



+44 (0) 161 834 1938



www.edgece.com



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

Document name: 230342-EDGE-XX-XX-RP-G-0001_SI REPORT [P01]

REPORT FOR 230342-DYE HOUSE, PRESCOT

08 December 2023

Prepared for:

Group D Developments Ltd

Avenue HQ

4 St Paul's Square

Liverpool

L3 9SJ

Geo-environmental

Revision	Date	Description	Prepared by	Checked by	Approved by
01	08/12/23	SI Letter Report	JC	TM	AJB



BACKGROUND

Alliance Design UK Ltd t/a EDGE Consulting Engineers ("EDGE") has been appointed by Group D Developments Ltd to undertake a site investigation at land located at Dye House, Liverpool Road, Prescott, L34 3LX. A site location plan is presented in Annex I.

The site comprises an approximate area of 1.1 hectares of vegetated ground with a house and associated outbuildings in the north. Prescott Brook crosses the site from the north-eastern corner flowing in a south-easterly direction, exiting the site on the eastern boundary.

The site is proposed to be redeveloped with two apartment blocks and twenty one housing plots as shown on Group D Developments Ltd Drawing No GDD2020-GDA-ZZ-RF-DR-A-2220-P06 presented in Annex I.

A Phase 1 Geo-environmental Risk Assessment has been undertaken by Betts Geo (Report Ref 22SEP003/DS dated August 2022) with a Coal Mining Risk Assessment undertaken by EDGE (Report Ref 230342-EDGE-XX-XX-R-G-0001_SI[R02] dated September 2023).

According to online British Geological Survey (BGS) data, the site is underlain by drift deposits comprising Diamicton (formerly known as Boulder Clay) with solid strata comprising mudstone, siltstone and sandstone of the Pennine Lower Coal Measures Formation.

Ground conditions encountered during the EDGE site investigation comprised topsoil over sandy gravelly clay and sand, underlain by solid strata at depths ranging from 1.0 to 4.5 m.

A supplementary site investigation was required to be undertaken in order to further ascertain ground conditions and to undertake percolation testing to assist with drainage design.

FIELDWORK

EDGE attended site on 4th December 2023 to supervise the excavation of two trial pits (SA01 and SA02) to depths of 2.25 and 2.40 m below ground level (bgl). Trial pits SA01 and SA02 were terminated due to reaching the target depth. The test locations were selected by the appointed civil engineer (Shape Consulting Engineers).

Percolation testing in accordance with BRE SD365 was undertaken in both SA01 and SA02 in order to assist with drainage design.

Both of the exploratory hole locations were backfilled with arisings.

Exploratory hole location plans are presented in Annex I and trial pit logs are presented in Annex II.

Ground Conditions

Ground conditions in both SA01 and SA02 comprised topsoil to a depth of 0.35 m underlain by clayey gravelly sand with gravel of mudstone to depths of 0.70 m and 0.50 m respectively. This was in turn underlain by sandy gravelly clay to depths of 2.25 m and 2.40 m respectively.

Groundwater was not encountered in any of the exploratory locations.

Percolation Testing

In order to assist with drainage design, percolation tests were undertaken in SA01 within the natural cohesive soils and SA02 within the natural cohesive and granular soils, both in accordance with BRE 365 (Soakaway Design).

There was no change in the water level in SA01 and the test was abandoned after two hours. In SA02, the water level dropped from 0.40 to 0.42 m after two hours and the test was abandoned.

Given the results of the percolation testing, it is not considered likely that soakaways will be a suitable drainage option at the site although consultations should be made with the appointed civil engineer.

Percolation test results are presented in Annex III.

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. R.", written over a horizontal line.

On behalf of EDGE Consulting Engineers

08/12/2023

Date

Annex I	Drawings
Annex II	Exploratory Hole Logs
Annex III	Percolation Test Results

ANNEX I

Drawings

REV	DESCRIPTION	DATE	DRAWN
P01	Block B - 1 Bed	07.09.22	PT
P02	Emergency access - amends	13.09.22	PT
P03	Ped/Cycle access - planner feedback	15.09.22	PT
P04	Highways comments	28.09.22	PT
P05	Highways comments	29.09.22	PT
P06	Highways comments	07.10.22	PT
P07	Highways comments	18.10.22	PT

- APT-BLOCK-A:**
1 NO. 18no. Apartments
8no. 2 Bed / 10no. 1 bed
2 Storey
- APT-BLOCK-B:**
1 NO. 6no. Apartments
1 Bed
3 Storey
- HT1:**
16 NO. 3 Bed
2.5 Storey
- Semi-detached
and mews variants
- HT2:**
5 NO. 2 Bed
2 Storey
- Semi-detached
and mews variants
- TOTAL 45 No. UNITS
TOTAL 71 No. PARKING SPACES

- Local Authority Access/Maintenance - 2.5m
- Brook - 8m offset zone (top of bank)
- Pump station - 15m offset zone
- Refuse - 3 bins per house
- Electric car charging point. One per house and 50% for apartment parking
- Close boarded timber fence - 1.8m
- Post and rail fence - 1.1m
- Covered secure cycle storage (2no. bikes per house & 1min. per apt)

NOTES
Plot numbers denoted in black
Associated parking denoted in orange
Landscaping indicative - see landscape scheme
To be read in conjunction other supporting drawings, reports and information submitted as part of this planning application



DYE HOUSE, PRESCOT

PROPOSED SITE PLAN - ROOF

Group D Developments Ltd
4 St Paul's Sq
Liverpool
L3 9SJ
T: 0151 542 5027

DWG: GDD2020-GDA-ZF-DR-A-2220-P07
DATE: 27.07.22
SCALE: 1:500 @ A3 DRAWN: PT



- Tree Removed
- Tree Retained
- Tree special measures (see supporting ARB information)



TABLE 2 - BELOW GRADE DESIGN CRITICAL STORAGE DETAILS

TANK 1 & 2 COMBINED DESIGN BASED ON IMPERVIOUS AREA OF CLADDING (AS MEASURED FROM ARCHITECTS LAYOUT DRAWING).

INVERT LEVEL: 51.15HADD
DEPTH OF TANK: 0.3m
TOP OF TANK LEVEL: 51.45HADD
MINIMUM DEPTH OF COVER: 0.45m
PLAN AREA: 4.6m² (DIMENSIONS SHOWN)

MAX VOLUME 4.6m³ TO ACCOMMODATE STORAGE FOR 1 IN 100 YEAR RETURN PERIOD STORM EVENT WITH A 40% CLIMATE CHANGE ALLOWANCE. PPS HAVE BEEN USED TO ACCOMMODATE STORM EVENTS UP TO AND INCLUDING 30 YEAR RETURN PERIOD.

APPROPRIATE MANAGEMENT COMPANY TO BE APPROVED FOR MAINTENANCE.

POUL WATER PUMPING STATION COMPOUND WITH 15m STAND OFF. PUMPING STATION INTERNAL ARRANGEMENTS, RISING MAIN AND ASSOCIATED HYDRAULICS TO BE DESIGNED BY SPECIALIST MANUFACTURER.

PROPOSED POUL WATER RISING MAIN TO BE DESIGNED BY OTHERS. RISING MAIN MAY REQUIRE ROOT BARRIER TO EXISTING TREES.

PROPOSED SURFACE WATER SINKING TO DISCHARGE TO EXISTING WATERCOURSE (PROPOSED BROOK) VIA PROPOSED HEADWALL.

THE PROPOSED DRAINAGE SYSTEM IS SUBJECT TO S106 APPROVAL WITH UNITED UTILITIES WITH FURTHER CORRESPONDENCE VIA LAND DRAINAGE CONSENT TO ALLOW DISCHARGE TO THE SA WATERCOURSE.

SURFACE WATER FLOW CONTROL CHAMBER WITH PAVED BEAK (S106) LIMITING FLOW TO 0.5L/S. DESIGN HEAD: 1.5m. (400-500-500-100-500)

PROPOSED POUL WATER RISING MAIN TO BE DESIGNED BY OTHERS. RISING MAIN MAY REQUIRE ROOT BARRIER TO EXISTING TREES.

COVER LEVEL TO BE CONFIRMED DUE TO LACK OF TOPOGRAPHICAL SURVEY INFORMATION. INVESTIGATORS TO CONFIRM ROUTING HAS NO IMPACT ON EXISTING UTILITY SERVICES & SURFACE WATER COURSE.

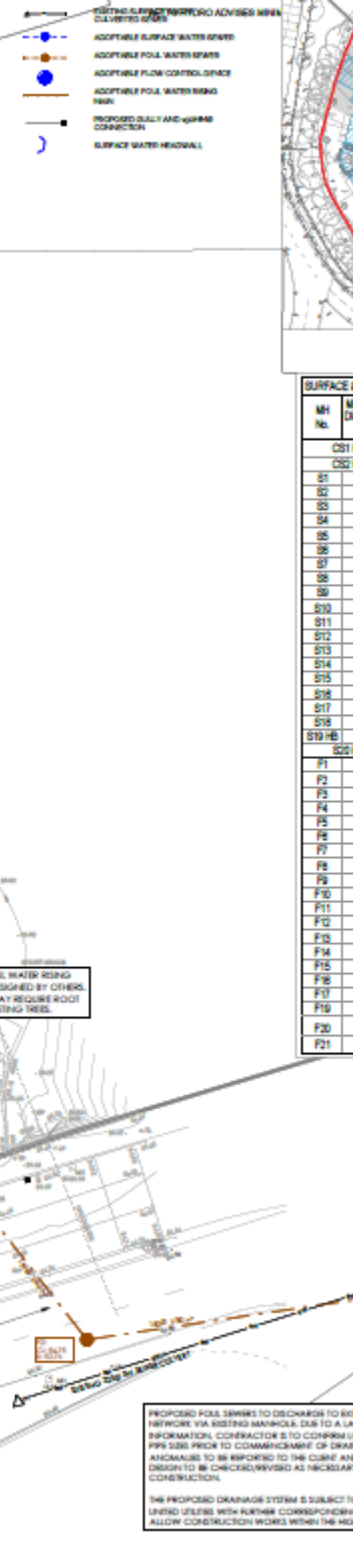


TABLE 2 - BELOW GRADE DESIGN CRITICAL STORAGE DETAILS

TANK 1 & 2 COMBINED DESIGN BASED ON IMPERVIOUS AREA OF CLADDING (AS MEASURED FROM ARCHITECTS LAYOUT DRAWING).

INVERT LEVEL: 51.15HADD
DEPTH OF TANK: 0.3m
TOP OF TANK LEVEL: 51.45HADD
MINIMUM DEPTH OF COVER: 0.45m
PLAN AREA: 4.6m² (DIMENSIONS SHOWN)

VOLUME 4.6m³ TO ACCOMMODATE STORAGE FOR 1 IN 100 YEAR RETURN PERIOD STORM EVENT WITH A 40% CLIMATE CHANGE ALLOWANCE. PPS HAVE BEEN USED TO ACCOMMODATE STORM EVENTS UP TO AND INCLUDING 30 YEAR RETURN PERIOD.

APPROPRIATE MANAGEMENT COMPANY TO BE APPROVED FOR MAINTENANCE.

NOT SCALE THIS DRAWING.

DESIGNED TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS. ARCHITECTS AND SPECIALIST DESIGN DRAWINGS ARE OFFICIAL. DIMENSIONS IN PARENTHESES UNLESS OTHERWISE STATED. ALL DIMENSIONS IN PARENTHESES UNLESS OTHERWISE STATED.

DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.

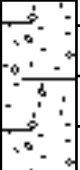
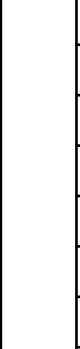
LOCATION AND LEVELS OF EXISTING PUBLIC SERVICES BASED ON WATER UTILITY RECORDS. RECORDS DEEMED TO BE FULLY RELIABLE. ALL UTILITIES TO BE CONFIRMED.

PROPOSED POUL SINKING TO DISCHARGE TO EXISTING NETWORK VIA EXISTING MANHOLE. DUE TO A LACK OF TOPOGRAPHICAL SURVEY INFORMATION, CONVEYANCE IS TO BE CONFIRMED BY PPS USE PRIOR TO COMMENCEMENT OF DRAINAGE CONSTRUCTION. ANY DISCREPANCIES TO BE REPORTED TO THE CLIENT AND DESIGN TO BE CHECKED/REVISED AS NECESSARY.

THE PROPOSED DRAINAGE SYSTEM IS SUBJECT TO S106 APPROVAL WITH UNITED UTILITIES WITH FURTHER CORRESPONDENCE VIA LAND DRAINAGE CONSENT TO ALLOW DISCHARGE TO THE SA WATERCOURSE.

ANNEX II

Exploratory Hole Logs

			Project Title: Dye House			SA01	
			Project Number: 230342		Client: Group D Developments Ltd		
			GL (mAOD):		N Coord: 0	E Coord: 0	
Date: 04/12/2023			Method: Tracked Excavator		Logged By: TM	Scale: 1:15	
Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water
		V=58 kPa			0.35	Grass over brown slightly silty gravelly fine to coarse SAND. Gravel is sub-angular fine to coarse of mudstone. Occasional rootlets (TOPSOIL).	
					0.70	Light brown clayey gravelly fine to coarse SAND. Gravel is sub-angular fine to coarse of mudstone.	
		V=73 kPa			1.00	Firm reddish brown mottled grey sandy gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular fine to coarse of mudstone.	
					1.40	Friable light brown mottled grey sandy gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of mudstone, sandstone and quartzite. Rare cobbles of quartzite.	
					2.00	Friable grey sandy gravelly CLAY. Sand is fine to coarse. Gravel is sub-rounded fine to coarse of mudstone.	
					2.10	Friable grey sandy gravelly CLAY. Sand is fine to coarse. Gravel is sub-rounded fine to coarse of mudstone.	
					2.25	End Of Trial Pit At 2.25 m	
					3.00		
KEY D - Disturbed Sample B - Bulk Sample W - Water Sample V - Hand Shear Vane kPa  - Groundwater Strike  - Groundwater Level 						REMARKS No Groundwater Encountered TP scanned with CAT. TP stable. TP backfilled with arisings. Soakaway test undertaken.	

			Project Title: Dye House			SA02	
			Project Number: 230342		Client: Group D Developments Ltd		
			GL (mAOD):		N Coord: 0	E Coord: 0	
Date: 04/12/2023			Method: Tracked Excavator		Logged By: TM	Scale: 1:15	
Depth (m)	Type	Test Result	Level	Legend	Depth (m)	Description	Water
					0.35	Grass over brown slightly silty gravelly fine to coarse SAND. Gravel is sub-angular fine to coarse of mudstone. Occasional rootlets (TOPSOIL).	
					0.50	Light brown clayey gravelly fine to coarse SAND. Gravel is sub-angular fine to coarse of mudstone.	
		V=67 kPa				Firm orange becoming reddish brown mottled grey sandy gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular fine to coarse of mudstone.	
		V=73 kPa					
		V=70 kPa					
					1.00		
					1.20		
						Friable light brown mottled grey sandy gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of mudstone, sandstone and quartzite.	
					2.00		
					2.40		
						End Of Trial Pit At 2.40 m	
					3.00		
KEY D - Disturbed Sample B - Bulk Sample W - Water Sample V - Hand Shear Vane kPa  - Groundwater Strike  - Groundwater Level 						REMARKS No Groundwater Encountered TP scanned with CAT. TP stable. TP backfilled with arisings. Soakaway test undertaken.	

ANNEX III

Percolation Test Results

Carried out by:	Date:	Method:				Trial pit dimensions:	Before:	After:	Location:	Grid: OSGB
TM	04/12/23	BRE Digest DG 365: 2016				Length (m):	1.40	1.40	mE:	
Chkd by:	Test no:	Granular infill:	Datum height (m aal):	Depth to water: Start: End:		Width (m):	0.55	0.55	mN:	
JC	1	No	0.00	0.40	0.42	Depth (m):	2.40	2.40	m OD:	

[illegible]

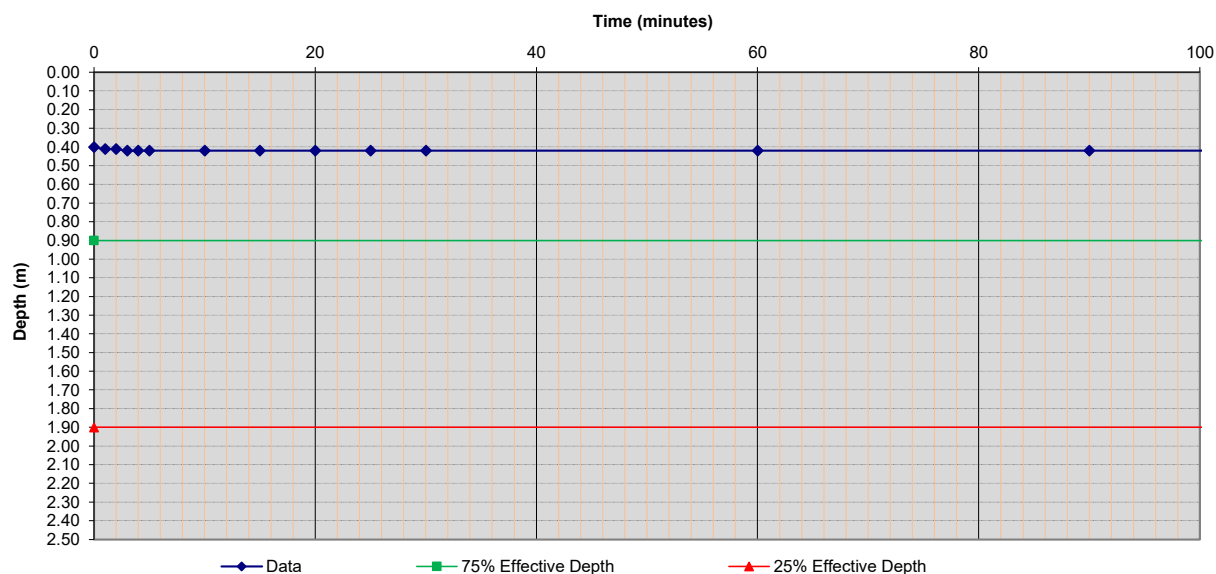
Effective depth (m):		Elapsed time (mins) (from graph):	
75%	0.90	75%	
50%	1.40		
25%	1.90	25%	

Base area of pit	0.77	m ²
Mean surface area through which outflow occurs	4.67	m ²
Volume outflow between 75 and 25% effective depth	0.77	m ³

Soil infiltration rate, f	N/A	m ³ /m ² /s
Soil infiltration rate, f	N/A	m/hr
Percolation Value, vp	N/A	s/mm

TEST NOT VALID - INSUFFICIENT INFILTRATION TO CALCULATE RATE

Notes:	Ground description: 0.00 - 0.35 TOPSOIL. 0.35 - 0.50 Light brown clayey gravelly SAND. 0.50 - 1.20 Orange becoming reddish brown mottled grey sandy gravelly CLAY. 1.20 - 2.40 Light brown mottled grey sandy gravelly CLAY.
--------	--



Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths in meters.

Issue:

Draft

Project:	Dye House
Proj. No:	230342
Client:	Group D Developments Ltd

Test reference:

SA02