Vale Consultancy

CONSULTING CIVIL & STRUCTURAL ENGINEERS

DRAINAGE STRATEGY REPORT (DSR)

Hawthorne GP Surgery
ASDA Longsight
Manchester
M12 4NH

Prepared for: Evabuild
Project Ref: 25597

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DOCUMENT CONTROL

Project:	Hawthorne GP Surgery
Client:	Evabuild
Vale Consultancy Ref:	25597

Issue	Prepared by	Approved by	Date	Status
01	Dylan Gray *Beng (Hons) GMICE* Assistant Civil Engineer	Paul Graham *BSc (Hons), MSc, GMICE* Director of Civil Engineering	18.08.26	First issue
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1 INTRODUCTION

1.1 Site Location

Vale Consultancy has been instructed by Wernick (the Client) to undertake a drainage strategy report (DSR) for the proposed development at ASDA Longsight, Manchester, M12 4NH.

Refer to Appendix A – Existing Site Plans

The site is currently a portion of carpark serving ASDA Supermarket in Manchester. The site is located approximately 3.6km southeast from the centre of Manchester in the borough of Longsight. The site is access from Kirkmanshulme Lane to the north.

Ordnance Survey National Grid Reference for the site is **SJ867957.** Refer to the site location plan marked within the red boundary in figure 1 below.

A topographical survey has been carried out and indicates the site's ground levels to be generally flat as the site is currently a car park, with site levels between approximately 52.30m – 51.89m AOD.

The total development site area is approximately 910m² (0.091ha). The site is currently hard paved and occupied used as a car park, which classed as a 'brownfield'. The following drainage strategy will cover the hydraulic design criteria of the surface water drainage network.

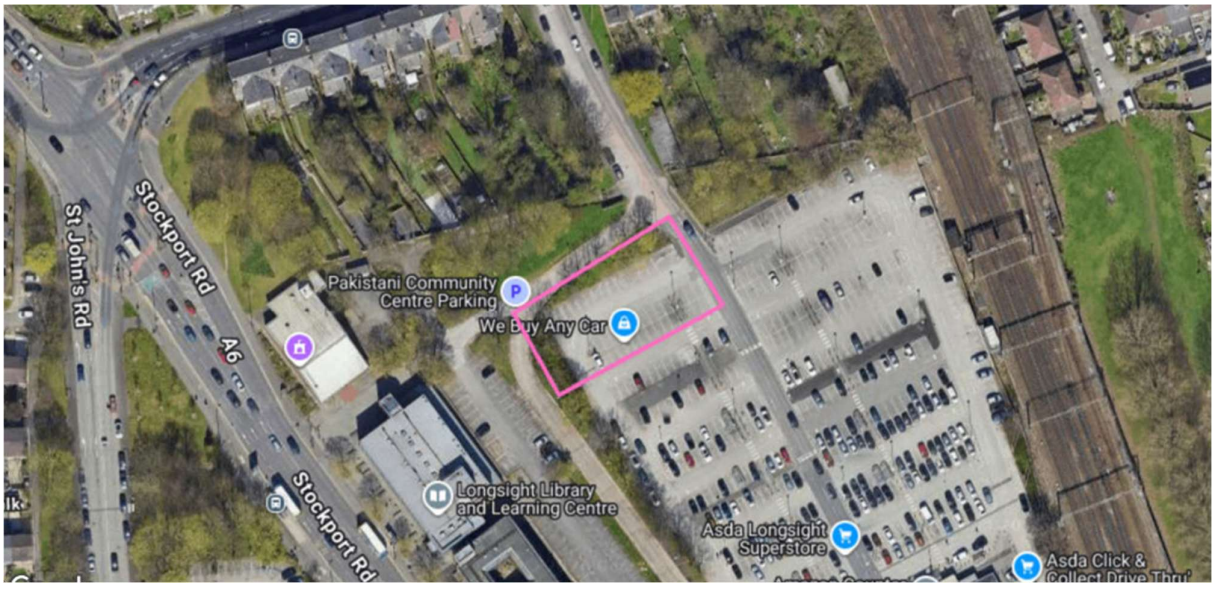


Figure 1: *Site Location Satellite Plan*

1.2 Proposed Development

The proposed development includes the installation of a temporary/modular building which will be constricted on above ground foundations and serve as a GP clinic.

Refer to **Appendix B** – Proposed Plans

1.3 Existing Geology

British Geological Survey records note that the site is listed to have the following:

Bedrock Geology - Chester Formation-Sandstone. These sedimentary rocks are fluvial in origin. They are detrital, ranging from coarse- to fine-grained and form beds and lenses of deposits reflecting the channels, floodplains and levees of a river or estuary.

Superficial Deposits - Till, Devensian-Diamicton. These sedimentary deposits are glacigenic in origin. They are detrital, created by the action of ice and meltwater, they can form a wide range of deposits and geomorphologies associated with glacial and inter-glacial periods during the Quaternary.

Refer to **Appendix D** – British Geological Survey record

1.4 Flood Risk

The EA Flood Map for Planning indicates the site to be in flood zone 1.

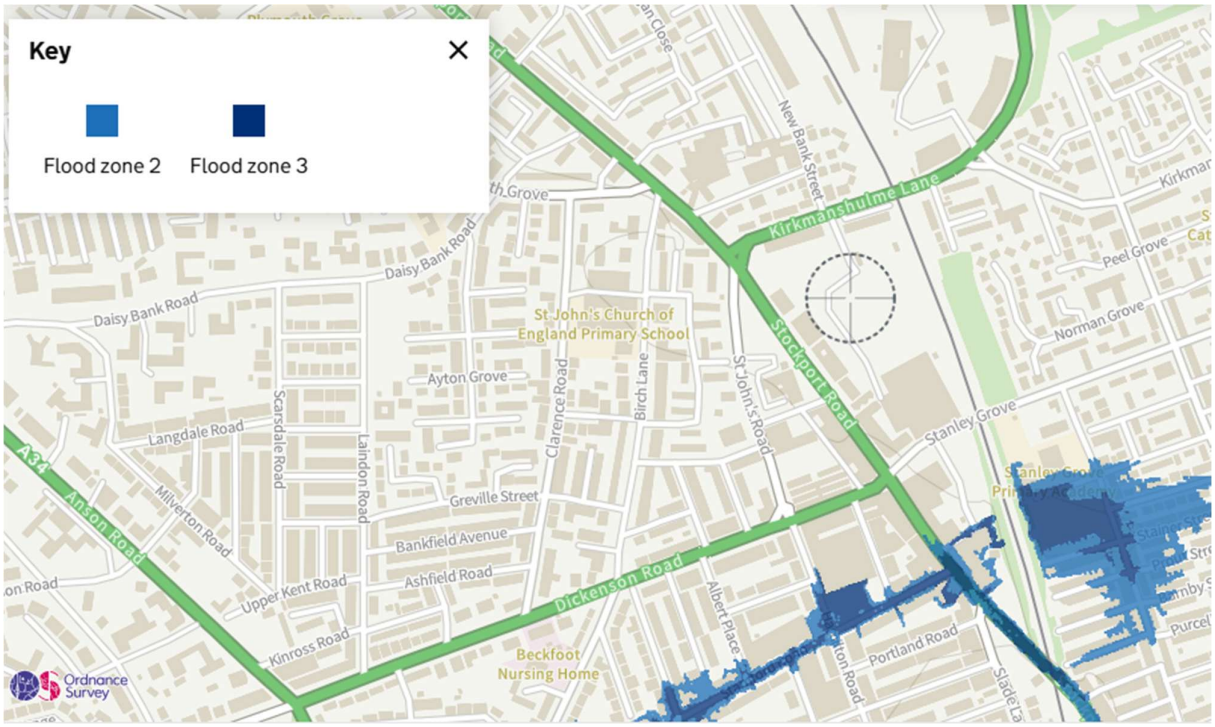


Figure 2: *EA Flood Map for Planning*

The surface water flood map shows an area at risk of surface water flooding to the south of the site however this does not encroach on the proposed site boundary.



Figure 3: *Surface Water Flood Map*

The flood mapping indicates that the site is at low risk of flooding from fluvial sources and surface water.

2 SURFACE WATER

2.1 Existing Drainage Systems

The nearest open body of water is a watercourse that lies 700m south of the site, just north of Nutsford Vale.

The site is brownfield, and as such is currently served by a formal drainage regime. A utilities survey was undertaken by Cornerstone Projects in July 2026. The survey shows the parking area is served by a dedicated surface water drainage network.

United Utilities Asset Mapping has identified a foul or combined sewer in the access road to the north.

Refer to **Appendix E** – United Utilities Asset Mapping

2.2 Proposed Drainage Systems

2.2.1 SuDS hierarchy of surface water discharge locations

The following receptors have been considered for surface water runoff on site, in order of SuDS preference. The aim of SuDS Standards is to ensure that the most effective drainage scheme is delivered to the preferred surface water destination, in order of the hierarchy set out below, where the design can move to the next means of discharge only under exception criteria.

1. **Surface water collection for reuse.**
2. **Discharge by infiltration into ground**
3. **Discharge into open surface water body**
4. **Discharge into surface water sewer, highway drain, or other drainage system**
5. **Discharge into combined sewer.**

Priority Level 1 - Surface water collected for reuse:

Rainwater harvesting is not proposed due to the practicalities of such a system as well as there being no foreseeable demand for non-potable water within the development proposals throughout its design life.

The need for non-potable water is low and the cost for such a system is high therefore it is deemed not feasible.

No solution, move to next Priority Level

Priority Level 2 – Discharge via infiltration:

As the site is small there is limited space and a soakaway cannot be placed within the redline boundary without contravening the Building Regulations minimum offset.

No solution, move to next Priority Level

Priority Level 3 – Discharge into open surface water body:

The nearest open body of water is a watercourse that lies 700m south of the site, just north of Nutsford Vale. No connection to an open water body is possible due to the distance.

No solution, move to next Priority Level

Priority Level 4 – Discharge into surface water sewer, highway drain or other drainage system:

United Utilities asset mapping has not identified any surface water public sewers within the vicinity of the site. The topographical survey however identified an existing surface water system that is under private ownership and connects to the united utilities surface water sewerage network further downstream.

It is proposed to utilise this surface water system for the roof area of proposed development.

Solution.

+-

Surface Water Runoff Hydraulic Control

Proposed SuDS drainage system

As the site is currently completely impermeable the proposed surface water drainage will connect to the existing surface water system unattenuated as no net change in discharge rate or volume will be created by the proposed development which is temporary in nature. The roof area will be connection to the private surface water drainage system on site, and the hardstanding will remain unchanged and drain as existing. The structure is to be temporary and as such will return to its existing condition following its proposed design life.

Refer to **Appendix F** – Design Calculations

2.2.2 Operation and Maintenance Requirements

The construction management plan and construction phasing plan will be developed by the appointed contractor, as the SuDS scheme requires coordination with all other elements of the development that will be constructed as part of the scheme, including plot strip/trench fill foundations, plot/boundary walls, foul drainage.

To ensure SuDS components continue to operate reliably, regular inspection and maintenance should be carried out. In most cases, appropriate information should be provided by the relevant manufacturer on what has been installed, how it works, when to inspect it and whether maintenance will be required. CIRIA C753 The SuDS Manual also provides information on the operation and maintenance requirements for various SuDS components.

An inspection and maintenance plan has been produced for the site proposals, providing the site owner, who is responsible for the maintenance, guidance on the types and frequency of inspections and maintenance work that is required for the proposed element.

Refer to **Appendix F –** Management & Maintenance Plan.

3 FOUL DRAINAGE

The site is brownfield, and as such is currently served by a formal drainage regime. A utilities survey was undertaken by Cornerstone Projects in July 2026. Thie survey identified public sewerage in the road to the north of the site. A private foul water sewer was identified by the topographical survey, and it is proposed to connect the proposed building foul drainage to this private drainage subject to agreement with the local authority.

4 CONCLUSIONS

The site is currently a portion of carpark serving ASDA Supermarket in Manchester. The site is located approximately 3.6km southeast from the centre of Manchester in the borough of Longsight. The site is access from Kirkmanshulme Lane to the north.

The proposed development includes the installation of a temporary/modular building which will be constricted on above ground foundations and serve as a GP clinic.

As the site is small there is limited space and a soakaway cannot be placed within the redline boundary without contravening the Building Regulations minimum offset.

As the site is currently completely impermeable the proposed surface water drainage will connect to the existing surface water system unattenuated as no net change in discharge rate or volume will be created by the proposed development which is temporary in nature.

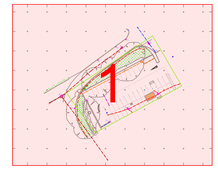
The surface water system will be designed to accommodate the 1 in 100 year event with 40% allowance for climate change with no flooding to the site. The surface water will discharge unattenuated as existing. The roof area will be connection to the private surface water drainage system on site and the hardstanding will remain unchanged and drain as existing.

The site is brownfield, and as such is currently served by a formal drainage regime. A utilities survey was undertaken by Cornerstone Projects in July 2026. Thie survey identified public sewerage in the road to the north of the site. A private foul water sewer was identified by the topographical survey, and it is proposed to connect the proposed building foul drainage to this private drainage subject to agreement with the local authority.

APPENDIX A: Existing Site Plans



Sheet Layout



Legend

AR	Assumed Route	GRun	Gully Run	RS	Road Sign
AV	Air Valve	GR	Gas Riser	RWP	Rain Water Pipe
BAS	Basement	HYD	Hydrant	SAT	Satellite Dish
BLK	Blocked	HOR	Head of Run	SL	Soffit Level
BP	Block Paving	HT	Height	ST	Stop Tap
Bol.	Bollard	IB	Illuminous Bollard	STN	Survey Control Station
BH	Borehole	IC	Inspection Chamber	SV	Stop Valve
BT	British Telecom Chamber	KBP	Kerb Blister/Ramped	TEL	Telephone Pole
CBox	Control Box	IL	Invert Level	TBM	Temporary Benchmark
GPit	Catchpit	KO	Kerb Outlet	TFR	Taken From Records
CHE	Chamber Extents	LB	Lighting Bollard	THL	Threshold Level
CL	Cover Level	LC	Lighting Column	TL	Traffic Light
CP	Control Point	LE	Lamp Line	TS	Traffic Signal
CPS	Concrete Paving Slabs	LP	Lamppost	TP	Telegraph Pole
CR	Cable Riser	MH	Manhole	UIS	Underside
CTV	Cable TV	MKR	Marker	UL	Uplight
DrChan.	Drainage Channel	MTR	Meter	UND	Undefined
DC	Direct Clay Lined Pipe	MWR	Monitoring Well	UA	Unable to Access
DL	Directly Laid	NOU	Number of Ducts Unknown	UTF	Unable to Find
DV	Dense Vegetation	NVI	No Visible Incoming	UTL	Unable to Lift
DP	Down Pipe	NVO	No Visible Outgoing	UTR	Unable to Rod
DR	Duct Riser	NVP	No Visible Pipe	UTS	Unable to Survey
EJB	Electric Junction Box	OBA	Off Site Area	UT	Unable To Trace
EoT	End of Trace	OSA	Off Survey Area	VP	Vent Pipe
EP	Electricity Pole	OSBM	Ordnance Survey Benchmark	VR	Vapour Recovery
ER	Earth Rod	PR	Pipe Riser	WFC	Water Filled Chamber
FFL	Finished Floor Level	PT	Poor Trace	WM	Water Meter
FH	Fire Hydrant	RE	Rodding Eye	WO	Wash Out
FP	Flag Pole	R/Wall	Retaining Wall	WR	Water Riser
FS	Flow Switch			WV	Wash Valve
GY	Gully			3SI	3-Stage Interceptor

Pipeline Material Abbreviations

AC	Asbestos Cement	PVC	Polyvinyl Chloride
CI	Cast Iron	RC	Reinforced Concrete
DI	Ductile Iron	S	Steel
HDPE	High Density Polyethylene	SS	Stainless Steel
MS	Mild Steel	VC	Vitrified Clay
PE	Polyethylene	WI	Wrought Iron

Utility Legend

EHV	Extra High Voltage Electricity	FWS	Foul Drainage
HV	High Voltage Electricity	SWS	Surface Drainage
LV	Low Voltage Electricity	CWS	Combined Drainage
SL	Street Lighting	EWS	Effluent Drainage
ES	Earthing Strip	ADL	Adfilue Line
TS	Traffic Signals		Offset Fill Line
CATV	Cable Television	V	Vent Line
CCTV	Closed Circuit Television	FL	Fuel Line
COM	Communications	VR	Vapour Recovery
BT	British Telecoms	G	Gauge Line
FO	Fibre Optics	OIL	Oil Pipe
GAS	Gas	HPL	Heating Pipe
HPG	High Pressure Gas	A	Compressed Air
IPG	Intermediate Pressure Gas	O2	Oxygen Supply
LPG	Localised High Pressure Gas	ALC	Alarm Cable
MPG	Medium Pressure Gas	ED	Empty Duct
W	Water	MSD	Multi Service Duct
P	Pipeline	FSL	Foam Service Pipe
UNK	Unknown Asset	SB	Survey Boundary
U.GPR	Unknown GPR	CE	Chamber Extents
			Approx. CE

Utility Location Depth Explanation

The located depth of a service obtained during a survey may be received to 3 different locations;

Center (c); EML Electromagnetic locating provides a depth to the center of the magnetic field received which is also the center of the pipe or cable.

Invert (i); Depths obtained during drainage surveys or using Flexi Trace or Sonde are taken at the invert of a pipe.

Top (t); GPR Ground Penetrating Radar provides depths to the top or crown of a pipe.



The letter following the depth indicates to where the depth has been measured to.

Utility Block Legend



PAS 128 Quality Level Classifications

Quality Level labeling of located utilities with a classification code allows the user of the information to understand clearly how it was obtained and then apply appropriate confidence and reliance upon it. Project risks relating to underground utilities can then be properly managed.

QL A Information is obtained by visually confirming the utility location, type, position and size. Services can be visually proven by way of Non destructive digging (NDD) using Vacuum Excavation or hand digging techniques to expose the buried service. Once accurately surveyed tolerances for a QL-A classification are: +/- 50mm of given depth and +/- 25mm horizontally.

QL B1 Information is obtained using Electromagnetic Pipe & Cable locators EML, Sonde or Flexi trace and Ground Penetrating Radar GPR equipment. In order to achieve a B1 classification at least two methods must accurately locate and agree on a buried service location. Once accurately surveyed tolerances for a QL-B1 classification are: +/- 15% of given depth and +/- 150mm horizontally.

QL B2 Information is obtained using Electromagnetic Pipe & Cable locators EML, Sonde or Flexi trace and Ground Penetrating Radar GPR equipment. In order to achieve a B2 classification one method must accurately locate a buried service location. Once accurately surveyed tolerances for a QL-B2 classification are: +/- 40% of given depth and +/- 250mm horizontally.

QL B3 Information is obtained using Electromagnetic Pipe & Cable locators EML, Sonde or Flexi trace and Ground Penetrating Radar GPR equipment. In order to achieve a B3 classification one method may indicate a possible position for a service location however due to possible interference or poor results no depth can be achieved. Once accurately surveyed tolerances for a QL-B3 classification are: no given depth and +/- 500mm horizontally.

QL B4 Information is has been unable to be located using Electromagnetic Pipe & Cable locators EML, Sonde or Flexi trace and Ground Penetrating Radar GPR equipment but is believed to exist until proven otherwise. This type of information could also be associated with assumed routes and Taken from records. There are no design tolerances associated with a B4-quality level and information should be treated with caution.

QL C Information is collected by correlating the survey of visible surface features such as marker plates, manholes or trench scars with existing drawing or record information to enable the approximate position of a utility to be determined. There are no design tolerances associated with a QL-C quality level.

QL D Information is the most basic level of Utility information derived from existing drawing and record information . This method should always be treated as an indication of the presence of a service and should not be used for design.

Drawing Notes

Utility depths and levels shown are in meters.

Pipe sizes and materials which cannot be obtained by visual survey are taken from record drawings or marker plates where available.

Cable routes shown as a single line may actually consist on many cables please refer to annotated configuration details where provided.

Drainage pipe sizes and invert levels have been determined without man entry into chambers. Every effort has been made to correctly obtain this information however accuracy is dependant on the visibility of the service.

For all equipment specifications, site procedures and limitations encountered on this project please see the survey report.

Coordinates and Levels are derived from Ordnance Survey datum OSGB36 through a series of GNSS RTK Observations.

Detection Disclaimer: Electromagnetic locating techniques as well as Ground Penetrating Radar have been utilized in the location of underground services. These results are non infallible and a NDD non destructive process should be carried out to confirm service identification positions and particularly depths where these are critical. Although all reasonable effort has been made in the locating and mapping of underground services the complete extents of this Utility survey information cannot be guaranteed.

Client Logo:

EvaBuild

Project Address:

Starley Grove
Longsight
Manchester
M12 4NH

Project Title

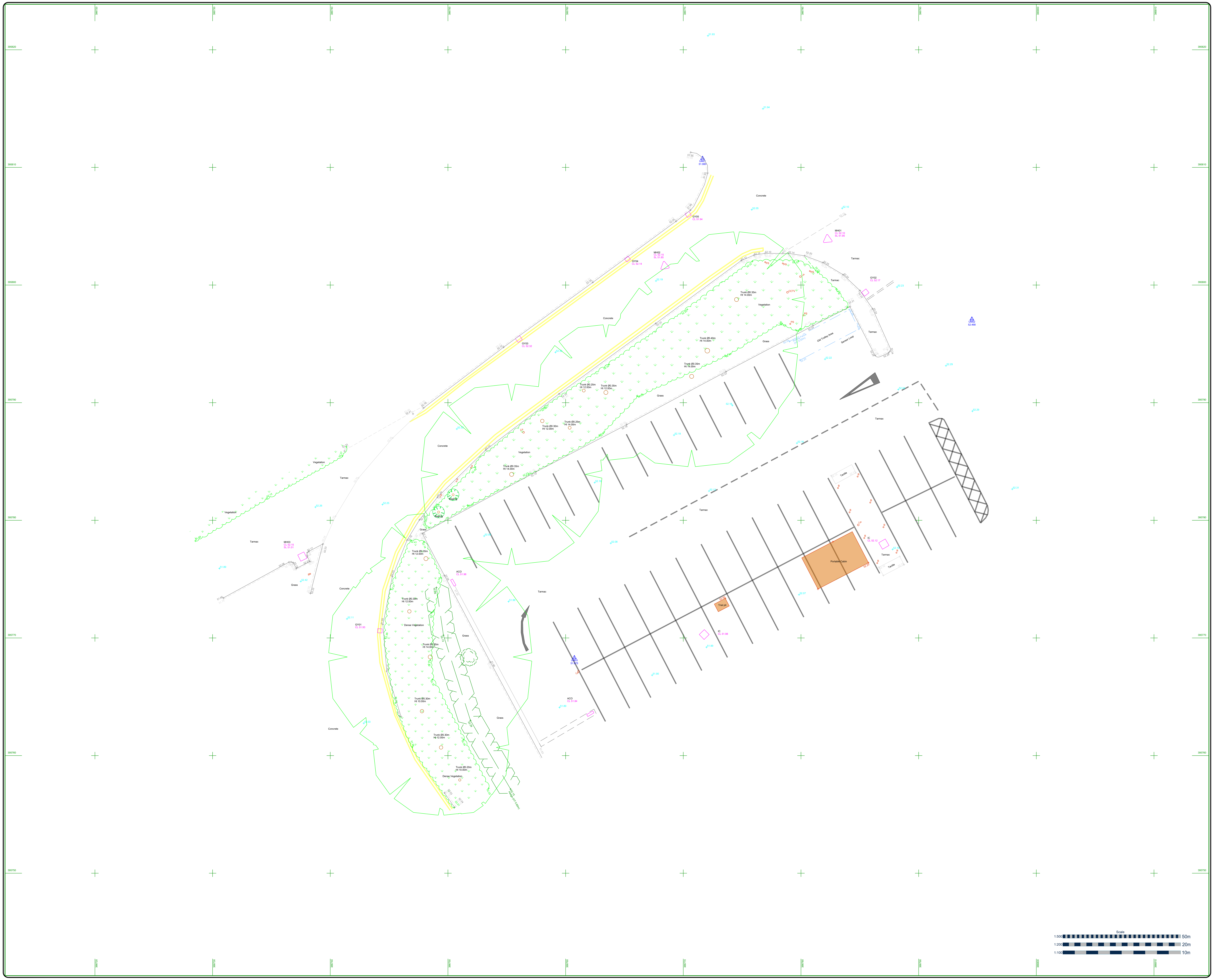
PAS128 2D M2 Utility Mapping + Topographic Survey

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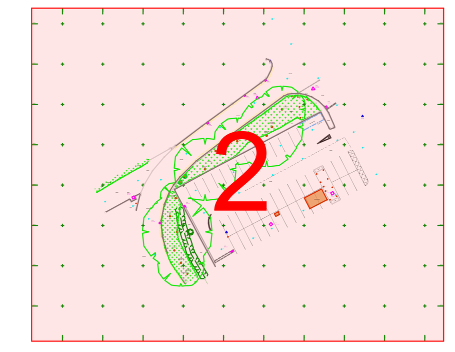
Project Number	Sheet No:	Revision:
UM26-4214-EVA	01 OF 02	1

Revision	Revision Notes	Date
1	Final Drawing	30/07/2026

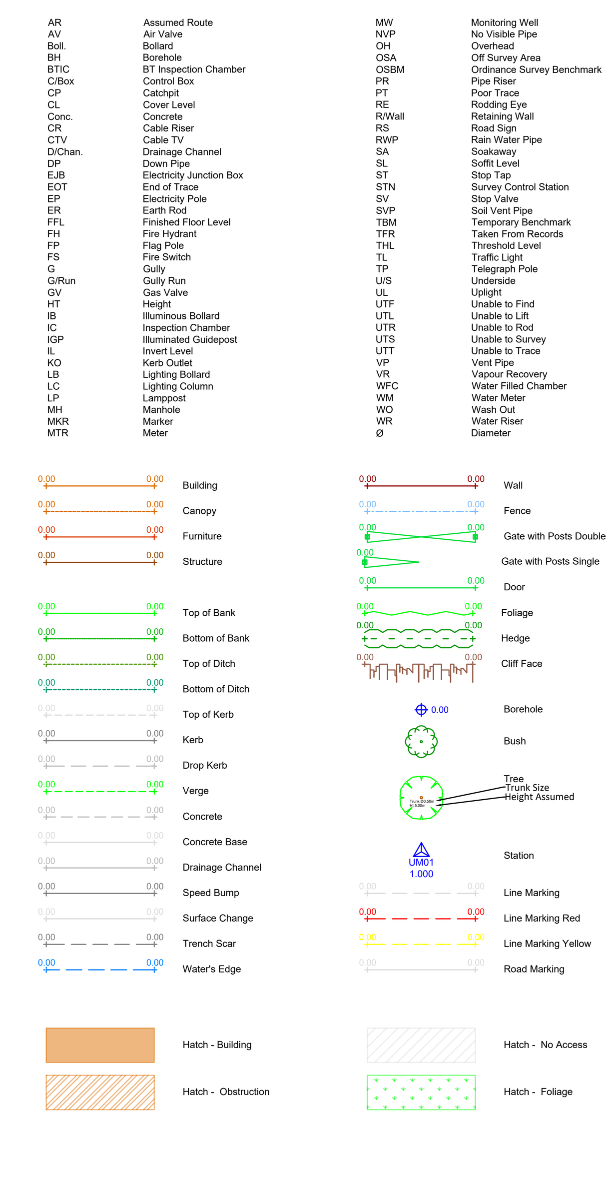
Utility MAPPING
0800 024 UMAP (8627)
www.u-map.co.uk info@u-map.co.uk



Sheet Layout



Legend



SURVEY STATIONS			
Name	Easting	Northing	Height
UM01	386771.637	395810.765	51.993
UM02	386794.522	395797.110	52.468
UM03	386760.743	395768.322	51.875

Drawing Notes

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Client Logo:

Project Address:
Starley Grove
Longsight
Manchester
M12 4NH

Project Title
PAS128 2D M2 Utility Mapping + Topographic Survey

Surveyor	Drawn	Checked	Survey Date:	Scale:
LM	KF	PL	13/07/2026	1:100 @ A1

Project Number:	Sheet No:	Revision:
UM26-4214-EVA	02 OF 02	1

Revision	Revision Notes	Date
1	Final Drawing	30/07/2026

0800 024 UMAP (8627)
www.u-map.co.uk info@u-map.co.uk

APPENDIX B:

Proposed Site Plans



Site Plan
1 : 100

N

0m 2m 4m 6m 8m

VISUAL SCALE 1:100 @ A1

REV	DESCRIPTION	BY	CHK	DATE
P3	increased size of clean store/drug store	FH	TM	19/06/2026
P2	Adjusted GIFA to include new mod	FH	TM	15/06/2026
P1	Adjusted map to fit new mod on car park	FH	TM	12/06/2026

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CLIENT TITLE
Hope Citadel Healthcare

PROJECT TITLE
Hawthorne Consulting Block

PROJECT ADDRESS
Asda Longsight, Stanley Grove, Longsight, Manchester, M12 4NH

DRAWING TITLE
Site_Plan

DRAWING REFERENCE

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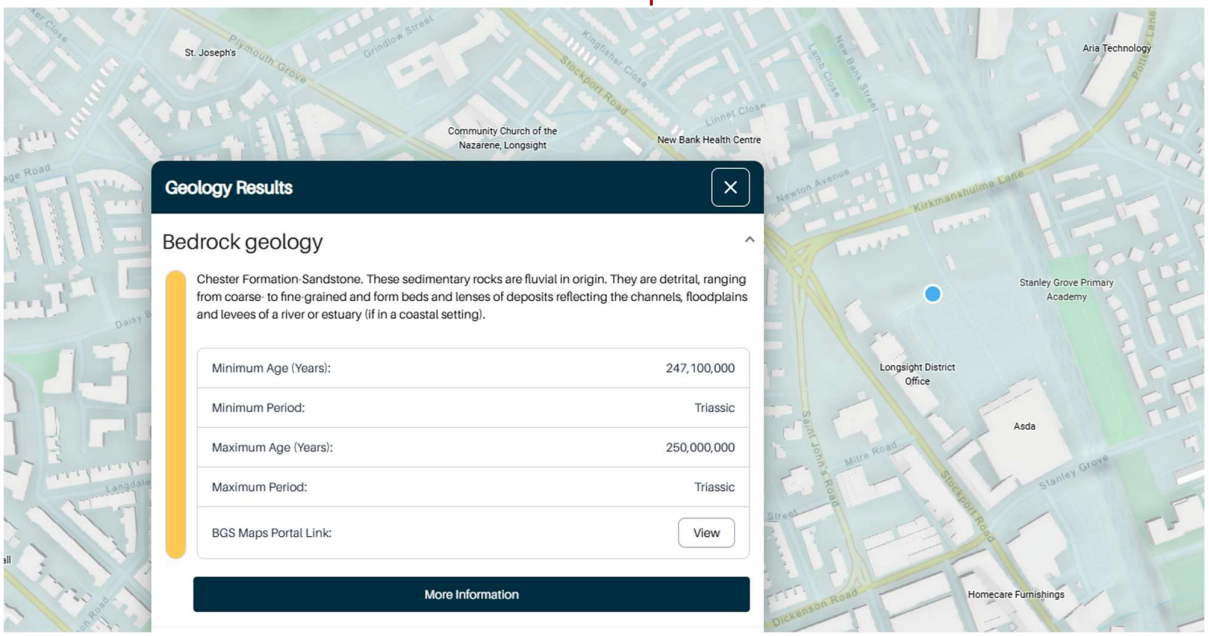
ISSUE DATE	INITIAL ISSUE BY	INITIAL CHECKED BY	GIFA
28/05/2026	FH	DK	**461 m²**

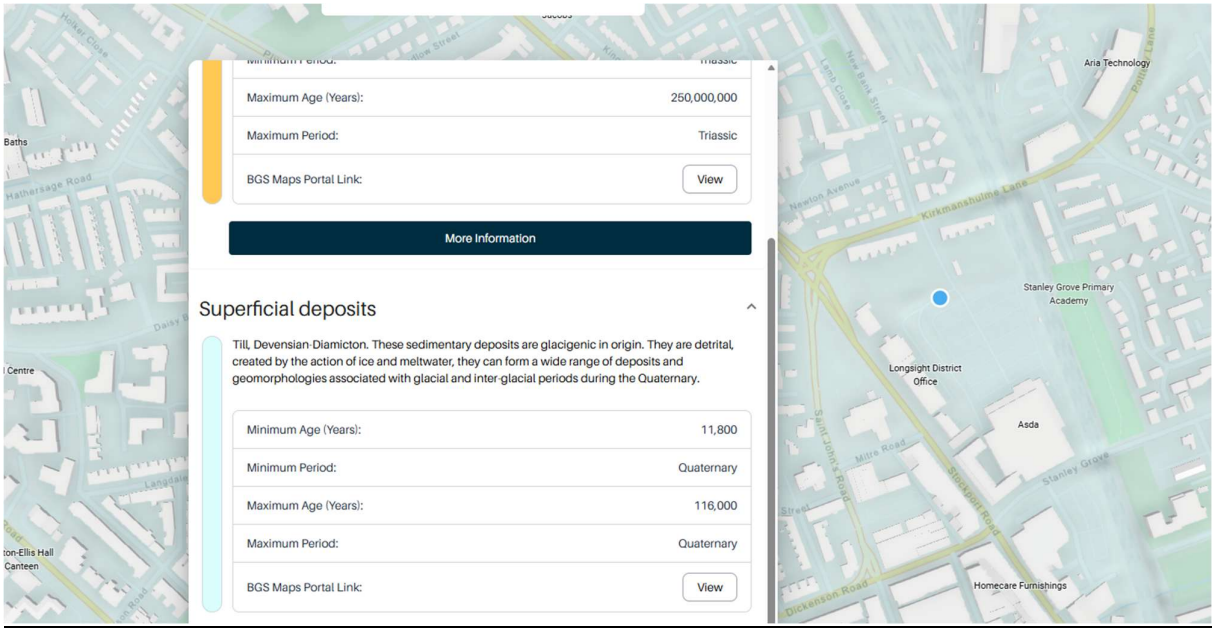
STATUS CODE	STATUS DESCRIPTION	SCALE	SHEET SIZE	REVISION
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APPENDIX C:

BGS Maps





APPENDIX D:

United Utilities Asset Mapping



Scale:	1:1250
Date:	10/07/2026

SEWER AND WATER MAINS RECORDS

United Utilities
Water for the North West

Address or Site Reference: UM26-4214

Printed by: Property Searches

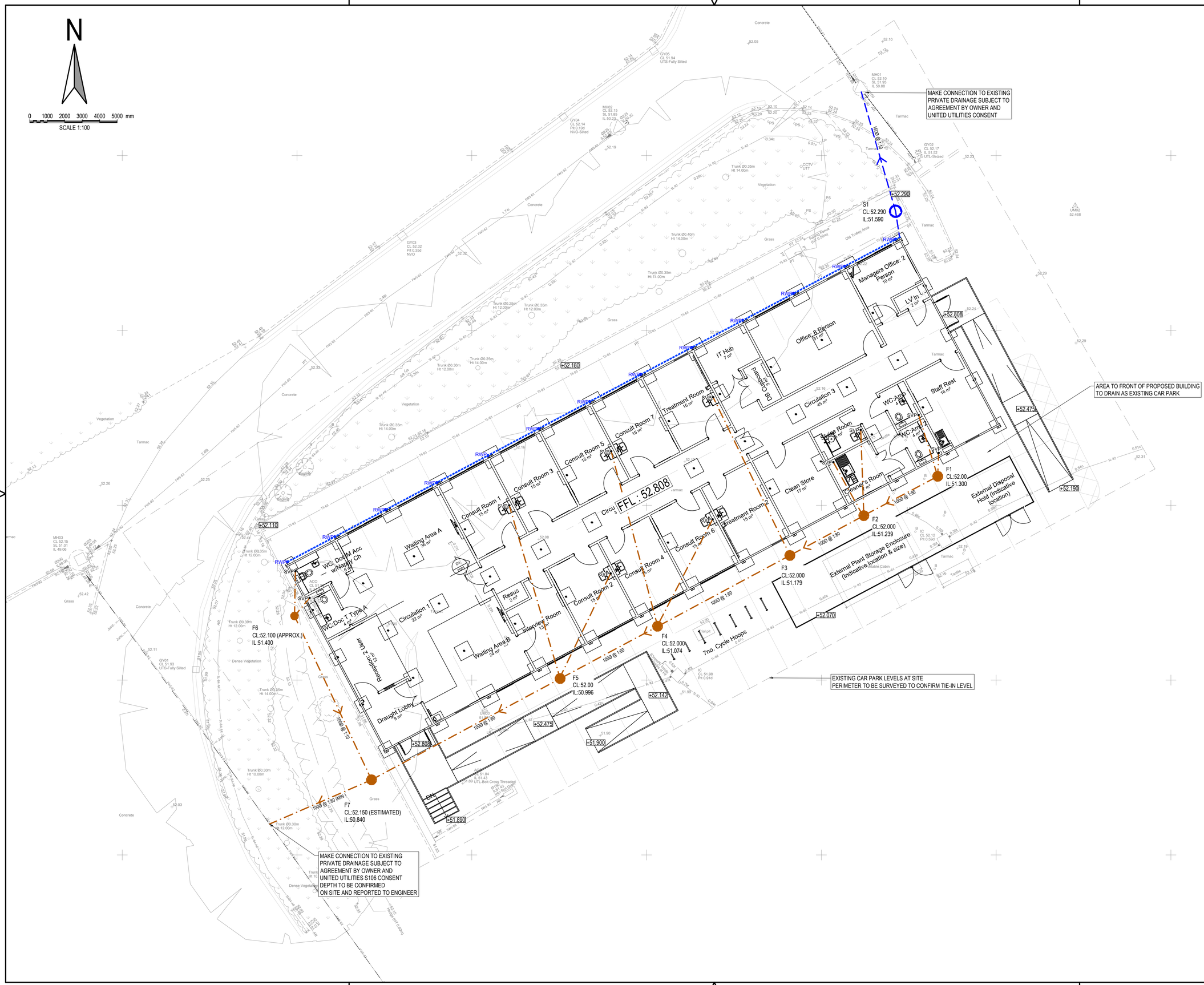
The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

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APPENDIX E:

Drainage Drawings

Sheet ACAD - A1 rev. C



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS ARE SHOWN IN METRES UNLESS NOTED OTHERWISE.
3. DO NOT SCALE FROM THE DRAWING. USE FIGURED DIMENSIONS ONLY.
4. ANY DISCREPANCIES TO BE REPORTED IMMEDIATELY TO THE ENGINEER.
5. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS, SUBCONTRACTORS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.
6. EXISTING SERVICES HAVE NOT BEEN SHOWN BUT ARE PRESENT - THE CONTRACTOR IS TO LIAISE WITH ALL STATUTORY AUTHORITIES PRIOR TO THE COMMENCEMENT OF ANY WORKS.
7. SITE IS COMPLETELY IMPERMEABLE AS EXISTING. SURFACE WATER ATTENUATION IS ASSUMED NOT TO BE REQUIRED. TO BE CONFIRMED BY LOCAL AUTHORITY
8. SURFACE WATER FROM THE FROM OF THE PROPOSED BUILDING ROOF IS TO DRAIN THE TO PUBLIC SEWER SUBJECT TO AGREEMENT BY LOCAL AUTHORITIES
9. DISCHARGE FROM THE FRONT OF THE PROPOSED BUILDING WILL REMAIN AS THE EXISTING CAR PARK WHICH IS TO REMAIN WITH ;LEVELS AND CONSTRUCTION AS EXISTING
10. CONNECTION TO PUBLIC SEWERAGE SUBJECT TO AGREEMENT BY LOCAL AUTHORITY
11. EXTERNAL LEVELS TO BE AS EXISTING CAR PARK

DRAINAGE LEGEND

- PROPOSED SURFACE WATER DRAINAGE
- PROPOSED FOUL WATER DRAINAGE
- EXISTING SURFACE WATER DRAINAGE
- 1000 @ 1:40 EXISTING FOUL WATER DRAINAGE
- PROPOSED PRE SLOPED ACO DRAIN WITH MIN 5MM/M FALL
- RWP PROPOSED RAINWATER PIPE
- SVP PROPOSED SOIL & VENT PIPE
- +11.300 PROPOSED SPOT LEVEL
- +6.92 EXISTING SPOT LEVEL

PRELIMINARY

rev.	drawn	chkd.	apprvd.	date	description
02	DG	PG	PG	25.08.26	POP UPS AND SW AMENDED
01	DG	PG	PG	14.08.26	FIRST ISSUE

Client
EVABUILD

Project
HAWTHORNE GP SURGERY
M12 4NH

Title
DRAINAGE LAYOUT

Vale Consultancy
CONSULTING CIVIL & STRUCTURAL ENGINEERS
29 Bocam Park, Old Field Road, Pencoed, Bridgend CF35 5LJ.
Phone: 01656 863794 Email: enquiries@vale-consultancy.co.uk

date	drawn	checked	approved
13.08.26	DG	PG 14.08.26	PG 14.08.26

scale @ A1	project no.
1:100	25597

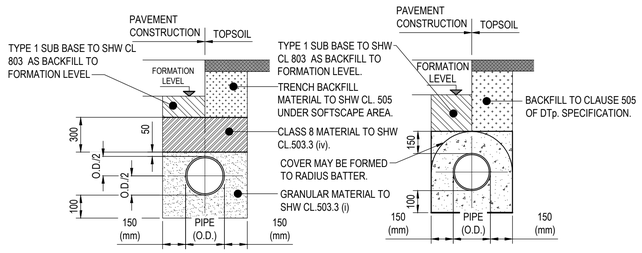
status	drg. no.	rev.
P	500	02

ORIGINAL DRAWING SIZE 841 x 594

10 0 10 20 50 100mm NATURAL SCALE

DRAWING STATUS
A - Approval, AB - As-Built, C - Construction, D - Draft, P - Preliminary, T - Tender

A1



TYPE S BEDDING

GRANULAR BED AND SURROUND UNDER ROAD
(BEDDING FACTION = 2.2)
SCALE 1:20

TYPE Z BEDDING

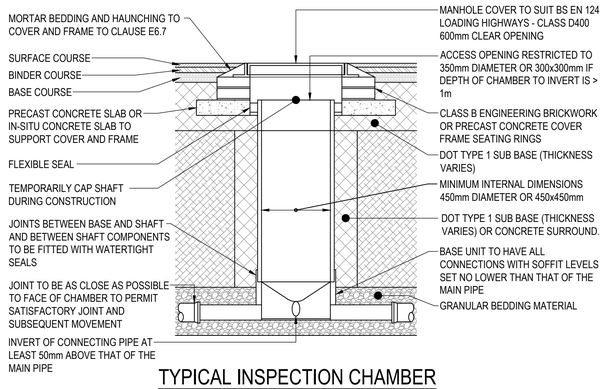
CONCRETE BED AND SURROUND
(BEDDING FACTION = 2.6)
SCALE 1:20

NOTES:
1. REFER TO SHW TABLE 5/3 AND SHW TABLE 6/1
2. BEDDING BENEATH AND AT SIDES OF THE PIPE TO BE WELL COMPACTED IN ACCORDANCE WITH CL 505.
3. CONCRETE CRADLES AND ARCHES MAY BE EXTENDED TO THE SIDES OF THE TRENCH.
4. GEOTEXTILES MAY BE USED WHERE DIRECTED OR APPROVED BY THE ENGINEER TO CONTAIN BEDDING MATERIAL IN CERTAIN SOILS EG. RUNNING SAND.
5. IN VERY WET CONDITIONS, WHERE DIRECTED OR APPROVED BY THE ENGINEER A TEMPORARY LAND DRAIN MAY BE LAID WITHIN THE GRANULAR BED.

NOTES: (TYPE Z ONLY)
6. WHERE PIPES WITH FLEXIBLE JOINTS ARE USED, THE CONCRETE PROTECTION IS TO BE INTERRUPTED OVER ITS FULL CROSS SECTION AT INTERVALS NOT EXCEEDING 5 METRES (OR AS DIRECTED BY THE ENGINEER) BY A SHAPED FORMER OF BITUMEN IMPREGNATED COMPRESSIBLE FILLER. THESE INTERRUPTIONS SHALL COINCIDE WITH PIPE JOINTS. SEE DIMENSIONS FOR PIPE BEDDING TABLE FOR THICKNESS OF COMPRESSIBLE FILLER.
7. CONCRETE TO BE GRADE GEN 3. WHERE FLEXIBLE PIPES ARE USED. CARE MUST BE TAKEN
8. TO PREVENT THE PIPES FROM FLOATING.

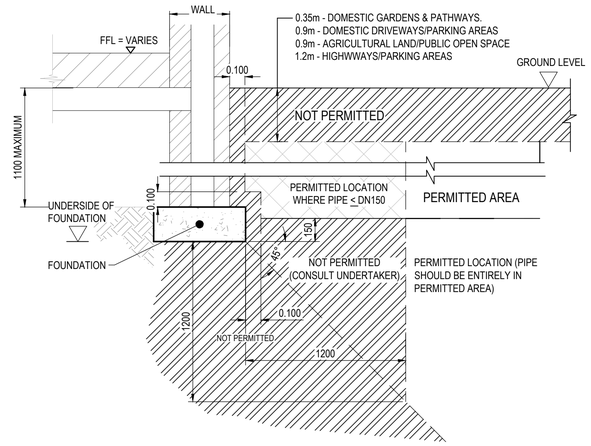
BEDDING DETAILS

SCALE 1:20



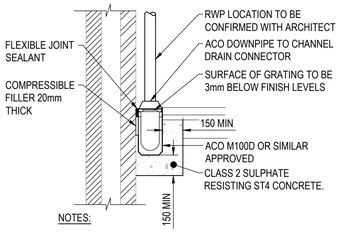
TYPICAL INSPECTION CHAMBER DETAIL - TYPE 3

(REFER TO FIG. B.16 OF SEWERS FOR ADOPTION 7th ED)
(DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE 3m)
(FLEXIBLE MATERIAL DETAIL)



TYPICAL DRAINAGE DETAIL IN CLOSE PROXIMITY OF FOUNDATIONS (DETAIL IN ACCORDANCE WITH SFA FIGURE B1)

NTS

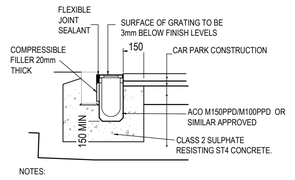


NOTES:

1. DRAINAGE CHANNELS TO BE ACO M200PPD OR SIMILAR APPROVED
2. FOUNDATION FOR CHANNELS TO BE LAID ON A ROLLED SUB-BASE OF 150mm MINIMUM THICKNESS.
3. GRATING LOAD CLASSIFICATION TO BE C250/ D400
4. RWP'S TO HAVE ACO DOWNPIPE CONNECTORS TO CHANNEL GRATINGS - REFER TO MANUFACTURERS GUIDELINES

RAINWATER PIPE/DRAINAGE CHANNEL CONNECTION DETAIL

SCALE (NTS)



NOTES:

1. DRAINAGE CHANNELS TO BE ACO M150PPD OR SIMILAR APPROVED
2. FOUNDATION FOR CHANNELS TO BE LAID ON A ROLLED SUB-BASE OF 150mm MINIMUM THICKNESS.
3. GRATING LOAD CLASSIFICATION TO BE C250/ D400

DRAINAGE CHANNEL DETAIL

SCALE (N.T.S)

PRELIMINARY

rev.	drawn	chkd.	apprvd.	date	description
01	DG	PG	PG	14.08.26	FIRST ISSUE

Client
EVABUILD

Project
HAWTHORNE GP SURGERY
M12 4NH

Title
DRAINAGE DETAILS

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date	drawn	checked	approved
13.08.26	DG	PG 14.08.26	PG 14.08.26

scale @ A1	project no.
AS SHOWN	25597

status	drg. no.	rev.
P	505	01

DRAWING STATUS
A - Approval, AB - As-Built, C - Construction, D - Draft, P - Preliminary, T - Tender

APPENDIX F:

Design Calculations

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	0.600
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
S1	0.060	5.00	52.290	1200	386784.247	395796.818	0.700	51.590
MH01			52.100	1200	386782.210	395803.842	1.220	50.880

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.001	S1	MH01	7.313	0.600	51.590	50.880	0.710	10.3	150	5.04	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.001	3.157	55.8	8.1	0.550	1.070	0.060	0.0	38	2.255

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.001	7.313	10.3	150	Circular	52.290	51.590	0.550	52.100	50.880	1.070

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.001	S1	1200	Manhole	Adoptable	MH01	1200	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S1	386784.247	395796.818	52.290	0.700	1200	0	1.001	51.590	150
MH01	386782.210	395803.842	52.100	1.220	1200	1	1.001	50.880	150



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Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	0.750	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	0.840	Additional Storage (m³/ha)	0.0		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
100	40	0	0

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S1	10	51.691	0.101	35.7	0.1141	0.0000	OK
15 minute winter	MH01	10	50.967	0.087	35.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	S1	1.001	MH01	35.5	3.063	0.637	0.0847	16.4

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APPENDIX F:
Management & Maintenance

Operation and maintenance requirements for traditional drainage components		
Maintenance schedule	**Required action**	**Typical frequency**
Regular maintenance	Inspection of traditional drainage including rainwater pipes, channel drains, gullies and inspection chambers (as applicable).	Bi-annually
	Remove litter or build-up of foliage	Bi-annually (or as required)
Occasional maintenance	Clear channel drains and gullies of silt build up	Every 5 years (or as required)
Remedial Actions	Jet/vac inspection chambers and below ground pipework when blocked or performance is affected due to partial blockages	Every 20 years (or as required)