environment (CABE) Planning Advisory Service guidelines on 'Design and Access Statements - How to Write, Read and Use Them'

2. Introduction

The preliminary foundation design for the proposed Plymouth EfW CHP facility consists of rotary-bored piles. The purpose of the test piles is to verify the preliminary design and continue with detailed design. It will also provide valuable data on the proposed piling method e.g. noise, vibration and dust data as well as data on rig performance in the conditions.

The area of land covered by the proposed plant is shown on the plan below. The existing soil is made up of crushed concrete, building rubble and other materials deposited over the past 20 years during the numerous construction projects in the dockyard. This is overlying softer alluvial silts and therefore the foundations require piles at different depths and to transmit varying magnitudes of load into the bedrock below that.

As an example, the bunker floor level is at 9m below plant datum and transmitting high loads into the underlying rock through rotary-bored reinforced concrete piles.

Access for all plant and materials deliveries will use only major trunk roads until a point closest to the Camel's Head entrance to the Dockyard.

3. Statement

Design

The design codes which will be used for the trial piles are as follows:

BS 8004 (1986) - Code of Practice for Foundations

BS 8102 (1990) – Code of Practice for Protection of Structures against Water from the Ground.

BS 8110:Part1 (1997) – Structural Use of Concrete

BS 8500:Part1 (2002) – Method of Specifying and Guidance for the Specifier

Cognisance of all relevant Eurocodes should also be taken.

Trial Pile testing will be carried out in accordance with the Federation of Piling Specialists' Handbook on Pile Load Testing.

The design life of all piles must be at least 100 years.

The trial pile design should be equal to that for the preliminary permanent pile design.

3.1. Use

The purpose of the test piles is to achieve the following:

- To prove that the selected piling method is practical in the given ground conditions.
- To use the information gained from installation and testing of these piles in the design of the permanent piles.
- To mitigate design risk and design period.

The results can be viewed as additional information to that already gained from the SI carried out during 2010.

Testing will be done using electronic load cells and deflection measurement equipment and applied hydraulically by transferring test loads via purpose-built steel test rigs into the adjacent reaction piles.

The testing criteria are as follows:

- Ultimate compression load (tested to 10MN)
- Tension load (reaction load from compression test shared between reaction piles, but test criterion is for 150kN)
- Lateral load (tested to 50kN sls)

The testing procedures will also generate data regarding settlement from application of test loads over specified time periods.

The following page shows the proposed locations for the test piles.

There will no further use for the piles following testing, however they will terminate at such a level as to not affect future uses of the site as they will be a minimum of 2m below finished ground levels.

3.2. Amount

There will be a total of fifteen piles in three separate locations as shown on the plan overleaf. Pile clusters comprise one test pile and four reaction piles.

DO NOT SCALE - IF IN DOUBT ASK

NOTES

- Cable percussion borehole
- Cable percussion borehole with rotary cored drilling following on
- Mechanically excavated trial pit
- CPTu probehole
- TRIAL PILE LOCATIONS

FOR INFORMATION

Rev	Date	Description	By	Chk	App
		Revision			
B	22/7/11	TRIAL PILE POSITIONS AMENDED	NW	KC	NW
A	27/1/11	INFORMATION	NW	KC	NW

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PROJECT: PLYMOUTH EfW

TITLE: SI & TRIAL PILE LOCATION PLAN

SCALE	DRAWING SIZE	CAD FILE NAME
1/500	A1	

DRAWING No. QC8223/10 REV. B

3.3. Layout

The proposed layout is as shown on the plan on page 6.

3.4. Scale

The piles will not project above existing or proposed future ground levels. They will extend approximately 22m below existing ground level depending upon ground conditions and will be 880mm diameter.

3.5. Landscaping

Not Applicable

3.6. Appearance

Not Applicable

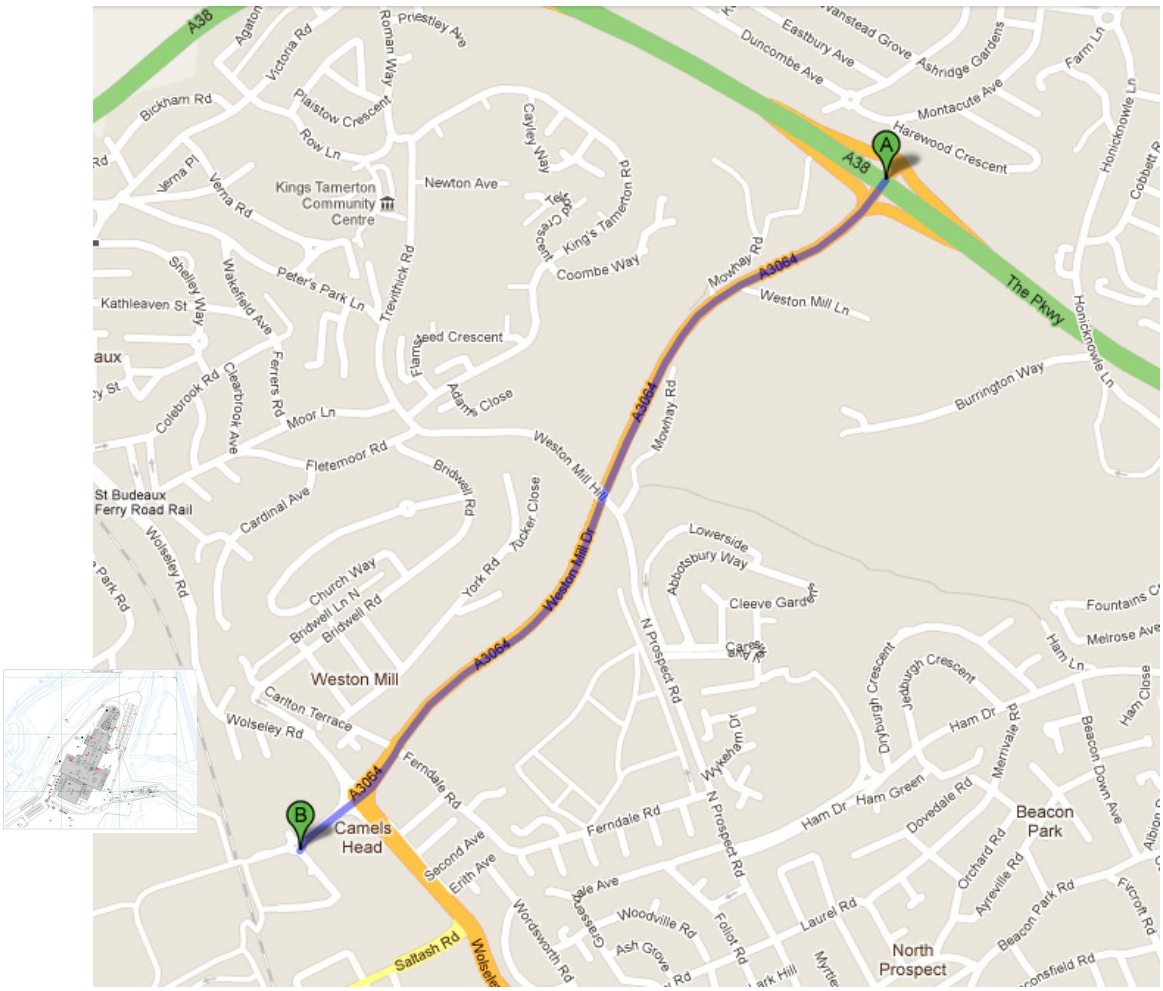
3.7. Vehicular and Transport Links

Access for all plant and materials deliveries will be restricted to a route from the A38 (Parkway), exiting at the Devonport exit and down Weston Mill Drive to the crossroads at Camel's Head. The route will continue straight across the junction into the Naval Base using North Access Road. From there (subject to the security restrictions associated with the Dockyard), vehicles will access the site as shown on drawing PA02 accompanying the planning application.

Access to the piling and testing site is through a gate in a 3m high security fence, so appropriate access arrangements will be made with the Ministry of Defence. The following page shows a route plan for access from the nearest trunk road exit.

Details of the site and of test pile locations are shown in the method statement for these works (document number CMS/C1005/001).

Access route to the test site.



3.8 Inclusive Access

Not Applicable