4th April 2025

8393 / HP / HC-P1:03.04.25

Hillingdon Council
Civic Centre, High Street
Uxbridge
UB8 1UW
Your Ref: 957/APP/2024/2765

To whom it may concern,

Island Site, Eskdale Road, Hillingdon, UB8 2RT

We are writing in response to the updated Planning Application Review Form completed by Hillingdon Council dated 12th March 2025, reference 957/APP/2024/2765. We have reviewed the further comments within Section 5 and respond as below.

Drainage Calculations

These now include the total site area amounting to 0.53 hectares, and the latest FEH 2022 rainfall data has been used. The proposed drainage strategy plan has been updated to reflect the larger below ground attenuation tank required and is included in Appendix A, together with the drainage model calculations summary.

Exceedance Flow Route Plan

The external levels of the western side of the site are existing. The finished design levels have not yet been finalised, and so the exceedance plan has been based on the current levels. It is expected that during detailed design, these finished ground levels around the perimeter of the building will be fully considered and designed to fall away towards the Eskdale Road. We have included the updated exceedance flow routes plan showing the exceedance flow routes based on proposed ground levels, in Appendix B.

We hope the above response is adequate for this stage of the project.

Yours sincerely,
For Furness Partnership

Heeta Patel

Attachments
Appendix A InfoDrainage Model Calculations Summary and Below Ground Drainage Plan
Appendix B Exceedance Flow Routes Plan

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Furness Partnership Limited Registered in England No.4604621
LONDON & BRADFORD

APPENDIX A – InfoDrainage Model Calculations Summary and Below Ground Drainage Plan

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Junctions Storm Phase: Phase	Company Address:		

Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Chamber Shape	Diameter (m)
S01	Manhole	179.428	117.284	30.590	0.930	29.660	Circular	1.200
S02	Manhole	156.936	117.525	30.580	1.110	29.470	Circular	1.200
S03	Manhole	132.235	117.684	30.770	1.585	29.185	Circular	1.200
S04	Manhole	131.776	71.395	30.560	1.680	28.880	Circular	1.200
S05	Manhole	138.386	71.707	30.560	2.280	28.280	Circular	1.200
S06	Manhole	164.475	63.572	30.560	1.580	28.980	Circular	1.200

Name	Lock
S01	None
S02	None
S03	None
S04	None
S05	None
S06	None

Inlets

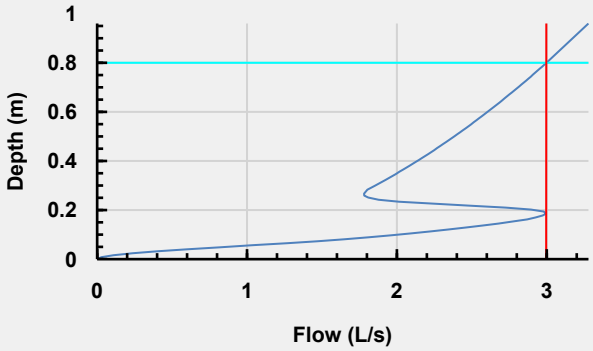
Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
S01	Inlet	Catchment Area (1)	(None)	No Restriction
	Inlet (1)	Catchment Area (2)	(None)	No Restriction
	Inlet (2)	Catchment Area (7)	(None)	No Restriction
S02	Inlet	Pipe	(None)	No Restriction
	Inlet (1)	Catchment Area (6)	(None)	No Restriction
S03	Inlet	Pipe (1)	(None)	No Restriction
	Inlet (1)	Catchment Area	(None)	No Restriction
S04	Inlet	Pipe (2)	(None)	No Restriction
	Inlet (1)	Catchment Area (8)	(None)	No Restriction
	Inlet (2)	Catchment Area (4)	(None)	No Restriction
S05	Inlet	Pipe (4)	(None)	No Restriction
S06	Inlet	Catchment Area (5)	(None)	No Restriction
	Inlet (1)	Catchment Area (3)	(None)	No Restriction

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Junctions Storm Phase: Phase	Company Address:		

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
S01	Outlet	Pipe	Free Discharge
S02	Outlet	Pipe (1)	Free Discharge
S03	Outlet	Pipe (2)	Free Discharge
S04	Outlet	Pipe (3)	Free Discharge
S05	Outlet	(None)	Hydro-Brake®

Invert Level (m)	28.280
Design Depth (m)	0.800
Design Flow (L/s)	3.0
Objective	Minimise Upstream Storage Requirements
Application	Surface Water Only
Sump Available	☐
Unit Reference	CHE-0082-3000-0800-3000



S06	Outlet (1)	Pipe (5)	Free Discharge

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		

Cellular Storage

Type : Cellular Storage

Dimensions

Exceedance Level (m)	30.300
Depth (m)	0.800
Base Level (m)	28.300
Number of Crates Long	48
Number of Crates Wide	50
Number of Crates High	2
Porosity (%)	95
Crate Length (m)	0.5
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	457.200

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Pipe (5)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (3)

Inlet Type	Point Inflow
Incoming Item(s)	Pipe (3)
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet (1)

Outgoing Connection	Pipe (4)
Outlet Type	Free Discharge

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	Company Address:		

Name	Cover Level (m) Invert Level (m)	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)		Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
			Outgoing Connections				Cover
S01	30.590 29.660	Diameter / Length: 1.200					Manhole
E:179.428 N:117.284	0.930		{a} Pipe	Pipe	29.660	Diam/Width:225	Not Applicable
S02	30.580 29.470	Diameter / Length: 1.200	{1} Pipe	Pipe	29.470	Diam/Width:225	Manhole
E:156.936 N:117.525	1.110		{a} Pipe (1)	Pipe	29.470	Diam/Width:225	Not Applicable
S03	30.770 29.185	Diameter / Length: 1.200	{1} Pipe (1)	Pipe	29.260	Diam/Width:225	Manhole
E:132.235 N:117.684	1.585		{a} Pipe (2)	Pipe	29.185	Diam/Width:300	Not Applicable
S04	30.560 28.880	Diameter / Length: 1.200	{1} Pipe (2)	Pipe	28.880	Diam/Width:300	Manhole
E:131.776 N:71.395	1.680		{a} Pipe (3)	Pipe	28.880	Diam/Width:300	Not Applicable
S05	30.560 28.280	Diameter / Length: 1.200	{1} Pipe (4)	Pipe	28.280	Diam/Width:300	Manhole
E:138.386 N:71.707	2.280						Not Applicable
S06	30.560 28.980	Diameter / Length: 1.200					Manhole
E:164.475 N:63.572	1.580		{a} Pipe (5)	Pipe	28.980	Diam/Width:300	Not Applicable

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address:		

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	S03		Time of Concentration	0.065	100	0	100	0.065
Catchment Area (1)	S01		Time of Concentration	0.066	100	0	100	0.066
Catchment Area (2)	S01		Time of Concentration	0.031	100	0	100	0.031
Catchment Area (3)	S06		Time of Concentration	0.063	100	0	100	0.063
Catchment Area (4)	S04		Time of Concentration	0.107	100	0	100	0.107
Catchment Area (5)	S06		Time of Concentration	0.109	100	0	100	0.109
Catchment Area (6)	S02		Time of Concentration	0.018	100	0	100	0.018
Catchment Area (7)	S01		Time of Concentration	0.017	100	0	100	0.017
Catchment Area (8)	S04		Time of Concentration	0.055	100	0	100	0.055
TOTAL		**0.0**		**0.530**				**0.530**

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Network Design Criteria Storm Phase: Phase	Company Address:		

Flow Options

Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

Pipe Options

Lock Slope Options	None
Design Options	Minimise Excavation
Design Level	Level Soffits
Min. Cover Depth (m)	1.200
Min. Slope (1:X)	500.00
Max. Slope (1:X)	40.00
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	☐
Reduce Channel Depths	☐

Pipe Size Library

Default

Add. Increment (mm)	75
Max. Diameter (mm)	0

Diameter (mm)	Min. Slope (1:X)	Max. Slope (1:X)
100	0.00	0.00
150	0.00	0.00

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Network Design Criteria Storm Phase: Phase	Company Address:		

Manhole Options

Apply Offset	☐

Manhole Size Library

Default

Diameter / Width

Connection (mm)	Diameter / Length (m)	Width (m)
0	1.200	0.000
375	1.350	0.000
500	1.500	0.000
750	1.800	0.000

Additional Sizing

Connection (mm)	900
Diameter / Length (m)	0.900
Width (m)	0.000

Depth

Depth (m)	Diameter / Length (m)	Width (m)
0.000	1.050	0.000
1.500	1.200	0.000

Access

Depth (m)	Ladder Protrusion (mm)
0.000	130
3.000	230

Benching Requirements

Landing Width (mm)	500
Benching Width (mm)	225

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address:		

FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Resident Volume

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status	Max. Flooded Volume (m³)
S01	FEH: 2 years: +0 %: 15 mins: Summer	30.590	29.660	29.766	0.106	20.1	0.120	19.5	8.717	OK	0.000
S02	FEH: 2 years: +0 %: 15 mins: Summer	30.580	29.470	29.579	0.109	22.2	0.123	20.4	9.872	OK	0.000
S03	FEH: 2 years: +0 %: 15 mins: Summer	30.770	29.185	29.310	0.125	32.2	0.142	30.4	14.956	OK	0.000
S04	FEH: 2 years: +0 %: 15 mins: Summer	30.560	28.880	29.022	0.142	59.9	0.160	57.6	27.717	OK	0.000
S05	FEH: 2 years: +0 %: 360 mins: Winter	30.560	28.280	28.473	0.193	3.0	0.218	3.0	94.331	OK	0.000
S06	FEH: 2 years: +0 %: 15 mins: Summer	30.560	28.980	29.080	0.100	31.3	0.113	30.8	13.579	OK	0.000

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address:		

FEH: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Resident Volume

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status	Max. Flooded Volume (m³)
S01	FEH: 30 years: +0 %: 15 mins: Summer	30.590	29.660	29.882	0.222	49.6	0.251	46.4	21.473	OK	0.000
S02	FEH: 30 years: +0 %: 15 mins: Summer	30.580	29.470	29.692	0.222	53.1	0.251	48.5	24.362	OK	0.000
S03	FEH: 30 years: +0 %: 15 mins: Summer	30.770	29.185	29.409	0.224	77.6	0.253	74.7	36.927	OK	0.000
S04	FEH: 30 years: +0 %: 15 mins: Summer	30.560	28.880	29.144	0.264	147.3	0.299	143.4	68.409	OK	0.000
S05	FEH: 30 years: +0 %: 360 mins: Winter	30.560	28.280	29.099	0.819	211.0	0.926	3.0	306.511	OK	0.000
S06	FEH: 30 years: +0 %: 15 mins: Summer	30.560	28.980	29.153	0.173	77.3	0.195	76.1	33.505	OK	0.000

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address:		

FEH: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Resident Volume

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status	Max. Flooded Volume (m³)
S01	FEH: 100 years: +0 %: 15 mins: Summer	30.590	29.660	30.247	0.587	64.1	0.664	57.6	27.765	Surcharged	0.000
S02	FEH: 100 years: +0 %: 15 mins: Summer	30.580	29.470	29.926	0.456	66.2	0.515	59.3	31.502	Surcharged	0.000
S03	FEH: 100 years: +0 %: 15 mins: Summer	30.770	29.185	29.562	0.377	96.9	0.426	86.8	47.853	Surcharged	0.000
S04	FEH: 100 years: +0 %: 15 mins: Summer	30.560	28.880	29.223	0.343	180.8	0.387	176.8	88.507	Surcharged	0.000
S05	FEH: 100 years: +0 %: 600 mins: Winter	30.560	28.280	29.551	1.271	181.1	1.438	3.3	374.044	OK	0.000
S06	FEH: 100 years: +0 %: 15 mins: Summer	30.560	28.980	29.186	0.206	100.0	0.233	98.6	43.345	OK	0.000

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address:		

FEH: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Resident Volume

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status	Max. Flooded Volume (m³)
S01	FEH: 100 years: +40 %: 15 mins: Summer	30.590	29.660	30.592	0.932	89.5	2.823	72.2	38.874	Flood	1.771
S02	FEH: 100 years: +40 %: 15 mins: Summer	30.580	29.470	30.367	0.897	74.9	1.014	76.0	44.188	Flood Risk	0.000
S03	FEH: 100 years: +40 %: 15 mins: Summer	30.770	29.185	29.999	0.814	113.2	0.920	110.9	67.156	Surcharged	0.000
S04	FEH: 100 years: +40 %: 15 mins: Summer	30.560	28.880	29.487	0.607	242.0	0.686	240.5	124.059	Surcharged	0.000
S05	FEH: 100 years: +40 %: 960 mins: Winter	30.560	28.280	29.624	1.344	143.1	1.520	3.3	627.551	OK	0.000
S06	FEH: 100 years: +40 %: 600 mins: Winter	30.560	28.980	29.370	0.390	12.4	0.441	12.4	178.499	Surcharged	0.000

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:		

FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FEH: 2 years: +0 %: 360 mins: Winter	28.473	28.473	0.173	0.173	15.9	98.722	0.000	0.000	3.0	94.461	78.407	OK

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:		

FEH: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FEH: 30 years: +0 %: 480 mins: Winter	28.716	28.716	0.416	0.416	140.2	236.746	0.000	0.000	210.3	352.626	48.218	OK

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:		

FEH: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FEH: 100 years: +0 %: 600 mins: Winter	28.859	28.859	0.559	0.559	62.2	318.230	0.000	0.000	181.1	480.177	30.396	OK

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:		

FEH: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FEH: 100 years: +40 %: 600 mins: Winter	29.369	29.369	1.069	1.069	166.1	456.143	0.000	0.000	148.3	395.714	0.231	OK

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address:		

FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S01	S02	30.590	29.766	0.108	8.717	1.0	0.41	19.5	OK
Pipe (1)	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S02	S03	30.580	29.579	0.105	9.872	1.1	0.43	20.4	OK
Pipe (2)	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S03	S04	30.770	29.310	0.134	14.956	1.0	0.34	30.4	OK
Pipe (4)	FEH: 2 years: +0 %: 480 mins: Summer	Pipe	Cellular Storage	S05	30.300	28.473	0.183	117.244	0.2	0.03	3.0	OK
Pipe (5)	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S06	Cellular Storage	30.560	29.080	0.095	13.579	1.6	0.2	30.8	OK
Pipe (3)	FEH: 2 years: +0 %: 15 mins: Summer	Pipe	S04	Cellular Storage	30.560	29.022	0.125	27.717	2.1	0.28	57.6	OK

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address:		

FEH: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S01	S02	30.590	29.882	0.222	21.473	1.2	0.97	46.4	OK
Pipe (1)	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S02	S03	30.580	29.692	0.203	24.362	1.3	1.01	48.5	OK
Pipe (2)	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S03	S04	30.770	29.409	0.244	36.927	1.2	0.83	74.7	OK
Pipe (4)	FEH: 30 years: +0 %: 480 mins: Winter	Pipe	Cellular Storage	S05	30.300	28.716	0.300	68.276	3.0	2.17	210.3	Surcharged
Pipe (5)	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S06	Cellular Storage	30.560	29.153	0.160	33.505	2.0	0.48	76.1	OK
Pipe (3)	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	S04	Cellular Storage	30.560	29.144	0.223	68.409	2.5	0.69	143.4	OK

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address:		

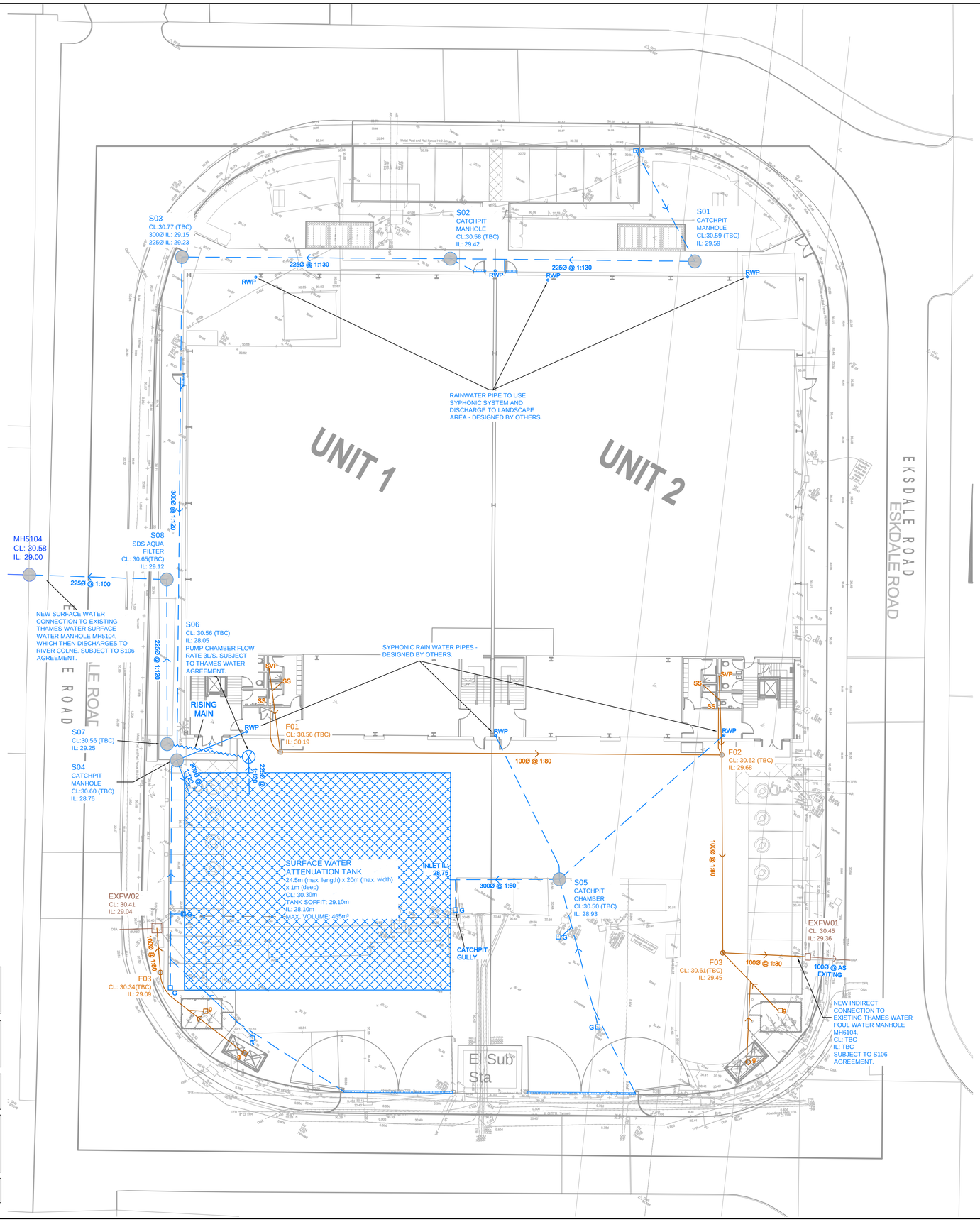
FEH: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S01	S02	30.590	30.247	0.225	27.765	1.4	1.21	57.6	Surcharged
Pipe (1)	FEH: 100 years: +0 %: 15 mins: Winter	Pipe	S02	S03	30.580	29.877	0.225	32.379	1.5	1.27	60.9	Surcharged
Pipe (2)	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S03	S04	30.770	29.562	0.300	47.853	1.2	0.96	86.8	Surcharged
Pipe (4)	FEH: 100 years: +0 %: 600 mins: Winter	Pipe	Cellular Storage	S05	30.300	28.859	0.300	266.335	2.6	1.87	181.1	Surcharged
Pipe (5)	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S06	Cellular Storage	30.560	29.186	0.189	43.345	2.1	0.63	98.6	OK
Pipe (3)	FEH: 100 years: +0 %: 15 mins: Summer	Pipe	S04	Cellular Storage	30.560	29.223	0.277	88.507	2.6	0.84	176.8	Surcharged

Project:	Date: 04/09/2024		
	Designed by: h.patel	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address:		

FEH: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	S01	S02	30.590	30.592	0.225	38.874	1.8	1.51	72.2	Flood
Pipe (1)	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	S02	S03	30.580	30.367	0.225	44.188	1.9	1.59	76.0	Flood Risk
Pipe (2)	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	S03	S04	30.770	29.999	0.300	67.156	1.6	1.23	110.9	Surcharged
Pipe (4)	FEH: 100 years: +40 %: 1440 mins: Winter	Pipe	Cellular Storage	S05	30.300	29.040	0.300	507.645	3.9	2.87	277.3	Surcharged
Pipe (5)	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	S06	Cellular Storage	30.560	29.256	0.246	60.707	2.2	0.87	137.0	OK
Pipe (3)	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	S04	Cellular Storage	30.560	29.487	0.300	124.059	3.4	1.15	240.5	Surcharged



LEGEND

- NEW SURFACE WATER DRAINS
- NEW SURFACE WATER RISING MAIN
- SXX — NEW SURFACE WATER MANHOLE
- SXX — NEW SURFACE WATER PUMP CHAMBER
- NEW SURFACE WATER ATTENUATION TANK
- NEW SURFACE WATER DRAINAGE CHANNEL
- G — NEW SURFACE WATER GULLY
- NEW FOUL WATER DRAINS
- FXX — NEW FOUL WATER MANHOLE
- g — NEW FOUL WATER INTERNAL GULLY (TRAPPED & RODDABLE)
- SVP — NEW SOIL VENT PIPE (RODDABLE ACCESS)
- SS — NEW STUB STACK
- EXISTING SURFACE WATER DRAINS
- MH — EXISTING SURFACE WATER MANHOLE
- EXISTING FOUL DRAINS
- EXFX — EXISTING FOUL WATER MANHOLE

GENERAL NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. ALL DRAINAGE TO BE TO THE SATISFACTION OF THE LOCAL AUTHORITY BUILDING CONTROL AND MAIN DRAINAGE SECTIONS ON MATTERS INVOLVING PUBLIC SEWERS.
3. ALL PIPEWORK, BENDS AND JUNCTIONS TO BE EXTRA STRENGTH VITRIFIED CLAY TO BS 65:1991, BS EN 295 OR PVCu TO BS EN 1401 TO BE AGREED WITH RELEVANT AUTHORITY.
4. INVERT LEVELS ON EXISTING DRAINS & OUTFALLS TO BE CHECKED PRIOR TO COMMENCEMENT OF WORKS.
5. TRENCH WIDTHS GENERALLY:- AS SMALL AS PRACTICABLE BUT NOT LESS THAN PIPE DIAMETER +300mm OR LARGER IF SPECIFIED. TRENCH SIDES MUST BE VERTICAL FROM BOTTOM UP TO 300mm ABOVE CROWN OF PIPE.
6. WHERE DRAINAGE PIPES HAVE LESS THAN 1.2m COVER IN TRAFFICKED AREAS AND LESS THAN 600mm UNDER LANDSCAPED AREAS PIPES SHALL HAVE A FULL CLASS Z CONCRETE SURROUND. CONCRETE PROTECTION TO BE DISCONTINUED AT EACH PIPE JOINT WITH COMPRESSIBLE MATERIAL. ALL OTHER FLEXIBLE PIPES TO HAVE CLASS S GRANULAR BEDDING DETAIL UNLESS OTHERWISE NOTED. ALL OTHER RIGID PIPES TO HAVE CLASS B GRANULAR BEDDING DETAIL UNLESS OTHERWISE NOTED.
7. GRANULAR BEDDING:
   - 10mm SINGLE SIZED COARSE AGGREGATE SHALL BE USED ON PIPES NOT EXCEEDING 140mm DIAMETER.
   - 2-14mm WELL GRADED COARSE AGGREGATE MAY BE USED ON PIPES EXCEEDING 140mm BUT NOT EXCEEDING 400mm DIAMETER.
   - 4-20mm WELL GRADED COARSE AGGREGATE MAY BE USED ON PIPES EXCEEDING 400mm DIAMETER.
   - THE DEPTH OF GRANULAR BEDDING UNDER THE PIPES SHALL BE X/6 OR 150mm, WHICHEVER IS GREATER, WHERE X=EXTERNAL DIAMETER OF THE PIPE.
8. ALL PRIVATE DRAINAGE WORKS SHALL BE IN ACCORDANCE WITH "THE BUILDING REGULATIONS APPROVED DOCUMENT H" AND BRITISH STANDARD BS EN 752.
9. ALL NEW DRAINAGE TO BE TESTED PRIOR TO BACKFILL OF THE TRENCHES & PRIOR TO HANDOVER TO THE SATISFACTION OF THE BUILDING CONTROL INSPECTOR.
10. THE CONTRACTOR MUST LIAISE WITH THE LOCAL AUTHORITY MAIN DRAINAGE SECTION PRIOR TO COMMENCEMENT OF WORK ON PUBLIC DRAINAGE.
11. TRENCH BACKFILL SHALL BE COMPACTED IN LAYERS NOT EXCEEDING 250mm ONCE 300mm COVER HAS BEEN PROVIDED TO THE TOP OF PIPE.
12. THE CONTRACTOR SHALL ALLOW IN HIS RATES FOR MAINTAINING FLOW IN PUBLIC SEWERS AT ALL TIMES DURING DIVERSION WORKS INCLUDING TEMPORARY PUMPING AND ALSO KEEPING EXCAVATIONS FREE FROM GROUNDWATER INCLUDING PUMPING AND FORMATION OF TEMPORARY SUMPS.
13. THE CONTRACTOR SHALL MAKE PROVISIONS FOR AND LIAISE WITH ALL RELEVANT STATUTORY BODIES FOR THE MANAGEMENT OF TRAFFIC WHILE CARRYING OUT WORKS IN THE PUBLIC HIGHWAY.
14. THE CONTRACTOR IS TO SATISFY HIMSELF TO THE POSITION AND AND DEPTH OF THE PUBLIC UTILITIES AND ALLOW FOR TEMPORARY SUPPORT, PROTECTION AND DIVERSION WORKS AS NECESSARY. THE CONTRACTOR SHALL ALSO INCLUDE FOR ANY TRIAL PIT EXCAVATIONS NECESSARY.
15. BACKFILL TO EXCAVATIONS IN PUBLIC HIGHWAYS TO BE WELL COMPACTED GRANULAR TYPE 1 TO CL 803 OF THE DTp SPECIFICATION FOR HIGHWAY WORKS 2009.

DRAINAGE STRATEGY TO BE CO-ORDINATE WITH LANDSCAPE PLANS, EXTERNAL LEVELS NEED TO BE DETERMINED PRIOR TO FINALISATION OF DRAINAGE DESIGN.

PROPOSED SURFACE WATER ATTENUATION VOLUME GIVEN IS DRAFT ONLY. FINAL VOLUME AND STRATEGY IS SUBJECT TO DETAILED DESIGN AND ANALYSIS.

DRAINAGE STRATEGY DESIGN SUBJECT TO COORDINATION WITH PROPOSED BELOW GROUND SERVICES.

DRAINAGE STRATEGY IS SUBJECT TO DETAILED CCTV SURVEY - ALL COVER AND INVERT LEVELS ARE TO BE CONFIRMED AND CONDITION OF EXISTING DRAINS TO BE DETERMINED.

INTERNAL FOUL DRAIN POINTS ASSUMED - MEP ENGINNER TO CONFIRM DRAIN POINTS.

Rev	Date	Comment	By	Check
P02	04.04.25	SIZE & DEPTH OF ATTENUATION INCREASED	HP	HP
P01	04.10.24	STAGE 2 ISSUE	PS	HP

Status Code: S2

Drawing Status: STAGE 2

This drawing may only be used for construction/manufacture if status is CONSTRUCTION

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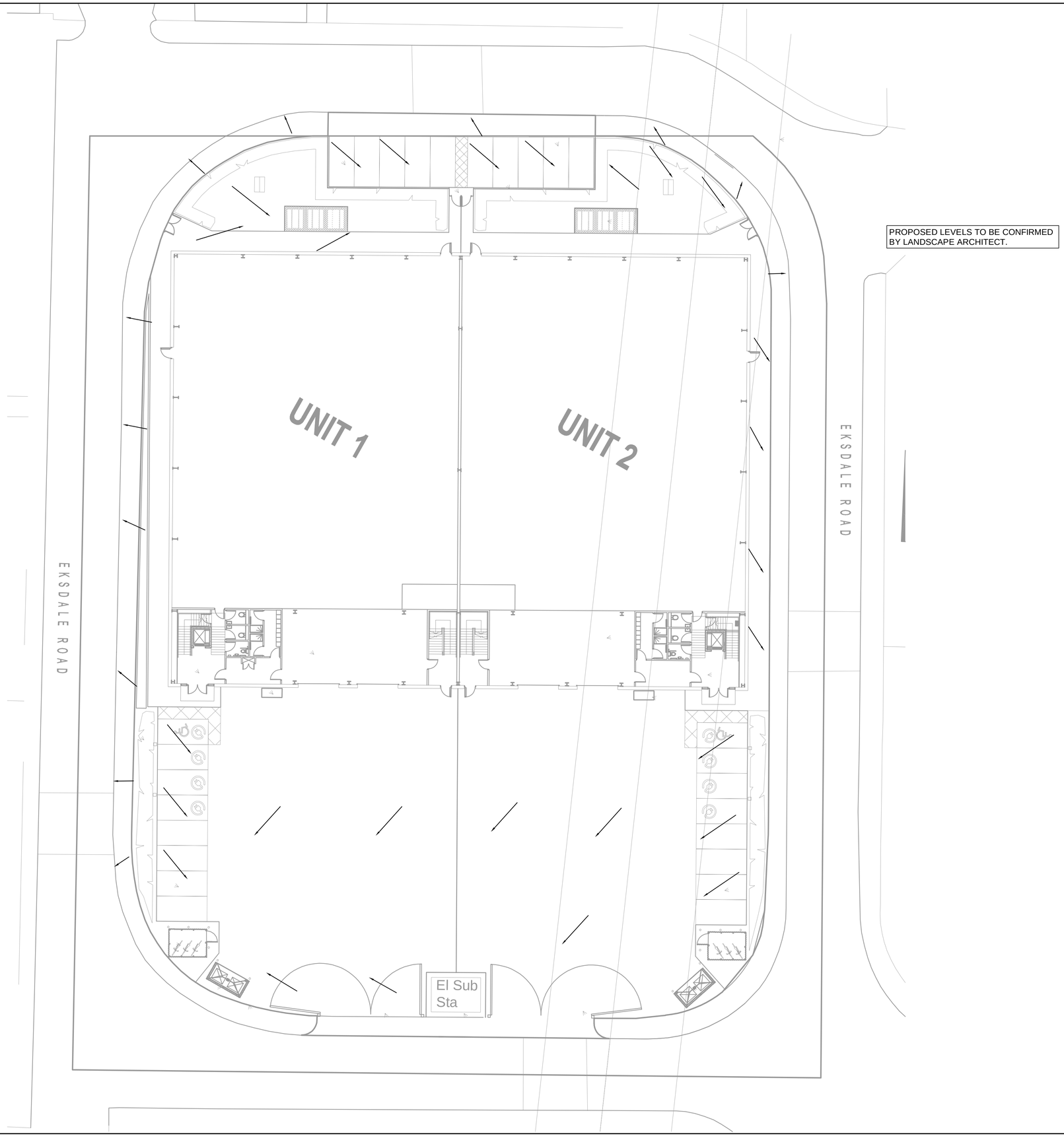
Project: GLOBAL EXHIBITIONS LTD, ISLAND SITE, ESKDALE ROAD UB8 2RT, UXBRIDGE

Drawing Title: PROPOSED BELOW GROUND DRAINAGE STRATEGY

FP Job No.	Drawn	Date	Checked	Scale @ A1
8393	PS	OCT '24	HP	1:200

PROJECT	OPERATOR	ZONE / VOLUME	LEVEL / LOCATION	FILE TYPE	ROLE	SHEET No.	Rev.
-	FUR	ZZ	BG	DR	D	0910	P02

Appendix B – Exceedance Flow Routes Plan



PROPOSED LEVELS TO BE CONFIRMED BY LANDSCAPE ARCHITECT.

GENERAL NOTES

Rev	Date	Comment	By	Check
P02	04.04.25	ISSUE FOR PLANNING	HP	HP
P01	12.02.25	ISSUE FOR PLANNING.	PS	HP

Status Code: S2

Drawing Status: STAGE 2

This drawing may only be used for construction/manufacture if status is CONSTRUCTION

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Project: GLOBAL EXHIBITIONS LTD, ISLAND SITE, ESKDALE ROAD UB8 2RT, UXBRIDGE

Drawing Title: PROPOSED DRAINAGE EXCEEDANCE FLOW ROUTES PLAN

FP Job No.	Drawn	Date	Checked	Scale @ A1
8393	PS	FEB '25	HP	1:200

PROJECT	OPERATOR	ZONE / VOLUME	LEVEL / LOCATION	FILE TYPE	ROLE	SHEET No.	Rev.
-	FUR	ZZ	GF	DR	D	0911	P02