

Euro Garages - Asda Blackpool, Cherry Tree Road

Drainage Strategy Report – Rev A

Client: Euro Garages

Date: 07 June 2021

Project No: P14995

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Project Number: PI4995		Signature	Date
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Checked by:	Nigel Batty		07/06/2021

Revision: A		Signature	Date
Prepared by:	Phillip Harrington		31/01/22
Checked by:	Nigel Batty		31/01/22
Revision Notes:	Layout Plan amended.		

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1.0 Introduction

Goodson Associates have been appointed by Euro Garages to prepare a Drainage Strategy for the proposed commercial development within the Asda complex on Cherry Tree Road in Blackpool. The purpose of this report is to describe in principle the design of the foul and surface water drainage systems for the development.

2.0 Existing Site

2.1 General Description

The proposed site is located on Cherry Tree Road, Blackpool (Grid Ref: E333158 N433964). Figure 1.0 shows an aerial photograph of the area with the Asda site boundary highlighted in red and the proposed development shaded in red. The site is bounded by Cherry Tree Road to the east, the main Asda access road and Petrol Filling Station beyond to the north, the Asda carpark to the west, and landscaping, trees and residential properties to the south.

2.2 Site Topography

As Figure 1.0 shows, the proposed site currently forms part of the existing Asda tarmac parking area. It is irregular in shape and is approximately 0.164ha in size. The site is relatively flat with the majority of the site sitting in the region of +9.23 AOD to +8.39m AOD.



Figure 1.0 Aerial Photograph showing the Current Site.

2.3 Existing Natural Drainage Features

There are no natural water courses running through the site, with the site being located around 3km from the Irish Sea coast to the west.

2.4 Existing Drainage Infrastructure

United Utilities records show that an adopted combined sewer is present running along Cherry Tree Road to the east of the site. Full records and correspondence with United Utilities are included in Section 6.0.



Figure 2.0 Existing Drainage – United Utilities Records

A drainage survey has been conducted by Underground Surveys Ltd for the site, which can be found in its entirety in Section 6.0. Figure 3.0 below shows a summary of the CCTV survey findings of the existing drainage on site, which indicates that surface water from the Asda building and carpark is currently discharged to the UU adopted combined sewer running along Cherry Tree Road via a 600mm diameter concrete sewer connection (CHE02 to CHE02J).

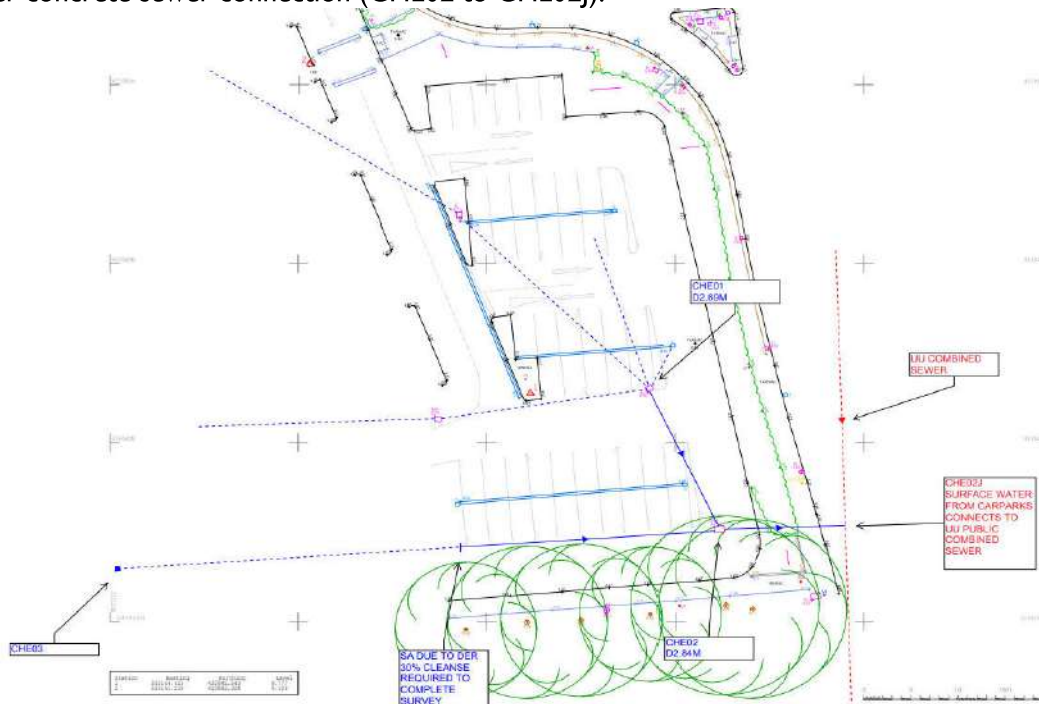


Figure 3.0 Existing Drainage – Drainage Survey extract

3.0 Proposed Development

The proposed development is to comprise of a drive through restaurant and associated parking spaces.

4.0 Flood Risk Assessment

The possible sources of flooding have been considered for the site and figure 4.0 and 5.0 below show the extent of flooding in the site location for fluvial or coastal and surface water flooding. It is indicated in Figure 4.0 that the site is within an area classified as Flood Zone I- low probability, representative of land having less than 1 in 1000 (0.1% annual exceedance probability – AEP) of river or sea flooding in any given year. Therefore, the risk of fluvial or coastal flooding is a very low risk. Figure 5.0 indicates there is low probability of surface water flooding across the site, which will be managed as part of the drainage strategy for the new development.



Figure 4.0 Flood Risk from Rivers

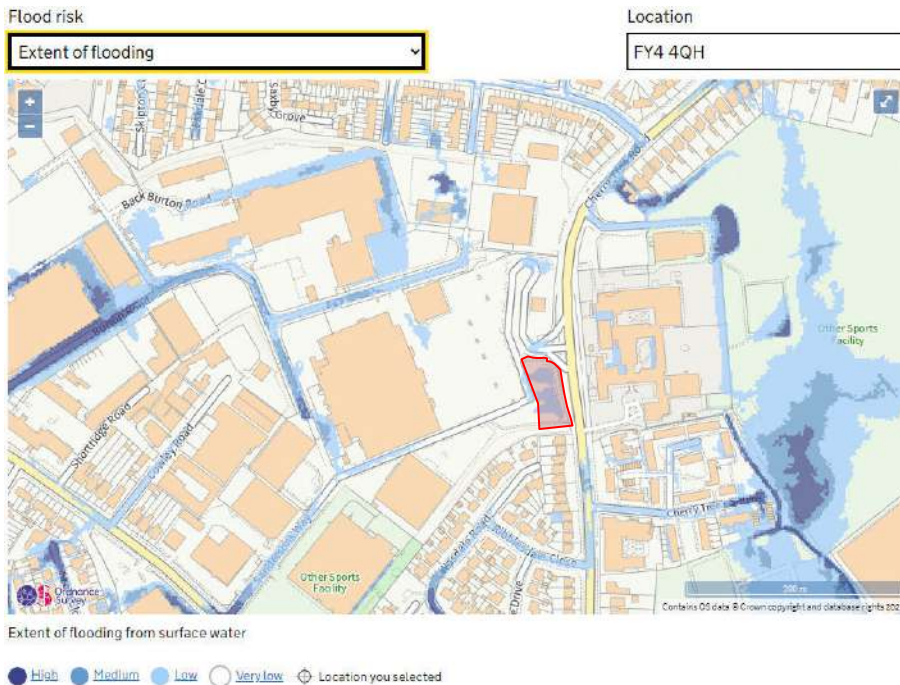


Figure 5.0 Flood Risk from Surface Water

5.0 Site Drainage

- The proposed development site forms a small part of the existing Asda carpark, with the existing surface water drainage from the wider site running through this area and discharging into the combined sewer in Cherry Tree Road via a 600mm diameter concrete sewer.
- The proposed development will have separate foul and surface water drainage systems and it is proposed that the foul will discharge into the public combined sewer in Cherry Tree Road via the existing connection.
- The surface water run-off from the new development will be restricted to reduce flood risk and discharge into the public combined sewer in Cherry Tree Road via the existing connection.

5.1 Foul Drainage

- The proposed new retail unit will drain to a private foul sewer before connecting into the public combined sewer in Cherry Tree Road via the existing site connection at manhole CHE02.
- United Utilities have confirmed that this is their preferred point of discharge and that the allowable rate is unrestricted.

5.2 Surface Water System

- SuDS hierarchy will be used for the surface water design.
- The surface water design flows are calculated on the proposed new development impermeable area of 0.146ha and a design storm intensity of 100-year return period plus 40% climate change allowance.
- There are no drainage ditches, watercourses or open bodies of water that are suitable to discharge surface water run-off to.
- BGS boreholes logs and monitoring results included in bEk Enviro Ltd Site Investigation indicate that the site is underlain by 2-4m of gravelly clay with varying levels of shallow perched groundwater present across the localised development area – consequently the use of soakaway drainage would not provide a reliable drainage discharge option for this development (bEk Enviro Ltd SI cl 3.4.9 extract below).

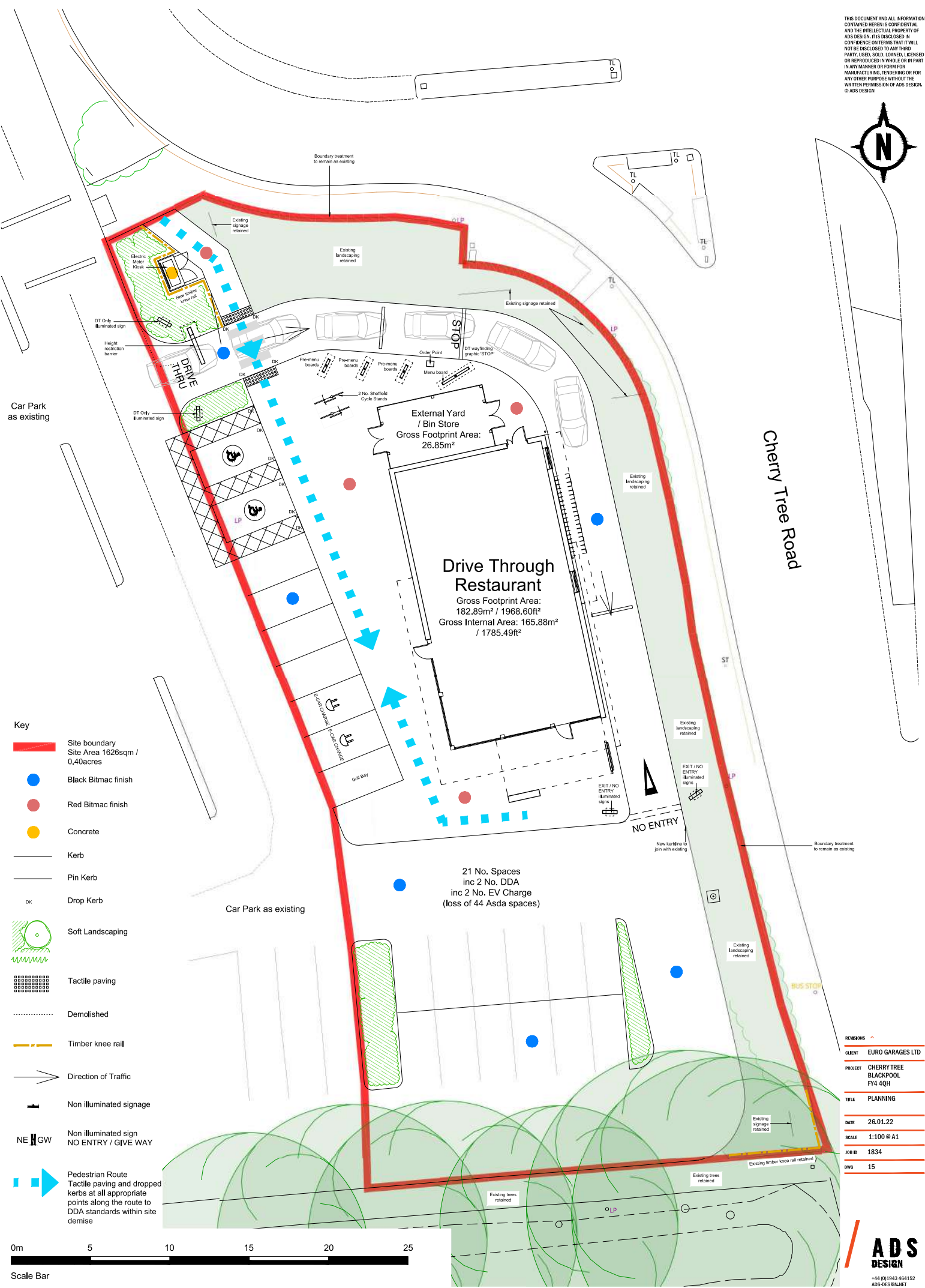
Soakaways

3.4.9 Given the shallow/variable depth to water during the site investigation and post investigation monitoring, the use of soakaways at this site is not considered to be viable.

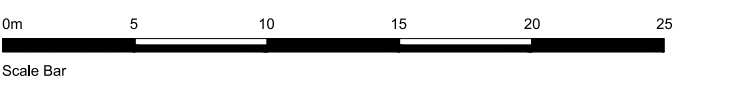
- It is therefore proposed that the surface water is discharged via the existing on site surface water drainage network to the combined sewer in Cherry Tree Road.
- In line with guidelines this stormwater discharge will be reduced by 30% from the existing surface water flow at urban rainfall run of 50mm/hr and an existing impermeable are of 0.131ha. This existing run off is calculated at 18.21l/s and so the proposed maximum discharge rate for the new development is a 30% reduction of this to 12.75l/s.
 - Existing run off: $Q_p = 2.78CiA$: $I=50\text{mm/hr}$
 - $Q_p = 2.78 \times 50 \times 0.131 = 18.21\text{l/s}$
 - $18.21\text{l/s} - 30\% = 12.75\text{l/s}$
- United Utilities have however requested that the agreed rate of discharge for the surface water into the combined sewer does not exceed 5.0l/s.
- MicroDrainage calculations provided in section 6.0 determine that 54.7m³ cellular crates will be required along with the pipe and manhole network to achieve the desired discharge rate of 5.0l/s, based on a proposed impermeable area of 0.146ha. The cellular crates will be situated under the parking bays as indicated on the drainage layout plan.

6.0 Drawings and Calculations

1834 – 15 Proposed Site Layout (ADS Designs)
Topographical Survey (Chris Partington Land Surveyors)
PI4995 – 500(A) Drainage Layout Plan (Goodson Associates)
PI4995 – 501(A) Impermeable Area Plan (Goodson Associates)
PI4995 – MicroDrainage Calculation (Goodson Associates)
United Utilities Record Information and Correspondence
Drainage Survey (Underground Survey Ltd)
Extracts from SI (bEk Enviro Ltd)

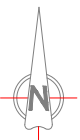


- Key**
- Site boundary
Site Area 1626sqm / 0.40acres
 - Black Bitmac finish
 - Red Bitmac finish
 - Concrete
 - Kerb
 - Pin Kerb
 - Drop Kerb
 - Soft Landscaping
 - Tactile paving
 - Demolished
 - Timber knee rail
 - Direction of Traffic
 - Non illuminated signage
 - Non illuminated sign
NO ENTRY / GIVE WAY
 - Pedestrian Route
Tactile paving and dropped kerbs at all appropriate points along the route to DDA standards within site demise

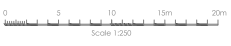


REVISIONS

CLIENT	EURO GARAGES LTD
PROJECT	CHERRY TREE BLACKPOOL FY4 4QH
TITLE	PLANNING
DATE	26.01.22
SCALE	1:100 @ A1
JOB #	1834
DWG	15



Station	Easting	Northing	Level
1	434000	334000	0.18
2	434000	334000	0.18
3	434000	334000	0.18



Abbreviations (as per BS 1191:2013)

C	Cartouche
CA	Cable Access
CD	Control Ditch
CH	Channel
CHW	Channel Width
CHD	Channel Depth
CHS	Channel Slope
CHV	Channel Velocity
CHM	Channel Material
CHC	Channel Condition
CHT	Channel Topography
CHF	Channel Flow
CHL	Channel Length
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Abbreviations (continued)

AM	Asymmetrical
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AV	Asymmetrical
AVL	Asymmetrical
AVR	Asymmetrical
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CCL	Control Channel Length

OPIS
Oxford Property Services Ltd
11 The Quadrant, Oxford, OX1 1BQ
www.opis.co.uk

Euvo Group Ltd

Auto, Cherry Tree Road, Backwood
Site Survey

Drawn by	GIS	Date	29/04/21
Checked by	GIS	Date	29/04/21
Reviewed by	GIS	Date	29/04/21

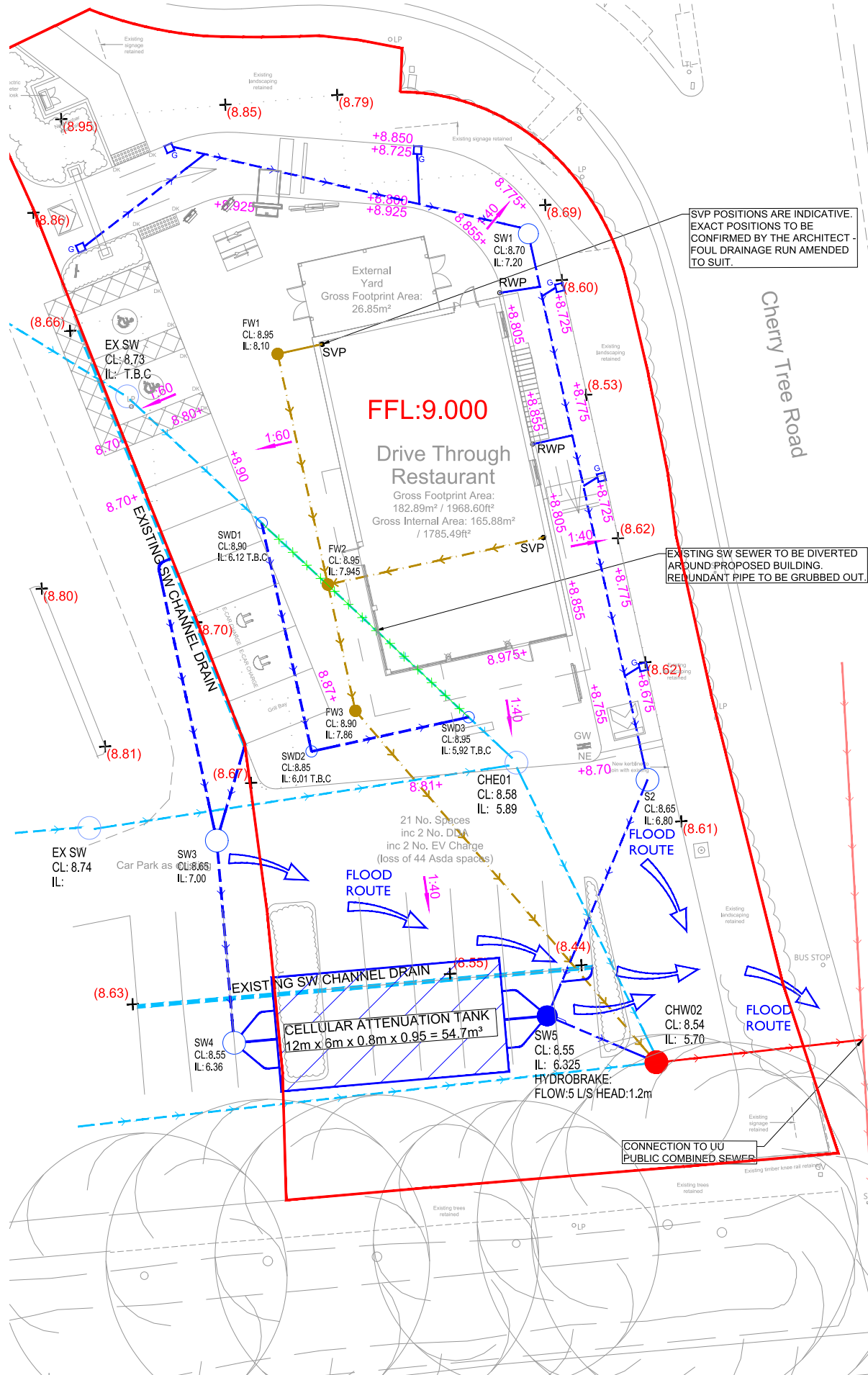
Scale	1:250
Drawn by	GIS
Checked by	GIS
Reviewed by	GIS
Date	29/04/21

OPERATION AND MAINTENANCE REQUIREMENTS FOR ATTENUATION STORAGE TANKS		
MAINTENANCE SCHEDULE	REQUIRED ACTION	TYPICAL FREQUENCY
REGULAR MAINTENANCE	INSPECT & IDENTIFY ANY AREAS THAT ARE NOT OPERATING CORRECTLY. IF REQUIRED, TAKE REMEDIAL ACTION	MONTHLY FOR 3 MONTHS THEN ANNUALLY
	REMOVE DEBRIS FROM THE CATCHMENT SURFACE (WHERE IT MAY CAUSE RISK TO PERFORMANCE)	MONTHLY
	REMOVE SEDIMENT FROM PRE-TREATMENT ROAD GULLIES & SILT TRAP MANHOLE	MONTHLY FOR 3 MONTHS THEN ANNUALLY OR AS REQUIRED
REMEDIAL ACTIONS	REPAIR/REHABILITATE INLETS, OUTLETS, OVERFLOWS & VENTS	AS REQUIRED
MONITORING	INSPECT/CHECK ALL INLETS, OUTLETS, VENTS & OVERFLOWS TO ENSURE THAT THEY ARE IN GOOD CONDITION & OPERATING AS DESIGNED	ANNUALLY
	CCTV SURVEY INSIDE OF TANK FOR SEDIMENT BUILD-UP & REMOVE IF NECESSARY	AFTER CONSTRUCTION, 1 YEAR & THEN EVERY 5 YEARS OR AS REQUIRED

DO NOT SCALE. IF IN DOUBT ASK. DO NOT INTERROGATE CAD BASE

NOTES

- DRAINAGE PIPE WITH LESS THAN 1.2m COVER TO HAVE CONCRETE BED & SURROUNDING CLASS 2/1
- SURFACE WATER ATTENUATION CRATES TO BE WAVIN AQUACELL PLUS OR SW/AS APPROVED. TO BE INSTALLED IN LINE WITH MANUFACTURERS SPECIFICATION.



KEY:

- SW1000 CL: 1500, X/m @ 1% - SURFACE WATER MH & DRAINAGE RUN
- FW1000 CL: 1500, X/m @ 1% - FOUL WATER MH & DRAINAGE RUN
- CH1000 CL: 1500, X/m @ 1% - COMBINED WATER MH & DRAINAGE RUN
- EX SW CL: 1500, X/m @ 1% - EXISTING SURFACE WATER MH & DRAINAGE RUN
- EX CW CL: 1500, X/m @ 1% - EXISTING COMBINED WATER MH & DRAINAGE RUN
- SW CL: FLOW CONTROL MANHOLE
- IL: HYDROBRAKE
- EXISTING SW CHANNEL DRAIN
- EXISTING SURFACE CHANNEL DRAIN
- SURFACE GULLY
- SURFACE RODDING EYE
- RAINWATER PIPE
- SOLVENT PIPE
- FLOOD ROUTE FOR STORM EVENTS IN EXCESS OF 1 IN 100 YEARS + 4% CLIMATE CHANGE
- PROPOSED BANKING
- PROPOSED LEVELS
- PROPOSED GRADIENTS
- EXISTING BOUNDARY LEVELS
- RETAINING WALL

SVP POSITIONS ARE INDICATIVE. EXACT POSITIONS TO BE CONFIRMED BY THE ARCHITECT - FOUL DRAINAGE RUN AMENDED TO SUIT.

EXISTING SW SEWER TO BE DIVERTED AROUND PROPOSED BUILDING REDUNDANT PIPE TO BE GRUBBED OUT.

- GOM NOTES**
- ACCESS AND EGRESS TO THE SITE OFF A BUSY CAR PARK.
 - EXISTING SERVICES IDENTIFIED ON SITE.
 - APPROPRIATE MEASURES REQUIRED TO CONTROL NOISE, DUST, FUMES AND VIBRATION.
 - POTENTIAL GROUND INSTABILITY IN DEEP EXCAVATIONS.

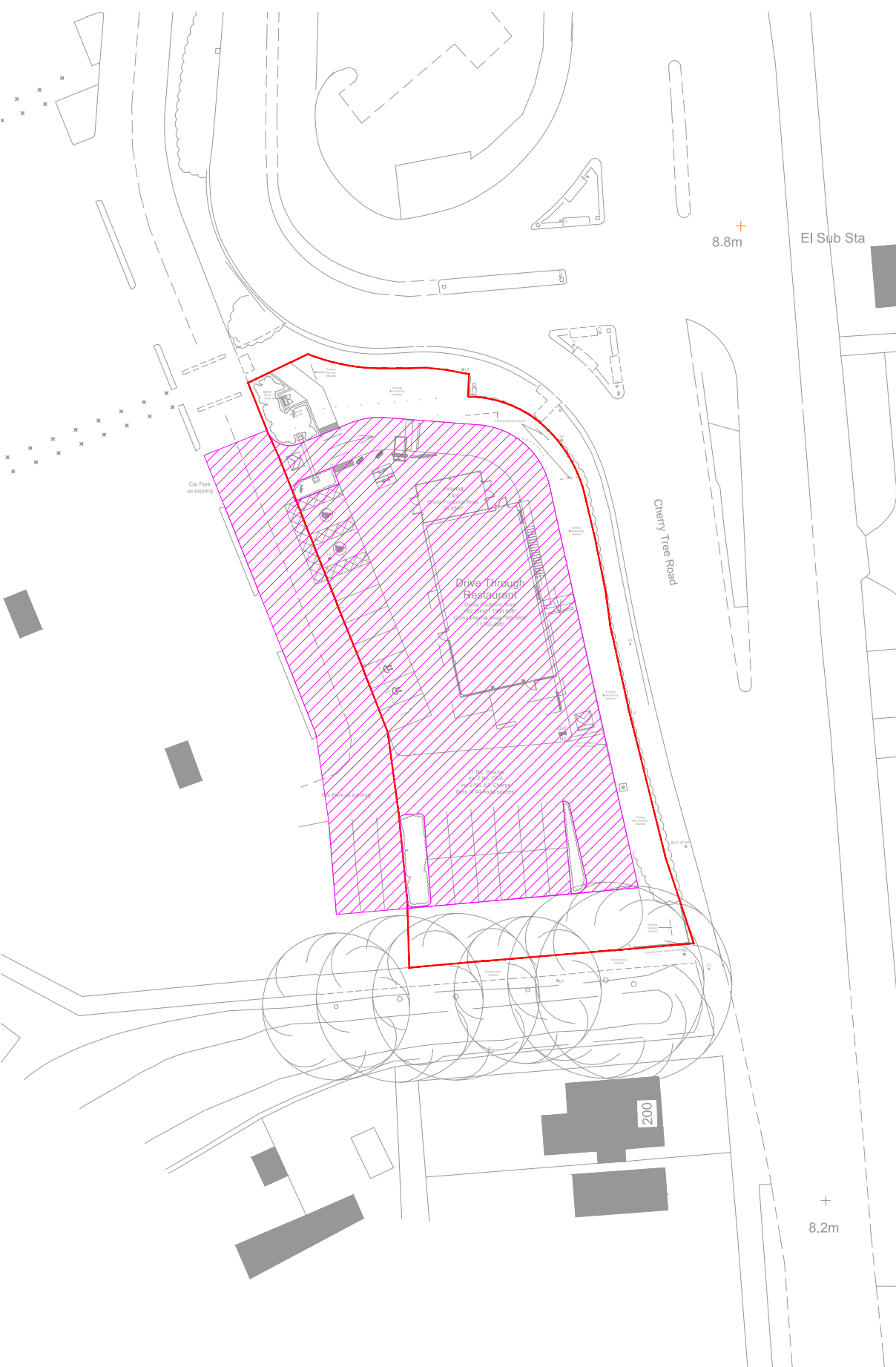
REV	DATE	REVISION	BY	CHK
-		FIRST ISSUE	PH	NB
A	27.01.22	UPDATED TO SUIT LATEST ARCHITECT'S LAYOUT DRAWING 18A-15.	PH	NB

Euro Garages Ltd
 Proposed Drive Thru Coffee Shop
 Asda Cherry Tree Road, Blackpool

Goodson Associates
 Consulting Civil, Structural & Transportation Engineers
 Fountain House, 4 South Parade,
 Leeds, LS1 5QX
 Also at Aberdeen, Edinburgh and Glasgow.

Tel: +44 (0)113 369 7925
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 Email: leeds@goodsons.com
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PLANNING			
DATE CREATED:	June 2021	SCALE:	1:100 @ A1
CONTRACT No:	P14995	DRAWING No:	500
		REV:	A



8.8m

EI Sub Sta

 PROPOSED CATCHMENT AREA: 1460m² (0.146 Ha)

Cherry Tree Road

Drive Through Restaurant
 165.26m² 1746.26m²
 120.00m² 1200.00m²

70.3M2 Storage
 for 236.00m² DGA
 for 236.00m² Car Capacity
 (also for 44.00m² storage)

Car Park as existing

70.3M2 Storage


8.2m

REV	DATE	REVISION	BY	CHK
-		FIRST ISSUE	PH	NB
A	28/01/22	AMENDED TO SUIT LATEST ARCHITECTS LAYOUT 1834-15.	PH	NB

Euro Garages Ltd
 Proposed Drive Thru Coffee Shop
 Asda Cherry Tree Road, Blackpool

Impermeable Area Plan
Goodson Associates
 Tel: +44 (0)113 369 7925
 Fax: -
 Email: leeds@goodsons.com
 Web: www.goodsons.com
 Consulting Civil, Structural & Transportation Engineers
 Fountain House, 4 South Parade,
 Leeds, LS1 5QX
 Also at Aberdeen, Edinburgh and Glasgow.

PLANNING			
DATE CREATED: June 2021	SCALE: 1:200	@ AI	
CONTRACT No: P14995	DRAWING No: 501	REV: A	

Goodson Associates		Page 1
53 Melville Street Edinburgh EH3 7HL		
Date 28/01/2022 15:36 File P14995 - Attenuation Cal...	Designed by PhilH Checked by	
XP Solutions		Source Control 2017.1.2

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 88 minutes.


Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	0.402	0.402	0.0	5.0	5.0	27.5	O K
30 min Summer	0.524	0.524	0.0	5.0	5.0	35.9	O K
60 min Summer	0.620	0.620	0.0	5.0	5.0	42.4	O K
120 min Summer	0.656	0.656	0.0	5.0	5.0	44.9	O K
180 min Summer	0.644	0.644	0.0	5.0	5.0	44.0	O K
240 min Summer	0.617	0.617	0.0	5.0	5.0	42.2	O K
360 min Summer	0.549	0.549	0.0	5.0	5.0	37.6	O K
480 min Summer	0.485	0.485	0.0	5.0	5.0	33.2	O K
600 min Summer	0.426	0.426	0.0	5.0	5.0	29.1	O K
720 min Summer	0.372	0.372	0.0	5.0	5.0	25.5	O K
960 min Summer	0.286	0.286	0.0	5.0	5.0	19.6	O K
1440 min Summer	0.180	0.180	0.0	4.6	4.6	12.3	O K
2160 min Summer	0.118	0.118	0.0	4.0	4.0	8.1	O K
2880 min Summer	0.097	0.097	0.0	3.3	3.3	6.6	O K
4320 min Summer	0.076	0.076	0.0	2.4	2.4	5.2	O K
5760 min Summer	0.066	0.066	0.0	1.9	1.9	4.5	O K
7200 min Summer	0.059	0.059	0.0	1.6	1.6	4.0	O K
8640 min Summer	0.054	0.054	0.0	1.4	1.4	3.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	117.448	0.0	32.1	23
30 min Summer	79.010	0.0	43.2	36
60 min Summer	50.812	0.0	55.6	62
120 min Summer	31.621	0.0	69.2	102
180 min Summer	23.637	0.0	77.6	134
240 min Summer	19.105	0.0	83.6	168
360 min Summer	14.037	0.0	92.2	234
480 min Summer	11.286	0.0	98.8	300
600 min Summer	9.522	0.0	104.2	362
720 min Summer	8.282	0.0	108.8	424
960 min Summer	6.640	0.0	116.3	540
1440 min Summer	4.854	0.0	127.5	770
2160 min Summer	3.541	0.0	139.6	1108
2880 min Summer	2.828	0.0	148.6	1472
4320 min Summer	2.055	0.0	162.0	2200
5760 min Summer	1.637	0.0	172.0	2936
7200 min Summer	1.371	0.0	180.1	3664
8640 min Summer	1.186	0.0	186.9	4392

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
10080 min Summer	0.051	0.051	0.0	1.3	1.3	3.5	O K
15 min Winter	0.456	0.456	0.0	5.0	5.0	31.2	O K
30 min Winter	0.598	0.598	0.0	5.0	5.0	40.9	O K
60 min Winter	0.717	0.717	0.0	5.0	5.0	49.1	O K
120 min Winter	0.771	0.771	0.0	5.0	5.0	52.7	O K
180 min Winter	0.748	0.748	0.0	5.0	5.0	51.2	O K
240 min Winter	0.703	0.703	0.0	5.0	5.0	48.1	O K
360 min Winter	0.592	0.592	0.0	5.0	5.0	40.5	O K
480 min Winter	0.489	0.489	0.0	5.0	5.0	33.5	O K
600 min Winter	0.398	0.398	0.0	5.0	5.0	27.2	O K
720 min Winter	0.321	0.321	0.0	5.0	5.0	22.0	O K
960 min Winter	0.213	0.213	0.0	4.8	4.8	14.6	O K
1440 min Winter	0.120	0.120	0.0	4.1	4.1	8.2	O K
2160 min Winter	0.089	0.089	0.0	3.0	3.0	6.1	O K
2880 min Winter	0.076	0.076	0.0	2.4	2.4	5.2	O K
4320 min Winter	0.062	0.062	0.0	1.8	1.8	4.2	O K
5760 min Winter	0.054	0.054	0.0	1.4	1.4	3.7	O K
7200 min Winter	0.049	0.049	0.0	1.2	1.2	3.4	O K
8640 min Winter	0.045	0.045	0.0	1.0	1.0	3.1	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
10080 min Summer	1.049	0.0	192.9	5080
15 min Winter	117.448	0.0	35.9	23
30 min Winter	79.010	0.0	48.3	36
60 min Winter	50.812	0.0	62.3	64
120 min Winter	31.621	0.0	77.5	118
180 min Winter	23.637	0.0	86.9	148
240 min Winter	19.105	0.0	93.7	184
360 min Winter	14.037	0.0	103.2	254
480 min Winter	11.286	0.0	110.7	322
600 min Winter	9.522	0.0	116.7	384
720 min Winter	8.282	0.0	121.8	442
960 min Winter	6.640	0.0	130.2	552
1440 min Winter	4.854	0.0	142.8	754
2160 min Winter	3.541	0.0	156.3	1112
2880 min Winter	2.828	0.0	166.4	1472
4320 min Winter	2.055	0.0	181.4	2208
5760 min Winter	1.637	0.0	192.7	2872
7200 min Winter	1.371	0.0	201.7	3616
8640 min Winter	1.186	0.0	209.3	4344

Goodson Associates		Page 3
53 Melville Street Edinburgh EH3 7HL		
Date 28/01/2022 15:36 File P14995 - Attenuation Cal...	Designed by PhilH Checked by	
XP Solutions		Source Control 2017.1.2

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m ³)	Status
10080 min Winter	0.042	0.042	0.0	0.9	0.9	2.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
10080 min Winter	1.049	0.0	216.1	5048

Goodson Associates		Page 4
53 Melville Street Edinburgh EH3 7HL		
Date 28/01/2022 15:36 File P14995 - Attenuation Cal...	Designed by PhilH Checked by	
XP Solutions		Source Control 2017.1.2


Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.146

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
From:	To:	From:	To:	From:	To:
0	4	4	8	8	12
	0.049		0.049		0.048

Goodson Associates		Page 5
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Date 28/01/2022 15:36 File P14995 - Attenuation Cal...	Designed by PhilH Checked by	
XP Solutions		Source Control 2017.1.2

Model Details

Storage is Online Cover Level (m) 2.000

Cellular Storage Structure

Invert Level (m) 0.000 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	72.0	0.0	0.801	0.0	0.0
0.800	72.0	0.0	2.000	0.0	0.0

Hydro-Brake® Optimum Outflow Control

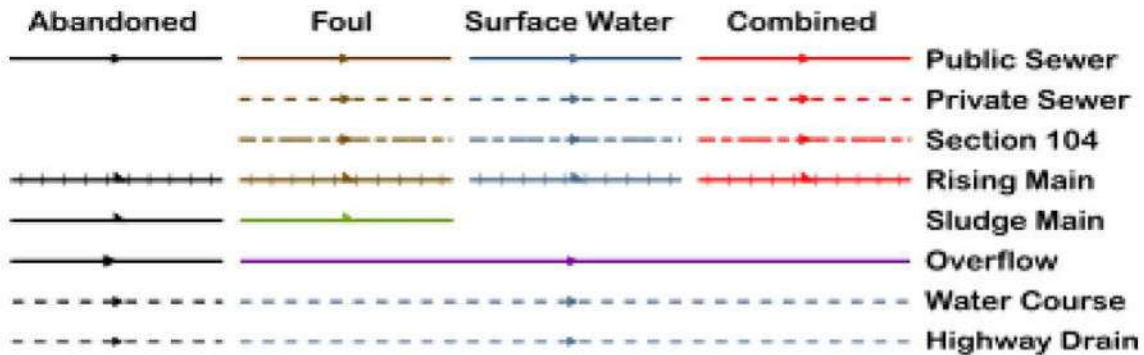
Unit Reference MD-SHE-0103-5000-1200-5000
 Design Head (m) 1.200
 Design Flow (l/s) 5.0
 Flush-Flo™ Calculated
 Objective Minimise upstream storage
 Application Surface
 Sump Available Yes
 Diameter (mm) 103
 Invert Level (m) 0.000
 Minimum Outlet Pipe Diameter (mm) 150
 Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.200	5.0	Kick-Flo®	0.745	4.0
Flush-Flo™	0.354	5.0	Mean Flow over Head Range	-	4.4

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

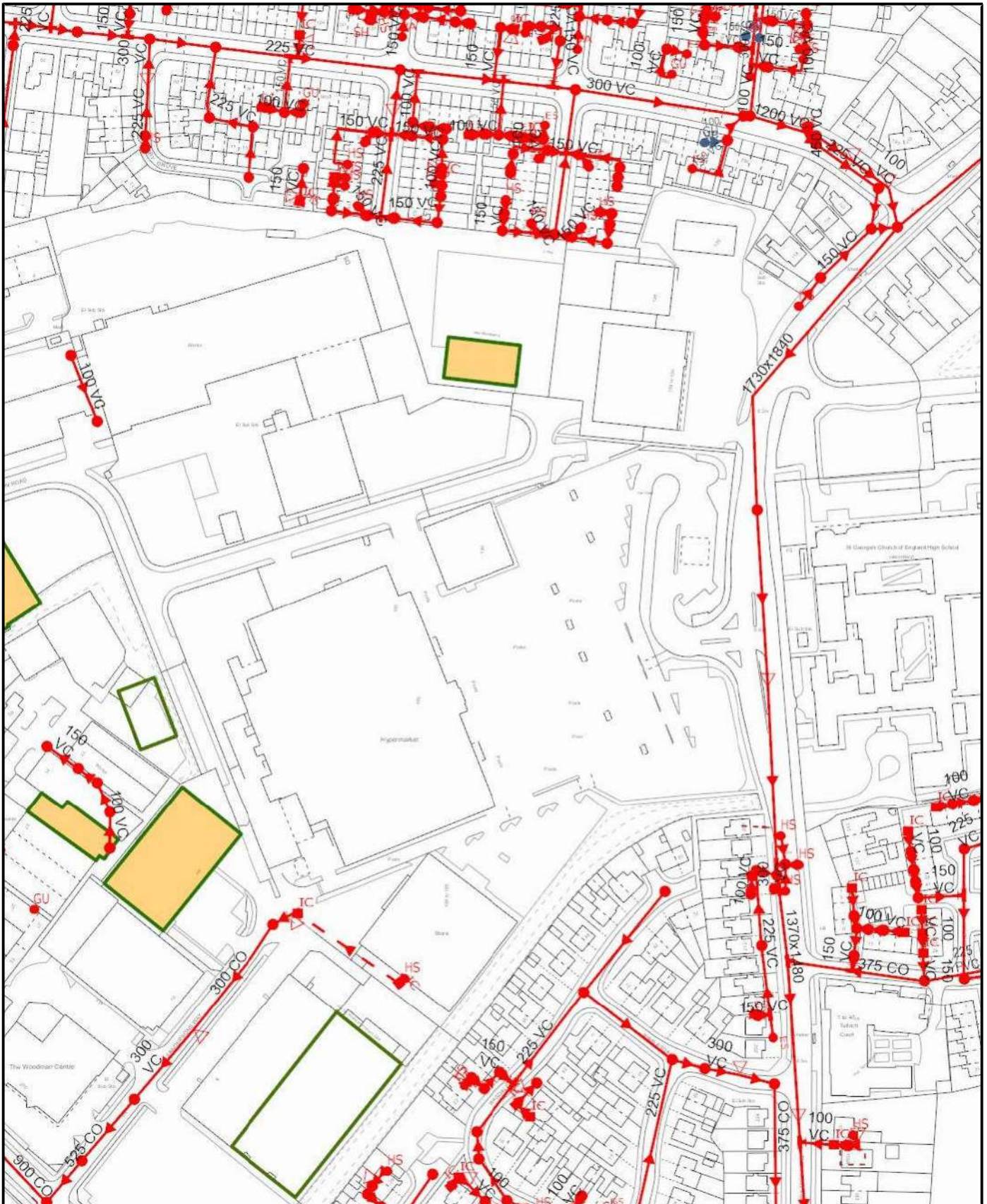
Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.4	1.200	5.0	3.000	7.7	7.000	11.5
0.200	4.7	1.400	5.4	3.500	8.3	7.500	11.8
0.300	5.0	1.600	5.7	4.000	8.8	8.000	12.2
0.400	5.0	1.800	6.0	4.500	9.3	8.500	12.6
0.500	4.9	2.000	6.3	5.000	9.8	9.000	12.9
0.600	4.7	2.200	6.6	5.500	10.2	9.500	13.3
0.800	4.1	2.400	6.9	6.000	10.7		
1.000	4.6	2.600	7.2	6.500	11.1		

Wastewater Symbology



All point assets follow the standard colour convention: **red** – combined **brown** - foul
blue – surface water **purple** - overflow

- | | |
|-------------------------|---------------------------------|
| Manhole | Side Entry Manhole |
| Head of System | Outfall |
| Extent of Survey | Screen Chamber |
| Rodding Eye | Inspection Chamber |
| Inlet | Bifurcation Chamber |
| Discharge Point | Lamp Hole |
| Vortex | T Junction / Saddle |
| Penstock | Catchpit |
| Washout Chamber | Valve Chamber |
| Valve | Vent Column |
| Air Valve | Vortex Chamber |
| Non Return Valve | Penstock Chamber |
| Soakaway | Network Storage Tank |
| Gully | Sewer Overflow |
| Cascade | Ww Treatment Works |
| Flow Meter | Ww Pumping Station |
| Hatch Box | Septic Tank |
| Oil Interceptor | Control Kiosk |
| Summit | |
| Drop Shaft | Change of Characteristic |
| Orifice Plate | |



Scale: 1:2426
 Date: 18/05/2021

SEWER RECORDS



Water for the North West

Address or Site Reference: HOME BARGAINS 198 CHERRY TREE ROAD,
 BLACKPOOL, FY4 4TH

Printed by: Property Searches

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

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Elizabeth Dawson

From: Perry, Graham <Graham.Perry@uuplc.co.uk>
Sent: 20 May 2021 17:17
To: Elizabeth Dawson
Cc: Wastewater Developer Services
Subject: Pre Development Enquiry for : ASDA Cherry Tree Road FY4 4QH UU reference Number : 4200039802

Pre Development Enquiry for: ASDA Cherry Tree Road FY4 4QH UU reference Number : 4200039802

We have carried out an assessment of your application which is based on the information provided. This pre-development advice on your drainage strategy will be valid for 12 months. Your drainage strategy will need to be reviewed by other competent authorities as part of the planning process, and we advise that you carry out the necessary site investigations to confirm the viability of your proposals.

If your investigations require access to our public sewer network, we ask that you contact our network engineers with a request for an access certificate via our main contact telephone number 0345 3723223 or refer to the link below:

<https://www.unitedutilities.com/builders-developers/working-near-our-assets/>

Foul Water

Foul flow from this site will be allowed to drain into the public foul water/combined sewer system.

Our preferred point of discharge would be to the 1370mm x1480mm diameter public combined sewer within Cherry Tree Rd located to the east of your proposed development at an unrestricted rate.

If you are able to identify an alternative, more suitable point of discharge, we request that you contact us at your earliest convenience so that we can assess suitability.

Surface Water

All surface water flow from the proposed development should drain in-line with the drainage hierarchy, as outlined in Paragraph 80, (Reference ID: 7-080-20150323), of the National Planning Practice Guidance. We also recommend you prioritise the use of multi-functional sustainable drainage systems for the management of surface water in accordance with national planning policy.

Generally, the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable.

This is outlined as follows, in order of priority:

- 1. into the ground (infiltration);**
- 2. to a surface waterbody;**
- 3. to a surface water sewer or highway drain;**
- 4. to a combined sewer.**

For guidance, The North West SuDS Pro-Forma provides information on the appropriate evidence required at each stage of the hierarchy, to demonstrate how each level has been discounted.

The Lead Local Flood Authority has responsibility for all surface water drainage concerns and their input to your proposal is critical. You should also consider whether it is necessary to discuss your proposal with the Environment Agency, or Internal Drainage Board (if operating in your area).

The Local Planning Authority are the determining authority for any application for planning permission and the appropriate authority for determining cost viability of a proposed drainage scheme, such assessments are outside of the jurisdiction of United Utilities.

Infiltration

Surface water runoff generated from this development should discharge to the ground via infiltration system where feasible.

A detailed evidence based feasibility assessment must be carried out in line with Chapter 25 of the CIRIA SuDS Manual 2015 to determine whether infiltration is a suitable method of surface water disposal.

Particular attention must be paid to Ground Water Source Protection Zones to ensure that the risk of pollution to these valuable resources is not compromised. Details can be obtained from the government website:

<https://www.gov.uk/guidance/groundwater-source-protection-zones-spzs#find-groundwater-spzs>

If your site is in a Groundwater Source Protection Zone, you should have regard to the Environment Agency's approach to Groundwater Protection. Information on this is available via the link below:

<https://www.gov.uk/government/publications/groundwater-protection-position-statements>

Please note that such a location could have implications for the principle of your development and the need for additional mitigating measures to protect the groundwater environment and public water supply in the detailed design of your site.

Public Sewer

In accordance with the hierarchy of drainage options within the National Planning Practice Guidance, both discharge to ground via infiltration and discharge to a waterbody should be discounted prior to consideration of discharging surface water to the public sewer system. Evidence should be provided to demonstrate how these have been discounted, as outlined in the North West SuDS pro-forma.

Once evidence is provided as outlined above, United Utilities will consider a connection to the 1370mm x1480mm diameter public combined sewer within Cherry Tree Rd located to the east of your proposed development at a pass forward flow to be agreed by the Lead Local Flood Authority. United Utilities request that any agreed rate does not exceed 5 l/s.

We have noted that you intend to drain surface water to the main drainage system serving Asda and can confirm that this is also acceptable

As a Water Company, we have no obligation to accept highway drainage into our public sewer network. However, should your proposals include runoff from highways, we would request that consideration is given to SuDS components that deliver source control are incorporated within the design of the scheme to reduce the volume and frequency of discharges of these flows to the public sewer.

Levels

For low-lying sites, (where the ground level of the site or the level of a basement is below the ground level at the point where the drainage connects to the public sewer), care should be taken to ensure that the property is not at increased risk of flooding. If these circumstances exist, we recommend that you contact us to discuss further. It could affect the detailed design of your site and result in the need to incorporate appropriate mitigating measures in your drainage scheme.

Land drainage / Overland flows / track drainage

United Utilities have no obligation, and furthermore we do not accept land drainage, overland flows or track drainage into the public sewerage network under any circumstances

Existing Water Assets Crossing the Site

It is the developer responsibility to identify utilities on-site. Where clean water assets are shown on our records, we recommend that you contact our Water Pre-Development Team, via the following email address:

DeveloperServicesWater@uuplc.co.uk. Further information for this service can be found on our website via the link below:

<https://www.unitedutilities.com/builders-developers/larger-developments/pre-development/water-pre-dev/>

Connection Application

Although we may discuss and agree discharge points and rates in principle, please be aware that you will have to apply for a formal sewer connection. This is so that we can assess the method of construction, Health & Safety requirements and to ultimately inspect the connection when it is made. Details of the application process and the form itself can be obtained from our website by following the link below:

<https://www.unitedutilities.com/builders-developers/larger-developments/wastewater/sewer-connections/>

We recommend that the detailed design should confirm the locations of all utilities in the area and ensure that any proposed drainage solution considers routing and clash checks where required.

If we can be of any further assistance please don't hesitate to contact us further.

Kind regards,

Graham Perry



Graham Perry
Development Engineer
Developer Services
M: 07557 577548
T: 01925 679405
unitedutilities.com

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Arsenic (Total), Cadmium (Total), Copper (Total), Lead (Total), Nickel (Total), Zinc (Total), Chromium (Total), Selenium (Total), Mercury (Total), Boron (Soluble), Hexavalent Chromium, Cyanide (Total), pH, 16 EPA Poly-Aromatic Hydrocarbons (PAH), Total Phenols, Total Sulphate, Sulphate 2:1 extract, Soil Organic Matter, Speciated Total Petroleum Hydrocarbons, BTEX compounds, MTBE and Absetsos ID.

3.3.3 In addition, three samples were also tested for full Waste Acceptance Criteria (WAC) suite.

3.3.4 Copies of the chemical test results are provided within Appendix D.

Geotechnical Testing

3.3.5 Geotechnical testing was carried out on one bulk sample by the UKAS accredited laboratory of James Fisher (Test Consult).

3.3.6 The sample was tested for Atterburg (Plasticity) testing and natural Moisture Content.

3.3.7 Note at the time of writing the geotechnical results for the site were not available. However, these will be forwarded on to the client upon receipt of the test results.

3.4 Ground Conditions

Made Ground

3.4.1 Made ground was encountered at each location. This was generally described as 0.1 m of tarmac underlain with limestone gravel (sub-base) to a maximum depth of 1 m bgl.

Superficial Strata

3.4.2 The underlying natural strata comprises of orange/brown mottled sandy slightly gravelly clay in Borehole WS1, WS2 and WS6; this extends to 2.2, 4.6 and 4.0 m bgl respectively and is underlain with fine to medium brown sand to the base.

3.4.3 The fine to medium sand directly underlies the made ground in Borehole WS3 and WS4 to base.

Bedrock

3.4.4 The bedrock geology was not encountered in any of the boreholes drilled on site.

Visual/Olfactory Evidence for Contamination

3.4.5 There was no visual or olfactory evidence of contamination identified within any of the boreholes.

Groundwater

3.4.6 Groundwater was not encountered during the site investigation, however, strata was described as ‘wet’ at various depths within each borehole (from 1.2 to 4.6 m bgl).

3.4.7 The groundwater probes were monitored on 24 May 2021 to determine post investigation water levels, with standing water levels as follows:

Borehole No WS1: 1.24 m bgl

Borehole No WS4: 2.03 m bgl

3.4.8 Based on site investigation information and recent monitoring, groundwater levels are highly variable and not representative of laterally continuous perched water. The water encountered is likely to be associated with pockets of perched groundwater ponded on more permeable horizons within the natural strata.

Soakaways

3.4.9 Given the shallow/variable depth to water during the site investigation and post investigation monitoring, the use of soakaways at this site is not considered to be viable.

3.5 In-Situ Testing

3.5.1 Standard Penetration Tests (SPTs) were carried out every 1 m in natural strata during drilling. The results are summarised in Table 4 below and presented on the borehole logs (Appendix C).

Depth (m)	WS1	WS2	WS3	WS4	WS6
1 – 1.45	10	10	11	10	11
2 - 2.45	29	12	11	12	13
3 - 3.45	28	14	17	14	15
4 - 4.45	22	18	19	16	20
5 - 5.45	--	21	--	--	23

Table 4: Summary of SPT ‘N’ Values



GEO-ENVIRONMENTAL CONSULTANTS DRAFT

GEO-ENVIRONMENTAL CONSULTING ENGINEERS

PROJECT NUMBER 21879	DATE 11th May 2021
PROJECT NAME Asda, Cherry Tree Road, Black	DRILLING METHOD Window Sample Borehole
CLIENT Eurogarages	BOREHOLE NO WS1
	SHEET 1/5

COMPLETION	CASING uPVC	SCREEN uPVC Factory Slotted
-------------------	--------------------	------------------------------------

COMMENTS 2 m pipe installed. 1 m plain, 1 m slotted. Wet strata from 2.2 m

Depth (m)	Depth (m)	Samples/ Test	Field Records	Water	Well Instal.	Graphic Log	Material Description	Additional Observations	Elevation (m)
	0.2	D=0.2 m					Tarmac		
0.5	0.5-1.0 0.6	B=0.5-1.0 m D=0.6 m					Light grey fine to coarse subangular sandy gravel of limestone with rare limestone cobbles		0.5
1	1 - 1.45	CPT (C) N=10	3,3/3,3,3,4				Stiff to very stiff orange/brown mottled sandy slightly gravelly clay		1
1.5	1.5-2.0	B=1.5-2.0 m							1.5
2	2 - 2.45 2.4	SPT (C) N=29 D=2.4 m	3,3/3,4,4,4	▽			Medium fine brown sand		2
2.5									2.5
3	3 - 3.45	SPT (C) N=28	4,4/4,5,5,5						3
3.5									3.5
4	4.0	D=4.0 m							4
	4 - 4.45	SPT (C) N=22	4,4/4,5,6,7						4
4.5							Termination Depth at: 3.6 m		4.5
5									5
5.5									5.5
6									6
6.5									6.5



GEO-ENVIRONMENTAL CONSULTANTS DRAFT

GEO-ENVIRONMENTAL CONSULTING ENGINEERS

PROJECT NUMBER 21879 PROJECT NAME Asda, Cherry Tree Road, Black CLIENT Eurogarages	DATE 12th May 2021 DRILLING METHOD Window Sample Borehole BOREHOLE NO WS2 SHEET 2/5
---	--

COMPLETION CASING uPVC SCREEN uPVC Factory Slotted

COMMENTS Wet strata at 4.6 m

Depth (m)	Depth (m)	Samples/ Test	Field Records	Water	Graphic Log	Material Description	Additional Observations	Elevation (m)
	0.2	D=0.2 m			Tarmac			
	0.5	D=0.5 m			Light grey fine to coarse subangular sandy gravel of limestone with rare limestone cobbles			0.5
	0.5-1.0	B=0.5-1.0 m			Stiff to very stiff orange/brown mottled very sandy slightly gravelly clay			
1	1-1.45	SPT (C) N=10	2,2/2,2,3,3		Stiff to very stiff orange/brown mottled very sandy slightly gravelly clay			1
1.5	1.5-2.0	B=1.5-2.0 m			Stiff to very stiff orange/brown mottled very sandy slightly gravelly clay			1.5
2	2 - 2.45	SPT (C) N=12	2,3/3,3,3,3		Stiff to very stiff orange/brown mottled very sandy slightly gravelly clay			2
2.5					Stiff to very stiff orange/brown mottled very sandy slightly gravelly clay			2.5
3	3.0	D=3.0 m			Stiff to very stiff orange/brown mottled very sandy slightly gravelly clay			3
	3 - 3.45	SPT (C) N=14	2,3/3,3,4,4		Stiff to very stiff orange/brown mottled very sandy slightly gravelly clay			3
3.5					Stiff to very stiff orange/brown mottled very sandy slightly gravelly clay			3.5
4	4 - 4.45	SPT (C) N=18	3,3/3,4,5,6		Stiff to very stiff orange/brown mottled very sandy slightly gravelly clay			4
4.5				∇	Stiff to very stiff orange/brown mottled very sandy slightly gravelly clay			4.5
5	5.0	D=5.0 m			Medium fine brown sand			5
	5 - 5.45	SPT (C) N=21	4,4/4,5,6,6		Medium fine brown sand			5
5.5					Termination Depth at: 5.45 m			5.5
6								6
6.5								6.5



GEO-ENVIRONMENTAL CONSULTANTS DRAFT

GEO-ENVIRONMENTAL CONSULTING ENGINEERS

PROJECT NUMBER 21879 PROJECT NAME Asda, Cherry Tree Road, Black CLIENT Eurogarages	DATE 12th May 2021 DRILLING METHOD Window Sample Borehole BOREHOLE NO WS3 SHEET 3/5
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COMPLETION	CASING uPVC	SCREEN uPVC Factory Slotted
-------------------	--------------------	------------------------------------

COMMENTS Wet strata at 1.2 .

Depth (m)	Depth (m)	Samples/ Test	Field Records	Water	Graphic Log	Material Description	Additional Observations	Elevation (m)	
	0.2	D=0.2 m		W		Tarmac			
0.5	0.5	D=0.5 m				Light grey fine to coarse subangular sandy gravel of limestone with rare limestone cobbles		0.5	
1	1-1.45	SPT (C) N=11	1,2/2,3,3,3			Loose to Medium fine to medium slightly silty sand		1	
1.5	1.5	D=1.5 m						1.5	
2	2 - 2.45	SPT (C) N=11	2,2/2,3,3,3						2
2.5									2.5
3	3 - 3.45	SPT (C) N=17	3,3/4,4,4,5						3
3.5									3.5
4	4 - 4.45	SPT (C) N=19	4,4/4,5,5,5				4		
4.5						Termination Depth at: 4.45 m		4.5	
5								5	
5.5								5.5	
6								6	
6.5								6.5	



GEO-ENVIRONMENTAL CONSULTANTS DRAFT

GEO-ENVIRONMENTAL CONSULTING ENGINEERS

PROJECT NUMBER 21879	DATE 11th May 2021
PROJECT NAME Asda, Cherry Tree Road, Black	DRILLING METHOD Window Sample Borehole
CLIENT Eurogarages	BOREHOLE NO WS4
	SHEET 4/5

COMPLETION	CASING uPVC	SCREEN uPVC Factory Slotted
-------------------	--------------------	------------------------------------

COMMENTS 2 m pipe installed. 1 m plain, 1 m slotted. Wet strata from 1.2 m

Depth (m)	Depth (m)	Samples/ Test	Field Records	Water	Well Instal.	Graphic Log	Material Description	Additional Observations	Elevation (m)
	0.2	D=0.2 m		W	A		Tarmac		
0.5	0.8	D=0.8 m					Light grey fine to coarse subangular sandy gravel of limestone with rare limestone cobbles		0.5
1	1 - 1.45 1.1	CPT (C) N=10 D=1.1 m	1,2/2,2,3,3				Medium fine brown sand		1
1.5									1.5
2	2 - 2.45	SPT (C) N=12	2,3/3,3,3,3					2	
2.5								2.5	
3	3 - 3.45	SPT (C) N=14	3,3/3,3,4,4					3	
3.5								3.5	
4	4 - 4.45	SPT (C) N=16	3,3/4,4,4,4					4	
4.5							Termination Depth at: 4.45 m		4.5
5									5
5.5									5.5
6									6
6.5									6.5



GEO-ENVIRONMENTAL CONSULTANTS DRAFT

GEO-ENVIRONMENTAL CONSULTING ENGINEERS

PROJECT NUMBER 21879 PROJECT NAME Asda, Cherry Tree Road, Black CLIENT Eurogarages	DATE 12th May 2021 DRILLING METHOD Window Sample Borehole BOREHOLE NO WS6 SHEET 5/5
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COMPLETION CASING uPVC SCREEN uPVC Factory Slotted

COMMENTS Wet strata at 1.2 .

Depth (m)	Depth (m)	Samples/ Test	Field Records	Water	Graphic Log	Material Description	Additional Observations	Elevation (m)
	0.2	D=0.2 m			Tarmac			
0.5					Light grey fine to coarse subangular sandy gravel of limestone with rare limestone cobbles			0.5
1	1.0	D=1.0 m			Stiff orange/brown mottled sandy gravelly clay			1
1.5	1-1.45 1 - 1.5	SPT (C) N=11 B=1.0 - 1.5 m	2,2/2,3,3,3		Stiff orange/brown mottled sandy gravelly clay			1.5
2	2 - 2.45	SPT (C) N=13	3,3/3,3,3,4		Stiff orange/brown mottled sandy gravelly clay			2
2.5					Stiff orange/brown mottled sandy gravelly clay			2.5
3	3 - 3.45 3.0-3.5	SPT (C) N=15 B=3.0-3.5 m	3,3/3,4,4,4		Stiff orange/brown mottled sandy gravelly clay			3
3.5					Stiff orange/brown mottled sandy gravelly clay			3.5
4	4 - 4.45	SPT (C) N=20	4,4/5,5,5,5	∇	Medium fine brown slightly silty sand			4
4.5					Medium fine brown slightly silty sand			4.5
5	5.0	D=5.0 m			Termination Depth at: 4.45 m			5
5.5	5 - 5.45	SPT (C) N=23	4,4/4,5,7,7		Termination Depth at: 4.45 m			5.5
6					Termination Depth at: 4.45 m			6
6.5					Termination Depth at: 4.45 m			6.5