

Royal Berkshire Hospital, ICS ER Project

RBH-DD-XX-XX-RP-D-0001-S4-01

Flood Risk Assessment

Second Issue

Version 2.0

[17/06/24]

Document prepared on behalf of Royal Berkshire NHS Foundation Trust



DOCUMENT CONTROL

Document:	Flood Risk Assessment
Project:	Royal Berkshire Hospital, ICS ER Project
Client:	Royal Berkshire NHS Foundation Trust
Project Number:	RBH-DD-XX-XX-RP-D-0001-S4-01

Revision:	P01	Prepared by:	JY
Date:	12.06.2024	Checked by:	MY
Status:	First Issue	Approved By:	MY
Description of Revision:	For Planning		

Revision:	P02	Prepared by:	JY
Date:	17.06.2024	Checked by:	MY
Status:	Second Issue	Approved By:	MY
Description of Revision:	For Planning – Revised as per updated proposed site plan		

Revision:		Prepared by:	
Date:		Checked by:	
Status:		Approved By:	
Description of Revision:			

Revision:		Prepared by:	
Date:		Checked by:	
Status:		Approved By:	
Description of Revision:			

TABLE OF CONTENTS

1.0 INTRODUCTION	1
1.1 Purpose of this Report	1
1.2 Scope of the Report	1
1.3 Limitations of this Report	1
2.0 SITE DESCRIPTION	2
2.1 Existing Site	2
2.2 Site Topography	2
2.3 Existing Drainage	3
Main Rivers	3
Ordinary Watercourses	3
2.4 Existing Sewers	3
2.5 Ground Conditions	3
Ground Strata	3
Hydrogeology	3
Source Protection Zones (SPZ)	4
Groundwater Vulnerability	5
3.0 FLOOD RISK	6
3.1 Fluvial Flood Risk	6
3.2 Tidal Flooding	7
3.3 Surface Water and Overland Flows	7
3.4 Groundwater Flooding	8
3.5 Sewer Flooding	9
3.6 Reservoir Flooding	9
3.7 Canal Flooding	9
3.8 Summary of Flood Risk	9
4.0 DEVELOPMENT PROPOSALS	10
4.1 Proposed Development	10
4.2 Planning Policy and Guidance	10
National Planning Policy Framework	10
Sequential and Exception Tests	10

Strategic Flood Risk Assessment	11
4.3 Development and Flood Risk	11
Flood Risk to the Development.....	11
Flood Risk Arising from the Development	11
APPENDIX A – PROPOSED SITE LAYOUT	12
APPENDIX B – SITE TOPOGRAPHY	13
APPENDIX C – UTILITY SURVEY	14
APPENDIX D – BOREHOLE TESTING RESULTS	15

LIST OF TABLES

Table 3-1: Flood Risk Summary	9
Table 4-1: Extract from NPPF NPPF Planning Practice Guidance	11

LIST OF FIGURES

Figure 2-1: Site Location	2
Figure 2-2: Extract from BGS Aquifer Map from DEFRA Magic Map Website.....	4
Figure 2-3: Extract from Source Protection Zone Map from DEFRA Magic Map Website	4
Figure 2-4: Extract from Groundwater Vulnerability Map from DEFRA Magic Map Website	5
Figure 3-1: Extract from EA Flood Map for Planning.....	6
Figure 3-2: Extract from EA Flood Map for Rivers and Sea	7
Figure 3-3: Extract from EA Surface Water Flood Map.....	8

1.0 INTRODUCTION

1.1 PURPOSE OF THIS REPORT

MDA Wirral Ltd have been appointed by Royal Berkshire NHS Foundation Trust (the 'Client') to prepare a Flood Risk Assessment (FRA) for the proposed development of demolition of existing temporary two storey Medical Block and construction of new two storey Inpatient and Outpatient Urology Building.

The proposed site plan is included in Appendix A.

1.2 SCOPE OF THE REPORT

The Flood Risk Assessment will consider all potential sources of flood risk including 'Main Rivers', 'Ordinary Watercourses', surface water and overland flow routes, groundwater, sewers, and reservoirs. It will identify the level of risk and, where necessary, propose mitigation to manage flood risk.

The assessment will be undertaken in accordance with the National Planning Policy Framework (NPPF) (Chapter 14), Planning Practice Guidance (PPG) (Flood Risk and Coastal Change), Environment Agency (EA) guidance and local guidance from the Reading Borough Council (RBC) Strategic Flood Risk Assessment (SFRA).

1.3 LIMITATIONS OF THIS REPORT

This report has been prepared by MDA Wirral Ltd on behalf of Royal Berkshire NHS Foundation Trust in connection with the scope of the report as described in Section 11 above and taking into account the particular instructions and requirements set out in the fee proposal and the Client's acceptance. It is not intended for and should not be relied on by any third party and no responsibility is undertaken to any third party.

MDA Wirral Ltd accepts no duty or responsibility (including in negligence) to any party other than Royal Berkshire NHS Foundation and disclaims all liability of any nature whatsoever to any such party in respect of this report.

This report cannot be reproduced without the written consent of MDA Wirral Ltd.

2.0 SITE DESCRIPTION

2.1 EXISTING SITE

The site is located on the existing Royal Berkshire Hospital site, north of the Addington Road, Reading. The nearest postcode is RG1 5HD and grid reference is E: 472586, N:172555.

The existing building to be demolished covers a total area of approximately 0.076 hectares and is classed as a brownfield site. The site location is shown in Figure 2-1.

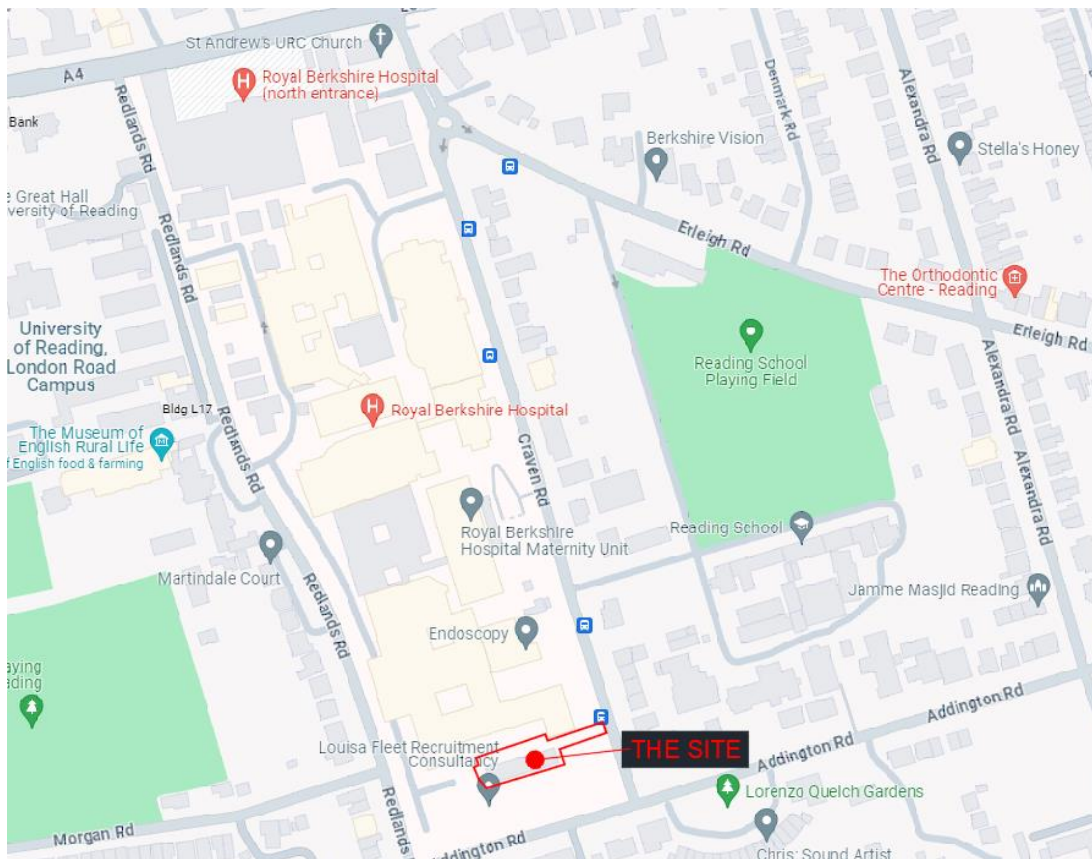


Figure 2-1: Site Location

The site is surrounded by an existing car park on the west, south, and east sides, with a landscaped area to the north. Access to the site is available through the car park entrances from Addington Road to the south and Craven Road to the northeast.

2.2 SITE TOPOGRAPHY

A topographic survey was conducted by Rigour Survey on 15 November 2019.

This survey indicates that the site generally falls from south to north, with levels ranging from 51.58 mAOD to approximation 51.00 mAOD. Notably, the car park and footpath situated to the south of the site slopes towards

the site, with its highest elevation recorded at 53.08 mAOD. An existing drainage channel has been installed to prevent surface water from entering the building,

The topographic survey is included as Appendix B.

2.3 EXISTING DRAINAGE

Main Rivers

The nearest main river to the application site is River Kennet, approximately 850m north of the site.

Ordinary Watercourses

There are no watercourses in proximity to the site.

2.4 EXISTING SEWERS

In accordance with utility survey drawing received from Rigour Survey (Appendix C), the roof area of the current modular building drains into a 150mm private surface water drainage system. This system directs the water westward to a manhole situated in the car park. The ultimate discharge point for this surface water is unknown and requires a further drainage survey to determine.

2.5 GROUND CONDITIONS

Ground Strata

Borehole testing conducted by Terra Firma Ground Investigation Ltd (Appendix D) has identified the ground strata beneath the car parking area has the primary composition is loose, dark brown clay, which begins at a depth of 1.2 meters below ground level (mbgl) and transitions into firm, brown, gravelly sandy clay. In the northern section of the site, including the existing landscaped area, the ground strata are also predominantly composed of clay.

Hydrogeology

A review of Defra's online 'Magic' mapping indicates that the bedrock aquifers are classified as Secondary A aquifers. These are aquifers comprise permeable layers that can support local water supplies and may form an important source of base flow to rivers.

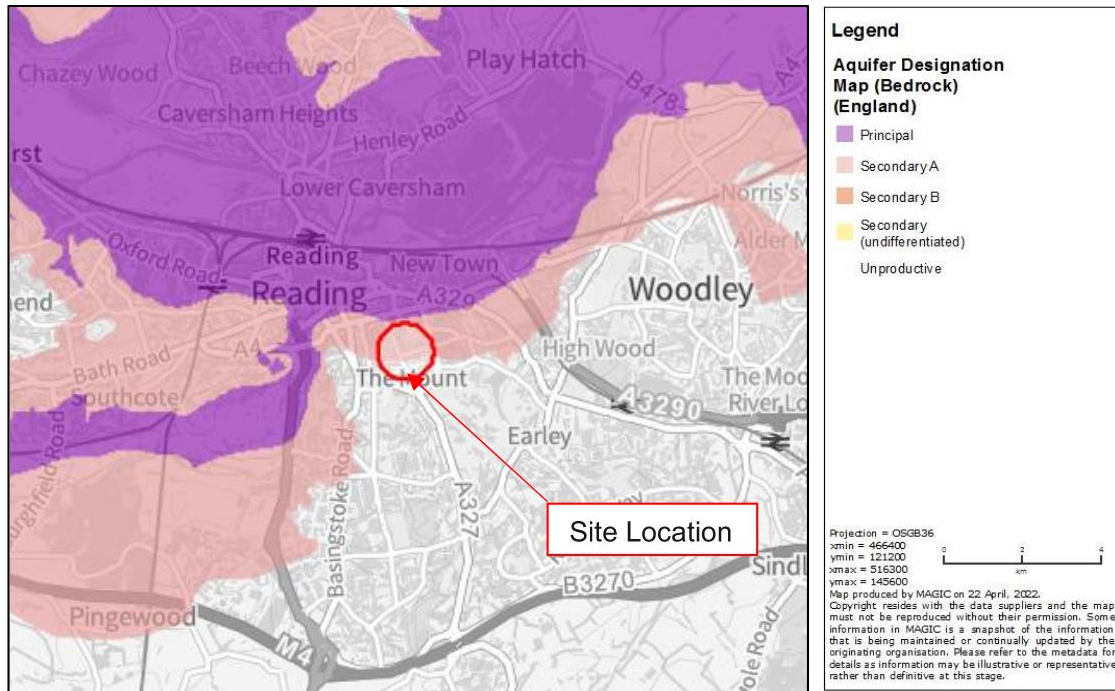


Figure 2-2: Extract from BGS Aquifer Map from DEFRA Magic Map Website

Source Protection Zones (SPZ)

A review of DEFRA's online 'Magic' mapping indicates that the site does not fall within an SPZ.

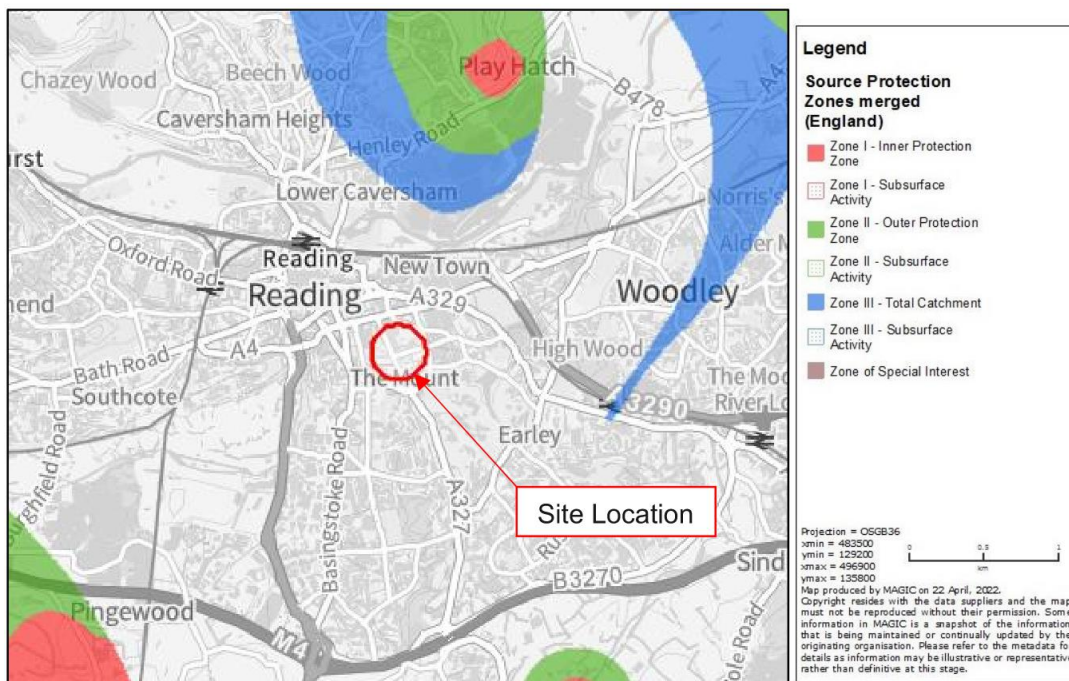


Figure 2-3: Extract from Source Protection Zone Map from DEFRA Magic Map Website

Groundwater Vulnerability

DEFRA's online 'Magic' mapping indicates that the site has medium to high risk of groundwater vulnerability. This means that the underlying aquifer is more likely become contaminated as a result of activities at the land surface.

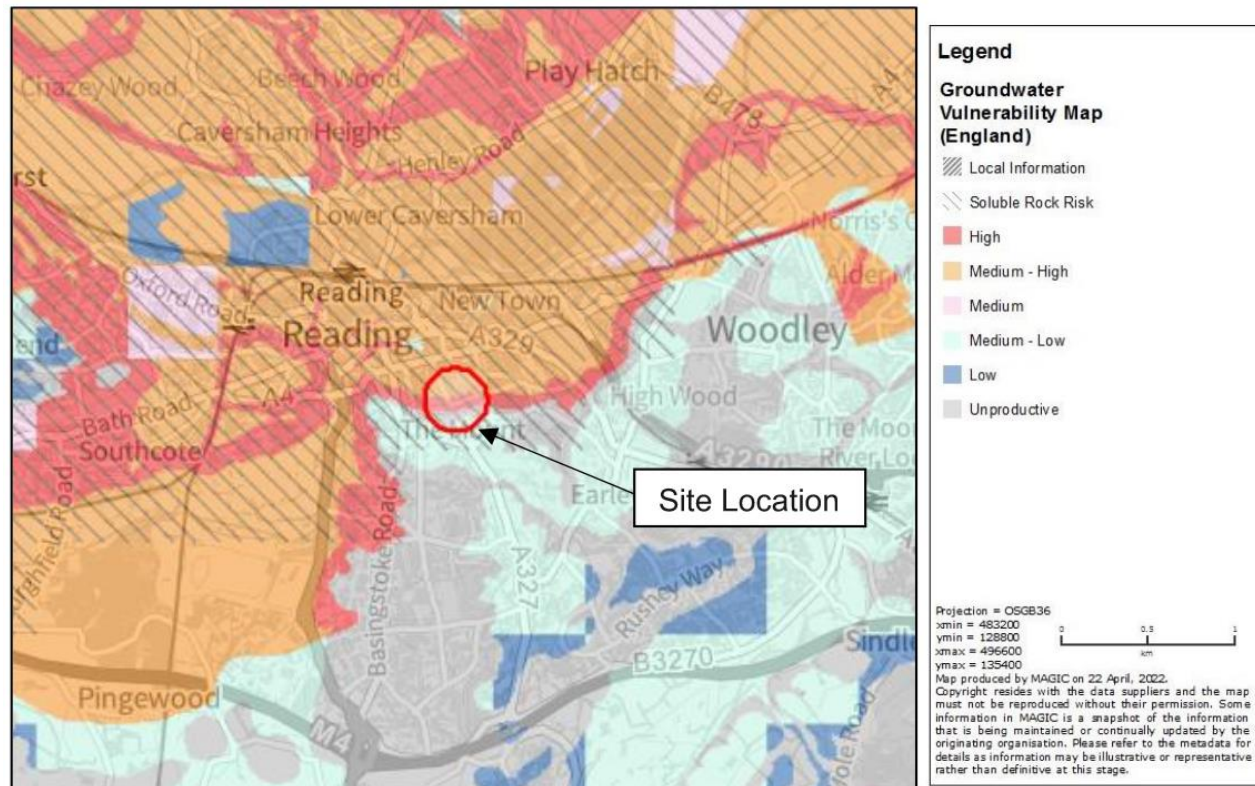


Figure 2-4: Extract from Groundwater Vulnerability Map from DEFRA Magic Map Website

3.0 FLOOD RISK

3.1 FLUVIAL FLOOD RISK

Fluvial flood risk is the risk arising from Main Rivers and Ordinary Watercourses. A floodplain is the area that would naturally be affected by flooding if a river rises above its banks. In England, floodplains of Main Rivers are divided into flood zones for planning purposes. These show the extent of the natural floodplain area at risk of inundation if there were no flood defences or certain other manmade structures and channel improvements. They are divided as follows:

- Flood Zone 1 is land assessed as having an annual probability of flooding of less than 1 in 1000 (<0.1%). The risk of flooding is low.
- Flood Zone 2 is land assessed as having an annual probability of flooding of between a 1 in 1000 (0.1%) and 1 in 100 (1%). The risk of flooding is medium.
- Flood Zone 3 is land assessed as having an annual probability of flooding of 1 in 100 or greater (>1%). The risk of flooding is high.

The EA flood map for planning shown in Figure 3-1 indicates that the site falls within Flood Zone 1 and therefore the fluvial risk is low.

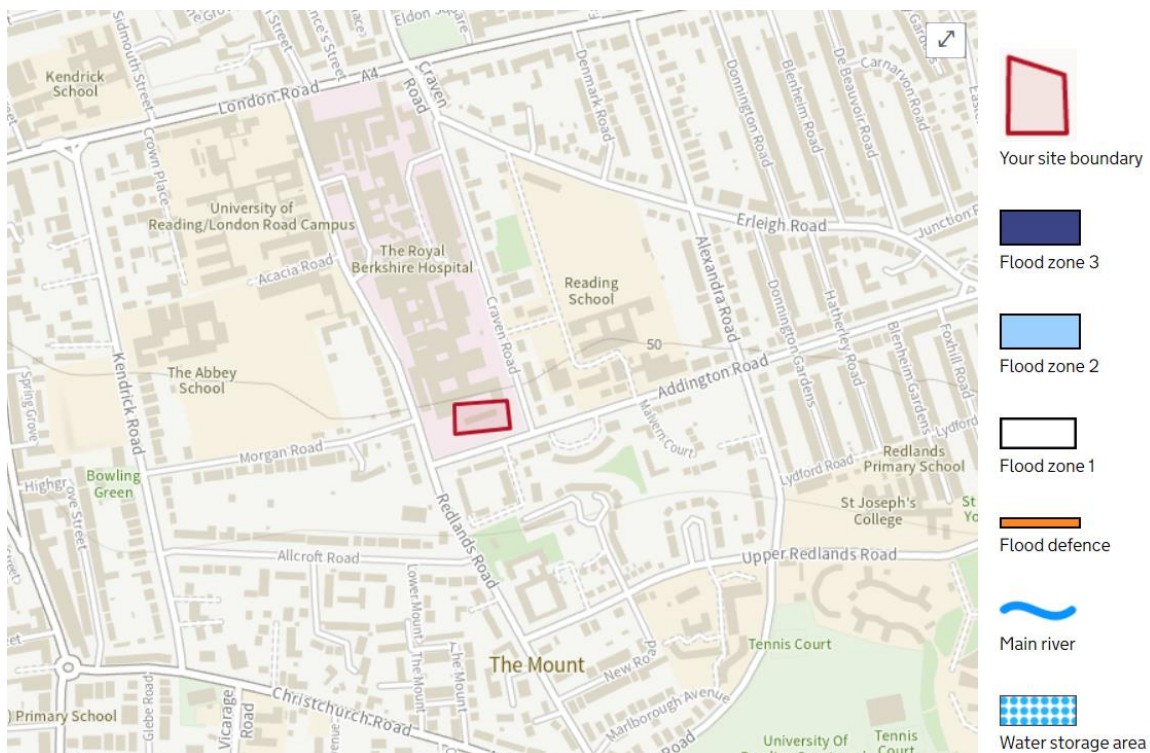


Figure 3-1: Extract from EA Flood Map for Planning

3.2 TIDAL FLOODING

Tidal flood risk is the risk arising from the sea. The EA Flood Map for Planning also includes consideration of the probability of flooding from the sea.

EA's map of flood risk from rivers and the sea (table 3-2) confirmed that the site is not at risk from flooding from these sources.

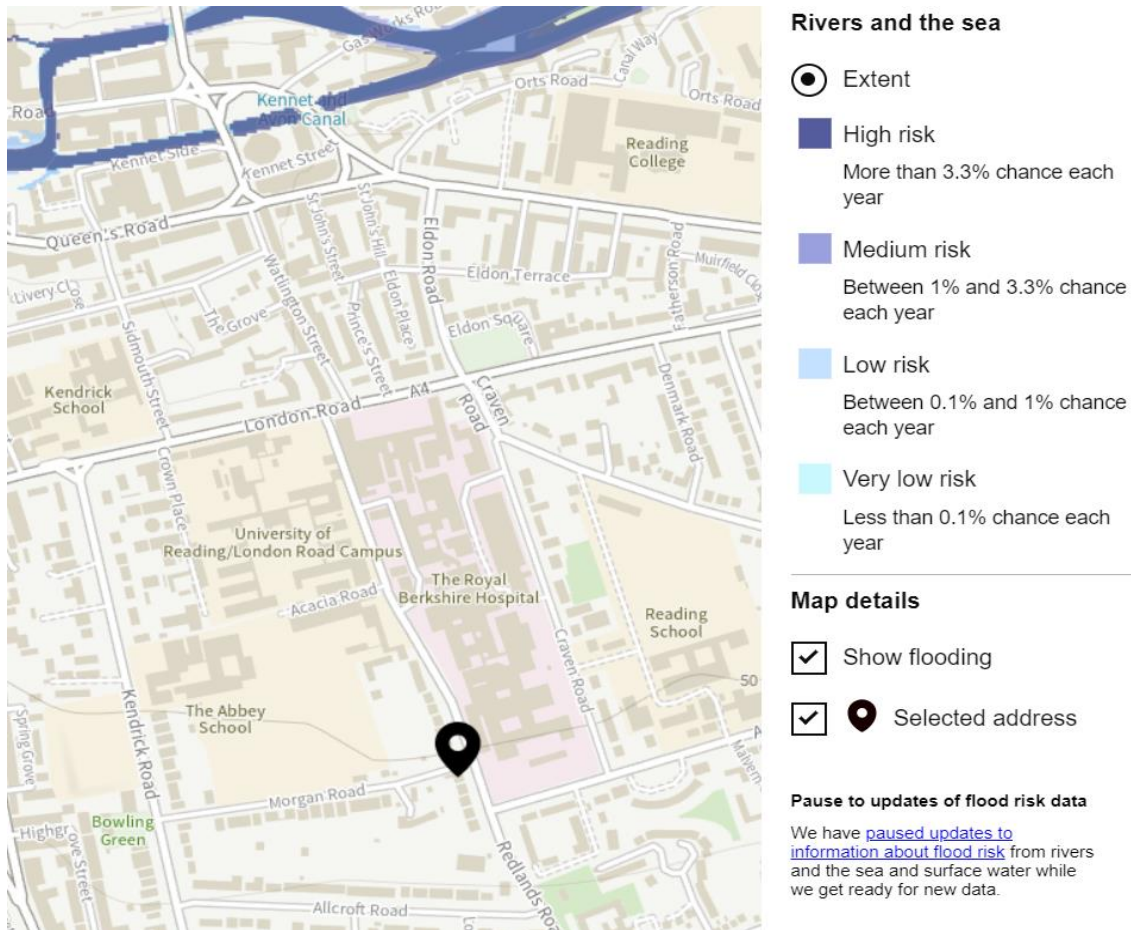


Figure 3-2: Extract from EA Flood Map for Rivers and Sea

3.3 SURFACE WATER AND OVERLAND FLOWS

Surface water flooding can occur during high intensity rainfall events as sheet runoff from fields or hard paved areas. It is particularly prevalent in areas with significant hard standing or poorly permeable soils (i.e. clay). This is because the grounds capacity for infiltration is reduced. In addition, the inability to enter local drainage systems also contributes to risk from this source. The risk of surface water flooding is divided as follows, as defined by the EA:

- Very low risk means that the annual probability of flooding is less than 1 in 1000 (<0.1%).
- Low risk means that the annual probability of flooding is between 1 in 1000 (0.1%) and 1 in 100 (1%).

- Medium risk means that the annual probability of flooding is between 1 in 100 (1%) and 1 in 30 (3.3%).
- High risk means that the annual probability of flooding of greater than 1 in 30 (3.3%).

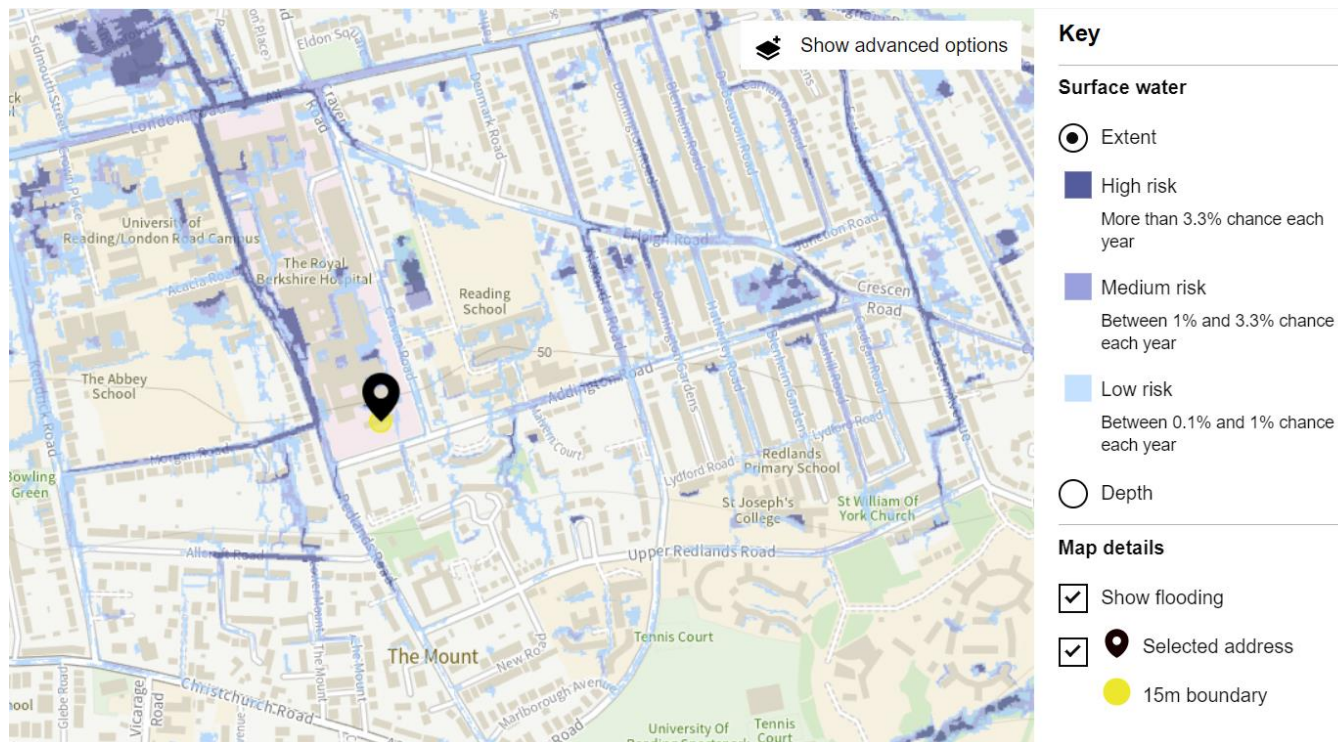


Figure 3-3: Extract from EA Surface Water Flood Map

The surface water flood map for the site is shown in Figure 3-3. The site is predominantly outside of surface water flood extents however there are some areas of localised flooding. In the north and west of the site there are areas of low risk.

Therefore, the overall risk to the site can be considered low.

3.4 GROUNDWATER FLOODING

Groundwater flooding occurs when water levels in the ground rise above the land surface. This type of flooding is most likely to occur in areas above an aquifer. The occurrence of groundwater flooding is usually local and does not generally pose a significant risk to life due to the slow rate at which the water level rises.

The Groundwater Flood Risk map in the SFRA (Map F3 in Appendix C, Reading Borough Council Strategic Flood Risk Assessment) has no record of any historical flooding incidences arising from groundwater on site.

Borehole testing on site (Appendix D) recorded groundwater encountered at approximately 8.0mbgl.

The risk to the site from groundwater can be considered low.

3.5 SEWER FLOODING

Sewer flooding occurs when intense rainfall overloads the sewer system capacity and/or when sewers cannot discharge properly to watercourses due to high water levels. Sewer flooding can also be caused when problems such as blockages, collapses or equipment failure occur in the sewerage system.

The Groundwater Flood Risk map in the SFRA (Map F1 in Appendix C, Reading Borough Council Strategic Flood Risk Assessment) does not show any incidents of internal or external sewer flooding on the site or in proximity to it.

Therefore, the risk of flooding from sewers can be considered low.

3.6 RESERVOIR FLOODING

Flooding from reservoirs occurs when a reservoir dam is overtopped or breaches due to structural failure. The consequence of such an event would be severe but the probability of a catastrophic dam failure is considered to be extremely low due to the management and maintenance required under the Reservoirs Act 1975.

The reservoir maps shows that the site does not fall within an area susceptible to reservoir flooding.

The risk of reservoir flooding is considered very low due to the low likelihood of an event.

3.7 CANAL FLOODING

Flooding from a canal occurs when the canal is overtopped or breaches due to failure.

There are no canals in proximity to the site and therefore the flood risk is considered negligible.

3.8 SUMMARY OF FLOOD RISK

The flood risk can at the site is summarised in Table 3-1.

Table 3-1: Flood Risk Summary

Source	Risk
Fluvial	Low
Tidal	Low
Surface Water	Low
Groundwater	Low
Sewer	Low
Reservoir	Low
Canals	Negligible

4.0 DEVELOPMENT PROPOSALS

4.1 PROPOSED DEVELOPMENT

The proposed development consists of demolition of existing temporary two storey Medical Block and construction of new two storey Inpatient and Outpatient Urology Building.

4.2 PLANNING POLICY AND GUIDANCE

The LLFA for the site is Reading Borough Council. The following national and local policies should be adhered to.

National Planning Policy Framework

In accordance with the NPPF a formal Flood Risk Assessment (FRA) is required in support of a planning application for development located within Flood Zones 2 and 3 and developments located in Flood Zone 1 that are greater than 1 Ha in size.

The site is in Flood Zone 1 and the site area is approximately 0.076 Ha.

Sequential and Exception Tests

One of the aims of NPPF is to steer development away from zones of high flood risk towards Flood Zone 1.

The proposed development components are classified as 'More Vulnerable' in accordance with Annex 3: Flood Risk Vulnerability Classification of the NPPF based on the proposed use as Hospitals.

The development is fully situated within the flood zone 1. In line with Table 3.2 NPPF Planning Practice Guidance and below, it is considered that the development is appropriate.

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	✗	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	✗	✗	✗	✓*

Key:

✓ Development is appropriate

✗ Development should not be permitted.

Table 4-1: Extract from NPPF NPPF Planning Practice Guidance

Strategic Flood Risk Assessment

The Local Planning Authorities (LPA), Reading Borough Council, has released Strategic Flood Risk Assessment in June 2017, and Level 2 Strategic Flood Risk Assessment in December 2017.

The FRA has been prepared taking account of information provided within the RBC SFRA and level 2 FRA.

4.3 DEVELOPMENT AND FLOOD RISK

Flood Risk to the Development

As discussed above the flood risk to the site from all sources can be considered low.

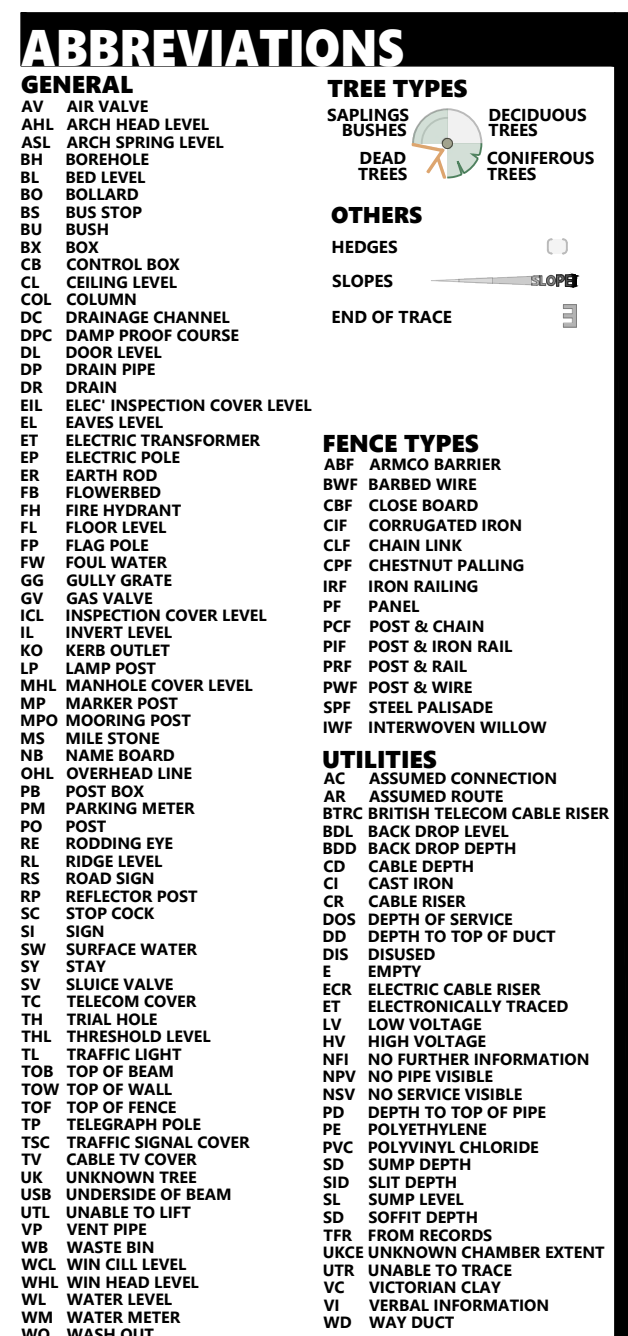
Flood Risk Arising from the Development

The proposed works will slightly reduce the permeable area by converting some of the existing landscape area into impermeable surface, including roof, walkway and a link bridge. This means that there is a requirement to manage the anticipated increase in run-off from the site as a result of the increase in impermeable area.

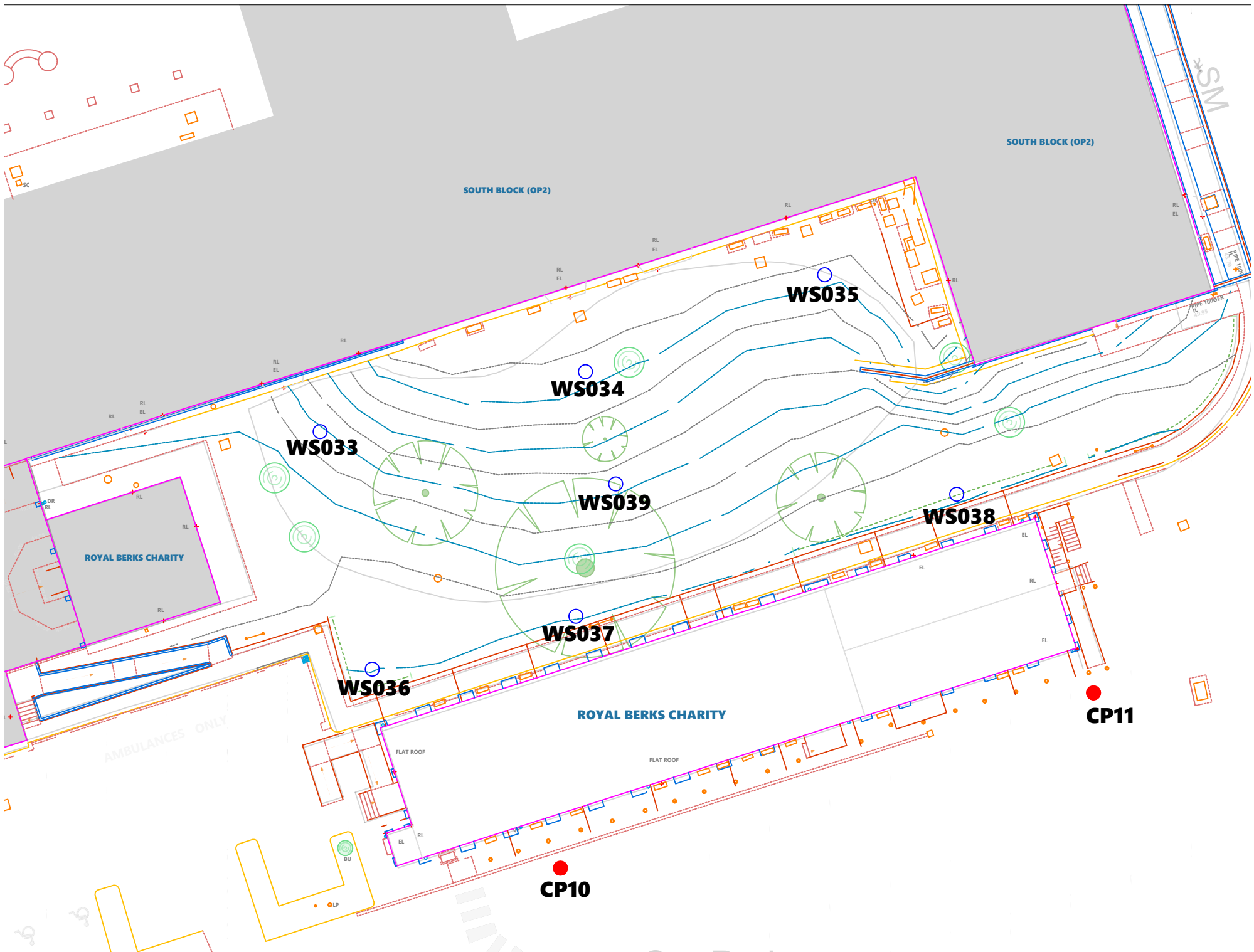
APPENDIX A – PROPOSED SITE LAYOUT

APPENDIX B – SITE TOPOGRAPHY

APPENDIX C – UTILITY SURVEY



APPENDIX D – BOREHOLE TESTING RESULTS



 TERRA FIRMA Ground Investigation Ltd							Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number CP010
Machine : Dando D150 Method : Cable Percussion		Casing Diameter 200mm cased to 10.00m 150mm cased to 18.00m		Ground Level (mOD) 51.65		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23	
		Location 472579.13 E 172544.21 N		Dates 26/10/2023-31/10/2023		Project Contractor TFGI		Sheet 1/4	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							Service Clearance Pit		
1.50-1.95	SPT N=7	1.50	DRY	1,1/2,1,2,2	50.65	1.00	Soft becoming firm brown sandy CLAY with occasional angular fine to medium flint gravel. TAPLOW GRAVEL MEMBER		
2.50-2.95	SPT N=16	1.50	DRY	1,2/3,4,5,4		(4.00)			
3.50-3.95	SPT N=12	3.00	DRY	1,3/3,4,3,2					
4.50-4.95	SPT N=7	3.00	DRY	1,1/1,1,2,3			becoming soft		
5.50-5.95	SPT N=11	4.50	DRY	1,2/2,3,3,3	46.65	5.00	Loose becoming medium dense brown slightly gravelly clayey SAND. Gravel is angular fine to medium flint. TAPLOW GRAVEL MEMBER		
						(2.20)			
7.00-7.45	SPT N=6	7.00	DRY	1,0/1,0,1,4	44.45	7.20	200mm band of soft brown gravelly slightly sandy CLAY - gravel is angular to sub-angular fine to coarse flint		
							Loose becoming very dense brown SAND. Sand is predominantly medium to coarse. TAPLOW GRAVEL MEMBER		
8.50-8.95	SPT N=8	8.50	DRY	2,2/1,2,3,2					
10.00-10.45	SPT N=50	10.00	9.35	26/10/2023:8.82m 27/10/2023:8.90m 2,6/8,12,18,12					
Remarks Vacuum excavated service clearance pit by others from GL - 1.00m. Borehole cased to 18.00m. Water added from 9.00 - 9.50m and 10.00 - 13.00m to assist boring. Groundwater was encountered at 14.00m. Standpipe installed upon completion - see separate sheet for details. DD15 - SPT Hammer Energy Ratio: 66%								Scale (approx) 1:50	Logged By CW
								Figure No. TFGI/1418/23.CP010	



Site

Royal Berkshire Hospital, London Road, Reading,
Berkshire. RG1 5AN.Borehole
Number

CP010

Machine : Dando D150

Method : Cable Percussion

Casing Diameter

200mm cased to 10.00m
150mm cased to 18.00m

Ground Level (mOD)

51.65

Client

Royal Berkshire NHS Foundation Trust

Job
Number

TFGI/1418/23

Location

472579.13 E 172544.21 N

Dates

26/10/2023-
31/10/2023

Project Contractor

TFGI

Sheet

2/4

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
11.50-11.95	SPT N=50	11.50	WA	2,4/8,10,16,16		(5.80)			
13.00-13.45	SPT N=34	13.00	WA	3,3/5,7,10,12	38.65	13.00	Very stiff grey CLAY locally slightly sandy with occasional orange oxidation marks. LAMBETH GROUP		
				Water strike(1) at 14.00m, rose to 13.86m in 20 mins.		(1.50)	becoming thinly interbedded dark grey, green and brown sandy CLAY with rare sub-angular medium flint		▼ ₁ ▽ ₁
16.00-16.45	SPT N=11	14.50	DRY	2,2/4,3,2,2 Water strike(2) at 16.10m, rose to 15.64m in 20 mins.	37.15	14.50	Recovered as: Structureless CHALK comprising uncompact cream with occasional orange staining. Locally small pockets of very soft brown silty clay noted. SEAFORD AND NEWHAVEN CHALK FORMATION		▼ ₂ ▽ ₂
17.50-17.95	SPT N=22	17.50	16.52	4,6/6,6,4,6					

Remarks

Scale
(approx)

1:50

Logged
By

CW

Figure No.

TFGI/1418/23.CP010



Machine : Dando D150 Method : Cable Percussion		Casing Diameter 200mm cased to 10.00m 150mm cased to 18.00m		Ground Level (mOD) 51.65	Client Royal Berkshire NHS Foundation Trust	Job Number TFGI/1418/23
		Location 472579.13 E 172544.21 N		Dates 26/10/2023- 31/10/2023	Project Contractor TFGI	Sheet 3/4

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
20.50-20.95	SPT N=27	18.00	16.45	4,4/3,6,9,9			CHALK becoming orangish cream silty GRAVEL and rare COBBLES - clasts are weak to moderately weak low to high density angular to sub-angular with light orange laminae - requent medium to coarse gravel sized fragments of angular flint noted		
22.00-22.45	SPT N=43	18.00	16.00	9,6/8,8,13,14		(15.95)			
25.00-25.45	SPT N=28	18.00	15.95	3,4/6,6,7,9					
26.50-26.95	SPT N=56	18.00	15.85	4,5/8,10,22,16					
28.00-28.45	SPT N=49	18.00	15.65	30/10/2023:15.65m 31/10/2023:15.45m 19,6/9,10,14,16 31/10/2023:15.90m					

Remarks	Scale (approx)	Logged By
	1:50	CW
	Figure No. TFGI/1418/23.CP010	

TFGI TERRA FIRMA Ground Investigation Ltd						Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number CP010			
Machine : Dando D150 Method : Cable Percussion		Casing Diameter 200mm cased to 10.00m 150mm cased to 18.00m			Ground Level (mOD) 51.65		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23		
		Location 472579.13 E 172544.21 N			Dates 26/10/2023-31/10/2023		Project Contractor TFGI		Sheet 4/4		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water		
30.00-30.45	SPT N=32	18.00	15.90	6,7/8,7,8,9	21.20	30.45	Complete at 30.45m				
Remarks								Scale (approx) 1:50	Logged By CW	Figure No. TFGI/1418/23.CP010	

Boring Method Cable Percussion Borehole Dando 2000	Casing Diameter 200mm to 6.00m 150mm to 14.00m	Ground Level (mOD) 44.60	Client Royal Berkshire NHS Foundation Trust	Job Number TFGI/1418/23
	Location 472405.436 E 172815.383 N	Dates 31/05/2023- 05/06/2023	Project Contractor TFGI	Sheet 1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50-1.00	B1				44.40 44.25	(0.20) (0.20) (0.15) (0.38)	MADE GROUND: Type 1 Backfill MADE GROUND: Hardcore Sub-Base comprising brick, broken concrete and flint.		
1.00-1.45 1.00-1.45	SPT(C) N=8 B2		DRY	1,1/2,2,2,2		(1.15)	MADE GROUND: Reworked brown slightly clayey slightly gravelly SAND. Gravel is fine to coarse sub-angular to sub-rounded flint, rare brick and rare ash.		
1.50-2.00	B3				43.10	1.50	Medium dense becoming dense dark to light brown to grey slightly gravelly very clayey SAND interbedded with bands of firm becoming stiff dark brown CLAY. Gravel is fine to coarse sub-angular to sub-rounded flint.		
2.00-2.45	B4			31/05/2023: DRY			TAPLOW GRAVEL MEMBER		
2.00-2.45 2.50-3.00	SPT(C) N=14 B5	2.00	DRY	01/06/2023: DRY 2,4/4,5,2,3					
3.00-3.45 3.00-3.45	SPT(C) N=27 B6	2.80	DRY	1,2/3,6,8,10		(2.80)	becoming slightly clayey gravelly SAND		
3.50-4.00	B7								
4.00-4.45 4.00-4.45	SPT(C) N=34 B8	4.00	2.50	4,6/8,8,8,10	40.30	4.30	Dense dark brown slightly clayey sandy GRAVEL. Gravel is fine to coarse sub-angular to sub-rounded flint and occasional sandstone. Rare flint cobbles noted up to 100mm diameter.		
4.50-5.00	B9						TAPLOW GRAVEL MEMBER		
5.00-5.45 5.50-5.80	SPT(C) N=42 B10	5.00	DRY	01/06/2023: DRY 02/06/2023: DRY 4,6/8,8,10,16		(1.50)			
5.90-6.00 6.00-6.45 6.00-6.45	D11 SPT N=10 D12	6.00	DRY	1,1/1,2,3,4	38.80	5.80 (0.80)	Soft to firm mottled dark brown to grey slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to well-rounded flint.		
7.00-7.45 7.00-7.45	SPT N=10 B13	6.10	DRY	1,1/2,3,2,3	38.00	6.60	Recovered as: Clean white slightly gravelly CHALK. Gravel is fine to coarse angular to sub-rounded flint and chalk lithorelics.		
							SEAFORD AND NEWHAVEN CHALK FORMATION		
8.50-8.95 8.50-8.95	SPT N=3 B14	8.50	8.70	2,2/1,0,1,1 Water strike(1) at 8.70m.					
10.00-10.45	SPT N=24	10.00	1.00	1,2/4,4,6,10					

Remarks Hand dug inspection pit from GL - 1.20m. Borehole cased to 14.00m Water was added from 3.50m - 5.80m and 6.60m - 14.50m to assist boring. Groundwater was encountered at 8.70m. Difficult to advance borehole beyond 11.00m - chiselling and bailing techniques employed to advance borehole. Standpipe installed upon completion - see separate sheet for details. SPT006 - Hammer Energy Ratio: 76.87%	Scale (approx) 1:50	Logged By CW
	Figure No. TFGI/1418/23.CP001	

 TERRA FIRMA Ground Investigation Ltd							Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number CP001
Boring Method Cable Percussion Borehole Dando 2000		Casing Diameter 200mm to 6.00m 150mm to 14.00m		Ground Level (mOD) 44.60		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23	
		Location 472405.436 E 172815.383 N		Dates 31/05/2023- 05/06/2023		Project Contractor TFGI		Sheet 2/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.00-10.45	B15					(8.17)	becoming slightly cobbly gravelly CHALK majority of chalk matrix not recovered		
11.50-11.79 11.50-11.95	SPT(C) 50/140 B16	11.00	5.50	10,8/15,35 02/06/2023:8.00m 05/06/2023:8.55m			becoming very gravelly CHALK - gravel is fine to coarse sub-angular to sub-rounded chalk lithorelics and flint large quantity of flint noted (possible flint boulder)		
13.00-13.37 13.00-13.45	SPT(C) 50/220 B17	13.00	11.10	4,10/15,16,19					
14.50-14.77	SPT(C) 100/120	14.00	9.48	11,14/45,55	29.83	14.77	Complete at 14.77m		
Remarks								Scale (approx) 1:50	Logged By CW
								Figure No. TFGI/1418/23.CP001	

 TERRA FIRMA Ground Investigation Ltd							Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number CP011
Boring Method Dando 150 Cable Percussion		Casing Diameter 200mm to 10.50m 150mm to 23.50m		Ground Level (mOD) 51.36		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23	
		Location 472611.039 E 172554.605 N		Dates 16/10/2023-20/10/2023		Project Contractor TFGI		Sheet 1/4	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.20-1.65 1.20	SPT N=0 D1	1.20	DRY	1,0/0,0,0,0	50.16	(1.20) 1.20	Service Clearance Pit Very loose becoming loose dark brown clayey SAND with rare angular fine flint gravel. TAPLOW GRAVEL MEMBER		
2.00-2.45 2.00	SPT N=10 D2	2.00	DRY	1,3/3,2,2,3		(2.30)			
2.50-3.00	B3								
3.00-3.45 3.50	SPT N=4 B4	3.00	DRY	16/10/2023:DRY 17/10/2023:DRY 2,2/1,1,1,1	47.86	3.50	Soft to firm becoming firm brown gravelly sandy CLAY. Gravel is sub-angular to rounded fine to medium flint gravel. TAPLOW GRAVEL MEMBER		
4.00-4.45 4.00	SPT N=8 D5	4.00	DRY	1,1/2,1,2,3					
5.00	D6								
6.00-6.50	B7								
6.50-6.95	SPT N=8	6.00	DRY	1,1/1,2,3,2					
7.00-7.50	B8					(7.50)			
8.00	D9								
8.50-9.00	B10						becoming loose brown gravelly clayey SAND		
9.50-9.95	SPT N=8	9.00	DRY	1,2/2,2,2,2					
Remarks Vacuum excavated service clearance pit by others from GL - 1.20m. Borehole cased to 23.50m. Water added from 10.50 - 12.00m to assist boring. Groundwater was encountered at 16.00m. Standpipe installed upon completion - see separate sheet for details. DD15 - SPT Hammer Energy Ratio: 66%								Scale (approx) 1:50	Logged By CW
								Figure No. TFGI/1418/23.CP011	

 TERRA FIRMA Ground Investigation Ltd							Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number CP011
Boring Method Dando 150 Cable Percussion		Casing Diameter 200mm to 10.50m 150mm to 23.50m		Ground Level (mOD) 51.36		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23	
		Location 472611.039 E 172554.605 N		Dates 16/10/2023- 20/10/2023		Project Contractor TFGI		Sheet 2/4	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.00-10.35	B11						becoming firm grey and orangish brown CLAY with frequent black oxidation spots		
10.50-10.95 10.50	SPT N=12 D12	10.50	DRY	1,2/2,3,4,3					
11.00-11.50	B13				40.36	11.00	Light brown SAND and GRAVEL. Gravel is angular to sub-rounded fine to coarse flint. TAPLOW GRAVEL MEMBER		
						(1.00)			
12.00-12.45 12.00-12.50	SPT(C) N=15 B14	12.00	10.50	1,2/3,3,4,5	39.36	12.00	Firm to stiff red mottled grey slightly sandy CLAY. LAMBETH GROUP		
				17/10/2023:10.82m 18/10/2023:11.31m		(1.50)			
13.00-13.50	B15								
13.50-13.95 13.50	SPT N=12 D16	13.50	DAMP	1,2/2,3,3,4	37.86	13.50	Light brown SAND. Sand is predominantly medium to coarse. LAMBETH GROUP		
14.50	D17					(2.50)			
15.00-15.45 15.00	SPT N=21 D18	15.00	DRY	2,3/5,5,5,6					▼1
16.00-16.50	B19			Water strike(1) at 16.00m, rose to 15.37m in 20 mins, not sealed. 3,4/4,5,6,7	35.36	16.00	Very stiff thinly laminated grey and orange CLAY. LAMBETH GROUP		▽1
16.00-16.45 16.50	SPT N=22 D20	16.50	DRY			(1.50)			
17.00-17.50	B21								
17.50-18.00	B22				33.86	17.50	Recovered as: Structureless CHALK comprising cream slightly sandy silty GRAVEL. Gravel is angular fine composed of chalk and occasional angular fine to coarse flint. SEAFORD AND NEWHAVEN CHALK FORMATION becoming silty - gravels absent		
18.00-18.45 18.00	SPT N=14 D23	18.00	17.90	2,3/4,3,3,4					
19.50-19.95 19.50	SPT N=21 D24	19.30	16.35	3,5/6,4,5,6					
Remarks								Scale (approx) 1:50	Logged By CW
								Figure No. TFGI/1418/23.CP011	

 TERRA FIRMA Ground Investigation Ltd							Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number CP011
Boring Method Dando 150 Cable Percussion		Casing Diameter 200mm to 10.50m 150mm to 23.50m		Ground Level (mOD) 51.36		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23	
		Location 472611.039 E 172554.605 N		Dates 16/10/2023-20/10/2023		Project Contractor TFGI		Sheet 3/4	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
21.00-21.45 21.00	SPT N=38 D25	20.50	17.10	6,3/3,5,8,22			becoming cream mottled orange slightly gravelly slightly sandy SILT - gravel is angular to sub-angular fine to coarse chalk lithorelics - chalk gravel is very weak low density cream and orange with occasional black specks		
22.50	D26			18/10/2023:17.35m					
22.50-22.95	SPT N=31	20.50	15.46	19/10/2023:15.46m 12,7/7,8,7,9					
24.00-24.45 24.00	SPT N=46 D27	20.50	15.61	8,10/9,9,11,17		(12.85)			
24.50-25.50	B28								
25.50-25.95 25.50	SPT N=31 D29	23.50	16.18	5,7/7,9,8,7					
27.00-27.45 27.00 27.00-28.50	SPT N=27 D30 B31	23.50	16.35	5,5/5,6,7,9			rare flint cobbles observed locally		
							gravels becoming absent		
28.50-28.95 28.50	SPT N=43 D32	23.50	15.82	6,7/7,8,14,14					
29.00-30.00	B33			19/10/2023:16.21m			becoming slightly gravelly		
Remarks								Scale (approx) 1:50	Logged By CW
								Figure No. TFGI/1418/23.CP011	

 TERRA FIRMA Ground Investigation Ltd							Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number CP011
Boring Method Dando 150 Cable Percussion		Casing Diameter 200mm to 10.50m 150mm to 23.50m		Ground Level (mOD) 51.36		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23	
		Location 472611.039 E 172554.605 N		Dates 16/10/2023- 20/10/2023		Project Contractor TFGI		Sheet 4/4	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
30.00-30.35 30.00	SPT 25*/50 N=33 D34	23.50	16.21	20,5/,12,9,12	21.01	30.35	Complete at 30.35m		
Remarks Scale (approx) 1:50 Logged By CW Figure No. TFGI/1418/23.CP011									

 TERRA FIRMA Ground Investigation Ltd							Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number WS033
Boring Method Dando Terrier 2002 Dynamic Sampling		Casing Diameter 143mm cased to 5.00m		Ground Level (mOD) 50.79		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23	
		Location 472566.902 E 172560.188 N		Dates 20/09/2023		Project Contractor TFGI		Sheet 1/1	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.00-1.45 1.00-2.00	SPT(C) N=13 B1		DRY	2,2/3,3,3,4	49.79	1.00	Service Clearance Pit		
2.00-2.45 2.00-3.00	SPT(C) N=11 B2	2.00	DRY	2,4/3,2,3,3		(3.24)	Medium dense orangish brown SAND and GRAVEL. Gravel is angular to rounded fine to coarse flint. Sand is fine to coarse. TAPLOW GRAVEL MEMBER		
3.00-3.45 3.00-4.00	SPT(C) N=13 B3	3.00	DRY	2,3/3,4,3,3			150mm band of orangish brown fine to coarse SAND		
4.00-4.45 4.00-4.18 4.30-4.45	SPT(C) N=34 D4 D5	4.00	DRY	2,6/7,7,8,12	46.55	4.24	240mm band of yellowish brown medium to coarse SAND becoming dense		
4.72-5.00	B6				46.07	4.72	Very stiff light brown and light grey sandy silty CLAY with rare pockets of orangish brown sand. Occasional pockets of reddish brown silt noted. TAPLOW GRAVEL MEMBER		
5.00-5.37	SPT 100/220	5.00	DRY	7,12/22,38,40	45.42	5.37	Orangish brown sandy clayey GRAVEL. Gravel is angular to rounded fine to coarse flint. Sand is fine to coarse. TAPLOW GRAVEL MEMBER		
							Complete at 5.37m		
Remarks Vacuum excavated service clearance pit by others from GL - 1.00m Borehole cased to 5.00m. Groundwater was not encountered. SPT Refused at 5.37m - position aborted by Engineer. Borehole backfilled with bentonite granules and pellets upon completion. DT1 - Hammer Energy Ratio: 62% - blow count not corrected for energy ratio.								Scale (approx) 1:50	Logged By CW
								Figure No. TFGI/1418/23.WS033	

 TERRA FIRMA Ground Investigation Ltd							Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number WS034
Boring Method Dando Terrier 2002 Dynamic Sampling		Casing Diameter 143mm cased to 6.00m		Ground Level (mOD) 46.27		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23	
		Location 472583.79 E 172581.201 N		Dates 12/09/2023- 13/09/2023		Project Contractor TFGI		Sheet 1/1	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.00-1.45 1.00-1.70	SPT(C) N=20 B1		DRY	3,4/5,6,4,5	45.27	1.00	Service Clearance Pit		
1.72-1.85 2.00-2.45 2.20-3.00	D2 SPT(C) N=9 B3	2.00	DRY	2,3/2,3,2,2			Medium dense becoming very dense orangish brown SAND and GRAVEL. Gravel is angular to rounded fine to coarse flint. Sand is fine to coarse. TAPLOW GRAVEL MEMBER		
3.00-3.45 3.00-4.00	SPT(C) N=14 B4	3.00	DRY	2,3/4,3,3,4		(4.40)	...280mm band of light brown slightly gravelly fine to coarse SAND - gravel is sub-rounded to angular flint		
4.00-4.45 4.30-5.00	SPT(C) N=10 B5	4.00	DRY	3,3/2,4,2,2					
5.00-5.45 5.00-5.20 5.40-6.00	SPT(C) N=85 D6 B7	5.00	DRY	3,6/13,13,20,39	40.87	5.40	Very dense light brown slightly gravelly fine to coarse SAND. Gravel is sub-rounded to angular fine to coarse flint. TAPLOW GRAVEL MEMBER		
6.00-6.34	SPT 100/190	6.00	DRY	12/09/2023:DRY 13/09/2023:DRY 10,17/30,32,38	39.93	(0.94) 6.34	Complete at 6.34m		
Remarks Vacuum excavated service clearance pit by others from GL - 1.00m Borehole cased to 6.00m. Groundwater was not encountered. SPT Refused at 6.34m - position aborted by Engineer. Borehole backfilled with bentonite granules and pellets upon completion. DT1 - Hammer Energy Ratio: 62% - blow count not corrected for energy ratio.								Scale (approx) 1:50	Logged By
								Figure No. TFGI/1418/23.WS034	

 TERRA FIRMA Ground Investigation Ltd							Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number WS035
Boring Method Dando Terrier 2002 Dynamic Sampling		Casing Diameter 143mm cased to 6.00m		Ground Level (mOD) 46.55		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23	
		Location 472596.713 E 172584.894 N		Dates 19/09/2023		Project Contractor TFGI		Sheet 1/1	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							Service Clearance Pit		
1.00-1.45 1.00-1.20 1.20-2.00	SPT(C) N=22 D1 B2		DRY	2,2/5,5,5,7	45.55 45.30	1.00 (0.25) 1.25	Firm to stiff dark orangish brown slightly gravelly slightly sandy CLAY. Gravel is sub angular to rounded fine to medium flint. TAPLOW GRAVEL MEMBER		
2.00-2.45 2.00-3.00	SPT(C) N=12 B3	2.00	DRY	2,3/2,3,3,4			Medium dense dark orangish brown SAND and GRAVEL. Gravel is angular to rounded fine to coarse flint. TAPLOW GRAVEL MEMBER		
3.00-3.45 3.30-4.50	SPT(C) N=9 B4	3.00	DRY	3,3/3,2,2,2		(3.85)			
4.00-4.45	SPT(C) N=9	4.00	DRY	2,3/2,3,2,2					
4.70-5.10 5.00-5.45 5.20-5.80	B5 SPT(C) N=10 B6	5.00	DRY	2,2/2,2,3,3	41.45	5.10 (0.70)	becoming dark orangish brown slightly gravelly SAND - gravel is angular to sub angular fine to medium flint		
					40.75	5.80 (0.20)	Soft to firm reddish brown very gravelly slightly sandy CLAY. Gravel is angular to rounded fine to coarse flint. TAPLOW GRAVEL MEMBER		
6.00-6.31 6.00-6.30 6.30-6.80	SPT(C) 100/155 D7 D8	6.00	DRY	7,19/35,60,5	40.55	6.00	Soft to firm becoming very stiff orange and red and light grey sandy slightly gravelly CLAY. Gravel is rounded fine to coarse of flint. LAMBETH GROUP		
6.80-7.00 7.00-7.32	D9 SPT 100/165	6.00	DRY	7,17/30,45,25	39.55	(1.00) 7.00	Very dense orange clayey SAND. Sand is fine to medium. LAMBETH GROUP becoming light yellow SAND rare rounded to sub-rounded fine to medium flint gravel noted locally		
				19/09/2023:DRY			Complete at 7.32m		
Remarks Vacuum excavated service clearance pit by others from GL - 1.00m Borehole cased to 6.00m. Groundwater was not encountered. SPT Refused at 7.32m - position aborted by Engineer. Borehole backfilled with bentonite granules and pellets upon completion. DT1 - Hammer Energy Ratio: 62% - blow count not corrected for energy ratio.								Scale (approx) 1:50	Logged By CW
								Figure No. TFGI/1418/23.WS035	

 TERRA FIRMA Ground Investigation Ltd							Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number WS036
Boring Method Dando Terrier 2002 Dynamic Sampling		Casing Diameter 143mm cased to 3.00m		Ground Level (mOD) 50.79		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23	
		Location 472566.902 E 172560.188 N		Dates 21/09/2023- 22/09/2023		Project Contractor TFGI		Sheet 1/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.00-1.45	SPT(C) N=10					(1.00)	Service Clearance Pit		
1.20-2.00	B1		DRY	2,1/2,2,3,3	49.79 49.66	(0.13)	MADE GROUND: Soft dark brown sandy gravelley CLAY. Gravel is fine to coarse flint. Sand is fine. Frequent rootlets rare red brick fragments noted.		
2.00-2.45	SPT(C) N=18	2.00	DRY	2,2/3,5,4,6			Soft to firm becoming stiff orangish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is angular to sub-rounded fine to coarse flint. Occasional black oxidation spots and rare rootlets observed. TAPLOW GRAVEL MEMBER		
2.00-3.00	B2					(3.12)			
3.00-3.45	SPT N=24	3.00	DRY	3,5/5,5,7,7			rare pockets of light brown silty fine sand noted - rootlets becoming absent		
3.00-4.00	B3								
4.00-4.45	SPT N=23	3.00	DRY	3,5/6,7,5,5	46.54	4.25	Medium dense orangish brown SAND AND GRAVEL. Gravel is angular to rounded fine to coarse flint. Sand is fine to coarse. TAPLOW GRAVEL MEMBER		
4.60-4.75	D4					(0.75)			
4.80-5.00	D5								
5.00-5.45	SPT N=16	3.00	DRY	2,2/2,2,4,8	45.79	5.00	Firm brown CLAY with frequent oxidation spots. TAPLOW GRAVEL MEMBER		
5.00-5.64	B6					(0.64)			
6.00-6.45	SPT N=15	3.00	DRY	3,3/3,3,4,5	45.15	5.64	Medium dense orangish brown SAND AND GRAVEL. Gravel is angular to rounded fine to coarse flint. Sand is fine to coarse. TAPLOW GRAVEL MEMBER		
6.30-7.00	B7								
7.00-7.45	SPT N=26	3.00	DRY	3,3/6,5,7,8		(3.16)			
7.22-8.80	B8								
8.00-8.45	SPT N=30	3.00	DRY	4,5/9,7,8,6					
8.80-9.00	D9				41.99	8.80	Firm light orangish brown mottled grey locally reddish orange slightly gravelly sandy CLAY with occasional black oxidation spots. Gravel is angular fine of flint. LAMBETH GROUP		
9.00-9.45	SPT N=35	3.00	DRY	5,6/7,9,8,11		(1.57)			
10.00-10.37	SPT 100/220			5,5/15,35,50					
Remarks Vacuum excavated service clearance pit by others from GL - 1.00m Borehole cased to 3.00m. Groundwater was not encountered. Borehole backfilled with bentonite granules and pellets upon completion. DT1 - Hammer Energy Ratio: 62% - blow count not corrected for energy ratio.								Scale (approx) 1:50	Logged By
								Figure No. TFGI/1418/23.WS036	

TFGI TERRA FIRMA Ground Investigation Ltd						Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number WS036	
Boring Method Dando Terrier 2002 Dynamic Sampling		Casing Diameter 143mm cased to 3.00m		Ground Level (mOD) 50.79		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23	
		Location 472566.902 E 172560.188 N		Dates 21/09/2023- 22/09/2023		Project Contractor TFGI		Sheet 2/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					40.42	10.37	Complete at 10.37m		
Remarks								Scale (approx)	Logged By
								1:50	
								Figure No. TFGI/1418/23.WS036	

 TERRA FIRMA Ground Investigation Ltd							Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number WS037
Boring Method Dando Terrier 2002 Dynamic Sampling		Casing Diameter 113mm cased to		Ground Level (mOD) 50.73		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23	
		Location 472590.392 E 172565.374 N		Dates 07/09/2023- 08/09/2023		Project Contractor TFGI		Sheet 1/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.00-1.45 1.00-1.60	SPT(C) N=14 B1		DRY	2,4/3,3,3,5	49.73	1.00	Service Clearance Pit		
1.60-3.00	B2						Firm becoming stiff orangish brown mottled grey sandy slightly gravelly CLAY. Gravel is angular to well-rounded fine to coarse flint. TAPLOW GRAVEL MEMBER		
2.00-2.45	SPT(C) N=15	2.00	DRY	2,3/3,4,3,5		(3.15)			
3.00-3.45 3.00-3.30 3.30-4.00	SPT(C) N=22 D3 B4	3.00	DRY	2,4/5,4,5,8					
4.00-4.45 4.00-4.15 4.15-4.80	SPT(C) N=23 D5 B6	4.00	DRY	2,3/6,5,5,7	46.58	4.15	Dense to medium dense brownish grey gravelly SAND interbedded with soft to firm orangish brown CLAY. Bedding thickness ranges from ~100mm - 450mm. TAPLOW GRAVEL MEMBER		
4.80-4.92 4.92-5.05 5.00-5.45 5.05-5.22 5.22-5.70	D7 D8 SPT(C) N=11 D9 B10	5.00	DRY	0,0/1,1,4,5			becoming slightly sandy silty CLAY - sand is fine becoming gravelly sand - gravel is angular to sub-angular fine to medium flint becoming fissured light orange CLAY - fissures are closely spaced and randomly orientated - black oxidation spots noted on fissure walls		
5.70-8.00	B11						becoming brown SAND and GRAVEL - gravel is angular to sub-rounded fine to coarse flint		
6.00-6.45	SPT(C) N=10	6.00	DRY	2,5/2,3,2,3		(4.35)			
7.00-7.45	SPT(C) N=5	7.00	DRY	2,1/2,1,1,1					
8.00-8.45	SPT(C) N=10	8.00	DRY	4,2/2,3,2,3					
8.50-9.00	B12			07/09/2023:DRY 08/09/2023:DRY	42.23	8.50	Stiff becoming very stiff red and greyish green gravelly slightly sandy CLAY. Gravel is angular to sub-rounded fine to coarse flint. LAMBETH GROUP sands and gravels become absent		
9.00-9.45 9.00-10.00	SPT(C) N=24 B13	9.00	DRY	2,3/4,6,6,8					
9.50	D14					(2.50)			
10.00-10.45	SPT(C) N=29	9.00	DRY	3,5/7,7,7,8					
Remarks Vacuum excavated service clearance pit by others from GL - 1.00m Borehole cased to 9.00m. Groundwater was not encountered. Borehole backfilled with bentonite granules and pellets upon completion. DT1 - Hammer Energy Ratio: 62% - blow count not corrected for energy ratio.								Scale (approx) 1:50	Logged By CW
								Figure No. TFGI/1418/23.WS037	

TFGI TERRA FIRMA Ground Investigation Ltd						Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number WS037	
Boring Method Dando Terrier 2002 Dynamic Sampling		Casing Diameter 113mm cased to		Ground Level (mOD) 50.73		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23	
		Location 472590.392 E 172565.374 N		Dates 07/09/2023- 08/09/2023		Project Contractor TFGI		Sheet 2/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.60-11.00	B15						becoming whitish yellow SAND		

 TERRA FIRMA Ground Investigation Ltd							Site Royal Berkshire Hospital, London Road, Reading, Berkshire. RG1 5AN.		Borehole Number WS038
Boring Method Dando Terrier 2002 Dynamic Sampling		Casing Diameter 143mm cased to 4.00m		Ground Level (mOD) 50.70		Client Royal Berkshire NHS Foundation Trust		Job Number TFGI/1418/23	
		Location 472607.606 E 172572.079 N		Dates 25/09/2023- 26/09/2023		Project Contractor TFGI		Sheet 1/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.00-1.45 1.00-1.60	SPT(C) N=22 B1		DRY	6,6/7,5,5,5	49.70	(1.00) 1.00 (0.60)	Service Clearance Pit MADE GROUND: Stiff dark brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse flint. Sand is fine. Occasional rootlets rare red brick fragments noted.		
2.00-2.45 2.00-3.00	SPT(C) N=13 B2	2.00	DRY	2,1/2,3,4,4	49.10	1.60	Firm becoming very soft orangish brown slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is angular to sub rounded fine to coarse flint. Occasional black oxidation spots and rare rootlets observed. TAPLOW GRAVEL MEMBER		
3.00-3.45 3.00-4.00	SPT(C) N=13 B3	3.00	DRY	1,2/3,2,3,5					
4.00-4.45 4.00-4.67	SPT(C) N=11 B4	4.00	DRY	2,3/2,3,3,3		(4.64)			
5.00-5.45 5.00-6.00	SPT N=11 B5	4.00	DRY	2,2/2,2,4,3			becoming slightly gravelly sandy CLAY		
6.00-6.45 6.24-7.00	SPT N=4 B6	4.00	DRY	1,1/1,1,1,1	44.46	6.24	Loose orangish brown locally clayey SAND AND GRAVEL. Gravel is angular to rounded fine to coarse flint. Sand is fine to coarse. TAPLOW GRAVEL MEMBER rootlets becoming absent		
7.00-7.45 7.40-8.00	SPT N=8 B7	4.00	DRY	1,2/2,2,2,2					
8.00-9.00 8.00-8.45	B8 SPT N=5	4.00	8.00	Water strike(1) at 8.00m. 2,3/2,1,1,1			becoming brown slightly gravelly SAND		▽1
9.00-9.45 9.00-10.00	SPT N=11 B9	4.00	9.00	2,3/3,3,3,2		(5.76)			
10.00-10.45	SPT N=8	4.00	10.00	25/09/2023:9.00m 26/09/2023:DRY 2,1/1,0,3,4			becoming brown SAND and GRAVEL		
Remarks Vacuum excavated service clearance pit by others from GL - 1.00m Borehole cased to 4.00m. Groundwater was encountered at 8.00m. Borehole backfilled with bentonite granules and pellets upon completion. DT1 - Hammer Energy Ratio: 62% - blow count not corrected for energy ratio.								Scale (approx) 1:50	Logged By CW
								Figure No. TFGI/1418/23.WS038	