

# ARC Oxford – Plot 4200

Cowley, Oxfordshire

## Land Quality Assessment

Project Ref: **13520** Report Ref: **R102** 

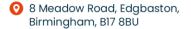
Revision 1.2 February 2024

Client

Advanced Research Clusters GP Limited (ARC)









#### **Consulting Civil and Structural Engineers**

#### **REPORT STATUS**

Client	Advanced Research Clusters GP Limited (ARC)
Project Title	ARC Oxford – Plot 4200
Report Type	Land Quality Assessment
Report Number	R102



Revision	Revised by	Approved by	Date
1.0	Marcel Richards – Assistant Engineer	Narinder Bangar - Director	06/11/2023
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1.2	Marcel Richards – Assistant Engineer	Narinder Bangar - Director	01/02/2024

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#### 2 Introduction

Baynham Meikle Partnership Limited has been commissioned on behalf of Advanced Research Clusters GP Limited (ARC) to prepare a Land Quality Assessment and Contamination Remediation Strategy submitted to Oxford City Council, to support a detailed planning application for the development of a new laboratory space with an associated car parking area to the rear of the building.

The site is located at ARC Oxford and accessed off John Smith Drive. The development area is approximately 1.283 hectares in total and the Ordnance Survey Grid reference is E454750, N203802. Site location plan is included in Appendices.

The existing site is currently developed and consists of 7 office units with associated infrastructure, which are to be demolished.

A full site investigation report is being prepared at the moment by the RSK, however, at the time of writing this report, RSK have provided preliminary geotechnical data which has been used to prepare this report. Extracts have been appended to this report.

## **3 Site History**

Having reviewed Groundsure report (provided by the RSK), it appears that the site has been undeveloped and remained as greenfield / agriculture land since 1878 until 1960 when the first historical map was published. Extracts have been appended to this report.

1987 map suggests a gravel path running along the western site boundary as well as crossing the site at southern end.

1911-1914 map indicates stone path / road running along western site boundary.

1937 map indicates that the land to the west of the site had fully been developed with new buildings and infrastructure.

1954 records show soft landscaping feature developed within the site area with a path running in the south – north direction in the middle of the development area.

1957 – 1965 map shows the site to be fully developed with a large unit (called WORKS) covering the most of proposed site development area.

1993 - 1994 map suggests that existing large unit had been demolished

2003 - new 7no. units / offices with associated infrastructure constructed. Also, main infrastructure / roundabout had also been developed to the north-east of the proposed site.

2010 map indicates that further units / offices had been constructed to the north, east and south of the proposed development area which seem to remain until today.

## 4 Topography

The topography of the existing site is such that it falls from north to south with existing levels in the north circa 72.000 AOD and in the south circa 71.000 AOD.

The existing site consists of several buildings with associated access roads, footpath, car parking and soft landscaping areas.

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A Topographical survey can be found in appendices.

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## 5 Geo environmental settings and findings

A full phase 2 intrusive ground investigation has been undertaken across the site by RSK. This was completed in Dec 2023, Report Reference: 252995 – R02 (00).

The geographic information map provided by Natural England indicates that the site is located on a superficial drift aquifer that is classified as unproductive. These are generally unable to provide useable water supplies and are unlikely to have surface water and wetland ecosystems dependant on them.

The sites soilscape is described as a freely draining slightly acid loamy soils. BGS Maps identifies the bedrock geology as Beckley Sand member – Sandstone (Secondary A bedrock).

Soakaway Infiltration testing was undertaken at the site as part of the investigation and given that the proposed site is located within the presence of a Beckley Sand and Sandstone strata the investigation work has concluded that some infiltration into the Beckley Sand Member will be possible.

A summary of the general ground investigation findings is included below:

Made Ground 0.05m to 2.50m (typically comprised of tarmacadam, concrete blocks, sandy gravel

and/or clayey sand with glass, clinker and plastic)

Sand 0.70m to 5.50m (typically comprised of Orangish brown and brown mottled grey

clayey fine to medium SAND)

Sandstone 4.50m to 15.00m (typically comprised of Medium strong orangish brown mottled grey

and brown distinctly weathered to partially unweathered fine to medium grained

SANDSTONE with fossils)

The site has been confirmed as not being in a Radon affected area (less than 1% of homes are estimated to be at or above the Action Level). Therefore, no radon protective measures are deemed to be necessary in the construction.

This site is not indicated to be in an area of historic underground coal or other mining.

Key maps have been appended to this report.

## 6 Hydrogeology and Groundwater Vulnerability

Groundwater Vulnerability Map produced by the Environment Agency indicates that the site is in a High Aquifer Zone. Magic maps identifies the Superficial Drift as an unproductive Aquifer.

Groundwater and surface water sampling was undertaken at the site as part of the investigation works.

Ground water was noted as being encountered within the boreholes. The investigation has concluded that the risk that the limited ground water contamination at the site does not pose as a risk to the underlying groundwater aquifer.

The available data collected by RSK through their intrusive investigations suggest that the site is underlain by varying depths of made ground and dark brown clayey material. Depths of the various strata's are depicted within the table included in the appendices.

According to Groundsure report (ref. no. GS-CBI-3EI-6YT-7WQ, carried out in Oct 2023) there has been no record of surface water abstraction licenses within 2000m of the site.

Historic records of the site show that the proposed area is not within groundwater source protection zone, please see BMP Flood Risk Assessment (REF: FRA / 13520) which gives a full breakdown of hydrogeology and groundwater vulnerability of the development.

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The provided borehole logs (RSK data) have confirmed that the groundwater strikes were encountered during drilling / excavation within exploratory locations, depths varied between 7.20 - 8.30m bgl.

## 7 Flood Risk and Flood Mapping

According to the Envirocheck Report and Environment Agency flood map information, the site is not at risk from flooding from rivers and sea, therefore is categorized as being in flood zone 1.

Also, the site is not at risk of flooding from reservoirs or surface water.

Sea (Tidal) - The site is not located in the vicinity of the coast and is therefore not at risk of sea (tidal) flooding.

Surface Water Flooding (Pluvial Flooding) - the site is in a very low to medium flood risk area meaning that each year, this area has a chance of flooding of 0.1% to 3.3%. This takes into account the effect of any flood defences in the area.

## 8 Site Sensitivity and Soil Chemistry

The new development site does not appear to be within impact zone for a site of Special Scientific Interest (SSSI).

The site investigation soil sampling works confirm that none of the samples displayed hazardous properties when analysed. As such any waste material from the site ground works operation should classified as non-hazardous.

The sampling test results did conclude that linkages to organic contamination are likely to exists and therefore water supply pipes should be upgraded to PVC pipes. Therefore, at this stage we should make allowances for barrier water supply pipes.

Asbestos fibres were encountered within two isolated sample locations. This was deemed to not present a risk to future users of the site and a recommendation of suitable protective measure to be adopted for future operations.

No visual olfactory contamination at the site was observed.

Groundwater monitoring was undertaken at the site. The results conclude that two GAC exceedances for nickel, zinc and fluoranthene in one location were noted.

The concentration of the metal contaminations within the soils are considered to be at low levels such that contamination linkages to the underlying aquifer in the dissolved phase are confirmed as incomplete.

The fluoranthene exceedance was noted as not being significant.

Ground gas monitoring has been undertaken at the site. The site has been classified as CS1 with no gas protection measure considered necessary.

Groundsure report confirmed that the site area had previously been used for industrial purposes, there are records of historical tanks, garages and petrol stations being present in close vicinity of the site development area -0 - 500m. as well as therefore, further contamination testing is yet to be provided.

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The Grounsure report has established the following potential for ground stability hazards on site.

•	Collapsible Ground Stability Hazards	Very Low
•	Compressible Ground Stability Hazards	Negligible
•	Ground Dissolution of Soluble Rocks	Negligible
•	Landslides	Very Low
•	Running Sand	Very Low
•	Shrink/ swell Clay	Very Low

The Envirocheck report has also identified that there might be a risk of elevated concentrations of sulphates to be present in the natural London Clay Soil and that this could present a risk to new buried concrete structures, the confirmed concentration listed below:

- Estimated Soil Chemistry Arsenic 15mg/kg
- Estimated Soil Chemistry Cadmium <1.8mg/kg</li>
- Estimated Soil Chemistry Chromium 60-90mg/kg
- Estimated Soil Chemistry Lead <100mg/kg</li>
- Estimated Soil Chemistry Nickel 15-30mg/kg

Envirocheck Report extracts have been appended to this report.

### 9 Remediation of Potential Contamination

Given the current use of the site it is unlikely that any significant contamination will be found over the site.

The recent investigation works has confirmed that no evidence of significant contamination has been discovered on site that is likely to present a risk to the future site user (including the build /demo stage).

As such no remediation measures are deemed necessary for the new development.

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## 10 Recommendations / Conclusions

The site has previously been developed and consists of 7no. units / offices which are to be demolished to allow construction of a new unit – laboratory space with associated access road, car parking and soft landscaping areas.

The proposed site development is predominantly flat with approx. fall from north to south at approx. 1 in 200.

The site is not at risk of flooding from rivers or the sea.

The site is not located in a Radon affected area.

This site is not indicated to be in an area of historic underground coal or other mining.

Groundwater depth has been confirmed to be min 7.20m bgl.

Groundsure report have identified the proposed site development being a potential risk to the groundwater vulnerability area - areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.

Therefore, if discharge of surface water is confirmed to be via infiltration techniques then protection measures are to be considered such as introduction of clean stone capping, with geotextile marker layers to the porous sub-base, etc, in order to allow discharge of treated surface water into the ground.

Unidentified localised areas of contamination may exist at the Site and an appropriate 'hotspot' protocol should be in place for ground workers to act upon should such contamination be identified during the construction process.

Due to site history and previous site uses it is likely that there will be underground obstructions / foundations present on site. Therefore, trial trenches may be required to further investigate the area of a former factory works building.

Any obstructions noted are to be removed to facilitate the ground works operation.

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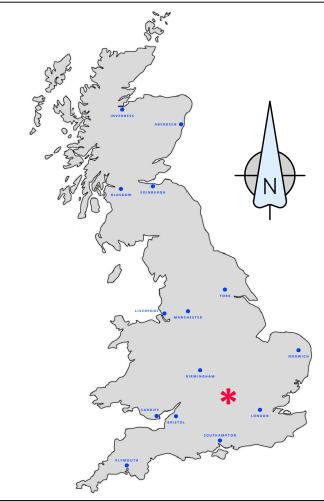
Project No: 13520 / Date: 01 February 2024 / Revision: 1.2

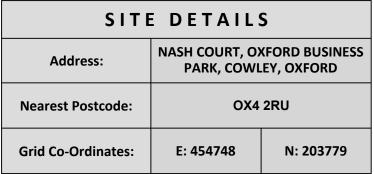
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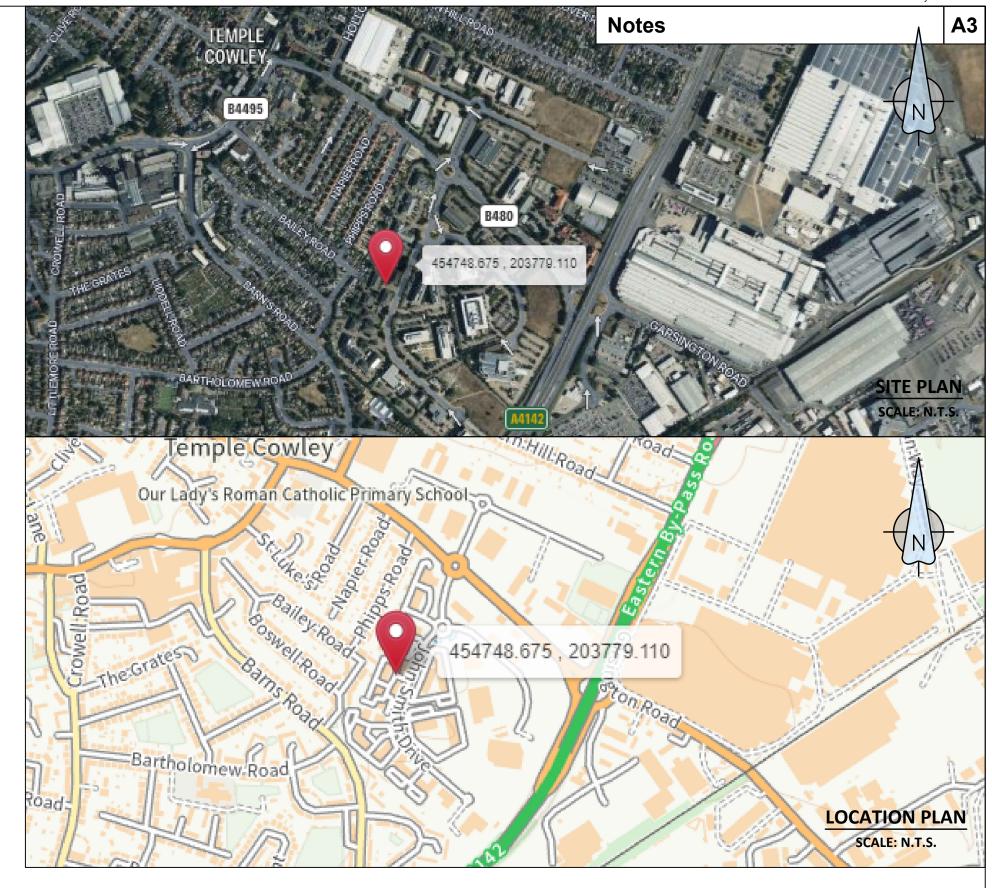


## **Appendices**

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Project Title

NASH COURT REDEVELOPMENT

BM Ref Scale @ A3 Drawn by Checked by Project Eng 13520 1:— M.R. J.H. J.H.



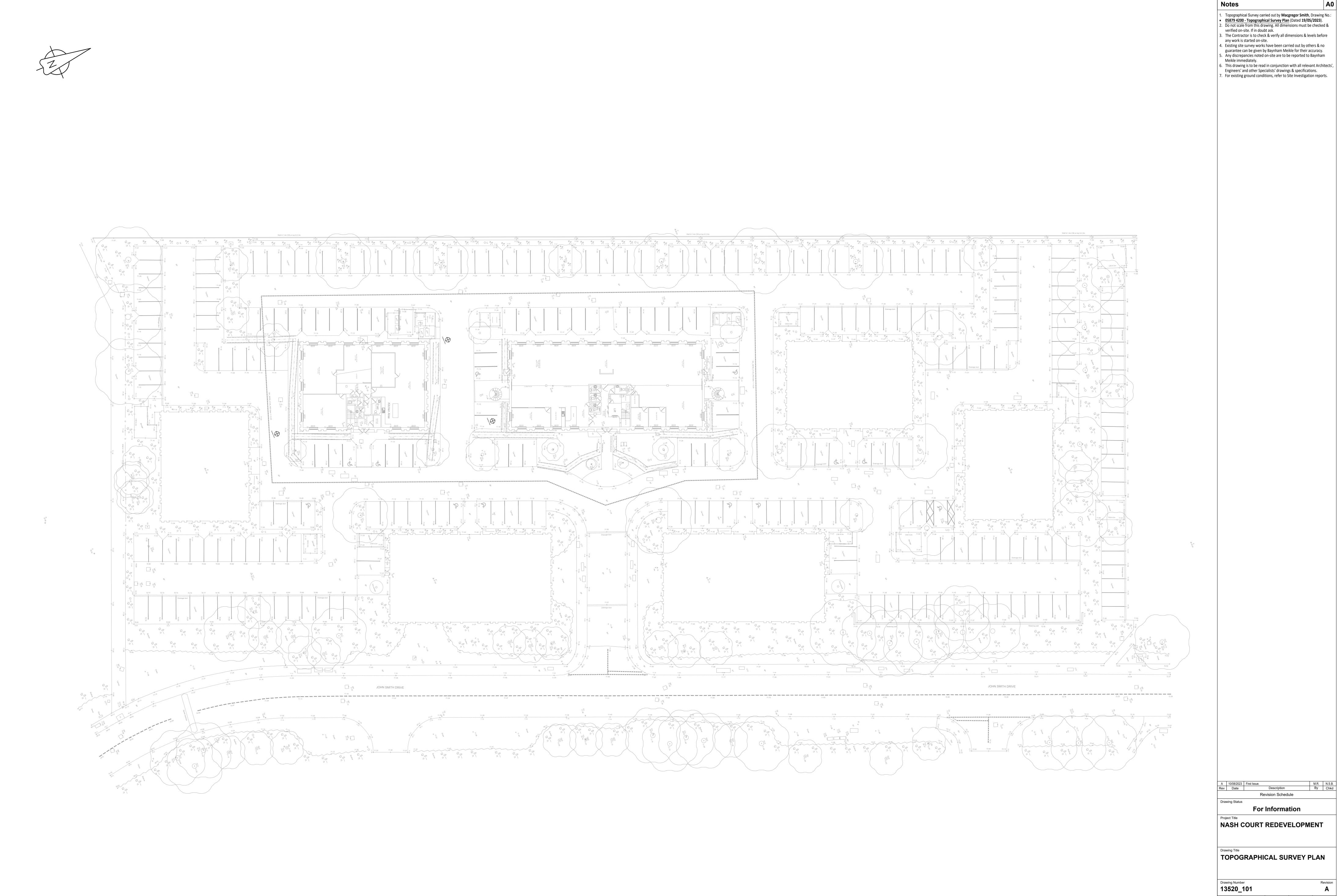
## For Information



Drawing Status

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Α	01/08/2023	First Issue.	M.R.	J.H.
Rev	Date	Description	Ву	Chkd
		Revision Schedule		



0m 0m 0m 0m 0m 0m 0m 0m 0m

0 mm 10 mm 20 mm 30 mm 40 mm 50 mm 60 mm 70 mm 80 mm 90 mm 100 mm

CHECK: For the plan to be in scale, the above scale bar must measure correct, i.e. 100mm when printed.

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BM Ref Scale @ A0 Drawn by Checked by Project Eng 13520 1:200 M.R. J.H. N.S.B. BAYNHAM

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### **BOREHOLE LOG**

Depth (m)	Ref:		t Oxford	Start:			• • •		u . u u						В
	8	5299			18.	10.23	Grou	nd Level:		ed Resea National Gri			Sheet:		
	8		15			10.23		71.73				N:203747.9		1	of
		Sample	s & Testing	Mecha	nical	_	<u> </u>						1		
-	(m) No Type Result			TCR SCR RQD (%)	g If (mm	Backfill & Instru-	Water			Descri	ption of S	Strata			Denth (m)
								Asphalt (MADE GROUN Grey and brown and brick		angular to sub-ro	unded fine to	o coarse GRAVEL of lir	mestone, cond	rete,	-
0.70 - 0.70	1	ES PID	0.0ppm					(MADE GROUN	D) and grey m tic. Gravel is	nottled brown and s angular to sub-ro	dark grey cla	ayey fine to coarse SAI to coarse brick, concre	ND with glass, te, sandstone,	and	₽°.
1.20-1.65	1	SPT	N=14					(MADE GROUN	D)						(1.
- 1.50 - 1.50	2	ES PID	0.0ppm												Ė
2.00-2.45	2	SPT	N=9					0 11				- CAND			<u></u>
2.40 - 2.40	3	ES PID	0.0ppm					(WEATHERED I	and brown BECKLEY	mottled grey clay SAND MEMBER)	ey fine to me	edium SAND.			
3.00-3.45 3.00-4.00	3 4	SPT B	N=16												(1.
4.00-5.50 - 4.00-4.24	4	SPT	N:50 for 90mm	1				Assumed Zone Fracture set		s (AZCL)					4
				6 0 0	NI NI NI										(1
- 5.50-7.00 - 5.50-5.85	5	SPT	N:50 for 200mm	89 47 17	NI 100 170			unweathered fin (BECKLEY SAN Fracture set Fractures are do	e to mediur ID MEMBEI t 2 osely space	n grained SANDS ₹)	TONE with f	) degrees with tight to d		ely	5.
7.00-8.50 - 7.00-7.23	6	SPT	N:50 for 115mm	54 26 14	NI 80 100			grained SANDS' (BECKLEY SAN Fracture set Fractures are ve	TONE with ID MEMBEI t 3 rry closely to	bivalve fossils. R)	lanar rough	partially unweathered fi dipping 0 to 5 degrees apetures.		artly	6.
8.50-10.00 8.50-8.72	7	SPT	N:50 for 135mm	77 23 13	NI NI 160 NI NI 150		<b>1</b>	(WHEATLEY LIN Fracture set Fractures are ve	MESTONE t 4 ery closely to	MEMBER)	lanar rough	d light grey unweathers dipping 0 to 5 degrees res.			8.
	В	oring P	rogress and W	ater Obs	ervati	ons						D 1			_
Date	Date   Time       Diameter						Wate Depth (	m) 1. Locatio 2. Ground	lwater enco	with GPR prior to untered at 8.30m	breaking gro	Remarks  ound. No services enco with 9.00m plain pipe a		ted.	
Method				Plan				A	All dimens	sions in metre	s Logged	Scale:	1:50 Checked		

	Boring F	rogress and	Water Obs	ervations				C-	norol	Remarks		
Date	Time	Boreho <b>l</b> e	Casing	Borehole Diameter	Water							
Date	111110	Depth (m)	Depth (m)	(mm)	Depth (m)	1 Locatio	Location scanned with GPR prior to breaking ground. No services encountered.					
						2. Ground	dwater encou	ntered at 8.30m	bgl.	vith 9.00m plain pipe		
						ļ ,	All dimensi	ons in metre	s	Scale:	1:50	
Method	Dete	nı Corod	Plan		echie GEC	205	Drilled By:	Delik	Logged	PMoore	Checked By:	AGS



### **BOREHOLE LOG**

Contract:							Client:		Borehole:			
Nasi	h C	our	t Oxford	Busi	ness P	ark	Advano	ed Research Clusters			BH	01
Contract F	Ref:			Start:	18.10.2	3 Gro	ound Level:	National Grid Co-ordinate:	Sheet:			
252995				End:	18.10.2	3	71.73	E:454724.2 N:203747.9	2	2 ,	of	2
Depth (m)				Mecha Lo TCR SCR RQD (%)		mentation Water		Description of Strata			Depth (m) (Thickness)	Legend
							Medium strong rarely stror grained SANDSTONE with (BECKLEY SAND MEMBE		ered fine to mediun	n		

Medium strong rarely strong dark grey distinctly weathered to partially unweathered fine to medium grained SANDSTONE.  Medium strong rarely strong dark grey distinctly weathered to partially unweathered fine to medium grained SANDSTONE.  Fractures are closely spaced planar rough dipping 0 to 10 degrees with tight to open clean rarely infilled with dark grey sand and gravel apetures.(stratum copied from 8.50m from previous sheet)  11.50-13.00  11.50-13.00  9 SPT N:45 for 145mm  Weak to moderately weak dark grey distinctly weathered fine to medium grained SANDSTONE.  (BECKLEY SAND MEMBER)  Weak to moderately weak dark grey distinctly weathered fine to medium grained SANDSTONE.  (BECKLEY SAND MEMBER)  Fractures are dosely spaced planar rough dipping 0 to 10 degrees with very tight to tight infilled with dark grey sand apetures.	(m)	No	Туре	Results	SCR RQD (%)	If (mm	Back Inst ment	Wa	Description of Strata	Depth (Thick	Lege
11.50-13.00 11.50-11.73  9 SPT N:45 for 145mm  77 38 18  18  Week to moderately weak dark grey distinctly weathered fine to medium grained SANDSTONE. (BECKLEY SAND MEMBER) Fracture set 6 Fractures are dosely spaced planar rough dipping 0 to 10 degrees with very tight to tight infilled with dark grey sand apetures. 13.00-14.50	10.00-11.50	8	SPT	N:50 for 135mm	777 233 133	N			grained SANDSTONE with bivatve fossits.  (BECKLEY SAND MEMBER)  Fracture set 5  Fractures et obselv spaced planar rough dipping 0 to 10 degrees with tight to open clean rarely	(3.90)	
Weak to moderately weak dark grey distinctly weathered fine to medium grained SANDSTONE.    12,40	11.50-13.00	9	SPT	N:45 for 145mm	77		H::H::				
13.00-13.35 10 SPT N:50 for 200mm	12.50	5	D		38 18	N			(BECKLEY SAND MEMBER) Fracture set 6 Fractures are closely spaced planar rough dipping 0 to 10 degrees with very tight to tight infilled	(0.60)	
14.50-15.00 14.50-15.29 12 SPT N:50 for 140mm    A	13.00-14.50 13.00-13.35	10	SPT	N:50 for 200mm					Medium strong rarely strong dark grey distinctly weathered to partially unweathered fine to medium grained SANDSTONE with browler fossils, (BECKLEY SAND MEMBER) Fracture set 7	13.00	
14.50-14.85 11 SPT N:50 for 195mm 60 14.50-14.85 11 SPT N:50 for 140mm	13.64-13.85	6	С		67 23 19	N			infilled with dark grey sand apetures.	(2.44)	)
15,00-15,29 12 SPT N:50 for 140mm Borehole terminated at 15,44m bgl.	14.50-15.00 14.50-14.85	11	SPT	N:50 for 195mm	60 14						
Borenae terminateo at 15,44m bgi.	15.00-15.29	12	SPT	N:50 for 140mm						15.44	
	98 L 13.00-13.35 13.64-13.85 13.64-13.85 13.64-13.85 14.50-14.85 14.50-14.85 14.50-15.00								Borende terminated at 15.44m bgl.		

	Boring P	rogress and	Water Obs	ervations				Co	امدما	Damarka		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)			Ge	nerai	Remarks		
				()								
							All dimensi	ons in metre	S	Scale:	1:50	
Method	Peter	v Cored	Plan		echio GEO	205	Drilled By:	DSIIK	Logged By:	PMoore	Checked By:	\C\$

## **RSK**GEOSCIENCES

GINT LIBRARY V10 01.GLB LINVersion: V8 07 001 Phytersion: V8 07 | Log BOREHOLE LOG - AAP | 252855-NASH COURT GPL - V10 01. RSK Environment Ltd, Abbey Park, Humber Road, Coventry, CV3 4A0. Tel. 02476 505600, Fax: 02476 501417, Web: www.rsk.co.uk. | 04/12/23 - 12.36 | RM8 |

#### **BOREHOLE LOG**

Contract:								Client:		Borehole:						
Nas	h (	Cour	t Oxford	Busir	nes	s Pa	rk		nced Research Clusters		вн	02				
Contract I	Ref:			Start:	17.1	0.23	Gro	und Level:	National Grid Co-ordinate:	Sheet:						
	2	5299	5	End:	17.1	0.23		71.26	E:454740.9 N:203778.3	1	of	2				
Depth			es & Testing	Mechar Log TCR SCR RQD	nical	Backfill & Instru- mentation	Water		Description of Strata							
(m)	No	Туре	Results	RQD (%)	(mm)		^	Turf over dark brown an	d brown slightly clayey fine to medium SAND with roots		Depth (m) (Thickness)	Legend				
								(TOPSOIL)								
-0.90 -0.90 -1.20-1.65 -1.20-3.00	1 1 2	ES PID SPT B	0.0ppm N=7					Brown and light brown s (WEATHERED BECKLE	slightly clayey fine to coarse SAND. EY SAND MEMBER)		0.70					
2.00-2.45	2	SPT	N=11								(3.00)					
- 3.00-3.45 - 3.00-3.70	3	SPT B	N=21													
3,70-3,74	4	SPT	N:50 for 40mm					AZCL			3.70-	AZCL				
4.50-6.00	4	D		67 15 15				grained SANDSTONE w (BECKLEY SAND MEM Fracture set 1	IBER) vaced planar rough dipping 0 to 10 degrees with tight to		4.50					
- 6.00-7.50 - 6.00-6.45	5	SPT	N=50	83 46 15	NI NI 120		<b>+</b>				(2.70)					
7.50-9.00 - 7.50-7.87	6	SPT	N:50 for 220mm	80	NI NI 100		*	grained SANDSTONE (BECKLEY SAND MEM Fracture set 2 Fractures are dosely sp blueish grey apetures. Grey mottled light grey	acced planar rough dipping 0 to 10 degrees with tight de wery strong to extremely strong unweathered LIMESTON rely moderately weak fine grained sandstone.	an stained dark	7.20- (0.75) -7.95-					
8.65-8.90	5	С		52 48	NI 200 230			Fracture set 3	medium spaced planar rough dipping 0 to 10 degrees v t blueish grey apetures. m 7.90m to 8.00m bgl	vith tight to partly	(1.00)					

	Boring P	rogress and	Water Obs					Go	noral	Remarks		
Date	Time	Borehole	Casing	Borehole Diameter	Water			Ge	Herai	Remaiks		
				Depth (m)	2. Ground	iwater encoun	tered at 7.20m	bgl.	und. No services enco			
						P	All dimension	ons in metre	s	Scale:	1:50	
Method Used:	Rota	ry Cored	Plan Used		cchio GEC	205	Drilled By:	DSUK	Logged By:	RMoore	Checked By:	AGS



Contract:

# BOREHOLE LOG Borehole:

	_						Client:		Dorenole.		
h (	Cour	t Oxford								BH	102
Ref:			Start:	17.1	0.23	Grour		National Grid Co-ordinate:	Sheet:		
2	<b>529</b> 9	5	1				71.26	E:454740.9 N:203778.3	2	of	2
			TCR SCR	nnical g	ickfill & Istru- intation	Vater		Description of Strata		pth (m)	
No	Туре	Results	RQD (%)	(mm)	ne _ ne	>	D-1		ad Baramalarad	aE	
6	SPT D	N:50 for 180mm	57 23 20			<b>*</b>	SANDSTONE. (BECKLEY SAND MEMBEF Fracture set 4 Fractures are closely space moderately wide clean stain apetures (stratum copied fro	R) d planar rough dipping 0 to 15 degrees with tight to p ted dark grey, occasionally infilled with dark grey san	artly open rarely		
8	SPT	N:50 for 161mm	57 13 0	NI NI 180						(4.30	)
7	n									ŧ	:
9	SPT	N:50 for 210mm	+							ŧ	
8	С		77 42 29	160			Grev mottled liaht arev verv	strong to extremely strong unweathered LIMESTONE	<u> </u>	13.2	
10	SPT	N:50 for 295mm	X	160			(WHEATLEY LIMESTONE II Fracture set 5 Fractures are closely space	MEMBER) d planar rough dipping 0 to 5 degrees with tight infille		13.4	1
9	D		50	NI NI			Dark grey mottled brown me (BECKLEY SAND MEMBEF Fracture set 6	edium strong partially unweathered fine grained SAN $ eals$		1	
11	SPT	N:50 for 200mm	, , , , , , , , , , , , , , , , , , ,	110			Fractures are closely space with dark grey sand and fine	d planar rough dipping 0 to 10 degrees with tight to p gravel apetures.	artly open infilled	(2.01	)
							Borehole terminated at 15.4	2m bgl.		15.42	2
	Ref: 2 S No 7 6 8 8 10 9	Ref:	Ref:  252995  Samples & Testing  No Type Results  7 SPT N:50 for 180mm  6 D  8 SPT N:50 for 161mm  7 D  9 SPT N:50 for 210mm  8 C  10 SPT N:50 for 295mm  9 D	Start:   252995   End:   End:	No   Type   Results   Start:   17.1	Start: 17.10.23   252995   End: 17.10.23   End: 17.10.23   Samples & Testing   Mechanical   Sort   Sort   Mechanical   Sort   Mechanical   Sort   Mechanical   Sort   Mechanical   Mechan	Samples & Testing	Start: 17.10.23   Ground Level:	Ref: Start: 17.10.23 Ground Level: National Grid Co-ordinate: E:454740.9 N:203778.3    Samples & Testing	Ref: Start: 17.10.23   Ground Level: National Grid Co-ordinate: Sheet: 252995   End: 17.10.23   Ground Level: E:454740.9 N:203778.3   2    Samples & Testing	Ref. Start: 17.10.23 Ground Level: National Grid Co-ordinate: Sheet: 252995 End: 17.10.23 T1.26 E:454740.9 N:203778.3 2 of Samples & Testing Start Sta

Client:

	Boring F	rogress and	Water Obs	ervations				0-		Dl		
Date	Time	Borehole	Casing	Borehole Diameter	Water			Ge	nerai	Remarks		
		Depth (m)	Depth (m)	(mm)	Depth (m)							
										1		
							All dimensi	ons in metre	S	Scale:	1:50	
Method			Plan	t			Drilled		Logged		Checked	
Used:	Rota	ry Cored	Use	d: Coma	cchio GEC	205	Ву:	DSUK	By:	RMoore	Ву:	AGS

GINT LIBRARY V10 01.GLB LUVersion: v8 07 001 Phytersion: v8 07 Ltog BOREHOLE LOG - A4P | 252895-NASH COURT.GPL -v10 01. RSK Environment Ltd, Abbey Park, Humber Road, Covertry, CV3 4AQ. Tet. 02476 505600, Fax. 02476 501417, Web: www.rsk.co.uk. | 04/12/23 - 12.36 | RM8 |

#### **BOREHOLE LOG**

									20112			_
Contract:		252995 End: 1						Client:		Borehole:		
Nas	h (	Cour	t Oxford	Busir	nes	s Pa	rk	Advance	ed Research Clusters		BH	03
Contract F	Ref:			Start:	16.1	0.23	Gro	und Level:	National Grid Co-ordinate:	Sheet:		
	2	5299	5	End:	16.1	0.23		72.90	E:454784.1 N:203826.9	1	of	2
	-			Mechar						-		
Depth (m)				TCR SCR RQD	If (mm)	Backfill & Instru- mentation	Water		Description of Strata		Depth (m) (Thickness)	Legend
-	T			(76)	(,			Block paving			0.05	
								(MADE GRÖUND) Light brown slightly gravelly concrete, brick, limestone al (MADE GROUND)	fine to coarse SAND. Gravel is angular to sub-round nd rare sandstone.	ed fine to coarse	0.25	
								Concrete and brick			' E	$\bowtie$
-								(MADE GROUND)			ļ.	$\bowtie$
											F	$\bowtie$
[											(2.25)	₩
											ŀ	$\bowtie$
											ļ	$\bowtie$
-											F	$\bowtie$
											E	$\bowtie$
2.50-2.95	1	SPT	N=9					Orangish brown and brown	nottled grey and light grey slightly clayey fine to med	lium SAND.	2.50	$\cong$
- 2.50-3.50	1	В						(WEATHERED BECKLEY S	AND MEMBER)		ŧ	-
-											F	-
[											E	[-]
	١.	oper									(2.00)	$\lceil -  floor$
- 3.50-3.95 - 3.50-4.50	2	SPT B	N=12								ŧ	$\lceil - \rceil$
E											Ē	[-]
											ŧ	$\lceil -  floor$
											ţ	$\lceil - \rceil$
4.50-6.00 4.50-4.79	3	SPT	N:50 for 205mm	4				Medium strong orangish bro grained SANDSTONE with f	wn and brown mottled grey partially unweathered fir	e to medium	4.50	Ē::::
- 1100 1110	ľ	0	14.00 IOI EUOIIIII					(BECKLEY SAND MEMBER	))		E	::::
-								Fracture set 1. Fractures are closely to med	lium spaced planar rough dipping 0 to 10 degrees w	th partly open to	ŀ	::::
	L	_		64 48				gravel apetures.	ed orangish brown, rarely infilled with orangish brow	n mottled grey	ŧ	::::
- 5.33-5.62	3	С		28		*.*H.*.		Grey from 5.33m to 5.63	2m bgl.		E	::::
											E	::::
- 00 750	1			<u> </u>	1						Ė	::::
- 6.00-7.50 - 6.00-6.37	4	SPT	N:50 for 220mm	Ī	NI						Ė.,	::::
E					100						(3.70)	::::
				64	200						ŀ	::::
				48 28							ŧ	
-				L			1				F	::::
[							1				E	
7.50-9.00				<del>                                     </del>	ł		=				ŧ	::::
- 7.50-7.68 -	5	SPT	N:50 for 85mm								ŧ	::::
F	1				1						Ė	::::
[				87 58	-			Strong to very strong arev m	ottled light grey unweathered LIMESTONE with fost	ils.	8.20	
ŧ	1			33	NI			(WHEATLEY LIMESTONE II	MEMBER)		ŧ	$\Box$
8.65-8.76	4	С			120 240			Fractures are closely to med tight to partly open clean ap	lium spaced planar rough rarely stepped dipping 0 to	5 degrees with	ŧ	Ħ
E	1			↓							(1.49)	Ħ

	Boring P	rogress and	Water Obs					Go	noral	Remarks		
Date	Time	Boreho <b>l</b> e	Casing	Borehole Diameter	Water			Ge	Herai	Remaiks		
Buto					Depth (m)	2. Ground	iwater encoun	tered at 7.50m	bgl.	und. No services enco		
						/	All dimension	ons in metre	s	Scale:	1:50	
Method Used:	Rota	y Cored	Plan Used		cchio GEC	205	Drilled By:	DSUK	Logged By:	RMoore	Checked By:	AGS



### **BOREHOLE LOG**

Contract:				Client:		Borehole	:		
Nasi	h Court Oxford	<b>Business Par</b>	rk	Advanc	ed Research Clusters			BH	103
Contract F	Ref:	Start: 16.10.23	Grour	nd Level:	National Grid Co-ordinate:	Sheet:			
	252995	End: <b>16.10.23</b>		72.90	E:454784.1 N:203826.9		2	of	2
Denth	Samples & Testing	Mechanical & Log	iter		December of Charte			(m) c	Pu

	8	Sample	s & Testing	Mechar Log	nical	or io	<u></u>		m)	T,
Depth (m)	No	Туре	Results	TCR SCR RQD (%)	If (mm)	Backfill & Instru- mentation	Water	Description of Strata	Depth (m) (Thickness)	Legend
9.00-10.50 9.00-9.17	6	SPT	N:50 for 70mm	Ā	NI 120 240			Strong to very strong grey mottled light grey unweathered LIMESTONE with fossils. (WHEATLEY LIMESTONE MEMBER) Fracture set 2 Fractures are dosely to medium spaced planar rough rarely stepped dipping 0 to 5 degrees with		Ē
9,50-9,69	5	С		85 46 43				tight to partly open clean apetures.(stratum copied from 8.20m from previous sheet)  Medium strong rarely strong dark grey rarely mottled light grey distinctly weathered to partially unweathered fine to medium grained SANDSTONE. (BECKLEY SAND MEMBER)  Fracture set dosely spaced planar rough dipping 0 to 15 degrees with very tight to tight infilled with dark grey sand and gravel apetures.	9.69	
10.50-12.00	7	SPT	N:50 for 120mm	57 13 0	NI NI 190					
- 12.00-13.50 - 12.00-12.23	8	SPT	N:50 for 145mm	53 28 28				Fracture set 4 Fractures are dosely to medium spaced planar rough dipping 0 to 5 degrees with very tight to tight	(5.31)	)
13.36-13.50 13.50-15.00 13.50-13.79	6 9	C SPT	N:50 for 135mm	31 5 0	NI 180 220			Infilled with dark grey sand and gravel apetures.		
13.36-13.50 13.50-15.00 13.50-13.79				<b>_</b>				Borehole terminated at 15.00m bgl.	15.00	:::
- - - -									-	

1		Boring P	rogress and	Water Obs	ervations			0-	1 1	Dl		
	Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter	Water Depth (m)		Ge	nerai	Remarks		
			Deptil (III)	Deput (III)	(mm)	Depti (III)						
							All c	limensions in metre	s	Scale:	1:50	
	Method			Plan	t		Dr	illed	Logged		Checked	

Rotary Cored Used: Comacchio GEO 205

DSUK

RMoore

## **TRIAL PIT LOG**

													- ' '		
Contract:								ent:					Trial Pit		
Nash		urt Ox	cford							Researc		ers	01 :	TP	SA01
Contract Ref					19.1	- 1	Ground Le			National Grid C			Sheet:		
	2529	995		End:	19.1	0.23	, ,	71.36		E:45471	).4 N:203	3800.9		1	of 1
Samp Depth	oles a	nd In-si	tu Tests Res	sults	Water	Backfill			De	escription of S	Strata			Depth (Thick ness)	
							Asphalt \(MADE	GROUND)					/	0.10	
0.30 0.30	1	ES PID	0.0	ppm			to coars and rare (MADE	GROUND)	f lime:	stone with a le	ow to moder	ate cobble o	content	0.50	
- - 0.70 - 0.70	2	ES PID	0.0	ррт			clayey fi	h brown and I ne to medium S HERED BECK	SANI	o.	•	light grey	slightly	-	
1.00	3	D												- (1 50)	
- 1.50-2.00 -														(1.50) - - - -	
							Trial pit t	terminated at 2	2.00m	i bgl.				2.00	
- - -														- -	

Plan (Not to Scale)		General	Remarks		
2.00	Location scanned with GPR prior     No groundwater encountered.     Trial pit backfilled with ansings up			encountered.	
	All dimensions in metre	s	Scale:	1:25	
	ant sed: JCB-3CX	Logged By:	RMoore	Checked By:	AGS

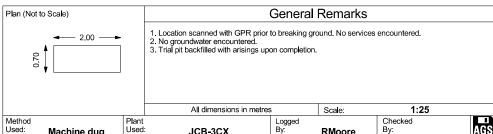


Contract:

#### TRIAL PIT LOG Trial Pit:

Nash Co	urt O	xford Bus	ines	s Par	k Advanc	ed Research Clusters		TP	SA02
Contract Ref:		Start	19.1	10.23	Ground Level:	National Grid Co-ordinate:	Sheet:		
252	995	End:	19.1	10.23	71.31	E:454693.1 N:203759.5		1	of <b>1</b>
Samples  Depth No		itu Tests Results	Water	Backfill		Description of Strata		Depth (Thick ness)	Mater Graph Leger
0.20 1 0.20 2 0.50 2 0.50 3 0.70-1.20 3	ES PID ES PID B	0.0ppm 0.0ppm			GRAVEL of limestone value of the state of th		Sand is	0.10	
					Trial pit terminated at 1.8	5m bgl.		- 1.85	

Client:



JCB-3CX

By:

**RMoore** 

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Machine dug

GINT LIBRARY V10 01.5LB LibVersion: V8 07 001 PriVersion: V8 07 1 Log TRIAL, PIT LOG - A4P 125295; NASH COURT GPJ - V10 01. RSK Environment Ltd, Abbey Park, Humber Road, Coventry, CV3 4AQ. T4. 02476 505500, Fax. 02476 501417, Web: www.sk.co.uk. | 04/12/23 - 12:38 | RM8 |

## **TRIAL PIT LOG**

Contract: Nash Court Oxford Busines								Client:			Trial Pi	h:		
	Coi	ırt Ox	ford	Busi	ness	Par	·k	l	ance	d Research Clusters			тт	02
Contract Ref								d Level:		National Grid Co-ordinate:	Sheet:		•	-
	529	95		End:			-	71.24		E:454748.7 N:203708.3		1	of	1
Samr	oles a	nd In-situ	ı Tests									Depth	Ма	iterial
Depth	No			sults	Water	Backfill				escription of Strata		(Thick ness)	Gra	aphic gend
							angu cond (MA	in clayey gravel liar to sub-rou crete, and limest DE GROUND)	inded tone.	to coarse SAND with frequent roots. G fine to coarse quartzite, sandstone,	ravel is brick,	- (0.90) - (0.90) - (0.90) - (0.90) - (0.90) - (0.90) - (0.90) - (0.90) - (0.90) - (0.90) - (0.90) - (0.90) - (0.90) - (0.90)		

Plan (Not to	o Scale)			Genera	l Remarks		
0:30	0.30		Location scanned with GPR p     No groundwater encountered.     Trial pit backfilled with arisings				
		İ	All dimensions in me	tres	Scale:	1:25	
Method Used:	Hand dug	Plant Used:	Hand tools	Logged Bv:	PMoore	Checked By:	AGS



Contract:

# TRIAL PIT LOG

Start: 20.10.23 Ground Level: National Grid Co-ordinate: Sheet: 20.995 End: 20.10.23 72.12 E:454787.5 N:203805.7 1 or sand In-situ Tests  No Type Results Description of Strata  Turf over dark brown clayey slightly gravelly fine to coarse SAND. Gravel is sub-angular to rounded fine to coarse sandstone and quartzite.  Black wire at 0.27m bgl. Pit terminated at 0.28m bgl.	7 1 Dept	E:454787.5 N:203805.7					O.E.		Contract Re
Description of Strata    Depth (Thick oness)	Dept (Thic	1	72.12	).23	20.1	End:	O.E		
Description of Strata (Thick ness)   No Type   Results   S   No Type   Results   No Type   No	(Thic	Description of Strata				Liid.	190	2529	;
Turf over dark brown clayey slightly gravelly fine to coarse SAND. Gravel is sub-angular to rounded fine to coarse sandstone and quartzite.  0.27   Black wire at 0.27m bgl.   F\0.28/		Description of Strata	Sackfill	Nater			_		
	se SAND. d quartzite.	playey slightly gravelly fine to coarse sounded fine to coarse sandstone and qua	lack wire at 0.27m	Backill	Water			No No	Sam Depth

Client:

Plan (Not to Scale)		ı	General	Remarks		
0.40		Location scanned with GPR prior     No groundwater encountered.     Trial pit backfilled with arisings upon the prior of the prior			encountered.	ļ
		All dimensions in metres	;	Scale:	1:25	
	Plant Used:	Unknown	Logged By:	RMoore	Checked By:	AGS

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## **TRIAL PIT LOG**

Contract:								Client:				Trial Pit	:	
Nash	Coı	ırt Ox	ford	Busi	ness	Par	k	l	/ance	d Research Cluste	rs			T03A
Contract Ref								d Level:		National Grid Co-ordinate:		Sheet:		
2	2529	995		End:				72.12		E:454787.5 N:203	805.7		1	of <b>1</b>
Sami	oles a	nd In-sit	tu Tests		_								Depth	Material
Depth	No	Туре		sults	Wate	Backf				escription of Strata			(Thick ness)	Graphic Legend
					Water	Backfill	SAN and o	ID. Gravel is s quartzite.	ind dark sub-angu m bgl. Sl	brown clayey slightly grave lar to sub-rounded fine to n	nedium sand	coarse	(Thick	Graphic
-														
_ -													-	
-														

Plan (Not to Scale)			General	Remarks		
97 0.25	<b>-</b>	Location scanned with GPR prior     No groundwater encountered.     Trial pit backfilled with arisings up				
		All dimensions in metres	3	Scale:	1:25	
Method Used: <b>Hand dug</b>	Plant Used:		Logged By:	RMoore	Checked By:	AGS



Contract:

#### **TRIAL PIT LOG** Trial Pit:

Nash Court Oxford	Busine	ess Pa	rk	Advance	ed Research Clusters		TT04	
ontract Ref:	Start: 20	0.10.23	Ground	d Level:	National Grid Co-ordinate:	Sheet:		
252995	End: 20	0.10.23		71.36	E:454749.0 N:203869.5		1	of <b>1</b>
Samples and In-situ Tests	S culto	Water			Description of Strata		Depth (Thick	Graphi
Depth No Type Re	sults		SANI sub-a conci (MAL	D with frequent cl	k brown clayey slightly gravelly fine to ay pockets and abundant roots. Gred fine to medium limestone, sandstone	avel is	ness)	Legen

Client:



Hand tools

By:

**RMoore** 

Used:

Hand dug

Method Used:

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## **TRIAL PIT LOG**

Contract:								Client:			Trial Pi		
Nash	Ca.	<del></del>	ford	Duci		Dor	ما		0000	ed Research Clusters	IIIaiPi		T04A
Contract Ref		iii Ox	ioru					d Level:		National Grid Co-ordinate:	Sheet:		1 U4A
	2529	105		End:			Groun	71.36		E:454749.0 N:203869.5	Oncci.	1	of <b>1</b>
			T4-		_			7 1,00		L.404743.0 14.200003.0			
Depth	No No	nd In-sit		sults	Water	Backfill				Description of Strata		Depth (Thick ness)	Material Graphic Legend
							with sand (MA	abundant roof	s. Gra oncrete	k brown clayey gravelly fine to coarse vel is angular to sub-rounded fine to, , and limestone.	SAND coarse	- (0.56) - (	

Plan (Not to Scale)		General Remarks								
0.30	40	Location scanned with GPR prior     No groundwater encountered.     Trial pit backfilled with arisings up		ound.						
		All dimensions in metre	5	Scale:	1:25					
Method Used: <b>Hand d</b>	ug Plant Used		Logged By:	RMoore	Checked By:	AGS				



### **BOREHOLE LOG**

Contract:		Client: Borehole	
Nash Court Oxford	Business Park	Advanced Research Clusters	WS01
Contract Ref:	Start: 17.10.23 Gro	und Level: National Grid Co-ordinate: Sheet:	
252995	End: <b>17.10.23</b>	71.33 E:454711.3 N:203798.8	1 of 1
Depth Samples & Testing  Depth Results	una wobuly  Instru- entation Water	Description of Strata	apth (m) hickness)
		Asphalt (MADE GROUND) Grey and brown sightly dayey very sandy angular to sub-rounded fine to coarse GRAVEL of brane finestone and quartitie. (MADE GROUND) Grey and light grey very sandy angular to sub-rounded fine to coarse GRAVEL of limestone will box cobbile (MADE GROUND) Brown slightly dayey fine to coarse SAND. (WEATHERED BECKLEY SAND MEMBER)  Borehole terminated at 3.04m bgl.	0.55

	Boring F	rogress and	Water Obs	ervations				C-	norol	Domonico		
Date	Time	Borehole	Casing	Borehole Diameter	Water			Ge	nerai	Remarks		
		Depth (m)	Depth (m)	(mm)	Depth (m)	2. Windo 3. Groun	w sample ho dwater not er	le advanced to 3 countered.	.04m bgl.	und. No services enco		
						,	All dimens	ions in metre	s	Scale:	1:50	
Method	Windov	v samnlind	Plan		er Compac	t 120	Drilled By:	DSUK	Logged By:	RMoore	Checked By:	AGS

GLB LibVersion: v8\_0/\_001 PriVersion: v8\_0/ | Log | IKIAL PIT LOG - A4P | 252995- NASH COURT GPJ - v10\_01. bey Park, Humber Road, Coventry, CV3 4AQ, Tel: 02476 505600, Fax: 02476 501417, Web: www.rsk.co.uk. | 04/12/23 - 12:38 | F

## **RSK**GEOSCIENCES

#### **BOREHOLE LOG**

								DON			_
Contract:					_		Client:		Borehole:		
		Cour	t Oxford					ed Research Clusters		WS	02
Contract			_	Start: 17.1		Grou	ınd Level:	National Grid Co-ordinate:	Sheet:		_
	2	5299	)5	End: <b>17.</b> 1			72.52	E:454734.1 N:203767.6	1		1
Depth (m)		ample Type	s & Testing Results	Window Run Information	Backfill & Instru- nentation	Water		Description of Strata		Depth (m) (Thickness)	Legend
	T						Asphalt			0.10	$\otimes$
0.30	1	ES PID	0 <u>.</u> 0ppm				(MADE GROUND)  Grey and brown slightly cla to coarse limestone and ra (MADE GROUND)	nyey gravelly fine to coarse SAND. Gravel is angular re sandstone.	to sub-rounded fine	0.45	$\bigotimes$
- 0.60 - 0.80	2	ES PID	0.0ppm					htty clayey fine to medium SAND. SAND MEMBER)			1.1
. 1.20-1.65 - 1.20	1 3	SPT D	N=10	Window run 85mm dia							
2.00-2.45 - 2.00-3.50	2 4	SPT B	<b>N</b> =16	(100% rec)  Window run 75mm dia						(3.08)	
3.00-3.45	3	SPT	N=20	(100% rec)  Window run 65mm dia (90% rec)						3.53	
3,50-3,53		SPT	N:50 for 30mm				Borehole terminated at 3,5	on by.			

	Boring F	rogress and	Water Obs	ervations					noral	Remarks		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)							
		,	,	,,		2. Windo 3. Ground	w sample hole dwater not end	e advanced to 3 countered.	.53m bgl.	und. No services enco		
						-	All dimensi	ons in metre	s	Scale:	1:50	
Method Used:	Windov	v sampling	Plan Use	-	er Compac	t 120	Drilled By:	DSUK	Logged By:	RMoore	Checked By:	AGS



Contract:

# BOREHOLE LOG Borehole:

Nas	h (	Cour	t Oxford	Business	s Pa	rk	Adva	nce	ed Research Clusters			WS	60
Contract f				Start: 17.1	0.23	Gro			National Grid Co-ordinate:	Sheet:			
	2	<b>529</b> 9	5	End: <b>17.1</b>	0.23		71.18		E:454734.8 N:203743.9		1	of	1
Depth (m)		Sample Type	s & Testing Results	Window Run Information	Backfill & Instru- mentation	Water			Description of Strata			Depth (m) (Thickness)	
0.55 0.55 0.95	1 2	ES PID	0.0ppm				Imestone (MADE GROUND) Becoming brown, Brown and grey mottle clinker. Gravel is angul	grey a	angular to sub-rounded fine to coarse GRAVEL of ch and yellowish brown from 0,25m bgl. brown slightly dayey gravelly fine to coarse SAND bub-rounded fine to coarse limestone, concrete, brick	with meta <b>l</b> an		0.10	Ž
0.95 1.20-1.65 1.30 1.30	1 3	PID SPT ES PID	0.0ppm N=10 0.0ppm	Window run 85mm dia (100% rec)	·:·B:·:		(MADE GROUND) Becoming brown f Light brown and brown (WEATHERED BECKL	sligh	tly clayey fine to medium SAND.			/E1.15	×
2.00-2.45 2.00-3.00	2 5	SPT B	<b>N</b> =19	Window run 75mm dia (95% rec)								(3.05	3)
3.00-3.45 3.00-4.00	3 6	SPT B	N=26	Window run 65mm dia (100% rec)									
4.00-4.20	4	SPT	N:50 for 50mm	•			Borehole terminated at	t 4,20i	m bgl.			4.20	<u>:</u>
												-	
-												-	

Client:

	Boring I	Progress and	Water Obs	ervations				0-		Damandia			
Date	Time	Borehole	Casing	Borehole Diameter	Water	General Remarks							
		Depth (m)	Depth (m)	(mm)	Depth (m)	2. Windo 3. Ground	w sample ho dwater not e	le advanced to 4 accuntered.	.20m bgl.	und. No services enc			
						-	All dimens	ions in metre	s	Scale:	1:50		
Method	Windo	w samnling	Plan		er Compac	+ 120	Drilled By:	DSUK	Logged By:	RMoore	Checked By:	AG	

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#### **BOREHOLE LOG**

Contract:					_	_	Client:		Borehole:		
		Cour	t Oxford	Business				ed Research Clusters	Observ	WS	04
Contract		5299	Æ	Start: 18.1		Grou	ind Level: <b>71.03</b>	National Grid Co-ordinate: <b>E:454736.2 N:203727.9</b>	Sheet:		4
	_			End: 18.1			71.03	E:434/30.2 N:203/2/.9	1		1
Depth (m)		Type	s & Testing Results	Window Run Information	Backfill	Water		Description of Strata		Depth (m) (Thickness)	Legend
- 0.40 - 0.40 - 0.70 - 0.70	1 2	ES PID ES PID	0.0ppm 0.0ppm			-	fine to coarse limestone, bri (MADE GROUND) Grey brown and brown sligh	ey very gravelly fine to coarse SAND. Gravel is angu k, and rare concrete. By dayey gravelly fine to coarse SAND. Gravel is an imestone, concrete and chert.		0.15	
1.10 - 1.20-1.65	3 1	D SPT	N=12	Window run 85mm dia (100% rec)				clayey fine to medium SAND with rare sub-angular f AND MEMBER) ∤ pockets at 1.20m bgl.	ine to medium	-	
2.00-2.45	4	SPT D	N=15	Window run 75mm dia (80% rec)						(3,59)	
3.00-3.45 3.00-4.00	3 5	SPT B	N=22	Window run 65mm dia (100% rec)							
4.00-4.19	4	SPT	N:50 for 40mm				Borehole terminated at 4.19	m bgl.		4.19	

	Boring F	Progress and	Water Obs	ervations				Ca	norol	Domorko	
Date	Time	Borehole	Casing	Borehole Diameter	Water			Ge	nerai	Remarks	
		Depth (m)	Depth (m)	(mm)	Depth (m)	2. Windo 3. Ground	w sample hole dwater not end	advanced to 4.	.19m bgl.	und. No services enc	ountered.
						/	All dimension	ns in metre	s	Scale:	1:50
Method						4 400	Drilled By:	DELIK	Logged	PMoore	Checked AC



#### **BOREHOLE LOG**

Contract			t Oxford	Start: 18.1			nd Level:		rch Clusters d Co-ordinate:	Sheet:	W
001111000		5299	95	End: 18.1			71.27		'44.4 N:203787.1		of
	_		es & Testing	TENG. 10.	I		7 1127	L.4047		<u> </u>	
Depth (m)		Туре	Results	Window Run Information	Backfill	Water		Descri	otion of Strata		Depth (m)
							Turf over brown slight (TOPSOIL)	y clayey brown fine to r	nedium SAND with roots.		(0.5
0.70	1	ES					sub-angular to sub-rou	inded fine to coarse sai	tly clayey gravelly fine to coarse	SAND, Gravel is	-fo.s
. 0.70 -		ES PID	0 <u>.</u> 0ppm				(WEATHERED BECK	LEY SAND MEMBER)			(0.8 E
. 1.20-1.65	1	SPT	N=10	Window run			Orangish brown mottle (WEATHERED BECK	ed grey and brown sligh	tly clayey fine to coarse SAND.		1.3
1.50	2	D		85mm dia (100% rec)			(WEATHERED BECK	LET SAND MEMBER)			E
2.00-2.45	2 3	SPT B	N=20	<b>X</b>	₩						Ē
•				Window run 75mm dia							(2.1
· ·				(95% rec)							ŧ
3.00-3.43	3	SPT	N:50 for 275mm	*	₩						F
							Borehole terminated a				3,4
			Progress and W	Casing Bore	ons ehole meter	Wate	r	Ge	neral Remarks	<b>3</b>	
Dete	1 '	ime	Depth (m) D	epth (m) (m	nm) [	Depth (	2. Window sam 3. Groundwater	nned with GPR prior to ple hole advanced to 3, not encountered, d with arisings upon co		ncountered.	
Date											
Date											

	Boring P	rogress and	Water Obse	ervations				Co	n o rol	Remarks		
Date	Time	Borehole	Casing	Borehole Diameter	Water			Ge	nerai	Remarks		
		Depth (m)	Depth (m)	(mm)	Depth (m)	2. Window 3. Ground	n scanned with w sample hole Iwater not enco ackfilled with a	advanced to 3. ountered.	43m bgl.	und. No services encou	intered.	
						A	All dimensio	ns in metre	S	Scale:	1:50	
Method Used:	Window	/ sampling	Plant Used		er Compac	t 120	Drilled By:	DSUK	Logged By:	RMoore	Checked By:	AGS

#### **BOREHOLE LOG**

Contract:	L /		• 0	Dunin	D-		Client:	aad Daaaa	uah Chiatana	Borehole:	\A/6
Contract F		our	t Oxford				and Level:		rch Clusters d Co-ordinate:	Sheet:	W
Contract		-200	-								
		5299		End: 1	8.10.23	_	71.85	E:4547	71.2 N:203777.5	1	of
Depth (m)		Type	s & Testing Results	Window Informati	uo un Backfill & Instru-	Water		Descrip	otion of Strata		Depth (m)
		1,700	11000110			_	Turf over brown clayey fin	e to coarse SAND.			(0.5
0.30	1	ES PID	0.0ppm		*.*H.*		Brown clavey gravelly fine	e to coarse SAND wi	th a low cobble content. Gravel is	angular to	
0.60	2	ES PID	0,0ppm				sub-angular fine to coarse (MADE GROUND) Pockets of light orang	e limestone, concrete	e and chert.		Ė
1.20-1.65	1	SPT	N=5	<b>A</b>							(1.3
1.40 1.40	3	ES PID	0.0ppm	Window 85mm d (100% re	ia I∵⊞∙:	:	Plastic at 1.55m bgl		Balak da Garaga	AND	1.8
2.00-2.45 2.00 2.00 2.00-3.00	2 4 5	SPT D B	N=3	Window 75mm d (80% re	run lia	i	Sub-angular fine to mediu (WEATHERED BECKLEY	im gravel of sandstor	n slightly clayey fine to medium S ne.	AND WITHING	
3.00-3.45 3.00-4.00	3 6	SPT B	N=20	Window 65mm d	run		Becoming mot <b>tl</b> ed gr	ey from 3,00m bgl.			(3.2
4.00-4.45 4.00-5.00	4 7	SPT B	N=20	Window 65mm d	run						
5.00-5.02	5	SPT	N:50 for 20mm	(100% re	90)		Borehole terminated at 5.	02m bgl.			5.0
	В	oring P	rogress and Wa					Go	neral Remarks		_t_
Date	Т	ime	I	Casing [E	Borehole Diameter (mm)	Wate Depth	1. Location scanne 2. Window sample 3. Groundwater not	d with GPR prior to I hole advanced to 5. t encountered.	oreaking ground. No services enc		
							All dime	nsions in metre:	S Scale:	1:50	
Method				Plant	•		Drilled		Logged	Checked	

	Boring P	rogress and	Water Obs	ervations					noral	Remarks		
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)	41						
						Location scanned with GPR prior to breaking ground. No services encountered.     Window sample hole advanced to 5.02m bgl.     Groundwater not encountered.     Gas and groundwater monitoring well. Installed with 0.50m plain pipe and 1.50m slotted.						
						-	All dimension	ns in metre	s	Scale:	1:50	
Method Used:	Windov	v sampling							Logged By:	RMoore	Checked By:	AGS



Contract:

#### **BOREHOLE LOG** Borehole:

Contract F	Ref:			Start: 18.	10.23	Grou	ınd Level:	National Gri	d Co-ordinate:	Sheet:	
	2	5299	5	End: 18.	10.23		71.45	E:4547	86.5 N:203851.2	2 1	of
	5	Sample	s & Testing		<b>∞</b> - io	<u></u>					Ê
Depth (m)	No	Туре	Results	Window Rur Information			Aanhali	Descrip	otion of Strata		Depth (m)
0.15	1	ES PID	0 <u>.</u> 0ppm				sub-rounded fine to d	gravelly fine to coarse Soarse limestone, concre	AND with rare timber. Gravel is ste, and brick	sub-angular to	-/ <sup>0.1</sup>
. 0.50 - 0.50 -	2	ES PID	0.0ppm			h	(MADE GROUND) Concrete				-  -  -  -
_0.90 - 0.90	3	ES PID	0.0ppm				(MADE GROUND) Soft brown slightly gr	avelly sandy CLAY. Sand ete, brick, quartzite, and	d is fine to coarse. Gravel is and	gular to sub-rounded	//⊧
1.20-1.65 - 1.30	1 4	SPT D	N=9	Window run 85mm dia (100% rec)			(MADE GROUND)  Orangish brown and		tly clayey fine to medium SANI	D.	1
2.00-2.45 - 2.00-3.00	5	SPT B	N=15	Window run 75mm dia (90% rec)							(3.2
3.00-3.45 - 3.00-4.00	3 6	SPT B	N=13	Window run 65mm dia (85% rec)							
4.00-4.03	4	SPT	N:50 for 30mm	*			Borehole terminated	at 4.03m bgl.			4.0
Date		oring P	Borehole Depth (m) D	Casing Born Dian	ehole meter	Wate Depth (	m) 1. Location sca 2. Window sar 3. Groundwate	anned with GPR prior to I	neral Remarks preaking ground. No services e 03m bgl. II. Installed with 1.00m plain pig	ncountered.	
							All di	mensions in metre	Scale:	1:50	
										Checked	

Client:

	Boring F	Progress and	Water Obs	ervations				0-		Dl					
Date	Time	Borehole	Casing	Borehole Diameter	Water		General Remarks								
Date	Time	Depth (m)	Depth (m)	(mm)	Depth (m)	1 Locati	on scanned	with GPR prior to	hreaking gro	und. No services en	countered				
						2. Windo 3. Groun	ow sample ho dwater not e	le advanced to 4 accuntered.	.03m bgl.	vith 1.00m plain pipe					
							All dimens	ions in metre	s	Scale:	1:50				
Method Used:						t 120	Drilled Bv:	DSUK	Logged Bv:	RMoore	Checked Bv:	AGS			