



+44 (0) 161 834 1938



www.edgece.com



3rd Floor, Conavon Court, 12 Blackfriars Street
Manchester M3 5BQ, United Kingdom

Document name: 210701-EDGE-XX-XX-RP-G-0001_SI REPORT [P01]

SITE INVESTIGATION REPORT FOR 210701- NORTH MANCHESTER GOLF CLUB

12 February 2025

Prepared for:

Matthew Lindop

Duchy Homes Ltd
6550 Daresbury Park
Daresbury
Warrington
Cheshire
WA4 4GE

Geo-environmental

Revision	Date	Description	Prepared by	Checked by	Approved by
01	12/02/25	SI Letter Report	TM	JC	AJB



BACKGROUND

Alliance Design UK Ltd t/a EDGE Consulting Engineers ("EDGE") has been appointed by Duchy Homes Ltd to undertake a supplementary geo-environmental site investigation on a parcel of land at North Manchester Golf Club, Manchester Old Road, Middleton, Manchester.

The site is irregular in shape and forms the southern part of the North Manchester Golf Club. The area consists of a maintained section of grass used as a practice green as well as an area of overgrown vegetation in the north-east with a number of semi-mature and mature trees, a number of which have fallen. A gravel surfaced car park and clubhouse are located to the north / north-west.

Planning permission (Ref 21/01797/FUL) has been granted to redevelop the site with 56 residential dwellings with associated gardens and infrastructure, as well as a replacement clubhouse and associated assets as shown on Duchy Homes Drawing No NMGCMP/001 Rev P49 presented in Annex I.

A third-party site investigation has previously been undertaken as presented in the following report:

- E3P Phase I & II Geoenvironmental Site Assessment North Manchester Golf Club, Reference: 14-807-R1-2, dated January 2022.

The previous investigation encountered loose to medium dense natural sand present beneath the site, underlain by very stiff clay at depths ranging from 5.5 to 5.6 m and proven to a maximum depth of 20.5 m.

EDGE have been appointed to undertake a supplementary investigation in order to confirm the depth of sand and extent of clay beneath the site in order to clarify foundation design which comprised a mixture of traditional piles and vibro ground improvement.

FIELDWORK

EDGE attended the site on the 27th and 28th of January 2025 to supervise the drilling of nine window sample boreholes, EWS01 to EWS10 (excluding EWS06), to depths ranging from 2.45 to 5.41 m bgl.

EWS01, EWS01a, EWS02 and EWS10 were terminated at depths of 3.45 m, 2.45 m, 3.45 m and 4.45 m respectively due to groundwater influx and subsequent collapse within the natural sand.

EWS03, EWS04, EWS05 and EWS09 were terminated at depths of 5.41 m, 4.44 m, 3.43 m and 4.42 m respectively due to refusals in the natural sand.

EWS07 and EWS08 were terminated at depths of 5.32 m and 5.20 m due to refusals in clay and gravel (respectively).

The window sample boreholes were drilled as close as possible to the proposed locations, however, a number of the boreholes were relocated due to the presence of a high-pressure gas main which required an easement distance of 15.0 m as a minimum, and a high voltage electric cable which required an easement of 5.0 m.

Due to the presence of the HPGM easement, pond and dense, overgrown vegetation, EWS06 was not able to be drilled and could not be relocated to a suitable area.

Standard Penetration Tests (SPTs) were undertaken in all of the window sample boreholes at 1.0 m centres.

The boreholes were backfilled with arisings upon completion.

An exploratory hole location plan is presented in Annex I with exploratory hole logs presented in Annex II.

Ground Conditions

Topsoil was encountered in all of the exploratory hole locations, excluding EWS07 and EWS08, to depths ranging from 0.30 to 0.60 m bgl, consisting of clayey silty gravelly sand with gravel of mudstone and sandstone, with localised cobbles of mudstone and frequent rootlets.

Made ground was encountered in two of the window sample boreholes in the north of the site (EWS07 and EWS08) to depths ranging from 0.30 to 1.40 m bgl, comprising sandy gravel of mudstone, sandstone, coal, quartzite and red brick with cobbles of red brick, mudstone and sandstone, fragments of metal and plastic and organic matter in EWS07. Clayey silty gravelly sand with gravel of red brick, mudstone and sandstone was recorded in EWS08.

Natural strata were encountered in all of the exploratory locations at depths ranging from 0.30 to 1.40 m comprising both cohesive and granular soils.

The granular strata generally comprised very loose to loose, medium dense, dense and very dense (locally clayey) silty gravelly sand with gravel of mudstone, coal and sandstone. Medium dense becoming very dense (locally clayey and silty) sandy gravel with gravel of mudstone, coal and sandstone was encountered in one location (EWS08) from 1.70 to 5.20 m.

Organic matter was present locally within the sand in EWS08 at a depth of 0.50 to 1.20 m.

The cohesive strata comprised very stiff slightly gravelly very sandy clay with gravel of mudstone encountered in EWS07 from 4.50 to 5.32 m.

Solid strata were not encountered during the investigation.

Groundwater was encountered in all of the exploratory locations (excluding EWS03) within the natural granular strata at depths ranging from 0.80 to 4.30 m bgl.

In-Situ Geotechnical Testing

In-situ standard penetration tests (SPTs) were carried out in the window sample boreholes during drilling at approximately 1.0 m centres in order to determine the soil strength / density.

Barring refusals, the SPTs undertaken in the natural granular soils (sand / gravel) recorded "N" values ranging from 3 to 47 indicating the soil to be in a 'very loose' to 'loose', 'medium dense' and 'dense' condition.

Refusals ("N" value > 50) were encountered within the natural granular soils in six locations; EWS03 (5.00 m), EWS04 (4.00 m), EWS05 (3.00 m), EWS08 (5.00 m) and EWS09 (4.00 m) indicating these soils to be in a 'very dense' condition.

One SPT was undertaken within the natural clay in EWS07 at 5.00 m, recording an "N" value of 50 (refusal) indicating the soil to be in a 'very stiff' condition.

CONCLUSIONS

EDGE has undertaken a supplementary investigation comprising the drilling of nine window sample boreholes in order to confirm the depth of sand and extent of clay beneath the site in order to clarify foundation design.

Made ground was encountered locally in the north of the site in EWS07 and EWS08 to a maximum depth of 1.40 m bgl. Elsewhere, topsoil was encountered to depths ranging from 0.30 to 0.60 m bgl.

The made ground / topsoil were underlain by natural granular soils which generally comprised very loose to loose, medium dense, dense and very dense sand at depths ranging from 0.30 to 1.40 m bgl to a maximum proven depth of 5.41 m bgl. Medium dense becoming very dense sandy gravel of mudstone, coal and sandstone was encountered in one location (EWS08) from 1.70 to 5.20 m.

Groundwater was encountered within the natural granular soils at depths ranging from 0.80 to 4.30 m bgl.

Solid strata were not encountered during the investigation.

Given that clay was not recorded at shallow depth, tree influence can be omitted and heave precautions will therefore not be required. As such, it is considered likely that a number of plots which were designated to have piled foundations can be changed to utilise a vibro ground improvement solution.

A copy of this report should be sent to the appointed structural engineer for comment.

We trust the above is to your satisfaction. Should you require any further information, please do not hesitate to contact the undersigned.

Yours sincerely,

A handwritten signature in blue ink, appearing to be "R. J. ...".

On behalf of EDGE Consulting Engineers

12/02/2025

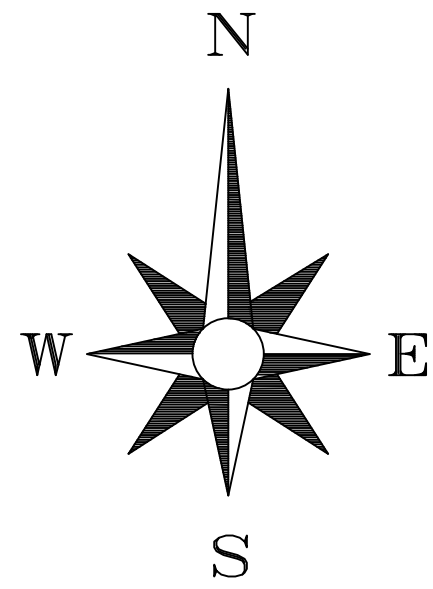
Date

Annex I Drawings
Annex II Exploratory Hole Logs

ANNEX I

Drawings

NORTH MANCHESTER GOLF CLUB, MIDDLETON



The copyright of this drawing is held by Duchy Homes Limited and no reproduction is allowed without prior permission.

NOTES:

KEY:

- 1.8m concrete post & close boarded panel fence (GP Units) / 1.8m close boarded panel (OM Units)
- 2.1m high timber close boarded fence
- 1.8m high timber close boarded gate
- 0.6m high wall / 1.2m high close boarded fence (feature wall detail)
- Refuse store
- Shared surface
- Estate Railing
- Affordable Unit / M4(2) / NDS

P49	06.01.25	Rear garden to Plot 28 adjusted.	SJ
P48	02.01.25	Flagging and gates added. Plots 2, 4 & 50 handed.	SJ
P47	06.11.24	Layout amended following LPA comments.	SJ
P46	05.11.24	Layout amended following LPA comments.	SJ
P45	01.11.24	Layout amended following internal comments.	SJ
P44	01.11.24	Layout amended following comments from the LPA.	SJ
P43	21.10.24	Road extended past Plot 35 to Plot 33.	SJ
P42	18.10.24	Layout redesigned following comments from the LPA.	SJ
P41	01.10.24	Layout redesigned following comments from the LPA.	SJ
P40	06.06.24	Layout amended following internal comments.	SJ
P39	25.05.24	Timesless 2.1 House Type Range Added.	SJ
P38	22.02.24	Plots 1 and 2 positions moved eastwards, so that Plot 3 sales garage can be separated. Parking of plot 56 revised. Shared driveway for plots 14 & 17-20 updated & Plots 35 & 48 garage positions updated.	AC
P37	16.02.24	Golf club access reverted back to existing access.	AC
P36	09.02.24	Plots 6 - 9 & 21 - 24 units swapped with plots 30 - 36 & 3No. Linnet House types omitted and replaced with 3No. Fieldfare house types.	AC
P35	25.01.24	Plots 1 - 11, 20 - 28 & 48 - 51 names clarified. Plot 6 updated to a Starling. Plot 7 & 49 updated to Brambling's and Plot 50 updated to a Fieldfare and Plot 55 parking arrangement updated.	AC
P34	24.01.24	Plots 4, 6 - 30, 40 - 52 & 56 updated as per layout meeting 23.01.24 and Sales Garage added to plot 22.	AC
P33	22.01.24	Plots 6, 8, 12 & 20 changed to Brc's; Plots 42 - 45 changed to the P3 3.1 & Plots 46 - 50 positions updated to suit.	AC
P32	30.11.23	Gas and Sludge main easements shown.	AC
P31	24.11.23	1 - 26 Plots replanned.	AC
P30	27.09.23	27-48 Plots replanned.	AC
P29	09.03.23	Plots 46-49 replanned.	AC
P28	06.02.23	Plots 39-45 replanned.	AC
P27	27.01.23	Latest Golf Club Car Parking layout added.	AC
P26	26.01.23	Amended following comments from the LPA & Golf Club.	AC
P25	18.01.23	A pair Bodnants replaces 1No. Oakford on Plot 39.	AC
P24	25.11.22	Plots 39-48 adjusted. Units reduced to 53.	AC
P23	18.11.22	Single sided road front of plots 20-24 changed to shared drive.	AC
P22	15.11.22	HA removed and house type mix amended.	AC
P21	14.11.22	Amended following layout review comments.	AC
P20	14.11.22	Layout redrawn.	AC
P19	22.09.22	Plots 12-16 replaced with 1No. Wentworth and 8 Affordable Units.	AC
P18	13.05.22	Plot 56 added to 27, 45 & 47. Affordable road reduced in front of Plot 46.	AC
P17	10.05.22	Site re-planned following comments from LPA and LU.	AC
P16	04.01.22	Updated to include latest house type footprints.	AC
P15	24.11.21	Turning Head sizes increased following comments back from Transport consultant.	AC
P14	06.08.21	Minor amendments following comments Group Design.	AC
P13	27.07.21	3No. Harwood replaced with Buckingham's, 2No. Ripleys replaced with Cranbournes, 1No. Calverley replaced with a Warwick.	AC
P12	29.06.21	Flagging indicated, handings corrected and Plot 14 changed to a Warwick.	AC
P11	14.04.21	Layout amended following sludge main diversion.	AC
P10	28.01.21	Plot 56 changed to a Calverley & Plot 17 garage removed.	AC
P9	22.01.21	Plots 2, 4, 10, 22, 24, 26, 27, 31 changed to Ripleys.	AC
P8	17.12.20	Layout re-planned following comment from the LPA.	AC
P7	08.11.20	Layout re-planned.	AC
P6	15.08.20	House type mix amended following comments.	AC
P5	05.06.20	Plot 50 changed from an Alderley to a Cranbury.	AC
P4	05.06.20	Plot 50 added.	AC
P3	15.05.20	Plots 1-4 adjusted following comments and red edge amended adjacent to Plot 6.	AC
P2	11.05.20	Amended to accommodate the HP gas main constraints.	AC
P1	21.04.20	Amended following internal comments.	AC

Duchy Homes Ltd.
3125 Century Way, Thorpe Park, Leeds, LS15 8ZB.

DEVELOPMENT:
NORTH MANCHESTER GOLF CLUB, MIDDLETON

TITLE:
PLANNING LAYOUT

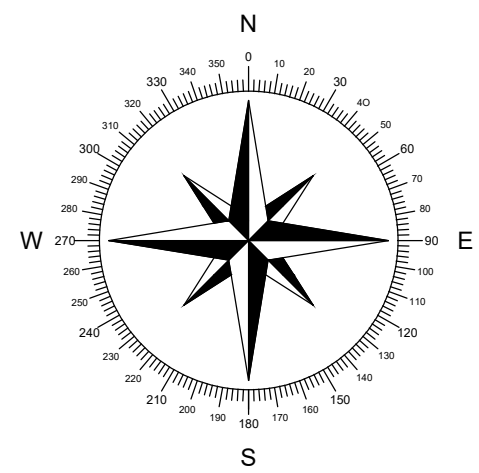
DATE:
20.04.20

SCALE:
1:500 @ A1

DRAWN:
SJ

DRAWING NO:
NMGCMPL/001

REV:
P49



KEY:

WS1 EDGE Window sample borehole

P01 12.02.25 PRELIMINARY - Issued for information H.S. A.B.
Rev Date Description By Cht

EDGE CONSULTING ENGINEERS
www.edgece.com
Manchester, UK
3rd Floor, Cornovion Court,
12 Blackfriars Street,
Manchester, M3 5BQ,
United Kingdom
T: +44 (0) 161 834 1938
E: manchester@edgece.com

The concepts + information contained in this document are the copyright of EDGE Consulting Engineers.
Use or copying of this document in whole or in part without the written permission of EDGE Consulting Engineers
constitutes an infringement of copyright.
DO NOT SCALE DRAWINGS. IF IN DOUBT, ASK!

Project Name:
**NORTH MANCHESTER
GOLF CLUB**
Client:
DUCHY HOMES
Designed Drawn Checked Scale @ A1
H.S. H.S. A.B. 1:500
Drawing Title:
**EXPLORATORY HOLE LOCATION PLAN
JANUARY 2025**

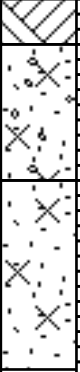
Project No.
210701
Drawing No.
210701-EDGE-XX-XX-DR-G-1001
Revision
P01

**PRELIMINARY
NOT FOR CONSTRUCTION**

ANNEX II

Exploratory Hole Logs

			Project Title: North Manchester Golf Club			EWS01A		
			Project Number: 210701		Client: Duchy Homes Ltd			
			GL (mAOD): 0.00		N Coord: 53.545852		E Coord: -2.213427	
Date: 27/01/2025			Method: Window Sampler		Driller: GP Drilling Ltd		Logged By: TM	

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
1.20 - 1.65	SPT	N=12 (3,3,3,3)	-0.30		0.30	Grass over dark brown slightly clayey silty gravelly fine to coarse SAND. Gravel is subangular fine to coarse of mudstone and sandstone. Cobble of mudstone. Frequent rootlets (TOPSOIL). Orangish brown silty gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of mudstone and sandstone. 0.60 - 2.45 Borehole collapse up to 0.60 m. 1.00 - 2.00 60 % recovery from 1.0 to 2.0 m. Saturated medium dense becoming very loose brown silty fine SAND. End Of Borehole At 2.45 m		
2.00 - 2.45	SPT	N=3 (1,1,0,1)	-1.20		1.00			
			-2.45		2.00			
					2.45			
					3.00			
					4.00			
					5.00			
					6.00			
					7.00			
					8.00			

KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa  - Groundwater Strike  - Groundwater Level			REMARKS BH scanned with CAT. Groundwater encountered at 0.8 m. Hand dug pit to 1.20 m. Borehole terminated at 2.45 m due to collapse. BH backfilled with arisings. 			Water Strikes																							
						<table border="1"> <thead> <tr> <th>Date</th> <th>Strike</th> <th>Level</th> <th>Minutes</th> <th>Casing</th> <th>Sealed</th> </tr> </thead> <tbody> <tr> <td>27/01/2025</td> <td>0.8</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						Date	Strike	Level	Minutes	Casing	Sealed	27/01/2025	0.8										
Date	Strike	Level	Minutes	Casing	Sealed																								
27/01/2025	0.8																												
Scale: 1:50			Daily Log Of Depths																										
			<table border="1"> <thead> <tr> <th>Date</th> <th>Casing</th> <th>Water</th> <th>From</th> <th>To</th> <th>Hours</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						Date	Casing	Water	From	To	Hours															
Date	Casing	Water	From	To	Hours																								

			Project Title: North Manchester Golf Club			EWS02		
			Project Number: 210701		Client: Duchy Homes Ltd			
			GL (mAOD): 0.00		N Coord: 53.545923		E Coord: -2.213866	
Date: 27/01/2025			Method: Window Sampler		Driller: GP Drilling Ltd		Logged By: TM	

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
1.20 - 1.65	SPT	N=14 (4,3,3,4)	-0.40		0.40	Grass over dark brown slightly clayey silty gravelly fine to coarse SAND. Gravel is subangular fine to coarse of mudstone and sandstone. Frequent rootlets (TOPSOIL). Orangish brown gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of mudstone, sandstone and coal. Medium dense brown silty gravelly fine to coarse SAND. Gravel is subrounded fine to coarse of mudstone, sandstone and coal. 1.00 - 3.45 50 % recovery from 1.0 m onwards. 1.40 - 3.45 Borehole collapse up to 1.40 m and redrilling attempted. Saturated medium dense brown silty gravelly fine to coarse SAND. Gravel is subrounded fine to coarse of mudstone, sandstone and coal.		
2.00 - 2.45	SPT	N=16 (3,3,3,7)	-0.90		0.90 1.00			
3.00 - 3.45	SPT	N=14 (3,3,3,5)	-1.60		1.60			
			-3.45		3.45	End Of Borehole At 3.45 m		
					4.00			
					5.00			
					6.00			
					7.00			
					8.00			

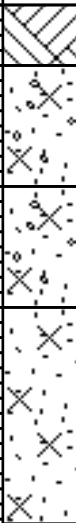
KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value H - Hand Shear Vane kPa  - Groundwater Strike  - Groundwater Level			REMARKS BH scanned with CAT. Groundwater encountered at 1.6 m. Hand dug pit to 1.20 m. Borehole terminated at 3.45 m due to collapse. BH backfilled with arisings. 			Water Strikes																							
						<table border="1"> <thead> <tr> <th>Date</th> <th>Strike</th> <th>Level</th> <th>Minutes</th> <th>Casing</th> <th>Sealed</th> </tr> </thead> <tbody> <tr> <td>27/01/2025</td> <td>1.6</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						Date	Strike	Level	Minutes	Casing	Sealed	27/01/2025	1.6										
Date	Strike	Level	Minutes	Casing	Sealed																								
27/01/2025	1.6																												
						Daily Log Of Depths			Chiselling																				
						<table border="1"> <thead> <tr> <th>Date</th> <th>Casing</th> <th>Water</th> <th>From</th> <th>To</th> <th>Hours</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						Date	Casing	Water	From	To	Hours												
Date	Casing	Water	From	To	Hours																								

			Project Title: North Manchester Golf Club			EWS03			
			Project Number: 210701		Client: Duchy Homes Ltd				Sheet 1 Of 1
			GL (mAOD): 0.00		N Coord: 53.545942		E Coord: -2.214195		
Date: 27/01/2025			Method: Window Sampler		Driller: GP Drilling Ltd		Logged By: TM		
Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe	
1.20 - 1.65	SPT	N=14 (3,4,4,3)	-0.50	                          <					

			Project Title: North Manchester Golf Club			EWS04		
			Project Number: 210701		Client: Duchy Homes Ltd			
			GL (mAOD): 0.00		N Coord: 53.54615		E Coord: -2.21428	
Date: 27/01/2025			Method: Window Sampler		Driller: GP Drilling Ltd		Logged By: TM	

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
1.20 - 1.65	SPT	N=24 (7,6,6,5)	-0.30		0.30	Grass over dark brown slightly clayey silty gravelly fine to coarse SAND. Gravel is subangular fine to coarse of mudstone and sandstone. Frequent rootlets (TOPSOIL).		
2.00 - 2.45	SPT	N=21 (5,5,5,6)	-1.70		1.00	Medium dense orangish brown silty gravelly fine to coarse SAND. Gravel is subangular fine to coarse of mudstone and sandstone. Rare cobbles of mudstone and sandstone.		
3.00 - 3.45	SPT	N=30 (7,7,8,8)	-2.70		1.70	1.00 - 4.00 50 % recovery from 1.0 m onwards.		
4.00 - 4.35	SPT	pp 50/285mm	-4.44		2.00	Saturated medium dense orangish brown gravelly very silty fine to coarse SAND. Gravel is subangular fine to coarse of mudstone and sandstone. Rare cobbles of mudstone and sandstone.		
					2.70	Dense becoming very dense brown slightly gravelly fine SAND. Gravel is subrounded fine to coarse of mudstone. Rare cobbles of mudstone.		
					4.44	End Of Borehole At 4.44 m		
					5.00			
					6.00			
					7.00			
					8.00			

KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa  - Groundwater Strike  - Groundwater Level			REMARKS BH scanned with CAT. Groundwater encountered at 1.4 m. Hand dug pit to 1.20 m. Borehole terminated at 4.44 m due to refusal in very dense sand. BH backfilled with arisings.			Water Strikes <table border="1"> <thead> <tr> <th>Date</th> <th>Strike</th> <th>Level</th> <th>Minutes</th> <th>Casing</th> <th>Sealed</th> </tr> </thead> <tbody> <tr> <td>28/01/2025</td> <td>1.4</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						Date	Strike	Level	Minutes	Casing	Sealed	28/01/2025	1.4																
Date	Strike	Level	Minutes	Casing	Sealed																														
28/01/2025	1.4																																		
			Scale: 1:50			Daily Log Of Depths <table border="1"> <thead> <tr> <th>Date</th> <th>Casing</th> <th>Water</th> <th>From</th> <th>To</th> <th>Hours</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						Date	Casing	Water	From	To	Hours																		
Date	Casing	Water	From	To	Hours																														

			Project Title: North Manchester Golf Club				EWS05																																														
			Project Number: 210701		Client: Duchy Homes Ltd					Sheet 1 Of 1																																											
			GL (mAOD): 0.00		N Coord: 53.54633		E Coord: -2.213512																																														
Date: 27/01/2025			Method: Window Sampler		Driller: GP Drilling Ltd		Logged By: TM																																														
Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe																																													
1.20 - 1.65	SPT	N=15 (3,5,4,3)	-0.40		0.40	Grass over dark brown slightly clayey silty gravelly fine to coarse SAND. Gravel is subangular fine to coarse of mudstone and sandstone. Frequent rootlets (TOPSOIL).																																															
			-1.20		1.00	Greyish brown silty gravelly fine to coarse SAND. Gravel is subangular fine to coarse of mudstone, sandstone and coal.																																															
			1.20		Medium dense reddish brown silty gravelly fine to coarse SAND. Gravel is subangular fine to coarse of mudstone, sandstone and coal.																																																
2.00 - 2.45	SPT	N=33 (8,8,9,8)		2.00	Dense becoming very dense reddish brown slightly silty fine SAND.																																																
3.00 - 3.42	SPT	pp 50/270mm	-3.43		3.43	End Of Borehole At 3.43 m																																															
					4.00																																																
					5.00																																																
					6.00																																																
					7.00																																																
					8.00																																																
KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa  - Groundwater Strike  - Groundwater Level 			REMARKS BH scanned with CAT. Groundwater encountered at 1.1 m. Hand dug pit to 1.20 m. Borehole terminated at 3.43 m due to refusal in very dense sand. BH backfilled with arisings. Scale: 1:50			Water Strikes <table><tr><th>Date</th><th>Strike</th><th>Level</th><th>Minutes</th><th>Casing</th><th>Sealed</th></tr><tr><td>28/01/2025</td><td>1.1</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> Daily Log Of Depths Chiselling <table><tr><th>Date</th><th>Casing</th><th>Water</th><th>From</th><th>To</th><th>Hours</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>						Date	Strike	Level	Minutes	Casing	Sealed	28/01/2025	1.1																	Date	Casing	Water	From	To	Hours												
						Date	Strike	Level	Minutes	Casing	Sealed																																										
						28/01/2025	1.1																																														
						Date	Casing	Water	From	To	Hours																																										

			Project Title: North Manchester Golf Club				EWS08				
			Project Number: 210701		Client: Duchy Homes Ltd					Sheet 1 Of 1	
			GL (mAOD): 0.00		N Coord: 53.546375		E Coord: -2.214626				
Date: 28/01/2025			Method: Window Sampler		Driller: GP Drilling Ltd		Logged By: TM				
Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe			
1.20 - 1.65	SPT	N=8 (2,1,2,3)	-0.30		0.30	MADE GROUND: Grass over dark brown slightly clayey silty gravelly fine to coarse SAND. Gravel is subangular fine to coarse of mudstone, sandstone and red brick. Frequent rootlets.					
			-0.50		0.50					MADE GROUND: Brown slightly silty gravelly fine to coarse SAND. Gravel is subangular fine to coarse of red brick, mudstone and sandstone.	
2.00 - 2.45	SPT	N=14 (4,4,3,3)	1.00		1.00	Brown slightly clayey gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of mudstone, sandstone and coal. Rare cobbles of mudstone. Rare rootlets. Occasional organic matter. Rare pockets of very sandy clay.					
			1.20		1.20					Blackish brown gravelly very silty fine to coarse SAND. Gravel is subrounded fine to coarse of mudstone and sandstone. Rare rootlets.	
3.00 - 3.45	SPT	N=13 (2,4,3,4)	1.40		1.40	Orangish brown silty gravelly fine SAND. Gravel is subrounded fine to coarse of mudstone and sandstone. Rare cobbles of sandstone.					
			1.70		1.70					Medium dense orangish brown sandy very silty GRAVEL. Sand is fine. Gravel is subrounded fine to coarse of mudstone and sandstone.	
4.00 - 4.45	SPT	N=14 (4,4,3,3)	3.00		3.00	Medium dense brown and grey sandy GRAVEL. Sand is fine. Gravel is subangular to subrounded fine to coarse of mudstone, sandstone and quartzite. Rare cobbles of mudstone.					
			-3.20		3.20					4.00 - 5.00 50 % recovery from 4.0 to 5.0 m.	
5.00 - 5.20	SPT	pp 50/95mm	4.00		4.00	Saturated very dense brown and grey clayey sandy GRAVEL. Sand is fine. Gravel is subangular to subrounded fine to coarse of mudstone, sandstone and quartzite. Rare cobbles of mudstone.					
			-4.60		4.60					End Of Borehole At 5.20 m	
			-5.20		5.00						
					5.20						
					6.00						
					7.00						
					8.00						
KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa ▼ - Groundwater Strike ▼ - Groundwater Level 			REMARKS BH scanned with CAT. Hand dug pit to 1.20 m. Groundwater encountered at 4.3 m. Borehole terminated at 5.20 m due to refusal in very dense gravel. BH backfilled with arisings. Scale: 1:50			Water Strikes					
						Date	Strike	Level	Minutes	Casing	Sealed
						28/01/2025	4.3				
						Daily Log Of Depths		Chiselling			
						Date	Casing	Water	From	To	Hours

			Project Title: North Manchester Golf Club			EWS09		
			Project Number: 210701		Client: Duchy Homes Ltd			
			GL (mAOD): 0.00		N Coord: 53.546187		E Coord: -2.215408	
Date: 27/01/2025			Method: Window Sampler		Driller: GP Drilling Ltd		Logged By: TM	

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
1.20 - 1.65	SPT	N=14 (0,2,5,7)	-0.60		0.60	Grass over dark brown slightly clayey silty gravelly fine to coarse SAND. Gravel is subangular fine to coarse of mudstone and sandstone. Frequent rootlets (TOPSOIL).		
2.00 - 2.45	SPT	N=23 (5,5,6,7)	-1.80		1.80	Medium dense light brown slightly clayey gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of sandstone and mudstone. Rare cobbles of mudstone.		
3.00 - 3.45	SPT	N=47 (11,11,12,13)	-2.70		2.70	Medium dense brown sandy GRAVEL. Sand is fine to coarse. Gravel is subrounded fine to coarse of mudstone and sandstone. Occasional cobbles of mudstone.		
4.00 - 4.42	SPT	pp 50/300mm	-3.20		3.20	2.50 - 4.42 Collapse of borehole from 4.42 to 2.5 m.	▼	
			-4.42		4.42	Dark brown and grey gravelly very clayey fine to coarse SAND. Gravel is subrounded fine to coarse of mudstone and sandstone. Rare cobbles of mudstone.		
					5.00	Saturated dense becoming very dense grey gravelly very clayey fine to coarse SAND. Gravel is subrounded fine to coarse of mudstone and sandstone.		
					6.00	End Of Borehole At 4.42 m		
					7.00			
					8.00			

KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa  - Groundwater Strike  - Groundwater Level			REMARKS BH scanned with CAT. Groundwater encountered at 3.1 m. Hand dug pit to 1.20 m. Borehole terminated at 4.42 m due to refusal in very dense sand. BH backfilled with arisings. 			Water Strikes					
						Date	Strike	Level	Minutes	Casing	Sealed
						27/01/2025	3.1				
						Daily Log Of Depths			Chiselling		
						Date	Casing	Water	From	To	Hours

			Project Title: North Manchester Golf Club			EWS10		
			Project Number: 210701		Client: Duchy Homes Ltd			
			GL (mAOD): 0.00		N Coord: 53.545866		E Coord: -2.215517	
Date: 27/01/2025			Method: Window Sampler		Driller: GP Drilling Ltd		Logged By: TM	

Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water	Standpipe
1.20 - 1.65	SPT	N=18 (4,4,4,6)	-0.40		0.40	Grass over dark brown slightly clayey silty gravelly fine to coarse SAND. Gravel is subangular fine to coarse of mudstone and sandstone. Frequent rootlets (TOPSOIL).		
2.00 - 2.45	SPT	N=20 (3,5,6,6)	-2.10		2.00	Brown silty gravelly fine to coarse SAND. Gravel is subangular fine to coarse of coal, mudstone and sandstone. Occasional cobbles of mudstone and sandstone.		
3.00 - 3.45	SPT	N=36 (4,7,14,11)	-2.50		2.10	Medium dense greyish brown sandy GRAVEL. Sand is fine to coarse. Gravel is subangular fine to coarse of mudstone and sandstone. Occasional cobbles of mudstone.		
4.00 - 4.45	SPT	N=23 (4,5,6,8)	-3.30		2.50	Medium dense orangish brown gravelly fine to coarse SAND. Gravel is subrounded fine to coarse of mudstone and sandstone. Rare cobbles of mudstone.		
			-4.45		3.00	Saturated dense orangish brown gravelly fine to coarse SAND. Gravel is subrounded fine to coarse of mudstone and sandstone. Rare cobbles of mudstone.		
					3.30	2.80 - 4.45 Borehole collapsed to 2.80 m, and redrilling attempted.		
					4.00	Medium dense orangish brown silty fine SAND.		
					4.45	End Of Borehole At 4.45 m		
					5.00			
					6.00			
					7.00			
					8.00			

KEY D - Disturbed Sample B - Bulk Sample U - Undisturbed W - Water Sample S - Standard Penetration Test C - Cone Penetration Test N - Penetration Test 'N' Value V - Hand Shear Vane kPa  - Groundwater Strike  - Groundwater Level			REMARKS BH scanned with CAT. Groundwater encountered at 2.5 m. Hand dug pit to 1.20 m. Borehole terminated at 4.45 m due to collapse. BH backfilled with arisings.			Water Strikes <table border="1"> <thead> <tr> <th>Date</th> <th>Strike</th> <th>Level</th> <th>Minutes</th> <th>Casing</th> <th>Sealed</th> </tr> </thead> <tbody> <tr> <td>27/01/2025</td> <td>2.5</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>						Date	Strike	Level	Minutes	Casing	Sealed	27/01/2025	2.5																
Date	Strike	Level	Minutes	Casing	Sealed																														
27/01/2025	2.5																																		
AGS Scale: 1:50			Daily Log Of Depths <table border="1"> <thead> <tr> <th>Date</th> <th>Casing</th> <th>Water</th> <th>From</th> <th>To</th> <th>Hours</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>						Date	Casing	Water	From	To	Hours																					
Date	Casing	Water	From	To	Hours																														