



Rolson House, Twyford

Wokingham Borough Council

Drainage Strategy Report

Client: Saiyan Investments Ltd

P25031-DGC-Z1-REP-C-0001-P02

Drainage Strategy Date: 23/02/26

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1.0 Introduction

This Surface Water Drainage Strategy has been prepared in support of a s73 planning application for a proposed development at Rolson House, Twyford. The purpose of this report is to demonstrate that the proposed development can be accommodated without increasing flood risk on or off-site and that appropriate surface water drainage arrangements are in place in accordance with national and local planning policy. The drainage strategy presented within this report is based on principles that have previously been reviewed and accepted by Wokingham Borough Council, the Lead Local Flood Authority, as part of negotiations following the grant of planning permission of the original planning application. As the site circumstances and proposed drainage approach remain unchanged, the same conclusions are reached.

2.0 Site Description

Rolson House is an established commercial site located off London Road in Twyford. The site comprises an existing industrial building, areas of concrete hardstanding, access roads and car parking. The proposed development comprises an extension to the existing building. The extension is located entirely within an area of existing impermeable hardstanding and does not extend into undeveloped or permeable areas of the site. Topographically, the site generally falls toward the internal yard and car parking areas, where the existing surface water drainage infrastructure is located.

3.0 Proposed Development

The proposed development does not increase the overall impermeable area of the site. The extension replaces existing hardstanding and therefore does not generate additional surface water runoff when compared to the current situation. There are no changes proposed to site levels that would materially alter surface water flow routes across the site.

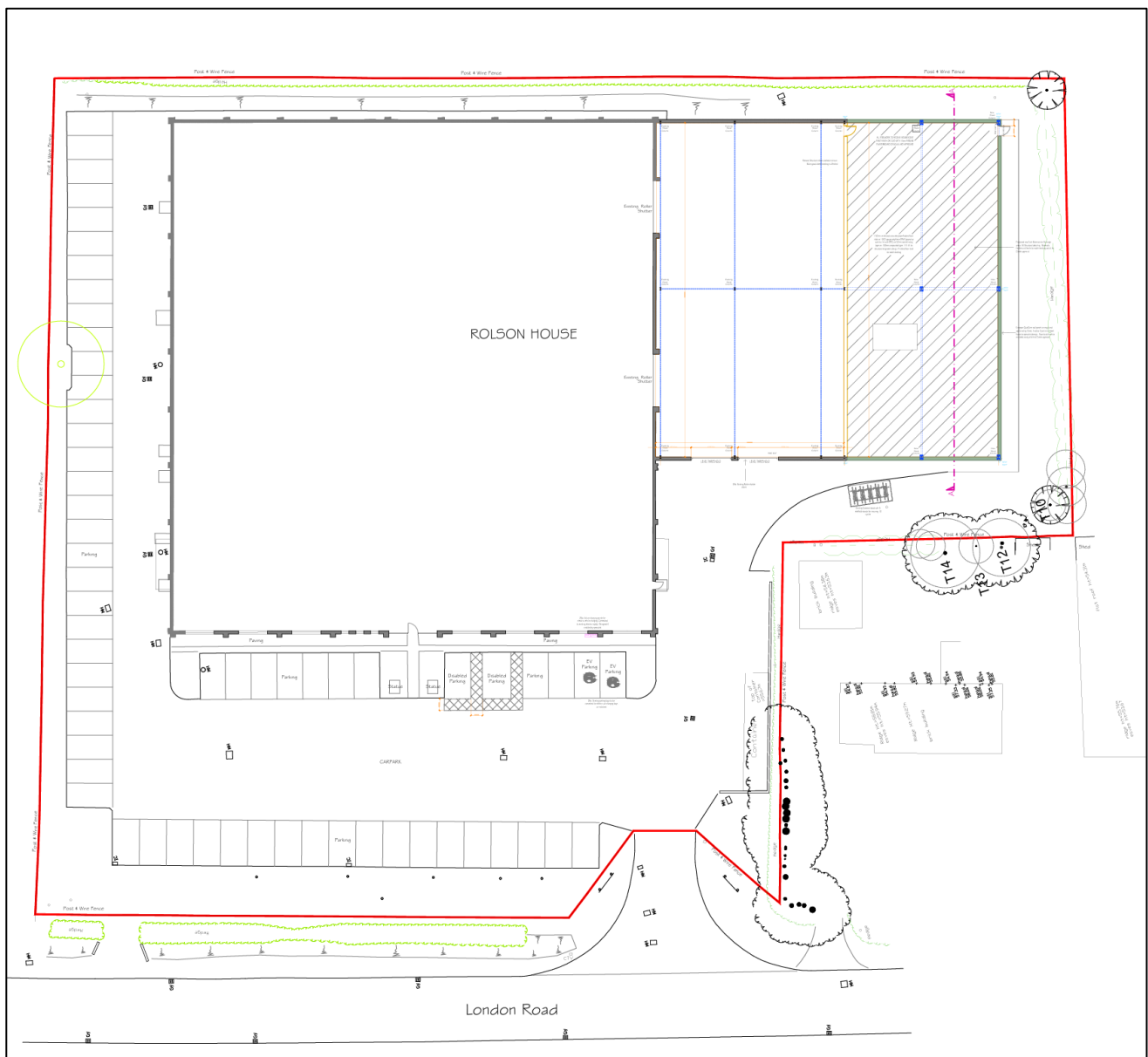


Figure 1: Proposed site layout.

4.0 Planning Policy and Guidance

This drainage strategy has been prepared in accordance with the following guidance and policy documents:

- National Planning Policy Framework Planning Practice Guidance
- Non statutory technical standards for sustainable drainage systems
- BRE365 Soakaway Design Guidance
- Local flood risk and drainage policies

The strategy follows the drainage hierarchy where practicable, while recognising site specific constraints.

5.0 Existing Drainage Arrangements

The site is served by a separate surface water and foul drainage system. Surface water from existing buildings and hardstanding areas drains via a dedicated on site surface water pipe network. CCTV surveys have confirmed that all surface water drainage from the site connects to a surface water sewer exiting the site to the north via a 375 mm diameter pipe. Investigations have confirmed that surface water from the site does not connect to the foul sewer network. The existing drainage system currently serves the full site catchment and operates without recorded flooding issues.

6.0 Drainage Options Assessment

6.1 Infiltration

Infiltration based drainage solutions, including soakaways, were previously considered as part of the previous site planning application. Site investigations and assessments undertaken in accordance with BRE365 guidance confirmed that infiltration rates across the site are very low. As a result, soakaway systems would not comply with half drain down requirements and are not considered a viable or reliable drainage solution for this site. This conclusion has previously been reviewed and accepted by Principal Flood Risk and Drainage Advisor, Naveen Tangri, at the Lead Local Flood Authority, on 03/11/2023.

6.2 Discharge to Existing Surface Water Network

Given the site constraints, the proposed drainage strategy retains the existing surface water drainage arrangement, as well as additional pipework to cater for the building extension. Surface water from the proposed extension will connect into the existing on site surface water network. Refer to Appendix 04 for the proposed drainage strategy. As the development does not increase impermeable area, there will be no increase in surface water runoff rate or volume when compared to the existing situation. Based on the responses from the Environment Agency and Thames Water as part of the previous application, it was identified that there were no alternate discharge receptors. The use of the existing surface water drainage network therefore represents the only practicable and sustainable drainage solution for the site.

7.0 Hydraulic Capacity Assessment

A hydraulic assessment of the existing surface water drainage network has been undertaken for the full site catchment area. The assessment considered the critical 1 in 100 year rainfall event, including a 40% climate change allowance, in accordance with current best practice. See Appendix 01 for the climate change allowances required for this area. The results confirm that the existing surface water network has sufficient capacity to accommodate flows from the site without surcharge or flooding. See Appendix 03 for the output of the hydraulic calculations, previously accepted as part of the previous planning application. As the proposed development does not increase runoff, the hydraulic performance of the network will remain unchanged.

8.0 Exceedance Flow Routing

In the unlikely event of an exceedance scenario, such as a blockage within the drainage network, surface water would surcharge from an existing manhole located at a low point within the car park. Overland flow routes would follow the natural site topography toward low lying areas of the car park, directing water away from buildings and sensitive receptors. This exceedance routing arrangement is consistent with good practice and does not result in increasing flood risk elsewhere. See Appendix 02 for details of the existing overland flow routes.

9.0 Maintenance and Management

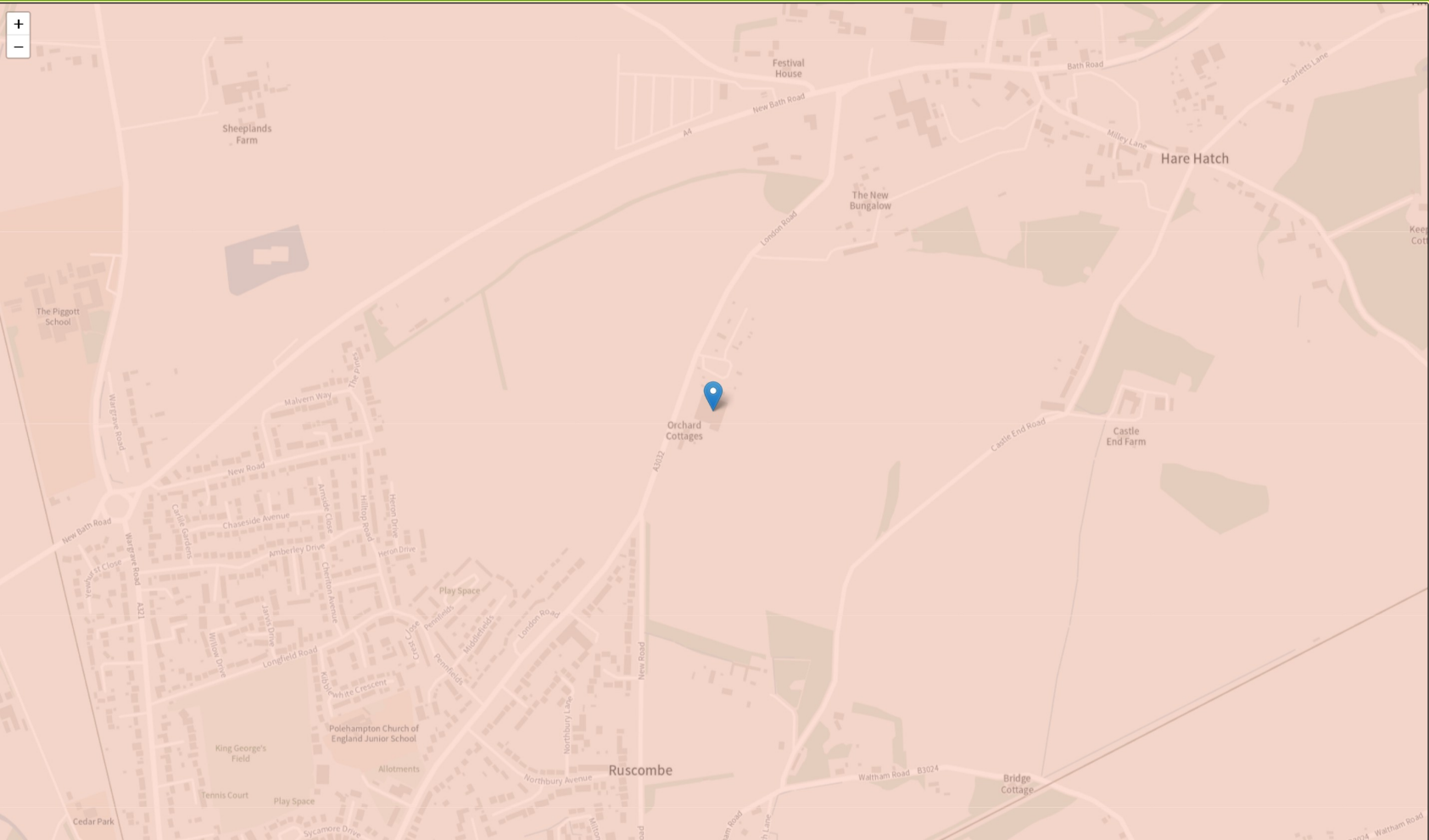
The existing surface water drainage system will continue to be maintained by the site owner in accordance with standard asset management procedures. Routine inspection and maintenance will ensure the continued performance of the drainage system.

10.0 Conclusions

This Surface Water Drainage Strategy has been prepared to support a new planning application for development at Rolson House, Twyford. The proposed development is located entirely within existing hardstanding and does not increase impermeable area, surface water runoff rates, or runoff volumes. Infiltration based drainage is not feasible due to site conditions. The proposed strategy therefore retains the existing surface water drainage arrangement, which has been demonstrated to have sufficient capacity for the 1 in 100 year plus climate change event. The drainage approach adopts principles that have previously been reviewed and accepted by the Lead Local Flood Authority. As such, the same conclusions are reached, and the proposed development is considered acceptable with regard to surface water drainage and flood risk.

Appendix 1:

AEP Rainfall Data



Loddon and tributaries
Management Catchment peak
rainfall allowances

3.3% annual exceedance rainfall event

Epoch	Central allowance	Upper end allowance
2050s	20%	35%
2070s	25%	35%

1% annual exceedance rainfall event

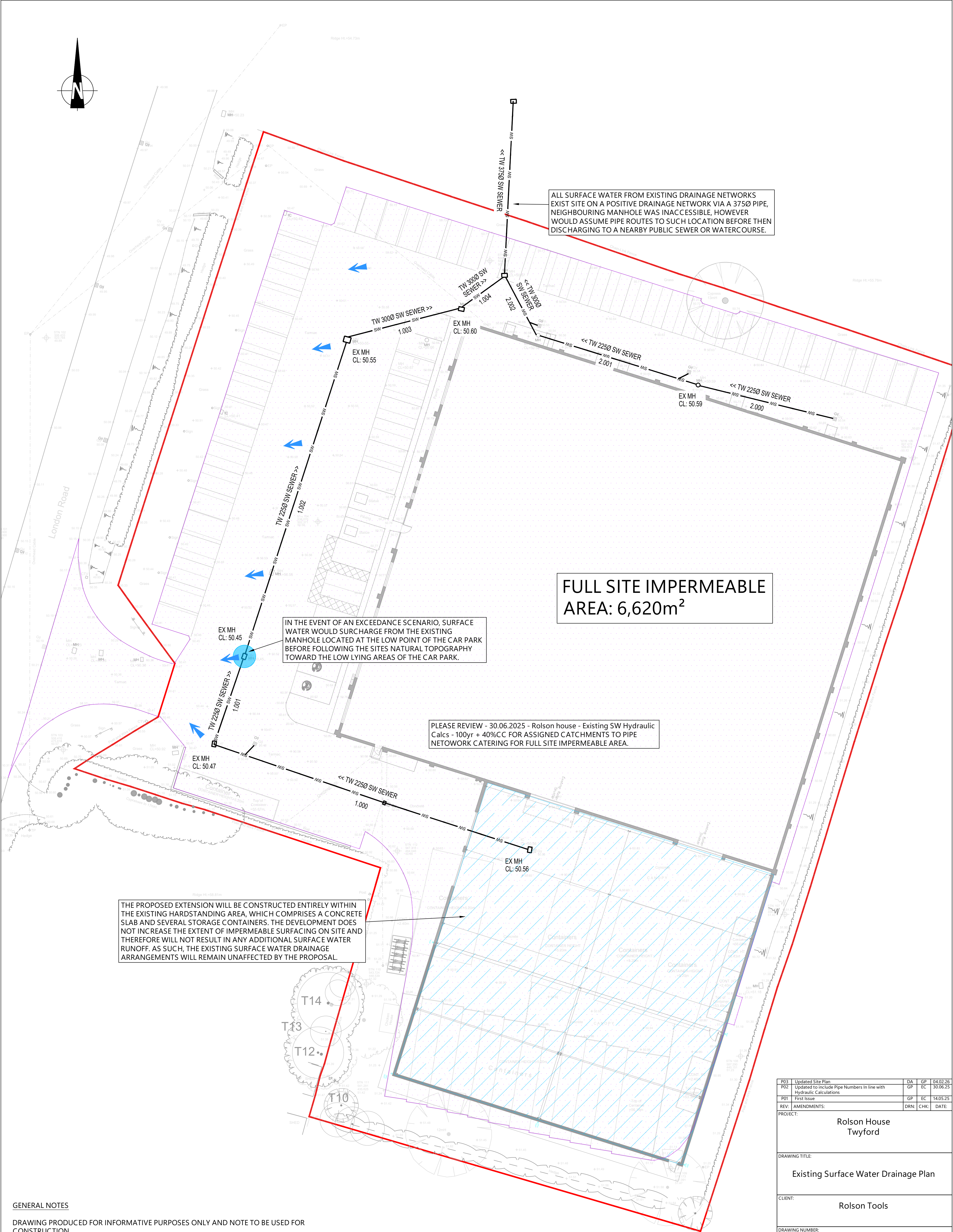
Epoch	Central allowance	Upper end allowance
2050s	20%	40%
2070s	25%	40%

*Use '2050s' for development with a lifetime up to 2060 and use the 2070s epoch for development with a lifetime between 2061 and 2125.

This map contains information generated by Met Office Hadley Centre (2019): UKCP Local Projections on a 5km grid over the UK for 1980-2080. Centre for Environmental Data Analysis, 2022

Appendix 2:

P25031-DGC-Z1-GF-DR-C-0001-P03- Existing Surface Water Drainage Plan



GENERAL NOTES

DRAWING PRODUCED FOR INFORMATIVE PURPOSES ONLY AND NOTE TO BE USED FOR CONSTRUCTION.

THIS DRAWING TO READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR / FABRICATOR PRIOR TO COMMENCEMENT OF WORKS.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.

ALL WORKS TO BE CARRIED OUT IN STRICT ACCORDANCE WITH THE ENGINEER'S SPECIFICATIONS, RELEVANT BRITISH STANDARDS AND WHERE APPLICABLE LOCAL AUTHORITIES REQUIREMENTS.

ALL DRAINAGE IN COORDINATION WITH ON SITE CCTV SURVEY UNDETAKEN.

P03	Updated Site Plan	DA	GP	04.02.26
P02	Updated to include Pipe Numbers in line with Hydraulic Calculations	GP	EC	30.06.25
P01	First Issue	GP	EC	14.05.25
REV:	AMENDMENTS:	DRN:	CHK:	DATE:
PROJECT:				
Rolson House Twyford				
DRAWING TITLE:				
Existing Surface Water Drainage Plan				
CLIENT:				
Rolson Tools				
DRAWING NUMBER:				
P25031-DGC-Z1-GF-DR-C-0001				
REVISION:	SHEET SIZE:	SCALE:		
P03	A1	1:200		
DRAWN BY:	CHECKED BY:	DATE:		
GP	EC	14.05.2025		
STATUS:				
PRELIMINARY				
		Office 2 Caldecott Park Wolverton Road Stony Stratford Milton Keynes MK11 1JQ T: 07946 263669 info@dgc-engineering.co.uk www.dgc-engineering.co.uk Office 9 Clock Tower Building Clock Tower Park Longmoor Lane Liverpool L10 1LD T: 0151 8236327 info@dgc-engineering.co.uk www.dgc-engineering.co.uk		
ORDNANCE SURVEY © CROWN COPYRIGHT 2014. ALL RIGHTS RESERVED				

Appendix 3:

30.06.2025 - Rolson house - Existing SW
Hydraulic Calcs - 100yr + 40%CC

DGC Consulting Ltd		Page 0
19 High Street, Yardley Gobion Towcester NN12 7TN	Rolson House SW Hydraulic Calcs Existing Network	
Date 30/06/2025 14:53 File SW DRIANAGE DESIGN 30.06.20...	Designed by ejc Checked by	
Innovyze	Network 2020.1.3	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Surface Network 1

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	1	PIMP (%)	100
M5-60 (mm)	18.500	Add Flow / Climate Change (%)	0
Ratio R	0.400	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Time Area Diagram for Surface Network 1

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.510	4-8	0.152

Total Area Contributing (ha) = 0.662

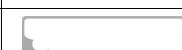
Total Pipe Volume (m³) = 11.496

Network Design Table for Surface Network 1

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	56.546	0.377	150.0	0.055	5.00	0.0	0.600	o	225	Pipe/Conduit	
1.001	10.710	0.071	150.8	0.067	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.002	38.788	0.259	149.8	0.151	0.00	0.0	0.600	o	300	Pipe/Conduit	
1.003	13.719	0.091	150.0	0.080	0.00	0.0	0.600	o	300	Pipe/Conduit	
1.004	6.385	0.043	148.5	0.065	0.00	0.0	0.600	o	375	Pipe/Conduit	
2.000	16.387	0.241	67.9	0.092	5.00	0.0	0.600	o	225	Pipe/Conduit	
2.001	19.500	0.390	50.0	0.092	0.00	0.0	0.600	o	225	Pipe/Conduit	
2.002	8.022	0.181	44.3	0.060	0.00	0.0	0.600	o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	47.11	5.88	49.200	0.055	0.0	0.0	0.0	1.07	42.4	7.0
1.001	46.49	6.05	48.823	0.122	0.0	0.0	0.0	1.06	42.2	15.4
1.002	44.74	6.56	48.676	0.273	0.0	0.0	0.0	1.28	90.7	33.1
1.003	44.16	6.74	48.418	0.353	0.0	0.0	0.0	1.28	90.6	42.2
1.004	43.93	6.81	48.251	0.418	0.0	0.0	0.0	1.48	164.0	49.7
2.000	49.95	5.17	49.171	0.092	0.0	0.0	0.0	1.59	63.2	12.4
2.001	49.22	5.35	48.930	0.184	0.0	0.0	0.0	1.85	73.7	24.5
2.002	48.99	5.40	48.465	0.244	0.0	0.0	0.0	2.37	167.4	32.4

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19 High Street, Yardley Gobion Towcester NN12 7TN	Rolson House SW Hydraulic Calcs Existing Network	
Date 30/06/2025 14:53 File SW DRIANAGE DESIGN 30.06.20...	Designed by ejc Checked by	
Innovyze	Network 2020.1.3	

Network Design Table for Surface Network 1

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.005	21.832	0.146	150.0	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.005	43.16	7.05	48.209	0.662	0.0	0.0	0.0	1.48	163.1	77.4

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Manhole Schedules for Surface Network 1

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	Pipe Out PN	Invert Level (m)	Diameter (mm)	Pipes In PN	Invert Level (m)	Diameter (mm)	Backdrop (mm)
S1	50.625	1.425	Open Manhole	1350	1.000	49.200	225				
S2	50.470	1.647	Open Manhole	1350	1.001	48.823	225	1.000	48.823	225	
S3	50.483	1.807	Open Manhole	1200	1.002	48.676	300	1.001	48.752	225	1
S4	50.533	2.116	Open Manhole	1200	1.003	48.418	300	1.002	48.417	300	
S5	50.673	2.422	Open Manhole	1200	1.004	48.251	375	1.003	48.326	300	
S8	50.596	1.425	Open Manhole	1350	2.000	49.171	225				
S9	50.579	1.649	Open Manhole	1350	2.001	48.930	225	2.000	48.930	225	
S10	50.585	2.120	Open Manhole	1200	2.002	48.465	300	2.001	48.540	225	
S6	50.676	2.468	Open Manhole	1350	1.005	48.209	375	1.004	48.208	375	
								2.002	48.284	300	
S7	50.600	2.537	Open Manhole	1350		OUTFALL		1.005	48.063	375	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S1	579.905	459.443	579.905	459.443	Required	
S2	526.026	476.604	526.026	476.604	Required	
S3	529.516	486.729	529.516	486.729	Required	
S4	541.532	523.609	541.532	523.609	Required	
S5	554.789	527.140	554.789	527.140	Required	
S8	598.254	514.322	598.254	514.322	Required	
S9	582.358	518.307	582.358	518.307	Required	
S10	563.736	524.091	563.736	524.091	Required	
S6	559.809	531.086	559.809	531.086	Required	
S7	560.752	552.898			No Entry	

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PIPELINE SCHEDULES for Surface Network 1

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	225	S1	50.625	49.200	1.200	Open Manhole	1350
1.001	o	225	S2	50.470	48.823	1.422	Open Manhole	1350
1.002	o	300	S3	50.483	48.676	1.507	Open Manhole	1200
1.003	o	300	S4	50.533	48.418	1.815	Open Manhole	1200
1.004	o	375	S5	50.673	48.251	2.047	Open Manhole	1200
2.000	o	225	S8	50.596	49.171	1.200	Open Manhole	1350
2.001	o	225	S9	50.579	48.930	1.424	Open Manhole	1350
2.002	o	300	S10	50.585	48.465	1.820	Open Manhole	1200
1.005	o	375	S6	50.676	48.209	2.092	Open Manhole	1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	56.546	150.0	S2	50.470	48.823	1.422	Open Manhole	1350
1.001	10.710	150.8	S3	50.483	48.752	1.506	Open Manhole	1200
1.002	38.788	149.8	S4	50.533	48.417	1.816	Open Manhole	1200
1.003	13.719	150.0	S5	50.673	48.326	2.047	Open Manhole	1200
1.004	6.385	148.5	S6	50.676	48.208	2.093	Open Manhole	1350
2.000	16.387	67.9	S9	50.579	48.930	1.424	Open Manhole	1350
2.001	19.500	50.0	S10	50.585	48.540	1.820	Open Manhole	1200
2.002	8.022	44.3	S6	50.676	48.284	2.092	Open Manhole	1350
1.005	21.832	150.0	S7	50.600	48.063	2.162	Open Manhole	1350

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Innovyze	Network 2020.1.3	

Area Summary for Surface Network 1

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.055	0.055	0.055
1.001	-	-	100	0.067	0.067	0.067
1.002	User	-	100	0.151	0.151	0.151
1.003	User	-	100	0.080	0.080	0.080
1.004	-	-	100	0.065	0.065	0.065
2.000	User	-	100	0.092	0.092	0.092
2.001	-	-	100	0.092	0.092	0.092
2.002	-	-	100	0.060	0.060	0.060
1.005	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.662	0.662	0.662

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Innovyze	Network 2020.1.3	

Network Classifications for Surface Network 1

PN	USMH Name	Pipe Dia (mm)	Min Cover Depth (m)	Max Cover Depth (m)	Pipe Type	MH Dia (mm)	MH Width (mm)	MH Ring Depth (m)	MH Type
1.000	S1	225	1.200	1.422	Unclassified	1350	0	1.200	Unclassified
1.001	S2	225	1.422	1.506	Unclassified	1350	0	1.422	Unclassified
1.002	S3	300	1.507	1.816	Unclassified	1200	0	1.507	Unclassified
1.003	S4	300	1.815	2.047	Unclassified	1200	0	1.815	Unclassified
1.004	S5	375	2.047	2.093	Unclassified	1200	0	2.047	Unclassified
2.000	S8	225	1.200	1.424	Unclassified	1350	0	1.200	Unclassified
2.001	S9	225	1.424	1.820	Unclassified	1350	0	1.424	Unclassified
2.002	S10	300	1.820	2.092	Unclassified	1200	0	1.820	Unclassified
1.005	S6	375	2.092	2.162	Unclassified	1350	0	2.092	Unclassified

Free Flowing Outfall Details for Surface Network 1

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
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1.005	S7	50.600	48.063	0.000	1350	0
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Simulation Criteria for Surface Network 1

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	1	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.500	Storm Duration (mins)	30
Ratio R	0.400		

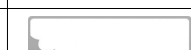
Manhole Headloss for Surface Network 1

PN	US/MH Name	US/MH Headloss
1.000	S1	0.500
1.001	S2	0.500
1.002	S3	0.500
1.003	S4	0.500
1.004	S5	0.500
2.000	S8	0.500
2.001	S9	0.500
2.002	S10	0.500
1.005	S6	0.500

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Innovyze	Network 2020.1.3	

CASDeF Controller for Surface Network 1

PN	US/MH Name	Level Exceeded	Not Control	Modify Control	Modify Pipe Size	Max Pipe Diameter	No. Pipe Failures	Add Storage	No. Storage Failures	Use CASDeF
1.000	S1	50.625		Yes	No	1275	0	Yes	0	Yes
1.001	S2	50.470		Yes	No	1497	0	Yes	0	Yes
1.002	S3	50.483		Yes	No	1657	0	Yes	0	Yes
1.003	S4	50.533		Yes	No	1965	0	Yes	0	Yes
1.004	S5	50.673		Yes	No	2272	0	Yes	0	Yes
2.000	S8	50.596		Yes	No	1275	0	Yes	0	Yes
2.001	S9	50.579		Yes	No	1499	0	Yes	0	Yes
2.002	S10	50.585		Yes	No	1970	0	Yes	0	Yes
1.005	S6	50.676		Yes	No	2317	0	Yes	0	Yes

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19 High Street, Yardley Gobion Towcester NN12 7TN	Rolson House SW Hydraulic Calcs Existing Network	
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Innovyze	Network 2020.1.3	

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for
Surface Network 1

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.500 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.400 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 200.0 DVD Status OFF
 Analysis Timestep Fine Inertia Status OFF
 DTS Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 40

									Water Surcharged
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.	Level (m) Depth (m)
1.000	S1 15	Winter	1	+0%	100/15 Summer				49.263 -0.162
1.001	S2 15	Winter	1	+0%	30/15 Summer				48.921 -0.127
1.002	S3 15	Winter	1	+0%	30/15 Summer				48.801 -0.175
1.003	S4 15	Winter	1	+0%	30/15 Summer				48.570 -0.147
1.004	S5 15	Winter	1	+0%	30/15 Summer				48.423 -0.203
2.000	S8 15	Winter	1	+0%	100/15 Summer				49.242 -0.155
2.001	S9 15	Winter	1	+0%	100/15 Summer				49.019 -0.136
2.002	S10 15	Winter	1	+0%	30/15 Summer				48.571 -0.194
1.005	S6 15	Winter	1	+0%	30/15 Summer				48.402 -0.182

Flooded					Half Drain Pipe		
PN	US/MH Name	Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)	Level Exceeded
1.000	S1	0.000	0.17			6.8	OK
1.001	S2	0.000	0.39			14.0	OK
1.002	S3	0.000	0.36			29.9	OK
1.003	S4	0.000	0.51			37.9	OK
1.004	S5	0.000	0.42			44.8	OK
2.000	S8	0.000	0.21			11.8	OK
2.001	S9	0.000	0.32			21.6	OK
2.002	S10	0.000	0.26			28.2	OK
1.005	S6	0.000	0.52			72.1	OK

DGC Consulting Ltd		Page 8
19 High Street, Yardley Gobion Towcester NN12 7TN	Rolson House SW Hydraulic Calcs Existing Network	
Date 30/06/2025 14:53 File SW DRIANAGE DESIGN 30.06.20...	Designed by ejc Checked by	
Innovyze	Network 2020.1.3	

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Surface Network 1

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

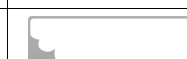
Rainfall Model FSR M5-60 (mm) 18.500 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.400 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 200.0 DVD Status OFF
 Analysis Timestep Fine Inertia Status OFF
 DTS Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 40

									Water	Surcharged
	US/MH		Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Level	Depth
PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow	Act.	(m)	(m)
1.000	S1 15	Winter	30	+0%	100/15	Summer			49.303	-0.122
1.001	S2 15	Winter	30	+0%	30/15	Summer			49.162	0.114
1.002	S3 15	Winter	30	+0%	30/15	Summer			49.106	0.130
1.003	S4 15	Winter	30	+0%	30/15	Summer			48.908	0.190
1.004	S5 15	Winter	30	+0%	30/15	Summer			48.762	0.136
2.000	S8 15	Winter	30	+0%	100/15	Summer			49.287	-0.110
2.001	S9 15	Winter	30	+0%	100/15	Summer			49.098	-0.057
2.002	S10 15	Winter	30	+0%	30/15	Summer			48.781	0.016
1.005	S6 15	Winter	30	+0%	30/15	Summer			48.681	0.097

Flooded				Half Drain Pipe			Level	
PN	US/MH Name	Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)	Status	Exceeded
1.000	S1	0.000	0.41			16.7	OK	
1.001	S2	0.000	1.07			38.1	SURCHARGED	
1.002	S3	0.000	0.86			72.3	SURCHARGED	
1.003	S4	0.000	1.25			93.8	SURCHARGED	
1.004	S5	0.000	1.03			110.2	SURCHARGED	
2.000	S8	0.000	0.51			28.8	OK	
2.001	S9	0.000	0.89			59.4	OK	
2.002	S10	0.000	0.71			75.9	SURCHARGED	
1.005	S6	0.000	1.34			185.9	SURCHARGED	

DGC Consulting Ltd		Page 9
19 High Street, Yardley Gobion Towcester NN12 7TN	Rolson House SW Hydraulic Calcs Existing Network	
Date 30/06/2025 14:53	Designed by ejc	
File SW DRIANAGE DESIGN 30.06.20...	Checked by	
Innovyze	Network 2020.1.3	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for
Surface Network 1

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.500 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.400 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 200.0 DVD Status OFF
 Analysis Timestep Fine Inertia Status OFF
 DTS Status ON

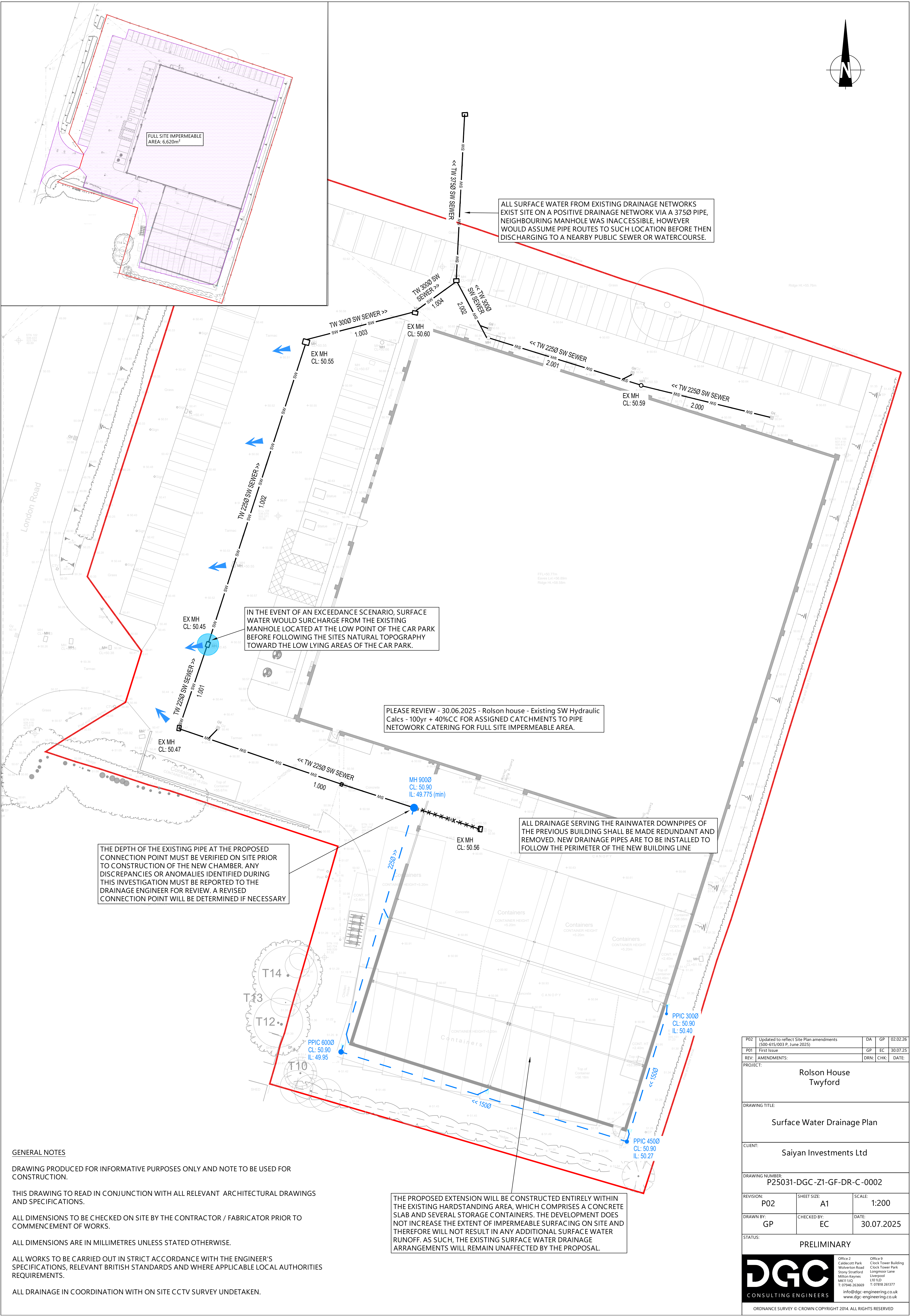
Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 1, 30, 100
 Climate Change (%) 0, 0, 40

										Water Surcharged
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Level (m)	Depth (m)
1.000	S1 15	Winter	100	+40%	100/15	Summer			50.555	1.130
1.001	S2 15	Winter	100	+40%	30/15	Summer			50.426	1.378
1.002	S3 15	Winter	100	+40%	30/15	Summer			50.290	1.314
1.003	S4 15	Winter	100	+40%	30/15	Summer			49.755	1.037
1.004	S5 15	Winter	100	+40%	30/15	Summer			49.351	0.725
2.000	S8 15	Winter	100	+40%	100/15	Summer			50.178	0.781
2.001	S9 15	Winter	100	+40%	100/15	Summer			50.024	0.869
2.002	S10 15	Winter	100	+40%	30/15	Summer			49.339	0.574
1.005	S6 15	Winter	100	+40%	30/15	Summer			49.119	0.535

		Flooded		Half Drain		Pipe			Level
PN	US/MH Name	Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)	Status	Level Exceeded	
1.000	S1	0.000	0.70			28.7	FLOOD RISK		
1.001	S2	0.000	1.59			56.4	FLOOD RISK		
1.002	S3	0.000	1.41			118.7	FLOOD RISK		
1.003	S4	0.000	2.06			154.0	SURCHARGED		
1.004	S5	0.000	1.72			184.8	SURCHARGED		
2.000	S8	0.000	0.83			46.6	SURCHARGED		
2.001	S9	0.000	1.31			87.4	SURCHARGED		
2.002	S10	0.000	1.08			115.0	SURCHARGED		
1.005	S6	0.000	2.16			299.3	SURCHARGED		

Appendix 4:

P25031-DGC-Z1-GF-DR-C-0002-P02- Proposed Surface Water Drainage Plan



GENERAL NOTES

DRAWING PRODUCED FOR INFORMATIVE PURPOSES ONLY AND NOTE TO BE USED FOR CONSTRUCTION.

THIS DRAWING TO READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR / FABRICATOR PRIOR TO COMMENCEMENT OF WORKS.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.

ALL WORKS TO BE CARRIED OUT IN STRICT ACCORDANCE WITH THE ENGINEER'S SPECIFICATIONS, RELEVANT BRITISH STANDARDS AND WHERE APPLICABLE LOCAL AUTHORITIES REQUIREMENTS.

ALL DRAINAGE IN COORDINATION WITH ON SITE CCTV SURVEY UNDETAKEN.

THE PROPOSED EXTENSION WILL BE CONSTRUCTED ENTIRELY WITHIN THE EXISTING HARDSTANDING AREA, WHICH COMPRISES A CONCRETE SLAB AND SEVERAL STORAGE CONTAINERS. THE DEVELOPMENT DOES NOT INCREASE THE EXTENT OF IMPERMEABLE SURFACING ON SITE AND THEREFORE WILL NOT RESULT IN ANY ADDITIONAL SURFACE WATER RUNOFF. AS SUCH, THE EXISTING SURFACE WATER DRAINAGE ARRANGEMENTS WILL REMAIN UNAFFECTED BY THE PROPOSAL.

P02	Updated to reflect Site Plan amendments (500-615/003 P, June 2025)	DA	GP	02.02.26
P01	First Issue	GP	EC	30.07.25
REV:	AMENDMENTS:	DRN:	CHK:	DATE:
PROJECT:				
Rolson House Twyford				
DRAWING TITLE:				
Surface Water Drainage Plan				
CLIENT:				
Saiyan Investments Ltd				
DRAWING NUMBER:				
P25031-DGC-Z1-GF-DR-C-0002				
REVISION:	SHEET SIZE:	SCALE:		
P02	A1	1:200		
DRAWN BY:	CHECKED BY:	DATE:		
GP	EC	30.07.2025		
STATUS:				
PRELIMINARY				
		Office 2 Caldecott Park Wolverton Road Stone Stratford Milton Keynes MK11 1JQ T: 07946 263669 info@dgc-engineering.co.uk www.dgc-engineering.co.uk Office 9 Clock Tower Building Clock Tower Park Longmoor Lane Liverpool L10 1LD T: 01698 261377		
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