

# Appendix B Topographical Survey





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## Appendix C Soakaway Investigation





Our Ref: MP/17992/Let1

Your Ref: 17992-V1

Contact: Morgan Peregrine

28<sup>th</sup> September 2023

SLR Consulting Ltd 3rd Floor, Brew House, Jacob Street, Bristol United Kingdom BS2 0EQ

For the attn. of Nick Bosanko

Dear Nick

## DRAFT SITE INVESTIGATION: Land off Weycock Road, (A4226), Barry, CF62 3AA.

We confirm that the required investigation has been completed at the above site and report the following:

## 1.0 Introduction

TFW Group Limited (Terra Firma) were commissioned by SLR Consulting Limited (The Client) to undertake an exploratory investigation of the geotechnical properties of the ground beneath their property at land off Weycock Road, (A4226), Barry, CF62 3AA.

It is understood that the development proposal is to build seven residential buildings on the site.

The main objectives of the geotechnical site investigation were to:

 Investigate the permeability characteristics of the shallow superficial and underlying solid geology

In order to achieve the above objectives, Terra Firma carried out a field investigation to determine the prevailing ground conditions and also to collect and analyse soil samples from selected locations around the site.

The annotated site layout is presented on Drawing 01.

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## 1.1 Limitations

The exploratory investigation was conducted, and this report has been prepared for the sole internal reliance of the client and their design and construction team. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Terra Firma. If an unauthorised third party comes into possession of this report, they rely on it at their peril and the authors owe them no duty of care and skill.

The report represents the findings and opinions of experienced geotechnical consultants. Terra Firma does not provide legal advice and the advice of lawyers may also be required.

The subsurface geological profiles are generalised by necessity and have been based on the information found at the location of the exploratory holes and depths tested.

## 2.0 Site Summary

## 2.1 Site Description

The site is located at land off Weycock Road, (A4226), Barry, CF62 3AA and is approximately centralised at a National Grid Reference of 309388, 169101. The location of the site is shown in **Figure 2.1** below. One residential property on site is currently occupied.



## 3.0 Geology

The 1:50,000 scale (Sheet 263 Cardiff) geological map of the area shows the site to be underlain by rocks of the Lavernock Member and Porthkerry Member of the Blue Lias Formation. These rocks of the Early Triassic are thinly interbedded limestone (laminated, nodular, or massive and persistent) and calcareous mudstone or siltstone (locally laminated). Individual limestones are typically 0.10-0.30m thick and in some areas, intervening mudstone units have relatively few limestone beds.

The 1:10,000 Solid and Drift map (Sheet St06NE) shows local geology appears to dip at approximately 13° to the north. Several faults are located within the local area, in particular an east to west orientated fault located approximately 100m south of the site.

No superficial deposits are recorded on site, however bedrock of the Lavernock and Porthkerry Members are likely to weather into a residual soil at the near surface.

Some made ground of unknown depth is also anticipated at the site.

#### 4.0 Site Works

The site works were undertaken on the 31<sup>st</sup> September 2023 and comprised the excavation of 2No. trial pits and 2No. soakaway influtration tests.

Trial pits referenced TP01 to TP02, were formed using a 5-tonne tracked excavator with a 0.70m wide bucket.

On completion all trial pits were backfilled with materials arisings compacted in layers using the excavator bucket. The ground surface was reinstated.

The trial pit logs are presented in Annex A.

Soakaway tests were carried out in trial pits TP01 and TP02 in general accordance with BRE DG 365:2016. The excavation sides were squared using the excavator bucket and dimensions recorded within the test section. The trial pit was partially filled with clean water using a dedicated bowser with a 75mm diameter outlet and the fall in level recorded against time. The results are presented in **Annex A**.

## 4.1 Ground Conditions

The ground conditions encountered by the exploratory holes can in general be summarised as shown in **Table 3.1**.

Depth (m)			Thickness (m)	Stratum
0.00	-	0.2-0.3m	0.2-0.3	Brown organic rich slightly clayey <b>SAND</b> <b>AND GRAVEL.</b> Gravel is fine to coarse sub angular to sub rounded of sandstone and flint. Sand is fine to coarse.
0.2-0.3	-	>1.50m	>1.2-1.3	Stiff grey mottled brown gravelly slightly sandy <b>CLAY</b> with moderate cobble content. Cobbles and gravels are fine to coarse sub angular to sub rounded of sandstone. Sand is fine to coarse.

### Table 3.1 Summary of Typical Ground Conditions – Behind Wall

### 4.2 Groundwater

Groundwater inflows were not encountered in any of the trial pits.

## 4.3 Obstructions and Stability

All exploratory locations were stable during excavation and during the soakaway tests, and no obstructions were encountered.

## 5.0 Soil Property Testing

## 5.1 In-situ Permeability Testing

During the site investigation two trial pit soakaway tests were undertaken in TP01 and TP02 and carried out in general accordance with BRE DG 365:2016.

Soakaway test results are summarised in Table 6.1.

Trial Pit	Depth Range of Test (m)	Infiltration Rate (ms <sup>-1</sup> )
TP01	1.0-1.5	Insufficient infiltration rate
TP02	1.0-1.5	Insufficient infiltration rate

#### Table 6.1 Summary of Soakaway Results

The test results are discussed in **SECTION 5.4** and the calculation sheets may be found in **Annex B**.

## 6.0 Engineering Recommendations

## 6.1 Storm Water Drainage

During the site investigation two soakaway test was undertaken in general accordance with BRE DG 365:2016. The soakaway test was carried out in trial pit TP01 and TP02 within natural materials.

The soakaway test recorded insufficient infiltration and was subsequently terminated early. It is considered that soakaway drainage is unsuitable at the locations and depths tested.

We trust that the above is to your satisfaction, however, should you have any queries or require any further information please do not hesitate to contact us.

Yours sincerely

For: TFW Group Ltd

Mr Morgan Peregrine

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Annex A – Exploratory Høle Logs Annex B – Soakaway Results Drawing 01 – Exploratory Hole Locations

ANNEX A Exploratory Hole Logs

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Geotechnical Project	& Geoenvironment	al Specialists			Proje	ect No:	Co-ords: -		Date:		
Name:	vveycock	Cross			17	992	Level:		31/08/2023		
Location	: Land off \	Waycock F	Road, (A4226), Ba	arry, CF6	2 3AA		Dimensions: 1.50		Scale: 1:25		
Client:	SLR Con	sultina Lin	nited				Depth R	Logged:			
	San	nples & In Si	tu Testing				MP				
Water Strike	Depth Type Results			(m)	(m)	Legend	3 Stratum Description				
Stability:	Stable			0.30			Brown organic rich signity of Gravel is fine to coarse sub sandstone and flint. Sand is Stiff grey mottled brown gra moderate cobble content. O coarse sub angular to sub r fine to coarse. End of F	Pit at 1.500m	CAVEL		
Remarks	s: 1] Consi	stency, str	ength and densit	y indicato	ors are b	ased upo	n field judgement. 2] Dens	ity indicator is in	brackets and is		
	for guida pit backf	ince only, illed with a	and is not in acco arisings on compl	ordance v etion of to	vith BS 5 est.	930:201	5. 3] Trial pit terminated to	perform infiltratio	n test. 4] Trial		

	terr	ď	Tel: 02920 735 nfo@terrafirmawal	354 es.co.uk			Trial Pit Loo	3	Trial Pit No: TP02	
Geotechnical	& Geoenvironment	tal Specialists	www.terrafirmawal	es.co.uk				<b>,</b>	Sheet 1 of 1	
Project	Mayaaak	Cross			Proje	ect No:	Co-ords: -		Date:	
Name:	vveycock	Closs			17	992	Level:		31/08/2023	
Location	: Land off \	Waycock F	Road, (A4226), B	arry, CF6	2 3AA		Dimensions:	1.50	Scale:	
Client:	SI R Con	sulting Lin	nited				Depth No	Logged:		
	Sor						N			
Water Strike	Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratu	m Description		
Stability:	Stable : 11 Consi		rength and densit	0.20			Brown organic rich slight Gravel is fine to coarse si sandstone and flint. Sand Stiff grey mottled brown g moderate cobble content. coarse sub angular to sul fine to coarse. End o	y clayey SAND AND GI ub angular to sub round is fine to coarse. ravelly slightly sandy C Cobbles and gravels a prounded of sandstone f Pit at 1.500m	RAVEL.	
Remarks	for quide	stency, str ance only	rength and densit	y indicato	ors are b vith RS F	ased upo	n īleld judgement. 2] Dei 5. 3] Trial nit terminated t	nsity indicator is in o perform infiltration	prackets and is in test 41 Trial	
	pit backf	filled with a	arisings on compl	letion of to	est.	,000.201				

ANNEX B Soahaway Results

BMS QUALITY FORM Ref: QF-033





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Drawings