FLOOD RISK ASSESSMENT & SUDS REPORT FOR

CHARTERS, OXFORD ROAD, READING, RG31 6TQ

DOCUMENT NUMBER: C3411-R1-REV-A

PREPARED BY



CONTENTS

1. INTRODUCTION 4
2. SITE Details 5
2.1 Development Proposals 5
2.2 Geology of The Area 6
3. PLANNING POLICIES 7
3.1 National Planning Policy 7
3.2 Local Planning Policy 7
4. FLOOD RISK ASSESMENT 8
4.1 Fluvial or Tidal Flooding 8
4.2 Flooding from Land (Overland Flow) 9
4.3 Flooding from Groundwater 10
4.4 Flooding from Sewers 11
4.5 Flooding from Reservoirs, Canals or Artificial Sources 11
5. RESIDUAL RISK AND MITIGATION MEASURES 13
6. SAFE ACCESS AND EGRESS 14
7. SUSTAINABLE URBAN DRAINAGE SYSTEMS 15
8. PROPOSED SOLUTION 19
9. SuDS PROPOSALS FOR DEVELOPMENT 21
9.1 Discharge Rates 23
10. TIMESCALE AND MAINTENANCE OF WORKS 24
11. SUMMARY AND CONCLUSIONS 27

APPENDIX A – DRAWINGS

APPENDIX B – SURFACE WATER RUN OFF CALCULATIONS

APPENDIX C – THAMES WATER ASSET PLANS

1. INTRODUCTION

This flood risk assessment (FRA) has been prepared to support a planning application for the development. The proposed development involves the construction of four blocks of eight flats each.

A review of the Environment Agency's Flood Map shows that the proposed development site is within flood zone 1. This report has been produced to demonstrate that the proposed development will not increase risk to life, will not increase flood risk elsewhere and will be safe for the lifetime of the development.

2. SITE DETAILS

Site Name	Charters
Site Address	Oxford Road, Reading, RG31 6TQ
Purpose of Development	Residential
Existing Land Use	Brownfield
Country	England
Local Planning Authority	Reading Borough Council

2.1 Development Proposals

The proposed development involves the construction of four blocks of eight flats.

The proposed site layout plan can be found in Appendix A.

2.2 Geology of The Area

According to the British Geological Survey, that the superficial deposit is unknown, as seen in Figure 2 below. The bedrock in the area is of the Seaford Chalk Formation, consisting of Chalk, as shown in Figure 3 overleaf.

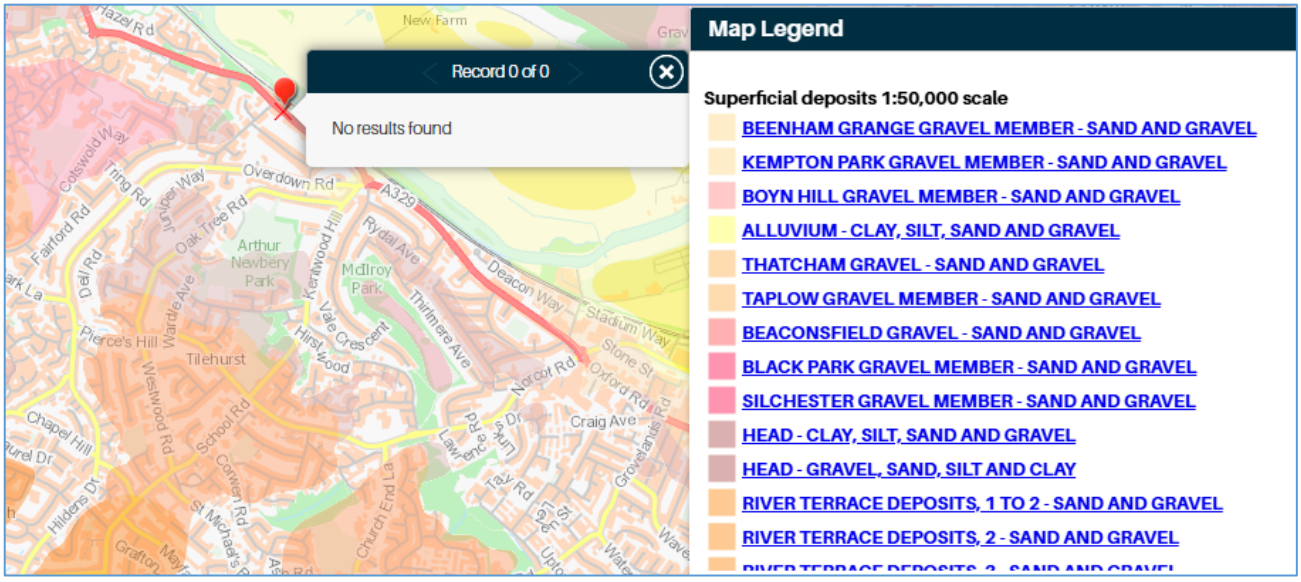


Figure 1- Superficial Deposits at the site. (Source: British Geological Society Website (contains British Geological Survey materials © NERC2024).

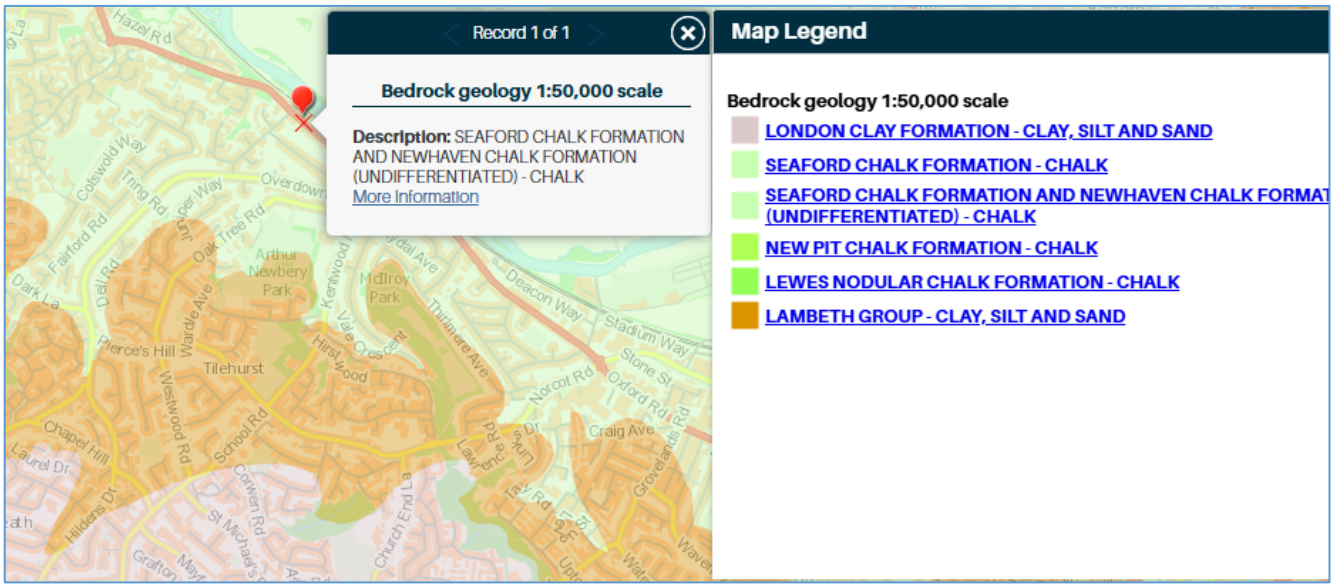


Figure 2- Bedrock at the site. (Source: British Geological Society Website (contains British Geological Survey materials © NERC2024).

3. PLANNING POLICIES

3.1 National Planning Policy

- NPPF's technical guidance states:

"The effect of development is generally to reduce the permeability of at least part of the site. This markedly changes the Site's response to rainfall. Without specific measures, the volume of water that runs off the site and the peak run-off flow rate is likely to increase. Inadequate surface water drainage arrangements in new development can threaten the development itself and increase the risk of flooding others."

3.2 Local Planning Policy

This report has been written in conjunction with the following local planning policy:

- Reading Borough Council, Level 1 and Level 2 Strategic Flood Risk Assessment reports

4. FLOOD RISK ASSESMENT

The possible causes of flooding set out in NPPF's technical guidance are considered in this section in relation to the flood risk to the site itself and the effects of the development of the site on flood risk elsewhere.

4.1 Fluvial or Tidal Flooding

The Environment Agency's Flood Map for Planning (Rivers and Sea), shown in Figure 1 below, indicates that the proposed development site is within a Flood Zone 1.

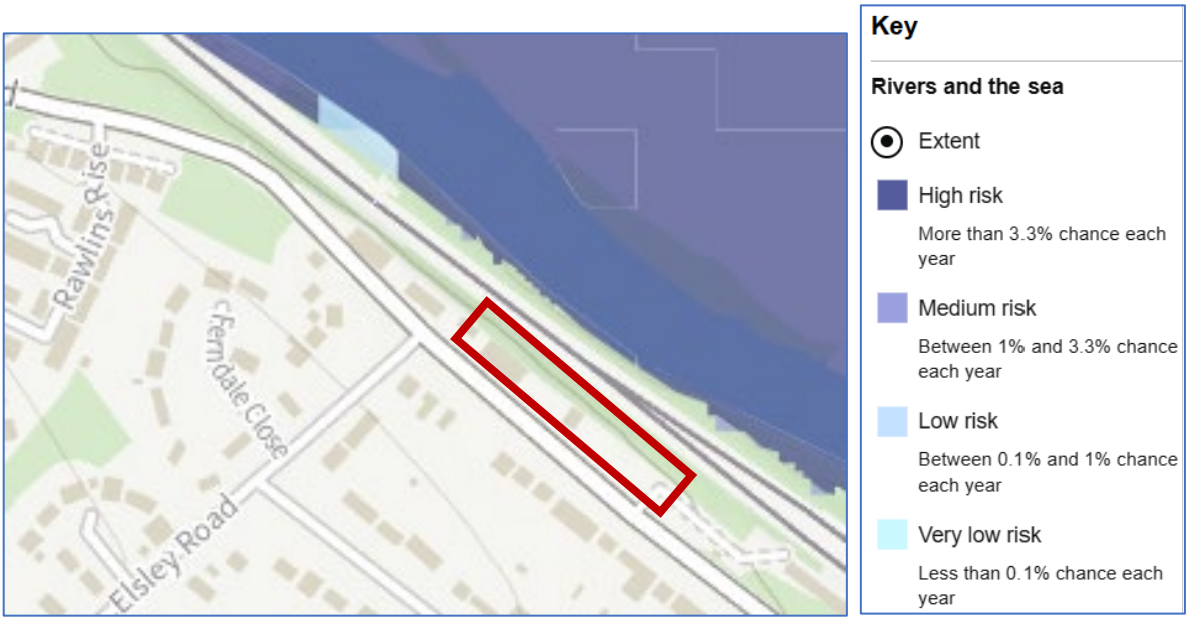


Figure 3 – Environment Agency Flood Map (from Rivers and the Sea) for the proposed development

4.2 Flooding from Land (Overland Flow)

The area of this proposed development is not at risk of surface water flooding. However, there are areas in the main road, in front of the development's entrance, showing areas with flood depths of less than 300mm. Therefore, the residents must be made aware of these issues during access and egress to their dwellings during extreme events and dangers such as blown manholes.

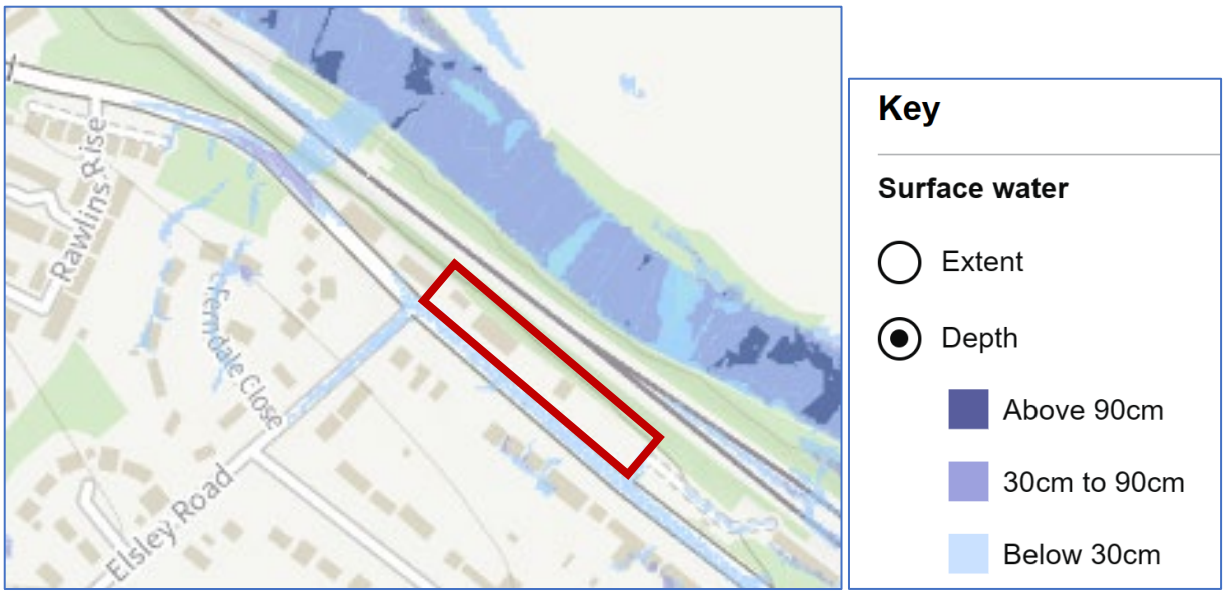


Figure 4 – Environment Agency Flood Map (from surface water) for the proposed development.

4.3 Flooding from Groundwater

The proposed site for this development is at an area designated as major aquifer with high permeability as per 'Bedrock Groundwater Vulnerability Map', extracted from the SFRA report, and shown below

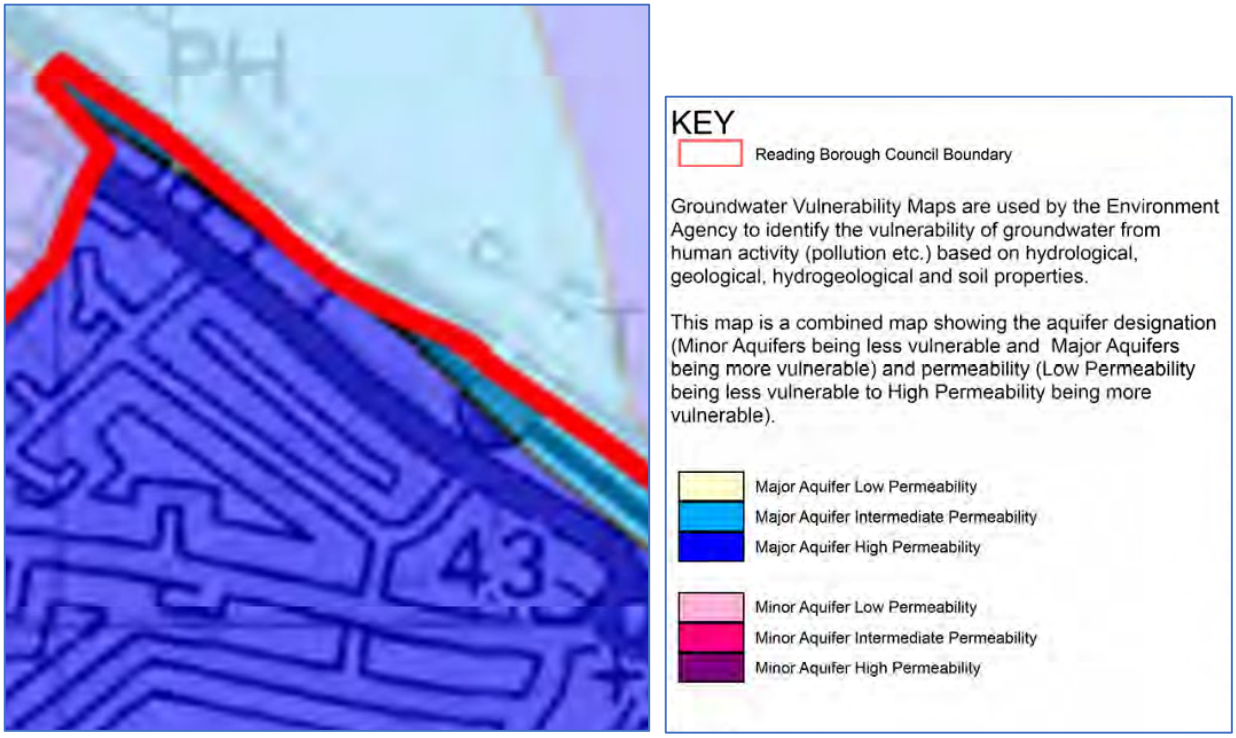


*Figure 5 – '*Bedrock Groundwater Vulnerability Map *'extracted from Reading Borough Council SFRA*

Similarly, the EA's Groundwater Vulnerability Map on Magic Maps shows the area as being a high vulnerability area.

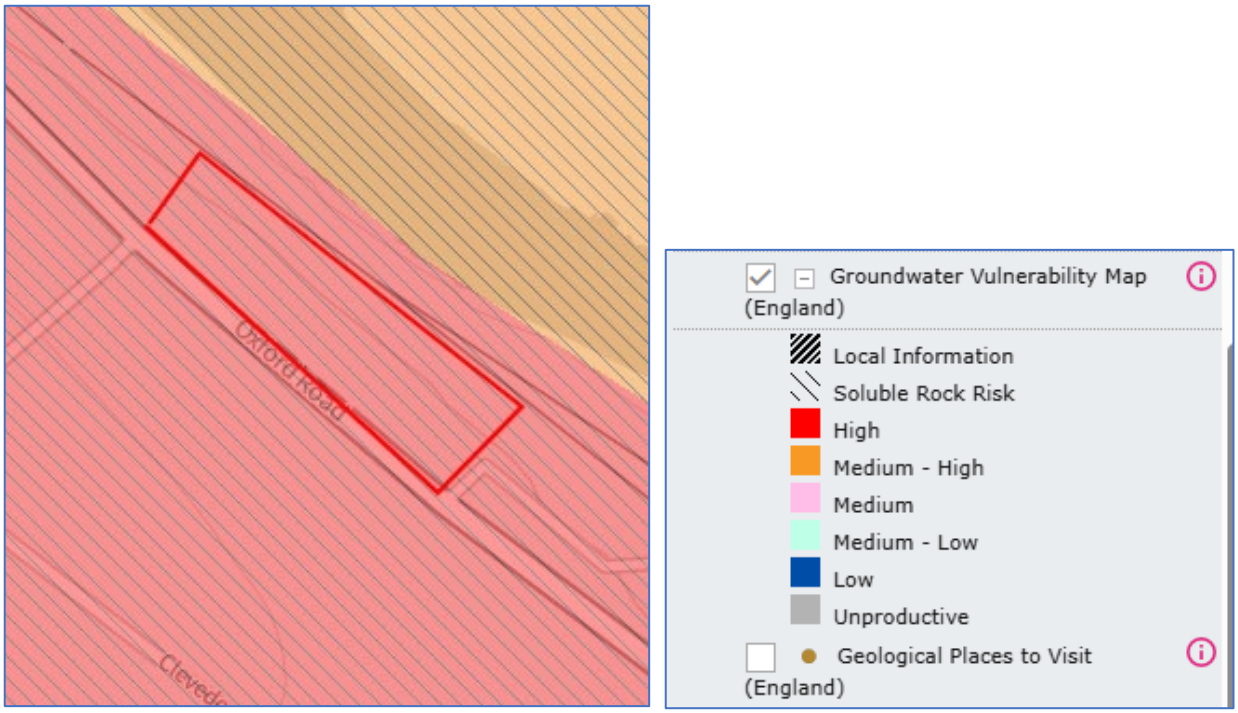


Figure 6 – 'Groundwater Vulnerability Maps 'extracted from Magic Maps

4.4 Flooding from Sewers

The proposed development is located in postcode RG31 6. According to Reading Borough Council's Extraction of the Thames Water DG5 Register from February 2016, there have been over 101 incidents of internal or external sewer flooding in this area.

4.5 Flooding from Reservoirs, Canals or Artificial Sources

The Environment Agency's website confirms flooding from reservoirs is unlikely at this site.



Figure 7 – Environment Agency Flood Map (from reservoirs) for the proposed development.

5. RESIDUAL RISK AND MITIGATION MEASURES

There is a very low risk of flooding from all overground sources, therefore there are no residual risks and no mitigation measures are required, the only issues would be access and egress from the site from the main road, during an extreme storm event, where there are areas of surface water ponding of depths of less than 300m.

Therefore, residents need to be aware of hidden dangers such as blown manholes and take care when accessing and egressing their dwellings during an extreme storm event.

6. SAFE ACCESS AND EGRESS

Occupants should not attempt to walk through floodwater unless instructed to do so by the emergency services, and they should be aware of hidden dangers such as blown manholes.

7. SUSTAINABLE URBAN DRAINAGE SYSTEMS

Surface water arising from a developed site should, as far as is practicable, be managed in a sustainable manner to mimic the surface water flows arising from the site prior to the proposed development, while reducing the flood risk to the site itself and elsewhere, taking climate change into account.

Reducing the rate of surface water discharge from urban sites is one of the most effective ways of reducing and managing flood risk.

Traditional piped surface water systems work by removing surface water from our developments as quickly as possible, however this can cause various adverse impacts:

- Increased downstream flooding, and sudden rises in flow rates and water levels in local water courses.

- Reduction in groundwater levels and dry weather flows in watercourses.

- Reduce amenity and adversely affect biodiversity due to the surface water run- off containing contaminants such as oil, organic matter and toxic materials

SuDS are defined as a sequence of management principles and control structures designed to drain surface water in a more sustainable fashion than conventional piped drainage techniques. SuDS should utilise the natural landscape of an area, which, as well as slowing down the rate of runoff, provides a number of environmental, ecological and social benefits.

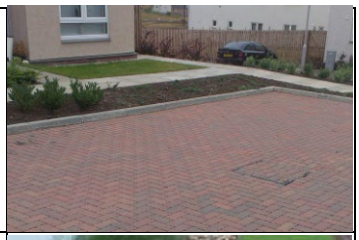
These include:

- Protection and enhancement of water quality. As well as providing on-site attenuation, SuDS treat the water, resulting in an improved quality of water leaving the site. This is achieved when the water passes through fine soils and the roots of specially selected plants. Pollutants washed off the hard landscaping by rainfall will be safely removed before the water reaches the natural receiving water course.

- A sympathetic approach to the environmental setting by providing opportunities to create habitats for flora and fauna in urban watercourses and open spaces.

- Meeting the amenity and social needs of the local community and residents in the creation of attractive green spaces.

The various types of SuDS include:

Permeable paving	
Soakaways;	
Swales and basins;	
Bioretention/ rain gardens;	
Green roofs and rainwater re-use;	

Preferably a combination of these techniques should be used as part of the surface water management train, and it is important for all stakeholders, such as developers, architects, landscape architects and engineers to work in order to determine a feasible solution.

The SuDS management train is shown below, and this has been followed when proposing the proposed Sustainable Urban Drainage Systems for this site.

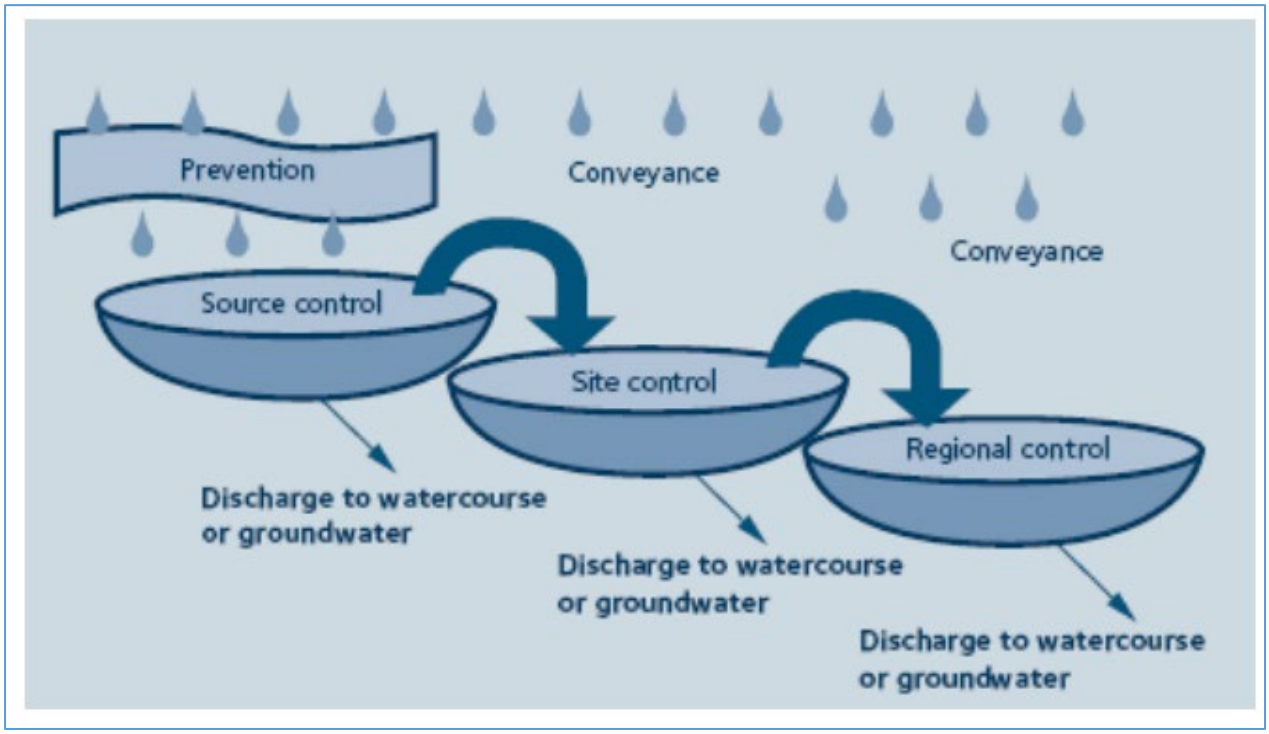


Figure 8 – SuDS Management Train

8. PROPOSED SOLUTION

The total site area for this proposed development is 3286m^2, with the existing impermeable areas at the site equating to 2582m^2, and following the development proposals, the impermeable areas will be reduced to 2356 m^2.

Green or sedum roofing is proposed on available flat roofs, and in order to follow the SuDS management train, one wall-mounted rainwater harvesting tank per block will be provided.

Due to the site being within an area that is at high vulnerability to groundwater, full infiltration to groundwater is deemed unfeasible.

The proposed hardstanding areas will be formed of porous surfacing where possible, underlain by a hydrocarbon-removing geotextile membrane at the car parking areas.

The remaining surface water runoff will be directed into a crate system attenuation tank designed to handle a 1-in-100-year storm event, with an additional 45% allowance for climate change as well as additional capacity to ensure sufficient attenuation for the 24 hour storm without any discharge in the event of pump failure. The discharge will then be pumped at a maximum discharge rate of 0.4l/s at rate equal to greenfield run-off rates.

Due to the limitations on outlets for the attenuated surface water, the following issues have been identified:

1. Infiltration is not feasible due to the high vulnerability of the groundwater in the development area.

2. Discharging into the nearby River Thames is not possible because of the proximity of the rail line.

3. Lack of Thames Water's surface water or combined sewer systems to connect to, as indicated by their Asset Map.

As a result, the only viable option is to discharge into the Thames Water foul drainage system and Thames Water have been contacted for a capacity check. The accompanying figure illustrates nearby developments that have received permission to connect their surface water drainage to the Thames Water foul drainage system.

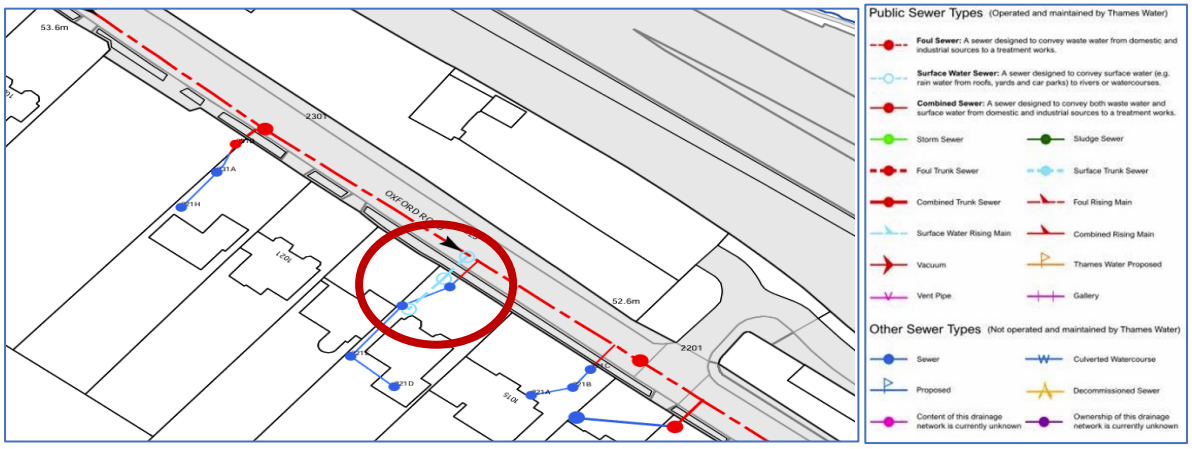


Figure 9 – Thames Water Asset Map

A drainage layout illustrating the attenuation tank can be found in Appendix A, while the hydraulic calculations are detailed in Appendix B.

This proposed SuDS solution is proportionate to the nature and scale of the development, and follows the SuDS hierarchy.

9. SuDS PROPOSALS FOR DEVELOPMENT

In accordance with the CIRIA SuDS Manual C753, the SuDS hierarchy has been considered in relation to the site-specific constraints and its surroundings. Table 1 below outlines the hierarchical approach considered for the development at Charters, Oxford Road, Reading, RG31 6TQ.

Sustainable Drainage Proposal	Description	Constraints/Comments	Appropriate
Rainwater Use as a Resource	Use of rainwater runoff for reuse, e.g. Rainwater harvesting tanks, Blue Roofs for irrigation	One wall-mounted rainwater harvesting tank will be provided per block	Yes
Rainwater Full Infiltration to Ground (Source Control)	Infiltration devices and/or soakaways. Surface water runoff stored on site and gradually percolating into receiving ground	The underlying geology is composed of chalk, and the requirement for a 10 metre gap between a soakaway and any structure makes installing a soakaway unfeasible due to the lack of available space. Additionally the area is within an area that is at high vulnerability to groundwater.	No
Rainwater Partial Infiltration to Ground (Source Control)	Installation of permeable/porous surfacing	Permeable paving has been proposed in order to deal with surface water runoff in low-rainfall events	Yes
Rainwater attenuation in green infrastructure features for gradual release	The onsite storage of all surface water runoff which can then be gradually conveyed to a nearby watercourse, sewer or infiltration into the ground. Forms of green infrastructure features: Green Roofs, Raingardens, Ponds,	Green/Sedum Roofs will be provided on flat roofs where possible	Yes

	Swales, Detention basins, Infiltration Trenches and raingarden planters		
Rainwater discharge direct to a watercourse	All surface water runoff on site discharged at a restricted rate to a nearby watercourse	Although the River Thames is within 50 meters of the development within this area is the rail line, hindering the possibility of a connection	No
Controlled rainwater discharge to a surface water sewer or drain	All surface water runoff on site discharged at a restricted rate to a nearby surface water sewer or drain, all rainwater runoff stored in below ground attenuation features. E.g. oversized pipes or geo-cellular tanks	Review of Thames Water Asset Plans, shows no nearby surface water drainage.	No
Controlled rainwater discharge to a combined sewer	All surface water runoff on site discharged at a restricted rate to a nearby combined sewer all rainwater runoff stored in below ground attenuation features. E.g. oversized pipes or geo-cellular tanks	The surface water run off from the site will be attenuated and restricted to 0.4 l/s, which is the greenfield rate for the site, and discharged to the adjacent Thame Water Foul Water sewer.	Yes

Table 1: SuDS Control Measures for Development

9.1 Discharge Rates

As per the hydraulic calculations in Appendix B, the discharge rates for the site area are presented in the following tables for pre-development, post-development pre-attenuation, and post-development post-attenuation.

Development Site Discharge Rate Table				
Storm Event	Pre Development	Post Development Pre attenuation	Post Development Post Attenuation	Discharge rate Reduction
1 in 1 +0%CCA	79.0l/s	73.6l/s	0.4l/s	**99.49%** **99.46%**
1 in 30 +0%CCA	191.2l/s	247.2l/s	0.4l/s	**99.79%** **99.84%**
1 in 30 +45%CCA	N/A	258.2l/s	0.4l/s	**99.85%**
1 in 100 +0%CCA	247.2l/s	230.2l/s	0.4l/s	**99.84%** **99.83%**
1 in 100 +45%CCA	N/A	333.7l/s	0.4l/s	**99.88%**

Table 2: Discharge rate table

10. TIMESCALE AND MAINTENANCE OF WORKS

All drainage works shall be completed prior to first occupation and there shall be no adoption of any of the drainage works within the site, a management company will be formed and will be responsible to oversee the long-term maintenance of the communal drains. The following outline maintenance strategy sets out recommended timescales for maintenance of the proposed drainage works, in line with CIRIA SuDS Design Guide:

- Regular inspection will comprise the inspection and cleaning of catchment, gutters, filters and tanks to reduce the likelihood of contamination, this is recommended to be carried out every 3 to 6 months.

Maintenance schedule	Required action	Typical Frequency
Regular maintenance	Inspection of the tank for debris and sediment build-up, inlets/outlets/withdraw devices, overflow areas, pumps, filters	Annually (and following poor performance)
	Cleaning of tank, inlets, outlets, gutters. Withdrawal devices and roof drain filters of silts and other debris	Annually (and following poor performance)
Occasional maintenance	Cleaning and/ or replacement of any filters	Three monthly (or as required)
Remedial actions	Repair of overflow erosion damage or damage to tank	As required
	Pump repairs	As required

Table 3: Operation and maintenance requirement for RWH systems.

The following table outlines the maintenance requirements for the Attenuation Tank:

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect and 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 risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockages by sediment, algae or other matter: remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from pre-treatment structures and/ or internal forebays	Annually, or as required
Remedial actions	Repair/ rehabilitate inlets, outlet, overflows and vents	As required
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

Table 4: Operation and maintenance requirements for attenuation storage tanks.

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations or clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this is the most likely to collect the most sediment
Occasional maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphospate applied directly into the weeds by an applicator rather than spraying	As required
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving.	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material.	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	Three-monthly, 48hr after large storms in six months
	Inspect slit accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Table 5 : Operation and maintenance requirements for pervious pavements

11. SUMMARY AND CONCLUSIONS

The site is at very low risk of flooding from tidal, river, and reservoir sources. However, there is a risk of surface water flooding on the main road. Additionally, it is located in an area highly vulnerable to groundwater flooding and has a postcode with a significant history of sewer flooding. Consequently, the main concerns arise during access to and egress from the dwelling, where caution is required during severe rain events and in situations such as the presence of blown manholes.

A drainage strategy has been proposed to ensure, as far as practicable, that the surface water is managed in a sustainable manner to mimic the surface water flows arising from the site prior to the proposed development while reducing the flood risk to the site itself and elsewhere while taking climate change into account.
SuDS have been incorporated into this design, in the form of:

1. The majority of uncovered hardstanding surfaces are formed of permeable paving.

2. The installation of 1 wall mounted rainwater harvesting tank per block for rainwater reuse

3. Green/Sedum Roofs to be provided on all flat roofs.

4. An underground crate style attenuation system for 1 in 100 Year storm event +45% climate change allowance.

APPENDIX A – DRAWINGS



Proposed Red Boundary Total Area is Approx. 3286m²

Existing Impermeable Total Area is Approx. 2582m²

Existing Soft Total Area is Approx. 704m²

Existing Impermeable area represent Approx. 79% from total considered area.

DRAWING TO BE PRINTED IN COLOUR.

KEY:

Existing Soft Areas as per topographical survey provided by architect. Soft areas include grass, shrubs and trees but for ease of reference is shown as same hatch

Existing impermeable areas as per existing site layout. Impermeable areas are roofs and pavements but for ease of reference is shown as same hatch.

Proposed Site Boundary.

Existing Exceedance SW routes as per information from Topo Survey.

53.60 Spot Levels As Per Topo Survey

NOTES:

1. DRAWING WILL NEED TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS FROM ARCHITECT, LANDSCAPE ARCHITECT, STRUCTURAL ENGINEER AND M&E.
2. EXISTING ROUTES FOR UNDERGROUND UTILITIES ARE CURRENTLY UNKNOWN.

NOT FOR CONSTRUCTION

IMPORTANT

DRAWING MUST BE PRINTED IN COLOUR.
NO DEVIATION MAY BE MADE FROM THE CONTENTS OF THIS DRAWING WITHOUT PRIOR PERMISSION FROM THE ENGINEER.
THIS DRAWING IS TO BE REMOVED FROM CURRENCY IMMEDIATELY AFTER A REVISED EDITION HAS BEEN ISSUED.
ALL RIGHTS DESCRIBED IN CHAPTER IV OF THE COPYRIGHT DESIGN ACTS 1988 HAVE BEEN GENERALLY ASSERTED.

REV	DATE	DRAWN	DESCRIPTION	CHECK	APPR.
A	30-10-24	N.E	For Information.	S.L	S.L

C3411 - Charters, Oxford Road, Reading, RG31 6TQ

Pre-Development Impermeable Areas & Exceedance Routes

Maxika Homes Ltd.

Nimbus ENGINEERING CONSULTANTS

S.L	30-10-24	S.L	30-10-24
N.E	1:200	C3411-01	A
30-10-24	A1		



Proposed Red Boundary Total Area is Approx. 3286m²

Proposed Impermeable Total Area is Approx. 2356m²

Proposed Soft Total Area is Approx. 930m²

Proposed Impermeable area represent Approx. 72% from total considered area.

DRAWING TO BE PRINTED IN COLOUR.

KEY:

Proposed Soft Areas.

Proposed Roof & Hardstanding Areas.

Proposed Site Boundary.

NOT FOR CONSTRUCTION

IMPORTANT

DRAWING MUST BE PRINTED IN COLOUR.
NO DEVIATION MAY BE MADE FROM THE CONTENTS OF THIS DRAWING WITHOUT PRIOR PERMISSION FROM THE ENGINEER.
THIS DRAWING IS TO BE REMOVED FROM CURRENCY IMMEDIATELY AFTER A REVISED EDITION HAS BEEN ISSUED.
ALL RIGHTS DESCRIBED IN CHAPTER IV OF THE COPYRIGHT DESIGN ACTS 1988 HAVE BEEN GENERALLY ASSERTED.

REV	DATE	DRAWN	DESCRIPTION	CHECK	APPR.
A	30-10-24	N.E	For Information.	S.L	S.L

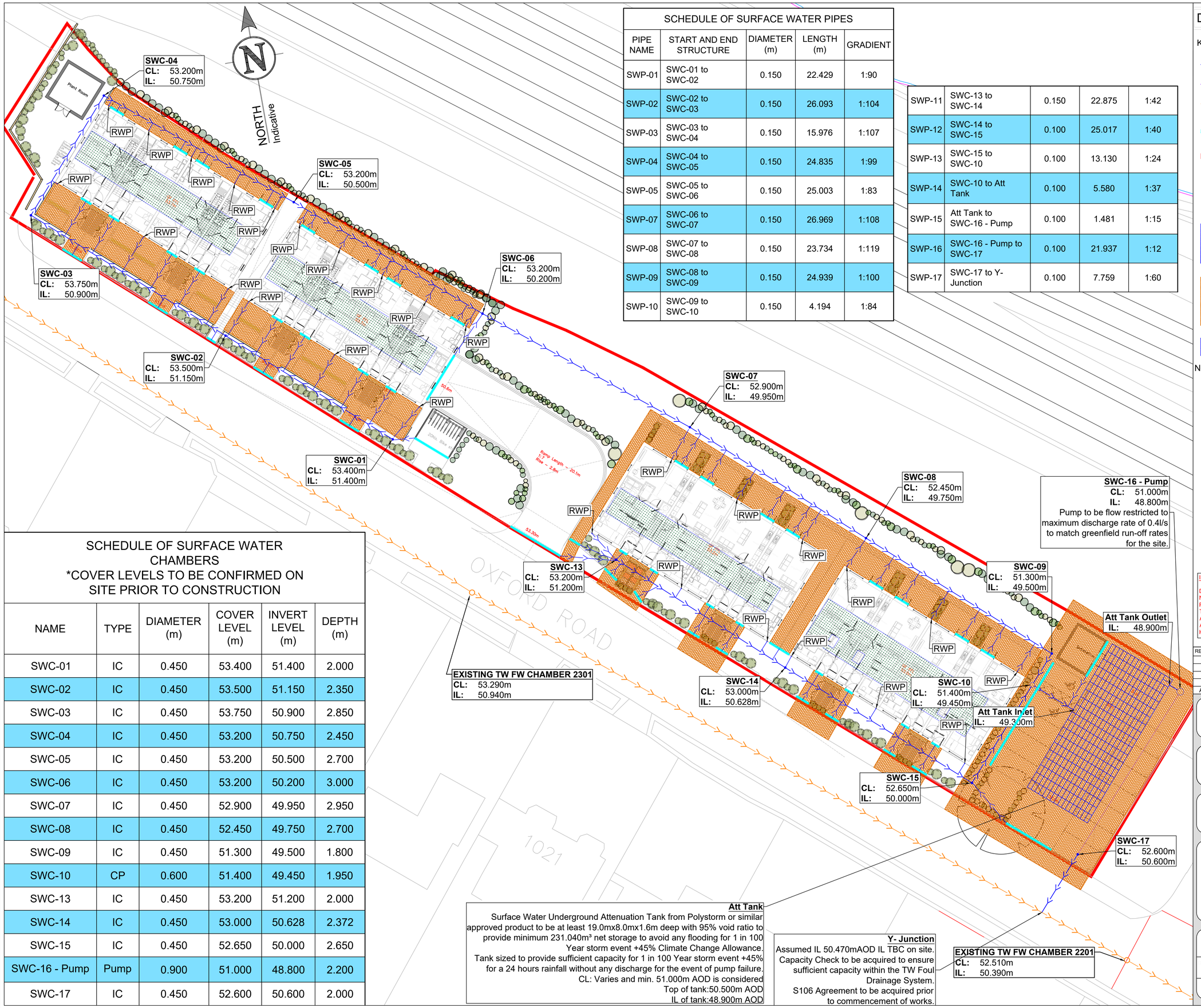
C3411 - Charters, Oxford Road, Reading, RG31 6TQ

Post-Development Impermeable Areas & Exceedance Routes

Maxika Homes Ltd.

Nimbus ENGINEERING CONSULTANTS

S.L	30-10-24	S.L	30-10-24
N.E	1:200	C3411-02	A
30-10-24	A1		



SCHEDULE OF SURFACE WATER PIPES

PIPE NAME	START AND END STRUCTURE	DIAMETER (m)	LENGTH (m)	GRADIENT
SWP-01	SWC-01 to SWC-02	0.150	22.429	1:90
SWP-02	SWC-02 to SWC-03	0.150	26.093	1:104
SWP-03	SWC-03 to SWC-04	0.150	15.976	1:107
SWP-04	SWC-04 to SWC-05	0.150	24.835	1:99
SWP-05	SWC-05 to SWC-06	0.150	25.003	1:83
SWP-07	SWC-06 to SWC-07	0.150	26.969	1:108
SWP-08	SWC-07 to SWC-08	0.150	23.734	1:119
SWP-09	SWC-08 to SWC-09	0.150	24.939	1:100
SWP-10	SWC-09 to SWC-10	0.150	4.194	1:84
SWP-11	SWC-13 to SWC-14	0.150	22.875	1:42
SWP-12	SWC-14 to SWC-15	0.100	25.017	1:40
SWP-13	SWC-15 to SWC-10	0.100	13.130	1:24
SWP-14	SWC-10 to Att Tank	0.100	5.580	1:37
SWP-15	Att Tank to SWC-16 - Pump	0.100	1.481	1:15
SWP-16	SWC-16 - Pump to SWC-17	0.100	21.937	1:12
SWP-17	SWC-17 to Y-Junction	0.100	7.759	1:60

SCHEDULE OF SURFACE WATER CHAMBERS
*COVER LEVELS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION

NAME	TYPE	DIAMETER (m)	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH (m)
SWC-01	IC	0.450	53.400	51.400	2.000
SWC-02	IC	0.450	53.500	51.150	2.350
SWC-03	IC	0.450	53.750	50.900	2.850
SWC-04	IC	0.450	53.200	50.750	2.450
SWC-05	IC	0.450	53.200	50.500	2.700
SWC-06	IC	0.450	53.200	50.200	3.000
SWC-07	IC	0.450	52.900	49.950	2.950
SWC-08	IC	0.450	52.450	49.750	2.700
SWC-09	IC	0.450	51.300	49.500	1.800
SWC-10	CP	0.600	51.400	49.450	1.950
SWC-13	IC	0.450	53.200	51.200	2.000
SWC-14	IC	0.450	53.000	50.628	2.372
SWC-15	IC	0.450	52.650	50.000	2.650
SWC-16 - Pump	Pump	0.900	51.000	48.800	2.200
SWC-17	IC	0.450	52.600	50.600	2.000

Att Tank
Surface Water Underground Attenuation Tank from Polystorm or similar approved product to be at least 19.0mx8.0mx1.6m deep with 95% void ratio to provide minimum 231.040m³ net storage to avoid any flooding for 1 in 100 Year storm event +45% Climate Change Allowance.
Tank sized to provide sufficient capacity for 1 in 100 Year storm event +45% for a 24 hours rainfall without any discharge for the event of pump failure.
CL: Varies and min. 51.000m AOD is considered
Top of tank:50.500m AOD
IL of tank:48.900m AOD

Y- Junction
Assumed IL 50.470mAOD IL TBC on site.
Capacity Check to be acquired to ensure sufficient capacity within the TW Foul Drainage System.
S106 Agreement to be acquired prior to commencement of works.

DRAWING TO BE PRINTED IN COLOUR.

KEY:

- Proposed Surface Water Pipes.
- Proposed Rising Surface Water Pipes.
- Existing Thames Water FW Drainage.
- Channel drain position shown indicative. Threshold drains to be detailed by architect.
- Proposed Site Boundary.
- Proposed RWP (blue) and SVP (red). Locations TBC by Architect or M&E.
- Proposed SW inspection/catchpit chamber.
- Proposed geocellular underground attenuation tank to be Polystorm or similar approved product. Supplier to provide structural calc and guidance for installation.
- Proposed Permeable Pavement as per Landscape Architect specification. permeable pavement not considered for hydraulic storage. Permeable pavement only suitable for very small storm events.
- Proposed Green/Sedum Roofs to be installed below PV Panels.

NOTES:

1. DRAWING WILL NEED TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS FROM ARCHITECT, LANDSCAPE ARCHITECT, STRUCTURAL ENGINEER AND M&E.
2. ROOT PROTECTION AREAS CURRENTLY NOT PROVIDED. IF THAT INFORMATION IS MADE AVAILABLE DESIGN WILL NEED TO BE CHECKED.
3. EXISTING AND PROPOSED LEVELS ARE BASED ON TOPO INFORMATION AND WILL NEED TO BE CONFIRMED ON SITE.
4. FINISHED FLOOR LEVELS TO BE CONFIRMED BY ARCHITECT DURING SUBSEQUENT DESIGN STAGES.
5. CATCH-PITS TO HAVE 300mm SUMP FROM VALUE SHOWN IN TABLE.
6. CONTRACTOR IS RESPONSIBLE FOR COORDINATION THIS DRAINAGE DESIGN WITH OTHER UTILITIES AND CHECK FOR CLASHES. ANY UNAVOIDABLE CLASHES TO BE REPORTED TO DRAINAGE DESIGN ENGINEER.

NOT FOR CONSTRUCTION

IMPORTANT

DRAWING MUST BE PRINTED IN COLOUR.
NO DEVIATION MAY BE MADE FROM THE CONTENTS OF THIS DRAWING WITHOUT PRIOR PERMISSION FROM THE ENGINEER.
THIS DRAWING IS TO BE REMOVED FROM CURRENCY IMMEDIATELY AFTER A REVISED EDITION HAS BEEN ISSUED.
ALL RIGHTS DESCRIBED IN CHAPTER IV OF THE COPYRIGHT DESIGN ACTS 1988 HAVE BEEN GENERALLY ASSERTED.

REV	DATE	DRAWN	DESCRIPTION	CHECK	APPR.
A	30-10-24	N.E	For Information.	S.L	S.L

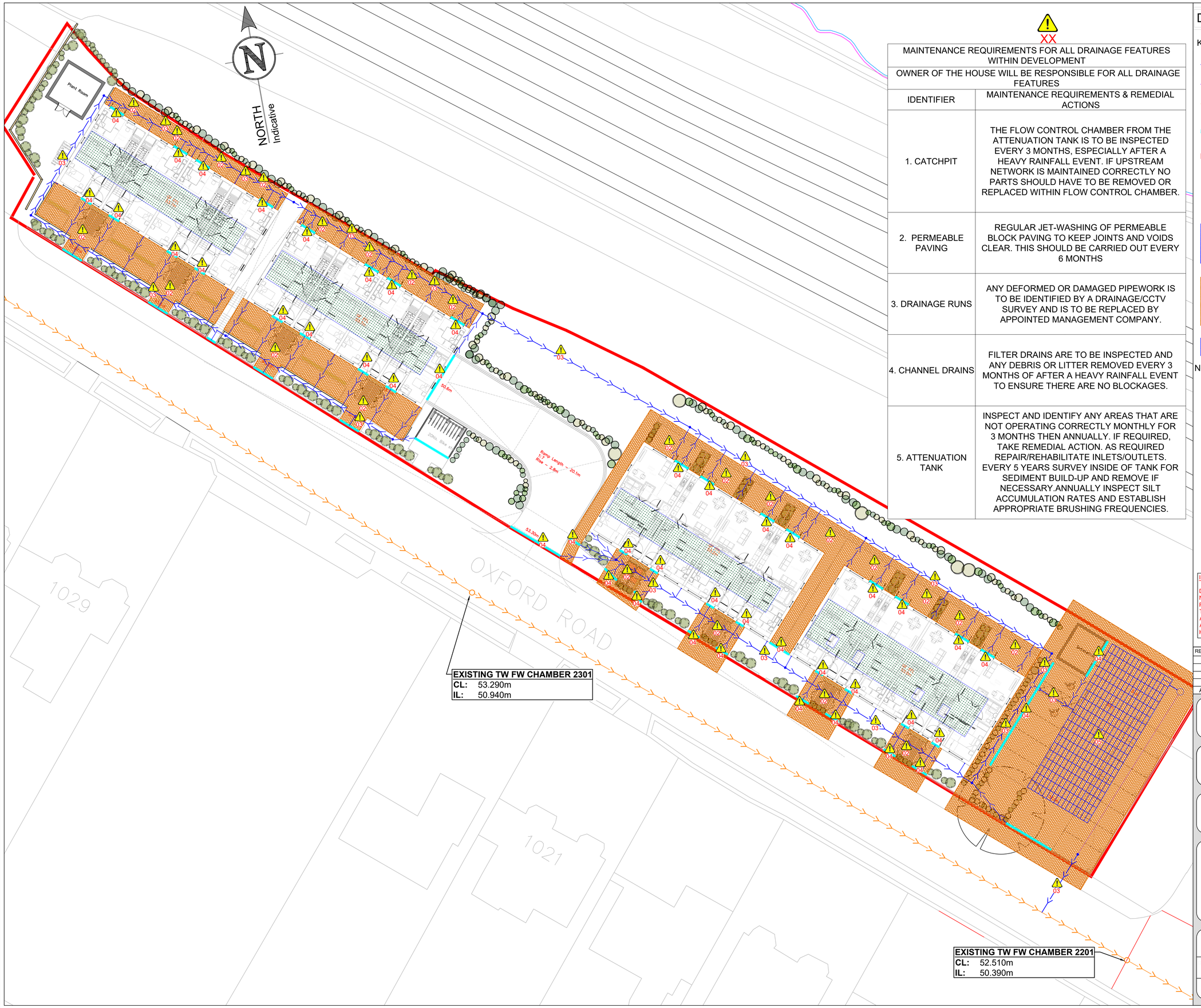
C3411 - Charters, Oxford Road, Reading, RG31 6TQ

Proposed Surface Water Drainage & SuDS Layout Plan

Maxika Homes Ltd.

Nimbus ENGINEERING CONSULTANTS

S.L	30-10-24	S.L	30-10-24
N.E	1:200	C3411-03	A
30-10-24	A1		



XX

MAINTENANCE REQUIREMENTS FOR ALL DRAINAGE FEATURES WITHIN DEVELOPMENT	
OWNER OF THE HOUSE WILL BE RESPONSIBLE FOR ALL DRAINAGE FEATURES	
IDENTIFIER	MAINTENANCE REQUIREMENTS & REMEDIAL ACTIONS
1. CATCHPIT	THE FLOW CONTROL CHAMBER FROM THE ATTENUATION TANK IS TO BE INSPECTED EVERY 3 MONTHS, ESPECIALLY AFTER A HEAVY RAINFALL EVENT. IF UPSTREAM NETWORK IS MAINTAINED CORRECTLY NO PARTS SHOULD HAVE TO BE REMOVED OR REPLACED WITHIN FLOW CONTROL CHAMBER.
2. PERMEABLE PAVING	REGULAR JET-WASHING OF PERMEABLE BLOCK PAVING TO KEEP JOINTS AND VOIDS CLEAR. THIS SHOULD BE CARRIED OUT EVERY 6 MONTHS
3. DRAINAGE RUNS	ANY DEFORMED OR DAMAGED PIPEWORK IS TO BE IDENTIFIED BY A DRAINAGE/CCTV SURVEY AND IS TO BE REPLACED BY APPOINTED MANAGEMENT COMPANY.
4. CHANNEL DRAINS	FILTER DRAINS ARE TO BE INSPECTED AND ANY DEBRIS OR LITTER REMOVED EVERY 3 MONTHS OF AFTER A HEAVY RAINFALL EVENT TO ENSURE THERE ARE NO BLOCKAGES.
5. ATTENUATION TANK	INSPECT AND IDENTIFY ANY AREAS THAT ARE NOT OPERATING CORRECTLY MONTHLY FOR 3 MONTHS THEN ANNUALLY. IF REQUIRED, TAKE REMEDIAL ACTION. AS REQUIRED REPAIR/REHABILITATE INLETS/OUTLETS. EVERY 5 YEARS SURVEY INSIDE OF TANK FOR SEDIMENT BUILD-UP AND REMOVE IF NECESSARY.ANNUALLY INSPECT SILT ACCUMULATION RATES AND ESTABLISH APPROPRIATE BRUSHING FREQUENCIES.

DRAWING TO BE PRINTED IN COLOUR.

KEY:

- Proposed Surface Water Pipes.
- Proposed Rising Surface Water Pipes.
- Existing Thames Water FW Drainage.
- Channel drain position shown indicative. Threshold drains to be detailed by architect.
- Proposed Site Boundary.
- Proposed RWP (blue) and SVP (red). Locations TBC by Architect or M&E.
- Proposed SW inspection/catchpit chamber.
- Proposed geocellular underground attenuation tank to be Polystorm or similar approved product. Supplier to provide structural calc and guidance for installation.
- Proposed Permeable Pavement as per Landscape Architect specification. permeable pavement not considered for hydraulic storage. Permeable pavement only suitable for very small storm events.
- Proposed Green/Sedum Roofs to be installed below PV Panels.

NOTES:

1. DRAWING WILL NEED TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS FROM ARCHITECT, LANDSCAPE ARCHITECT, STRUCTURAL ENGINEER AND M&E.
2. ROOT PROTECTION AREAS CURRENTLY NOT PROVIDED. IF THAT INFORMATION IS MADE AVAILABLE DESIGN WILL NEED TO BE CHECKED.
3. EXISTING AND PROPOSED LEVELS ARE BASED ON TOPO INFORMATION AND WILL NEED TO BE CONFIRMED ON SITE.
4. FINISHED FLOOR LEVELS TO BE CONFIRMED BY ARCHITECT DURING SUBSEQUENT DESIGN STAGES.
5. CATCH-PITS TO HAVE 300mm SUMP FROM VALUE SHOWN IN TABLE.
6. CONTRACTOR IS RESPONSIBLE FOR COORDINATION THIS DRAINAGE DESIGN WITH OTHER UTILITIES AND CHECK FOR CLASHES. ANY UNAVOIDABLE CLASHES TO BE REPORTED TO DRAINAGE DESIGN ENGINEER.

NOT FOR CONSTRUCTION

IMPORTANT

DRAWING MUST BE PRINTED IN COLOUR.
NO DEVIATION MAY BE MADE FROM THE CONTENTS OF THIS DRAWING WITHOUT PRIOR PERMISSION FROM THE ENGINEER.
THIS DRAWING IS TO BE REMOVED FROM CURRENCY IMMEDIATELY AFTER A REVISED EDITION HAS BEEN ISSUED.
ALL RIGHTS DESCRIBED IN CHAPTER IV OF THE COPYRIGHT DESIGN ACTS 1988 HAVE BEEN GENERALLY ASSERTED.

REV	DATE	DRAWN	DESCRIPTION	CHECK	APPR.
A	30-10-24	N.E	For Information.	S.L	S.L

C3411 - Charters, Oxford Road, Reading, RG31 6TQ

Maintenance and Management Layout Plan

Maxika Homes Ltd.

Nimbus ENGINEERING CONSULTANTS

S.L	30-10-24	S.L	30-10-24
N.E	1:200	C3411-04	A
30-10-24	A1		

APPENDIX B – SURFACE WATER RUNOFF CALCULATIONS

Nimbus Engineering Consultants Ltd
www.nimbusengineering.co.uk

Kemp House,
152 City Road,
London, EC1V 2NX
Mob:0772 339 3155
email: info@nimbusengineering.co.uk

Job No.	C3411
Sheet no.	1
Date	31/10/24

MasterDrain
HY 10.01

Project	By	Checked	Reviewed
Charters, Oxford Road, Reading, RG31 6TQ	N.E		

Title: **Pre and Post Runoff rates**

Data:-

Hydrology (FSR):-

Location = READING		WRAP	= 2
Long reference = 472172		Grid reference	= SU7272
M5-60 (mm)	= 18	SAAR (mm/yr)	= 650
r	= 0.40	Soil	=0.30
Hyd. area	= 7	Hyd. zone	= 5
Hydrograph	= Summer	Area = England & Wales	

Site values used in design:-

Total site area	= 0.2582 ha	Climate change factor	= 45%
Pre-dev area drained	= 0.2582 ha	Post-dev area drained	= 0.2360 ha
Imperm runoff factor	= 100%	Perm runoff factor	= 20%
Pre-development			
Area to soakaways	= 0.0000 ha	Area to other SUDS	= 0.0000 ha
Perv. area to SUDS	= 0.0000 ha	Pre-dev flow to drain	= 0.00 l/s
Post-development			
Area to soakaways	= 0.0000 ha	Area to other SUDS	= 0.0000 ha
Perv. area to SUDS	= 0.0000 ha	Post-dev flow to drain	= 0.00 l/s

Calculations:-

Revised Post-dev Imperm. area = 0.236 ha
Equiv. Post-dev Imperm. area = 0.236 ha
Equiv. Post-dev Perm. area = 0.004 ha
Total Pre-dev equiv. area ha = 0.258 ha
Total Post-dev equiv. area ha = 0.240 ha
100 yr 6 hour mean intensity = 9.53mm/hr

Results:-

Pre-dev peakflow runoff (l/s) (m^3/s)

R.P.	15	30	60	120	240	360	480	600	Max	CCF	Final	R.P.
1	79.0	50.8	32.4	20.2	12.4	9.2	7.6	6.4	79.0	N/A	79.0	1
30	191.2	124.6	77.7	47.2	28.1	20.5	16.4	13.8	191.2	N/A	191.2	30
100	247.2	162.5	102.0	62.1	36.8	26.8	21.3	17.9	247.2	N/A	247.2	100

Post-dev peakflow runoff (l/s)

R.P.	15	30	60	120	240	360	480	600	Max	CCF	Final	R.P.
1	73.6	47.3	30.2	18.8	11.6	8.5	7.1	6.0	73.6	45	106.7	1
30	178.0	116.0	72.4	43.9	26.1	19.1	15.3	12.9	178.0	45	258.2	30
100	230.2	151.4	95.0	57.8	34.3	24.9	19.9	16.7	230.2	45	333.7	100

100 year 6 hour (x Climate Change Factor) storm gives:-
Pre-dev runoff volume m^3 = 147.6m^3
Post-dev rainfall volume = 199.3m^3
Post-dev volume m^3 (excess above SUDS) = 199.3m^3
100 yr 6 hour mean intensity = 9.53mm/hr
Pre-dev volume to drain at 0 l/s = 0.0 m^3
Post-dev volume to drain at 0 l/s = 0.0 m^3
Post-dev storage volume = 199.3m^3
Post-dev 5mm imperm volume = 11.8 m^3
Post-dev 5mm perm volume = 1.1 m^3

$Q_{BAR(rural)}$ = 0.431 l/s or 1.671 l/s/ha or 0.000 cumecs - from IoH 124.

Nimbus Engineering Consultants Ltd
www.nimbusengineering.co.uk

Kemp House,
152 City Road,
London, EC1V 2NX
Mob:0772 339 3155
email: info@nimbusengineering.co.uk

Job No.	C3411
Sheet no.	2
Date	31/10/24

MasterDrain
HY 10.01

Project	Charters, Oxford Road, Reading, RG31 6TQ	By	Checked	Reviewed
Title	Pre and Post Runoff rates	N.E		

Data summary.

Use the data below for the SUR1 form

Site areas:-

Total site area	=	0.2582 ha ;2582.0 m² [3A]
Pre-development impermeable area	=	0.2582 ha [3B]
Pre-development permeable area	=	0.0000 ha
Post-development impermeable area	=	0.2360 ha [3C]
Post-development permeable area	=	0.0222 ha

Peak runoff:-

Pre-development 1 year storm (15min)	=	79.0 l/s [6A]
Pre-development 100 year storm (15min)	=	247.2 l/s [6C]
Post-development 1 year storm (15min)	=	73.6 l/s [6B]
Post-development 100 year storm (15min)	=	230.15 l/s [6D]

Greenfield runoff:-

$Q_{BAR(rural)}$ = 0.431 l/s or 1.671 l/s/ha or 0.000 cumecs - from IoH 124.

Climate change factor:-

CCF = 45%

Volumes:-

Pre-development 100 yr/6hr storm [12A]= 214.0m³
Post-development 100 yr/6hr storm (add. volume with no SUDS) [12B]= 199.3m³
Post-development 100 yr/6hr storm (add. volume with SUDS) = 199.3m³
Post-development add. predicted volume (No SUDS) [12C] = -14.7m³

You may also require

Data relating to the infiltration test calculations (if applicable)
Evidence to show runoff reduction (if applicable)
Information on calculation methods (if applicable see next sheet)

Note

Numbers in square brackets relate to the
Nov. 2010 v1.1 / issued 11/02/10 copy of SUR1

Nimbus Engineering Consultants Ltd
www.nimbusengineering.co.uk

Kemp House,
152 City Road,
London, EC1V 2NX
Mob:0772 339 3155
email: info@nimbusengineering.co.uk

Job No.	C3411
Sheet no.	3
Date	31/10/24

MasterDrain
HY 10.01

Project	Charters, Oxford Road, Reading, RG31 6TQ	By	N.E
Title	Pre and Post Runoff rates	Checked	
		Reviewed	

Definitions and methods

Hydrology

The hydrological constants are derived from the Wallingford maps. They are used to calculate location specific rainfall figures.

Site values and factors

Areas of the site should be entered in hectares (10000 m²). If the Pre-development site is a green field, this box is blank.
Climate Change Factor is initially set at 20% - this may be changed as required.
Greenfield runoff is calculated using the method described in IoH 124.
Runoff factors

The impermeable runoff factor is initially set at 98%
The permeable runoff factor is initially set at 20%

Note: the CCF and the runoff factors may be changed by the user to suit the development
The areas draining to soakaways and other SUDS are entered in the appropriate box (in hectares)

Calculations

The post-development area is reduced by subtracting the areas that drain to soakaways or other SUDS, to give a revised figure.
All areas are then multiplied by the appropriate runoff factor to give an equivalent area with 100% runoff.
These are then summated.
This gives a total pre-development equivalent area, and a similar figure for the post-development area.
The 'Post-dev volume to drain (no SUDS)' gives the total runoff to drain if no SUDS were used.

Results

The pre- and post-development areas are subjected to 1,30 and 100 year return period storms with a duration of 15 to 600 minutes.
The Revised Post-dev Imperm. area is the area (in ha) that is not going to SUDS x impervious runoff factor.
The runoff rates are calculated for the chosen hydrograph (Summer or Winter) as l/s. Figures in red indicate m³/s
The peak value is measured, multiplied by the CCF and the total maximum rate is shown.
The pre- and post-development volumes for a 100 year / 6 hour storm are calculated from the area under the hydrograph curve.
Post-dev volume (i.e. excess above SUDS) is that volume produced by the drained area that does not go to SUDS.
Qbar(rural) is calculated in accordance with the procedure laid down in IoH 124

Nimbus Engineering Consultants Ltd
www.nimbusengineering.co.uk

Kemp House,
152 City Road,
London, EC1V 2NX
Mob:0772 339 3155
email: info@nimbusengineering.co.uk

Job No.	C3411
Sheet no.	1
Date	31/10/24

MasterDrain
HY 10.01

Project	Charters, Oxford Road, Reading, RG31 6TQ	By	N.E
Title	IoH 124 Qbar Runoff calcs	Checked	
		Reviewed	

Hydrological Data:-

FSR Hydrology:-

Location	= READING	Grid reference	= SU7272
M5-60 (mm)	= 18	r	= 0.40
Soil runoff	= 0.30	SAAR (mm/yr)	= 650
WRAP	= 2	Area = England & Wales	
Hydrological area = 7		Hydrological zone = 5	

Soil classification for WRAP type 2
i) Very permeable soils with shallow ground water;
ii) Permeable soils over rock or fragipan, commonly on slopes in western Britain associated with smaller areas of less permeable wet soils; (fragipan - a natural subsurface horizon having a higher bulk density than the solum above. Seemingly cemented when dry but showing moderate to weak brittleness when moist. The layer is low in organic matter, mottled and slowly or very slowly permeable to water. It is found in profiles of either cultivated or virgin soils but not in calcareous material).
iii) Moderately permeable soils, some with slowly permeable subsoils.

Design data:-

Area = 0.00236 Km² - 0.236 Ha - 2360 m² % Urbanisation = 100.00%

Calculation method:-

Runoff is calculated from:-

$$Q_{BAR(urban);} = Q_{BAR(rural)} (1 + URBAN)^{2NC}[1 + URBAN\{(21/CIND) - 0.3\}]$$

where:-

NC varies with the value of SAAR:-
for 500<SAAR<1100 mm then NC = 0.92 - 0.00024SAAR
for 1100<SAAR<3000 mm then NC = 0.74 - 0.000082SAAR

CIND = 102.4SOIL + 0.28(CWI - 125) CWI = Catchment Wetness Index

so

CIND =14.757 CWI =67.989 NC =0.764

For areas less than 50Ha, a modified calculation which multiplies the 50Ha runoff value by the ratio of the site area to 50Ha is used
Reducing factor used for these calculations is 0.005

$Q_{BAR(rural)}$ = 0.394 (l/s)

$Q_{BAR(urban)}$ = 2.415 (l/s)

$Q_{BAR(urban)}$ is then multiplied by a growth factor - GC(T) - for different storm return periods derived from EA publication W5-074/A.

Nimbus Engineering Consultants Ltd
www.nimbusengineering.co.uk

Kemp House,
152 City Road,
London, EC1V 2NX
Mob:0772 339 3155
email: info@nimbusengineering.co.uk

Job No.	C3411
Sheet no.	2
Date	31/10/24
Project	Charters, Oxford Road, Reading, RG31 6TQ
Title	IoH 124 Qbar Runoff calcs
By	N.E
Checked	
Reviewed	

MasterDrain
HY 10.01

Calculated data:-

Mean Annual Peak Flow $Q_{BAR(urban)}$ = 2.41 l/s

Values for $Q_{BAR(urban)}$

Ret. per.	m³/hr	l/s	l/s/ha	Ret. per.	m³/hr	l/s	l/s/ha
1yr	0.002	2.052	8.697	100yr	0.008	7.606	32.229
2yr	0.002	2.125	9.004	100yr+20%	0.009	9.127	38.675
5yr	0.003	3.091	13.096	100yr+30%	0.010	9.888	41.898
10yr	0.004	3.912	16.575	200yr	0.009	8.934	37.856
30yr	0.005	5.385	22.816	200yr + 30%	0.012	11.614	49.213
50yr	0.006	6.326	26.806	500yr	0.011	10.842	45.939
				1000yr	0.012	12.459	52.794

Growth factors -

1yr	2yr	5yr	10yr	30yr	50yr	100yr	200yr	500yr	1000yr
0.85	0.88	1.28	1.62	2.23	2.62	3.15	3.70	4.49	5.16

The above is based on the Institute of Hydrology Report 124 to which you are referred for further details (see Sect 7). Note that the 200 year growth curve was taken from W5-074/A.

For WRAP type 1 soils, CIND can become negative for lower values of SAAR. In this case the CIND value is multiplied by -1 to return a positive value (CIND is very small at this point).

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Junctions Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
SWC-13	Outlet	SWP-13	Free Discharge
SWC-14	Outlet	SWP-14	Free Discharge
SWC-15	Outlet	SWC-16	Free Discharge
SWC-09	Outlet	SWP-10	Free Discharge
SWC-08	Outlet	SWP-09	Free Discharge
SWC-07	Outlet	SWP-08	Free Discharge
SWC-01	Outlet	SWP-01	Free Discharge
SWC-02	Outlet	SWP-02	Free Discharge
SWC-03	Outlet	SWP-03	Free Discharge
SWC-04	Outlet	SWP-04	Free Discharge
SWC-05	Outlet	SWP-05	Free Discharge
SWC-06	Outlet	SWP-07	Free Discharge
SWC-16 - Pump	Outlet	(None)	Pump
	Invert Elevation (m)	48.800	
	Depth (m)	Outflow (L/s)	
	0.100	0.0	
	2.000	0.0	
SWC-10	Outlet	SWP-11	Free Discharge



Att Tank

Type : Cellular Storage

Dimensions

Exceedance Elevation (m)	51.000
Depth (m)	1.600
Base Elevation (m)	48.900
Number of Crates Long	19
Number of Crates Wide	16
Number of Crates High	4
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	231.540

Inlets

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	SWP-11
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	SWP-12
Outlet Type	Free Discharge

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analyzed (ha)
Catchment Area	SWC-03		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (1)	SWC-04		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (1) (1)	SWC-05		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (2)	SWC-02		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (3)	SWC-01		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (4)	SWC-06		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (5)	SWC-06		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (6)	SWC-13		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (7)	SWC-14		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (8)	SWC-15		Time of Concentration	0.010	100	0	100	0.010
Catchment Area (9)	SWC-15		Time of Concentration	0.011	100	0	100	0.011
Catchment Area (10)	SWC-09		Time of Concentration	0.026	100	0	100	0.026
Catchment Area (11)	SWC-08		Time of Concentration	0.030	100	0	100	0.030
Catchment Area (12)	SWC-07		Time of Concentration	0.017	100	0	100	0.017
Catchment Area (13)	SWC-13		Time of Concentration	0.006	100	0	100	0.006
Catchment Area (14)	SWC-04		Time of Concentration	0.008	100	0	100	0.008
TOTAL		**0.0**		**0.236**				**0.236**

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Title: Rainfall Analysis Criteria	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England and Wales
M5-60 (mm)	18.8
Ratio R	0.400
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	45.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Inflows Summary Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		



FSR: 100 years: Increase Rainfall (%): +45: 15 mins: Summer

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	8.3	3.773
Catchment Area (1)	0.01	8.1	3.691
Catchment Area (2)	0.01	8.3	3.767
Catchment Area (3)	0.01	7.9	3.619
Catchment Area (1) (1)	0.01	8.1	3.673
Catchment Area (4)	0.01	7.0	3.209
Catchment Area (5)	0.01	7.2	3.294
Catchment Area (6)	0.01	7.8	3.549
Catchment Area (7)	0.01	7.8	3.549
Catchment Area (8)	0.01	5.6	2.533
Catchment Area (9)	0.01	6.4	2.915
Catchment Area (10)	0.03	14.5	6.613
Catchment Area (11)	0.03	16.7	7.601
Catchment Area (12)	0.02	9.5	4.338
Catchment Area (13)	0.01	3.6	1.635
Catchment Area (14)	0.01	4.5	2.029

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Inflows Summary Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		



FSR: 100 years: Increase Rainfall (%): +45: 15 mins: Winter

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	8.7	4.223
Catchment Area (1)	0.01	8.5	4.132
Catchment Area (2)	0.01	8.7	4.211
Catchment Area (3)	0.01	8.4	4.050
Catchment Area (1) (1)	0.01	8.5	4.108
Catchment Area (4)	0.01	7.4	3.587
Catchment Area (5)	0.01	7.6	3.687
Catchment Area (6)	0.01	8.2	3.968
Catchment Area (7)	0.01	8.2	3.968
Catchment Area (8)	0.01	5.9	2.835
Catchment Area (9)	0.01	6.7	3.256
Catchment Area (10)	0.03	15.3	7.394
Catchment Area (11)	0.03	17.6	8.503
Catchment Area (12)	0.02	10.0	4.850
Catchment Area (13)	0.01	3.8	1.824
Catchment Area (14)	0.01	4.7	2.269

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 30 mins: Summer

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	5.7	4.929
Catchment Area (1)	0.01	5.5	4.826
Catchment Area (2)	0.01	5.7	4.923
Catchment Area (3)	0.01	5.4	4.730
Catchment Area (1) (1)	0.01	5.5	4.796
Catchment Area (4)	0.01	4.8	4.187
Catchment Area (5)	0.01	4.9	4.313
Catchment Area (6)	0.01	5.3	4.639
Catchment Area (7)	0.01	5.3	4.639
Catchment Area (8)	0.01	3.8	3.312
Catchment Area (9)	0.01	4.4	3.813
Catchment Area (10)	0.03	9.9	8.651
Catchment Area (11)	0.03	11.4	9.942
Catchment Area (12)	0.02	6.5	5.671
Catchment Area (13)	0.01	2.5	2.136
Catchment Area (14)	0.01	3.0	2.648

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 30 mins: Winter

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	6.0	5.516
Catchment Area (1)	0.01	5.8	5.401
Catchment Area (2)	0.01	5.9	5.510
Catchment Area (3)	0.01	5.7	5.299
Catchment Area (1) (1)	0.01	5.8	5.371
Catchment Area (4)	0.01	5.1	4.696
Catchment Area (5)	0.01	5.2	4.817
Catchment Area (6)	0.01	5.6	5.196
Catchment Area (7)	0.01	5.6	5.196
Catchment Area (8)	0.01	4.0	3.707
Catchment Area (9)	0.01	4.6	4.262
Catchment Area (10)	0.03	10.4	9.675
Catchment Area (11)	0.03	12.0	11.128
Catchment Area (12)	0.02	6.8	6.348
Catchment Area (13)	0.01	2.6	2.381
Catchment Area (14)	0.01	3.2	2.972

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 60 mins: Summer

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	4.9	6.169
Catchment Area (1)	0.01	4.8	6.036
Catchment Area (2)	0.01	4.9	6.151
Catchment Area (3)	0.01	4.7	5.916
Catchment Area (1) (1)	0.01	4.8	6.006
Catchment Area (4)	0.01	4.2	5.236
Catchment Area (5)	0.01	4.3	5.386
Catchment Area (6)	0.01	4.6	5.807
Catchment Area (7)	0.01	4.6	5.807
Catchment Area (8)	0.01	3.3	4.140
Catchment Area (9)	0.01	3.8	4.760
Catchment Area (10)	0.03	8.6	10.821
Catchment Area (11)	0.03	9.9	12.433
Catchment Area (12)	0.02	5.7	7.089
Catchment Area (13)	0.01	2.1	2.672
Catchment Area (14)	0.01	2.6	3.304

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 60 mins: Winter

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	4.4	6.901
Catchment Area (1)	0.01	4.3	6.757
Catchment Area (2)	0.01	4.4	6.901
Catchment Area (3)	0.01	4.3	6.624
Catchment Area (1) (1)	0.01	4.3	6.733
Catchment Area (4)	0.01	3.8	5.872
Catchment Area (5)	0.01	3.9	6.035
Catchment Area (6)	0.01	4.2	6.504
Catchment Area (7)	0.01	4.2	6.504
Catchment Area (8)	0.01	3.0	4.645
Catchment Area (9)	0.01	3.4	5.325
Catchment Area (10)	0.03	7.8	12.118
Catchment Area (11)	0.03	8.9	13.923
Catchment Area (12)	0.02	5.1	7.930
Catchment Area (13)	0.01	1.9	2.990
Catchment Area (14)	0.01	2.4	3.712

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 120 mins: Summer

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	3.5	7.477
Catchment Area (1)	0.01	3.5	7.321
Catchment Area (2)	0.01	3.5	7.459
Catchment Area (3)	0.01	3.4	7.177
Catchment Area (1) (1)	0.01	3.5	7.273
Catchment Area (4)	0.01	3.0	6.353
Catchment Area (5)	0.01	3.1	6.528
Catchment Area (6)	0.01	3.3	7.032
Catchment Area (7)	0.01	3.3	7.032
Catchment Area (8)	0.01	2.4	5.025
Catchment Area (9)	0.01	2.7	5.764
Catchment Area (10)	0.03	6.2	13.103
Catchment Area (11)	0.03	7.1	15.063
Catchment Area (12)	0.02	4.1	8.583
Catchment Area (13)	0.01	1.5	3.234
Catchment Area (14)	0.01	1.9	4.021

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 120 mins: Winter

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	2.9	8.355
Catchment Area (1)	0.01	2.8	8.187
Catchment Area (2)	0.01	2.9	8.355
Catchment Area (3)	0.01	2.7	8.030
Catchment Area (1) (1)	0.01	2.8	8.151
Catchment Area (4)	0.01	2.4	7.100
Catchment Area (5)	0.01	2.5	7.298
Catchment Area (6)	0.01	2.7	7.862
Catchment Area (7)	0.01	2.7	7.862
Catchment Area (8)	0.01	1.9	5.622
Catchment Area (9)	0.01	2.2	6.463
Catchment Area (10)	0.03	5.0	14.662
Catchment Area (11)	0.03	5.8	16.866
Catchment Area (12)	0.02	3.3	9.616
Catchment Area (13)	0.01	1.2	3.610
Catchment Area (14)	0.01	1.5	4.487

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 180 mins: Summer

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	0.01	2.8	8.252
Catchment Area (1)	0.01	2.7	8.066
Catchment Area (2)	0.01	2.8	8.246
Catchment Area (3)	0.01	2.6	7.916
Catchment Area (1) (1)	0.01	2.7	8.024
Catchment Area (4)	0.01	2.3	7.015
Catchment Area (5)	0.01	2.4	7.213
Catchment Area (6)	0.01	2.6	7.760
Catchment Area (7)	0.01	2.6	7.760
Catchment Area (8)	0.01	1.9	5.550
Catchment Area (9)	0.01	2.1	6.379
Catchment Area (10)	0.03	4.8	14.475
Catchment Area (11)	0.03	5.6	16.637
Catchment Area (12)	0.02	3.2	9.502
Catchment Area (13)	0.01	1.2	3.574
Catchment Area (14)	0.01	1.5	4.439

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Inflows Summary Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 180 mins: Winter

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	2.1	9.235
Catchment Area (1)	0.01	2.1	9.037
Catchment Area (2)	0.01	2.1	9.229
Catchment Area (3)	0.01	2.0	8.899
Catchment Area (1) (1)	0.01	2.1	9.007
Catchment Area (4)	0.01	1.8	7.854
Catchment Area (5)	0.01	1.9	8.076
Catchment Area (6)	0.01	2.0	8.683
Catchment Area (7)	0.01	2.0	8.683
Catchment Area (8)	0.01	1.4	6.215
Catchment Area (9)	0.01	1.6	7.145
Catchment Area (10)	0.03	3.7	16.206
Catchment Area (11)	0.03	4.3	18.644
Catchment Area (12)	0.02	2.5	10.622
Catchment Area (13)	0.01	0.9	3.999
Catchment Area (14)	0.01	1.1	4.960

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 240 mins: Summer

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	2.3	8.814
Catchment Area (1)	0.01	2.2	8.628
Catchment Area (2)	0.01	2.3	8.808
Catchment Area (3)	0.01	2.2	8.454
Catchment Area (1) (1)	0.01	2.2	8.592
Catchment Area (4)	0.01	1.9	7.493
Catchment Area (5)	0.01	2.0	7.685
Catchment Area (6)	0.01	2.2	8.298
Catchment Area (7)	0.01	2.2	8.298
Catchment Area (8)	0.01	1.5	5.932
Catchment Area (9)	0.01	1.8	6.791
Catchment Area (10)	0.03	4.0	15.449
Catchment Area (11)	0.03	4.6	17.766
Catchment Area (12)	0.02	2.6	10.135
Catchment Area (13)	0.01	1.0	3.819
Catchment Area (14)	0.01	1.2	4.743

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 240 mins: Winter

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	1.7	9.870
Catchment Area (1)	0.01	1.7	9.660
Catchment Area (2)	0.01	1.7	9.858
Catchment Area (3)	0.01	1.6	9.456
Catchment Area (1) (1)	0.01	1.7	9.612
Catchment Area (4)	0.01	1.5	8.381
Catchment Area (5)	0.01	1.5	8.621
Catchment Area (6)	0.01	1.6	9.300
Catchment Area (7)	0.01	1.6	9.300
Catchment Area (8)	0.01	1.2	6.634
Catchment Area (9)	0.01	1.3	7.631
Catchment Area (10)	0.03	3.0	17.297
Catchment Area (11)	0.03	3.5	19.896
Catchment Area (12)	0.02	2.0	11.347
Catchment Area (13)	0.01	0.7	4.257
Catchment Area (14)	0.01	0.9	5.295

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 360 mins: Summer

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	1.7	9.588
Catchment Area (1)	0.01	1.7	9.402
Catchment Area (2)	0.01	1.7	9.570
Catchment Area (3)	0.01	1.6	9.198
Catchment Area (1) (1)	0.01	1.6	9.354
Catchment Area (4)	0.01	1.4	8.171
Catchment Area (5)	0.01	1.5	8.381
Catchment Area (6)	0.01	1.6	9.030
Catchment Area (7)	0.01	1.6	9.030
Catchment Area (8)	0.01	1.1	6.442
Catchment Area (9)	0.01	1.3	7.421
Catchment Area (10)	0.03	3.0	16.817
Catchment Area (11)	0.03	3.4	19.350
Catchment Area (12)	0.02	1.9	11.017
Catchment Area (13)	0.01	0.7	4.161
Catchment Area (14)	0.01	0.9	5.163

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Inflows Summary Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		



FSR: 100 years: Increase Rainfall (%): +45: 360 mins: Winter

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	1.3	10.738
Catchment Area (1)	0.01	1.2	10.522
Catchment Area (2)	0.01	1.3	10.738
Catchment Area (3)	0.01	1.2	10.306
Catchment Area (1) (1)	0.01	1.2	10.474
Catchment Area (4)	0.01	1.1	9.142
Catchment Area (5)	0.01	1.1	9.388
Catchment Area (6)	0.01	1.2	10.126
Catchment Area (7)	0.01	1.2	10.126
Catchment Area (8)	0.01	0.8	7.215
Catchment Area (9)	0.01	1.0	8.307
Catchment Area (10)	0.03	2.2	18.853
Catchment Area (11)	0.03	2.5	21.650
Catchment Area (12)	0.02	1.4	12.347
Catchment Area (13)	0.01	0.5	4.658
Catchment Area (14)	0.01	0.7	5.780

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 480 mins: Summer

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	1.4	10.186
Catchment Area (1)	0.01	1.4	9.970
Catchment Area (2)	0.01	1.4	10.186
Catchment Area (3)	0.01	1.3	9.790
Catchment Area (1) (1)	0.01	1.4	9.934
Catchment Area (4)	0.01	1.2	8.691
Catchment Area (5)	0.01	1.2	8.914
Catchment Area (6)	0.01	1.3	9.592
Catchment Area (7)	0.01	1.3	9.592
Catchment Area (8)	0.01	0.9	6.855
Catchment Area (9)	0.01	1.1	7.893
Catchment Area (10)	0.03	2.4	17.887
Catchment Area (11)	0.03	2.8	20.570
Catchment Area (12)	0.02	1.6	11.717
Catchment Area (13)	0.01	0.6	4.406
Catchment Area (14)	0.01	0.7	5.486

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Inflows Summary Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		



FSR: 100 years: Increase Rainfall (%): +45: 480 mins: Winter

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	1.0	11.451
Catchment Area (1)	0.01	1.0	11.151
Catchment Area (2)	0.01	1.0	11.439
Catchment Area (3)	0.01	1.0	10.953
Catchment Area (1) (1)	0.01	1.0	11.121
Catchment Area (4)	0.01	0.9	9.711
Catchment Area (5)	0.01	0.9	9.987
Catchment Area (6)	0.01	0.9	10.755
Catchment Area (7)	0.01	0.9	10.755
Catchment Area (8)	0.01	0.7	7.664
Catchment Area (9)	0.01	0.8	8.816
Catchment Area (10)	0.03	1.8	20.021
Catchment Area (11)	0.03	2.0	23.034
Catchment Area (12)	0.02	1.1	13.119
Catchment Area (13)	0.01	0.4	4.969
Catchment Area (14)	0.01	0.5	6.122

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 600 mins: Summer

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	0.01	1.2	10.665
Catchment Area (1)	0.01	1.1	10.467
Catchment Area (2)	0.01	1.2	10.653
Catchment Area (3)	0.01	1.1	10.275
Catchment Area (1) (1)	0.01	1.1	10.401
Catchment Area (4)	0.01	1.0	9.093
Catchment Area (5)	0.01	1.0	9.345
Catchment Area (6)	0.01	1.1	10.041
Catchment Area (7)	0.01	1.1	10.041
Catchment Area (8)	0.01	0.8	7.184
Catchment Area (9)	0.01	0.9	8.271
Catchment Area (10)	0.03	2.0	18.732
Catchment Area (11)	0.03	2.3	21.529
Catchment Area (12)	0.02	1.3	12.280
Catchment Area (13)	0.01	0.5	4.634
Catchment Area (14)	0.01	0.6	5.744

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Inflows Summary Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		



FSR: 100 years: Increase Rainfall (%): +45: 600 mins: Winter

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	0.8	11.991
Catchment Area (1)	0.01	0.8	11.697
Catchment Area (2)	0.01	0.8	11.955
Catchment Area (3)	0.01	0.8	11.469
Catchment Area (1) (1)	0.01	0.8	11.655
Catchment Area (4)	0.01	0.7	10.172
Catchment Area (5)	0.01	0.7	10.454
Catchment Area (6)	0.01	0.8	11.259
Catchment Area (7)	0.01	0.8	11.259
Catchment Area (8)	0.01	0.6	8.036
Catchment Area (9)	0.01	0.6	9.242
Catchment Area (10)	0.03	1.5	20.975
Catchment Area (11)	0.03	1.7	24.131
Catchment Area (12)	0.02	1.0	13.773
Catchment Area (13)	0.01	0.4	5.167
Catchment Area (14)	0.01	0.4	6.439

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 720 mins: Summer

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	1.0	11.091
Catchment Area (1)	0.01	1.0	10.875
Catchment Area (2)	0.01	1.0	11.067
Catchment Area (3)	0.01	1.0	10.659
Catchment Area (1) (1)	0.01	1.0	10.827
Catchment Area (4)	0.01	0.9	9.441
Catchment Area (5)	0.01	0.9	9.699
Catchment Area (6)	0.01	0.9	10.437
Catchment Area (7)	0.01	0.9	10.437
Catchment Area (8)	0.01	0.7	7.460
Catchment Area (9)	0.01	0.8	8.582
Catchment Area (10)	0.03	1.8	19.440
Catchment Area (11)	0.03	2.0	22.386
Catchment Area (12)	0.02	1.2	12.748
Catchment Area (13)	0.01	0.4	4.795
Catchment Area (14)	0.01	0.5	5.966

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 720 mins: Winter

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	0.7	12.434
Catchment Area (1)	0.01	0.7	12.176
Catchment Area (2)	0.01	0.7	12.422
Catchment Area (3)	0.01	0.7	11.906
Catchment Area (1) (1)	0.01	0.7	12.074
Catchment Area (4)	0.01	0.6	10.562
Catchment Area (5)	0.01	0.6	10.838
Catchment Area (6)	0.01	0.7	11.684
Catchment Area (7)	0.01	0.7	11.684
Catchment Area (8)	0.01	0.5	8.378
Catchment Area (9)	0.01	0.6	9.626
Catchment Area (10)	0.03	1.3	21.790
Catchment Area (11)	0.03	1.5	25.055
Catchment Area (12)	0.02	0.8	14.295
Catchment Area (13)	0.01	0.3	5.395
Catchment Area (14)	0.01	0.4	6.685

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Inflows Summary Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 960 mins: Summer

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	0.01	0.8	11.781
Catchment Area (1)	0.01	0.8	11.529
Catchment Area (2)	0.01	0.8	11.763
Catchment Area (3)	0.01	0.8	11.288
Catchment Area (1) (1)	0.01	0.8	11.481
Catchment Area (4)	0.01	0.7	10.022
Catchment Area (5)	0.01	0.7	10.286
Catchment Area (6)	0.01	0.8	11.084
Catchment Area (7)	0.01	0.8	11.084
Catchment Area (8)	0.01	0.5	7.922
Catchment Area (9)	0.01	0.6	9.092
Catchment Area (10)	0.03	1.4	20.614
Catchment Area (11)	0.03	1.6	23.723
Catchment Area (12)	0.02	0.9	13.527
Catchment Area (13)	0.01	0.3	5.077
Catchment Area (14)	0.01	0.4	6.349

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Inflows Summary Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		



FSR: 100 years: Increase Rainfall (%): +45: 960 mins: Winter

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	0.6	13.172
Catchment Area (1)	0.01	0.6	12.896
Catchment Area (2)	0.01	0.6	13.172
Catchment Area (3)	0.01	0.6	12.656
Catchment Area (1) (1)	0.01	0.6	12.848
Catchment Area (4)	0.01	0.5	11.258
Catchment Area (5)	0.01	0.5	11.534
Catchment Area (6)	0.01	0.5	12.422
Catchment Area (7)	0.01	0.5	12.422
Catchment Area (8)	0.01	0.4	8.875
Catchment Area (9)	0.01	0.4	10.201
Catchment Area (10)	0.03	1.0	23.121
Catchment Area (11)	0.03	1.2	26.614
Catchment Area (12)	0.02	0.7	15.146
Catchment Area (13)	0.01	0.3	5.695
Catchment Area (14)	0.01	0.3	7.057

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 1440 mins: Summer

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	0.01	0.6	12.752
Catchment Area (1)	0.01	0.6	12.488
Catchment Area (2)	0.01	0.6	12.740
Catchment Area (3)	0.01	0.6	12.272
Catchment Area (1) (1)	0.01	0.6	12.386
Catchment Area (4)	0.01	0.5	10.862
Catchment Area (5)	0.01	0.5	11.156
Catchment Area (6)	0.01	0.5	12.044
Catchment Area (7)	0.01	0.5	12.044
Catchment Area (8)	0.01	0.4	8.599
Catchment Area (9)	0.01	0.4	9.871
Catchment Area (10)	0.03	1.0	22.425
Catchment Area (11)	0.03	1.2	25.732
Catchment Area (12)	0.02	0.7	14.696
Catchment Area (13)	0.01	0.3	5.485
Catchment Area (14)	0.01	0.3	6.901

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 1440 mins: Winter

Inflow	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	0.01	0.4	14.221
Catchment Area (1)	0.01	0.4	13.939
Catchment Area (2)	0.01	0.4	14.197
Catchment Area (3)	0.01	0.4	13.729
Catchment Area (1) (1)	0.01	0.4	13.867
Catchment Area (4)	0.01	0.4	12.133
Catchment Area (5)	0.01	0.4	12.445
Catchment Area (6)	0.01	0.4	13.465
Catchment Area (7)	0.01	0.4	13.465
Catchment Area (8)	0.01	0.3	9.595
Catchment Area (9)	0.01	0.3	11.077
Catchment Area (10)	0.03	0.7	25.052
Catchment Area (11)	0.03	0.8	28.838
Catchment Area (12)	0.02	0.5	16.375
Catchment Area (13)	0.01	0.2	6.145
Catchment Area (14)	0.01	0.2	7.675

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 15 mins: Summer

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.970	0.770	11.4	0.122	0.000	6.1	5.148	Surcharged
SWC-14	53.000	50.628	51.780	1.152	13.9	0.183	0.000	10.6	8.773	Surcharged
SWC-15	52.650	50.000	51.151	1.151	20.6	0.183	0.000	16.6	14.255	Surcharged
SWC-09	51.300	49.500	50.587	1.087	44.0	0.173	0.000	40.8	45.768	Surcharged
SWC-08	52.450	49.750	51.442	1.692	36.3	0.269	0.000	34.8	39.197	Surcharged
SWC-07	52.900	49.950	51.926	1.976	27.1	0.314	0.000	27.5	31.591	Surcharged
SWC-01	53.400	51.400	52.675	1.275	7.9	0.203	0.000	3.6	3.628	Surcharged
SWC-02	53.500	51.150	52.668	1.518	9.3	0.241	0.000	7.2	7.428	Surcharged
SWC-03	53.750	50.900	52.640	1.740	10.9	0.277	0.000	10.8	11.258	Surcharged
SWC-04	53.200	50.750	52.601	1.851	16.7	0.294	0.000	14.6	16.998	Surcharged
SWC-05	53.200	50.500	52.479	1.979	18.0	0.315	0.000	18.2	20.702	Surcharged
SWC-06	53.200	50.200	52.287	2.087	25.1	0.332	0.000	22.7	27.223	Surcharged
SWC-16 - Pump	51.000	48.800	49.312	0.512	0.7	0.326	0.000	0.0	0.008	OK
SWC-10	51.400	49.450	50.277	0.827	57.3	0.234	0.000	58.8	59.989	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 15 mins: Winter

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	52.182	0.982	12.0	0.156	0.000	6.2	5.759	Surcharged
SWC-14	53.000	50.628	51.979	1.351	14.4	0.215	0.000	11.0	9.783	Surcharged
SWC-15	52.650	50.000	51.321	1.321	21.3	0.210	0.000	17.5	15.918	Surcharged
SWC-09	51.300	49.500	50.720	1.220	46.3	0.194	0.000	43.6	50.836	Surcharged
SWC-08	52.450	49.750	51.652	1.902	37.9	0.302	0.000	36.8	43.574	Surcharged
SWC-07	52.900	49.950	52.164	2.214	27.9	0.352	0.000	28.8	35.182	Surcharged
SWC-01	53.400	51.400	52.942	1.542	8.4	0.245	0.000	3.8	4.064	Surcharged
SWC-02	53.500	51.150	52.935	1.785	9.7	0.284	0.000	7.6	8.308	Surcharged
SWC-03	53.750	50.900	52.907	2.007	11.0	0.319	0.000	11.4	12.589	Surcharged
SWC-04	53.200	50.750	52.868	2.118	16.9	0.337	0.000	15.4	19.006	Surcharged
SWC-05	53.200	50.500	52.741	2.241	18.0	0.356	0.000	19.3	23.127	Surcharged
SWC-06	53.200	50.200	52.545	2.345	25.6	0.373	0.000	23.7	30.381	Surcharged
SWC-16 - Pump	51.000	48.800	49.358	0.558	1.2	0.355	0.000	0.0	0.010	OK
SWC-10	51.400	49.450	50.373	0.923	61.1	0.261	0.000	62.4	66.650	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Junctions Summary Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 30 mins: Summer

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.777	0.577	7.8	0.092	0.000	7.0	6.748	Surcharged
SWC-14	53.000	50.628	51.579	0.951	12.2	0.151	0.000	9.7	11.412	Surcharged
SWC-15	52.650	50.000	51.069	1.069	17.5	0.170	0.000	16.0	18.548	Surcharged
SWC-09	51.300	49.500	50.565	1.065	43.2	0.169	0.000	41.9	59.950	Surcharged
SWC-08	52.450	49.750	51.360	1.610	35.4	0.256	0.000	33.5	51.286	Surcharged
SWC-07	52.900	49.950	51.751	1.801	26.7	0.286	0.000	27.5	41.300	Surcharged
SWC-01	53.400	51.400	52.578	1.178	5.4	0.187	0.000	5.2	4.726	Surcharged
SWC-02	53.500	51.150	52.570	1.420	10.7	0.226	0.000	6.9	9.716	Surcharged
SWC-03	53.750	50.900	52.536	1.636	10.5	0.260	0.000	10.3	14.703	Surcharged
SWC-04	53.200	50.750	52.489	1.739	14.8	0.277	0.000	14.3	22.198	Surcharged
SWC-05	53.200	50.500	52.350	1.850	16.8	0.294	0.000	17.9	27.030	Surcharged
SWC-06	53.200	50.200	52.134	1.934	23.3	0.307	0.000	23.1	35.566	Surcharged
SWC-16 - Pump	51.000	48.800	49.439	0.639	0.5	0.406	0.000	0.0	0.006	OK
SWC-10	51.400	49.450	50.236	0.786	58.0	0.222	0.000	57.1	78.478	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 30 mins: Winter

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.909	0.709	8.2	0.113	0.000	6.2	7.550	Surcharged
SWC-14	53.000	50.628	51.704	1.076	11.6	0.171	0.000	10.2	12.765	Surcharged
SWC-15	52.650	50.000	51.176	1.176	18.2	0.187	0.000	16.6	20.744	Surcharged
SWC-09	51.300	49.500	50.653	1.153	45.2	0.183	0.000	43.8	67.079	Surcharged
SWC-08	52.450	49.750	51.503	1.753	37.0	0.279	0.000	35.6	57.397	Surcharged
SWC-07	52.900	49.950	51.998	2.048	27.9	0.326	0.000	28.9	46.231	Surcharged
SWC-01	53.400	51.400	52.860	1.460	5.7	0.232	0.000	3.8	5.306	Surcharged
SWC-02	53.500	51.150	52.852	1.702	9.6	0.271	0.000	7.3	10.835	Surcharged
SWC-03	53.750	50.900	52.819	1.919	11.7	0.305	0.000	10.9	16.410	Surcharged
SWC-04	53.200	50.750	52.772	2.022	15.6	0.321	0.000	15.2	24.807	Surcharged
SWC-05	53.200	50.500	52.626	2.126	17.6	0.338	0.000	18.8	30.276	Surcharged
SWC-06	53.200	50.200	52.404	2.204	24.3	0.350	0.000	24.3	39.834	Surcharged
SWC-16 - Pump	51.000	48.800	49.502	0.702	0.5	0.447	0.000	0.0	0.008	OK
SWC-10	51.400	49.450	50.298	0.848	60.4	0.240	0.000	59.5	87.713	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 60 mins: Summer

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.546	0.346	6.8	0.055	0.000	6.5	8.451	Surcharged
SWC-14	53.000	50.628	51.365	0.737	11.0	0.117	0.000	9.1	14.277	Surcharged
SWC-15	52.650	50.000	50.888	0.888	15.9	0.141	0.000	14.9	23.186	Surcharged
SWC-09	51.300	49.500	50.436	0.936	40.1	0.149	0.000	39.1	74.665	Surcharged
SWC-08	52.450	49.750	51.164	1.414	33.1	0.225	0.000	32.2	63.951	Surcharged
SWC-07	52.900	49.950	51.595	1.645	25.2	0.262	0.000	26.0	51.481	Surcharged
SWC-01	53.400	51.400	52.354	0.954	4.7	0.152	0.000	4.6	5.910	Surcharged
SWC-02	53.500	51.150	52.347	1.197	9.4	0.190	0.000	6.5	12.073	Surcharged
SWC-03	53.750	50.900	52.317	1.417	9.1	0.225	0.000	9.8	18.303	Surcharged
SWC-04	53.200	50.750	52.276	1.526	13.9	0.243	0.000	13.8	27.635	Surcharged
SWC-05	53.200	50.500	52.147	1.647	16.0	0.262	0.000	17.0	33.686	Surcharged
SWC-06	53.200	50.200	51.951	1.751	21.9	0.278	0.000	22.0	44.349	Surcharged
SWC-16 - Pump	51.000	48.800	49.571	0.771	0.4	0.490	0.000	0.0	0.033	OK
SWC-10	51.400	49.450	50.144	0.694	54.0	0.196	0.000	53.4	97.652	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 60 mins: Winter

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.431	0.231	6.1	0.037	0.000	6.0	9.465	Surcharged
SWC-14	53.000	50.628	51.268	0.640	10.1	0.102	0.000	8.8	15.996	Surcharged
SWC-15	52.650	50.000	50.800	0.800	15.0	0.127	0.000	14.3	25.962	Surcharged
SWC-09	51.300	49.500	50.403	0.903	38.8	0.144	0.000	38.3	83.348	Surcharged
SWC-08	52.450	49.750	51.178	1.428	32.2	0.227	0.000	32.5	71.492	Surcharged
SWC-07	52.900	49.950	51.621	1.671	25.5	0.266	0.000	25.8	57.567	Surcharged
SWC-01	53.400	51.400	52.355	0.955	4.3	0.152	0.000	3.2	6.618	Surcharged
SWC-02	53.500	51.150	52.348	1.198	6.8	0.191	0.000	6.4	13.542	Surcharged
SWC-03	53.750	50.900	52.321	1.421	9.2	0.226	0.000	9.7	20.495	Surcharged
SWC-04	53.200	50.750	52.284	1.534	13.6	0.244	0.000	13.9	30.948	Surcharged
SWC-05	53.200	50.500	52.158	1.658	16.4	0.264	0.000	17.2	37.693	Surcharged
SWC-06	53.200	50.200	51.972	1.772	21.7	0.282	0.000	21.9	49.613	Surcharged
SWC-16 - Pump	51.000	48.800	49.649	0.849	1.1	0.540	0.000	0.0	0.031	OK
SWC-10	51.400	49.450	50.123	0.673	52.4	0.190	0.000	52.6	109.029	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 120 mins: Summer

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.252	0.052	4.9	0.008	0.000	4.9	10.245	OK
SWC-14	53.000	50.628	50.889	0.261	8.2	0.041	0.000	7.6	17.283	Surcharged
SWC-15	52.650	50.000	50.493	0.493	12.7	0.078	0.000	12.3	28.064	Surcharged
SWC-09	51.300	49.500	50.166	0.666	33.4	0.106	0.000	32.9	90.160	Surcharged
SWC-08	52.450	49.750	50.759	1.009	28.0	0.160	0.000	27.9	77.289	Surcharged
SWC-07	52.900	49.950	51.118	1.168	21.9	0.186	0.000	22.4	62.238	Surcharged
SWC-01	53.400	51.400	51.737	0.337	3.4	0.054	0.000	3.3	7.168	Surcharged
SWC-02	53.500	51.150	51.732	0.582	6.8	0.092	0.000	6.6	14.626	Surcharged
SWC-03	53.750	50.900	51.708	0.808	10.1	0.128	0.000	8.4	22.139	Surcharged
SWC-04	53.200	50.750	51.674	0.924	13.0	0.147	0.000	12.1	33.458	Surcharged
SWC-05	53.200	50.500	51.567	1.067	14.2	0.170	0.000	14.9	40.736	Surcharged
SWC-06	53.200	50.200	51.409	1.209	18.9	0.192	0.000	19.1	53.631	Surcharged
SWC-16 - Pump	51.000	48.800	49.709	0.909	0.4	0.578	0.000	0.0	0.042	OK
SWC-10	51.400	49.450	49.950	0.500	45.2	0.142	0.000	44.9	117.882	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 120 mins: Winter

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.246	0.046	3.9	0.007	0.000	3.9	11.467	OK
SWC-14	53.000	50.628	50.690	0.062	6.6	0.010	0.000	6.6	19.324	OK
SWC-15	52.650	50.000	50.275	0.275	10.7	0.044	0.000	10.5	31.394	Surcharged
SWC-09	51.300	49.500	50.044	0.544	30.3	0.087	0.000	30.4	100.500	Surcharged
SWC-08	52.450	49.750	50.576	0.826	25.8	0.131	0.000	25.8	86.259	Surcharged
SWC-07	52.900	49.950	50.892	0.942	20.6	0.150	0.000	20.7	69.540	Surcharged
SWC-01	53.400	51.400	51.449	0.049	2.7	0.008	0.000	2.7	8.025	OK
SWC-02	53.500	51.150	51.443	0.293	5.6	0.047	0.000	5.5	16.372	Surcharged
SWC-03	53.750	50.900	51.422	0.522	8.3	0.083	0.000	7.5	24.741	Surcharged
SWC-04	53.200	50.750	51.392	0.642	11.4	0.102	0.000	11.0	37.397	Surcharged
SWC-05	53.200	50.500	51.294	0.794	13.4	0.126	0.000	13.6	45.536	Surcharged
SWC-06	53.200	50.200	51.153	0.953	17.8	0.152	0.000	17.7	59.924	Surcharged
SWC-16 - Pump	51.000	48.800	49.802	1.002	0.3	0.637	0.000	0.0	0.052	OK
SWC-10	51.400	49.450	49.858	0.408	40.4	0.115	0.000	40.4	131.452	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 180 mins: Summer

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.245	0.045	3.8	0.007	0.000	3.8	11.329	OK
SWC-14	53.000	50.628	50.689	0.061	6.4	0.010	0.000	6.4	19.084	OK
SWC-15	52.650	50.000	50.215	0.215	10.4	0.034	0.000	10.2	30.999	Surcharged
SWC-09	51.300	49.500	49.987	0.487	28.8	0.077	0.000	28.5	99.320	Surcharged
SWC-08	52.450	49.750	50.455	0.705	24.4	0.112	0.000	24.4	85.213	Surcharged
SWC-07	52.900	49.950	50.749	0.799	19.5	0.127	0.000	19.7	68.655	Surcharged
SWC-01	53.400	51.400	51.438	0.038	2.6	0.006	0.000	2.7	7.914	OK
SWC-02	53.500	51.150	51.266	0.116	5.4	0.018	0.000	5.3	16.148	OK
SWC-03	53.750	50.900	51.245	0.345	8.0	0.055	0.000	8.0	24.415	Surcharged
SWC-04	53.200	50.750	51.216	0.466	12.2	0.074	0.000	10.5	36.905	Surcharged
SWC-05	53.200	50.500	51.124	0.624	13.1	0.099	0.000	12.8	44.923	Surcharged
SWC-06	53.200	50.200	50.991	0.791	17.1	0.126	0.000	16.9	59.148	Surcharged
SWC-16 - Pump	51.000	48.800	49.791	0.991	0.3	0.630	0.000	0.0	0.081	OK
SWC-10	51.400	49.450	49.821	0.371	38.7	0.105	0.000	38.5	129.916	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 180 mins: Winter

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.239	0.039	2.9	0.006	0.000	2.9	12.677	OK
SWC-14	53.000	50.628	50.679	0.051	4.9	0.008	0.000	4.9	21.357	OK
SWC-15	52.650	50.000	50.059	0.059	8.0	0.009	0.000	8.0	34.702	OK
SWC-09	51.300	49.500	49.895	0.395	24.8	0.063	0.000	24.7	110.837	Surcharged
SWC-08	52.450	49.750	50.222	0.472	21.2	0.075	0.000	21.2	95.131	Surcharged
SWC-07	52.900	49.950	50.455	0.505	17.2	0.080	0.000	17.1	76.873	Surcharged
SWC-01	53.400	51.400	51.434	0.034	2.0	0.005	0.000	2.0	8.896	OK
SWC-02	53.500	51.150	51.200	0.050	4.2	0.008	0.000	4.2	18.122	OK
SWC-03	53.750	50.900	50.965	0.065	6.3	0.010	0.000	6.3	27.355	OK
SWC-04	53.200	50.750	50.829	0.079	9.6	0.013	0.000	9.5	41.343	OK
SWC-05	53.200	50.500	50.759	0.259	11.6	0.041	0.000	11.3	50.341	Surcharged
SWC-06	53.200	50.200	50.651	0.451	15.0	0.072	0.000	14.8	66.260	Surcharged
SWC-16 - Pump	51.000	48.800	49.895	1.095	0.5	0.696	0.000	0.0	0.066	OK
SWC-10	51.400	49.450	49.895	0.445	32.7	0.126	0.000	32.7	144.989	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 240 mins: Summer

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.241	0.041	3.1	0.006	0.000	3.1	12.112	OK
SWC-14	53.000	50.628	50.681	0.053	5.3	0.008	0.000	5.3	20.407	OK
SWC-15	52.650	50.000	50.062	0.062	8.6	0.010	0.000	8.6	33.115	OK
SWC-09	51.300	49.500	49.866	0.366	25.5	0.058	0.000	25.4	105.857	Surcharged
SWC-08	52.450	49.750	50.253	0.503	21.8	0.080	0.000	21.8	90.856	Surcharged
SWC-07	52.900	49.950	50.487	0.537	17.5	0.085	0.000	17.6	73.327	Surcharged
SWC-01	53.400	51.400	51.435	0.035	2.2	0.006	0.000	2.2	8.451	OK
SWC-02	53.500	51.150	51.202	0.052	4.5	0.008	0.000	4.5	17.257	OK
SWC-03	53.750	50.900	50.967	0.067	6.8	0.011	0.000	6.8	26.068	OK
SWC-04	53.200	50.750	50.875	0.125	10.2	0.020	0.000	10.0	39.429	OK
SWC-05	53.200	50.500	50.804	0.304	12.2	0.048	0.000	11.5	48.012	Surcharged
SWC-06	53.200	50.200	50.691	0.491	15.3	0.078	0.000	15.1	63.188	Surcharged
SWC-16 - Pump	51.000	48.800	49.850	1.050	0.5	0.668	0.000	0.0	0.128	OK
SWC-10	51.400	49.450	49.850	0.400	34.0	0.113	0.000	33.9	138.566	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 240 mins: Winter

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.235	0.035	2.4	0.006	0.000	2.4	13.552	OK
SWC-14	53.000	50.628	50.673	0.045	4.0	0.007	0.000	4.0	22.850	OK
SWC-15	52.650	50.000	50.052	0.052	6.5	0.008	0.000	6.5	37.100	OK
SWC-09	51.300	49.500	49.961	0.461	20.3	0.073	0.000	20.2	118.274	Surcharged
SWC-08	52.450	49.750	50.001	0.251	17.5	0.040	0.000	17.3	101.559	Surcharged
SWC-07	52.900	49.950	50.140	0.190	14.3	0.030	0.000	14.1	82.101	Surcharged
SWC-01	53.400	51.400	51.430	0.030	1.6	0.005	0.000	1.6	9.453	OK
SWC-02	53.500	51.150	51.195	0.045	3.4	0.007	0.000	3.4	19.309	OK
SWC-03	53.750	50.900	50.957	0.057	5.1	0.009	0.000	5.1	29.177	OK
SWC-04	53.200	50.750	50.821	0.071	7.7	0.011	0.000	7.7	44.130	OK
SWC-05	53.200	50.500	50.574	0.074	9.4	0.012	0.000	9.4	53.738	OK
SWC-06	53.200	50.200	50.296	0.096	12.3	0.015	0.000	12.4	70.732	OK
SWC-16 - Pump	51.000	48.800	49.961	1.161	0.2	0.739	0.000	0.0	0.096	OK
SWC-10	51.400	49.450	49.961	0.511	26.7	0.145	0.000	26.7	154.738	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 360 mins: Summer

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.235	0.035	2.3	0.005	0.000	2.3	13.186	OK
SWC-14	53.000	50.628	50.673	0.045	3.9	0.007	0.000	3.9	22.213	OK
SWC-15	52.650	50.000	50.051	0.051	6.4	0.008	0.000	6.4	36.061	OK
SWC-09	51.300	49.500	49.934	0.434	20.2	0.069	0.000	20.1	115.169	Surcharged
SWC-08	52.450	49.750	49.933	0.183	17.4	0.029	0.000	17.2	98.805	Surcharged
SWC-07	52.900	49.950	50.088	0.138	14.1	0.022	0.000	14.0	79.828	OK
SWC-01	53.400	51.400	51.430	0.030	1.6	0.005	0.000	1.6	9.195	OK
SWC-02	53.500	51.150	51.195	0.045	3.3	0.007	0.000	3.3	18.762	OK
SWC-03	53.750	50.900	50.957	0.057	5.0	0.009	0.000	5.0	28.348	OK
SWC-04	53.200	50.750	50.820	0.070	7.6	0.011	0.000	7.6	42.910	OK
SWC-05	53.200	50.500	50.573	0.073	9.3	0.012	0.000	9.2	52.259	OK
SWC-06	53.200	50.200	50.295	0.095	12.2	0.015	0.000	12.2	68.809	OK
SWC-16 - Pump	51.000	48.800	49.933	1.133	0.2	0.721	0.000	0.0	0.241	OK
SWC-10	51.400	49.450	49.933	0.483	26.4	0.137	0.000	25.9	150.827	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 360 mins: Winter

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.229	0.029	1.7	0.005	0.000	1.7	14.780	OK
SWC-14	53.000	50.628	50.666	0.038	2.9	0.006	0.000	2.9	24.904	OK
SWC-15	52.650	50.000	50.053	0.053	4.7	0.008	0.000	4.7	40.457	OK
SWC-09	51.300	49.500	50.053	0.553	15.2	0.088	0.000	15.1	128.569	Surcharged
SWC-08	52.450	49.750	50.053	0.303	13.0	0.048	0.000	13.0	110.406	Surcharged
SWC-07	52.900	49.950	50.053	0.103	10.4	0.016	0.000	10.4	89.232	OK
SWC-01	53.400	51.400	51.426	0.026	1.2	0.004	0.000	1.2	10.304	OK
SWC-02	53.500	51.150	51.188	0.038	2.5	0.006	0.000	2.5	21.040	OK
SWC-03	53.750	50.900	50.948	0.048	3.7	0.008	0.000	3.7	31.776	OK
SWC-04	53.200	50.750	50.809	0.059	5.6	0.009	0.000	5.6	48.076	OK
SWC-05	53.200	50.500	50.561	0.061	6.8	0.010	0.000	6.8	58.546	OK
SWC-06	53.200	50.200	50.279	0.079	9.0	0.013	0.000	9.0	77.085	OK
SWC-16 - Pump	51.000	48.800	50.053	1.253	0.2	0.797	0.000	0.0	0.214	OK
SWC-10	51.400	49.450	50.053	0.603	19.8	0.171	0.000	19.8	168.320	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 480 mins: Summer

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.231	0.031	1.9	0.005	0.000	1.9	13.994	OK
SWC-14	53.000	50.628	50.668	0.040	3.2	0.006	0.000	3.2	23.584	OK
SWC-15	52.650	50.000	50.045	0.045	5.2	0.007	0.000	5.2	38.320	OK
SWC-09	51.300	49.500	49.997	0.497	16.7	0.079	0.000	16.7	122.403	Surcharged
SWC-08	52.450	49.750	49.997	0.247	14.3	0.039	0.000	14.3	105.102	Surcharged
SWC-07	52.900	49.950	50.047	0.097	11.5	0.015	0.000	11.5	84.891	OK
SWC-01	53.400	51.400	51.427	0.027	1.3	0.004	0.000	1.3	9.788	OK
SWC-02	53.500	51.150	51.190	0.040	2.7	0.006	0.000	2.7	19.972	OK
SWC-03	53.750	50.900	50.951	0.051	4.1	0.008	0.000	4.1	30.155	OK
SWC-04	53.200	50.750	50.812	0.062	6.2	0.010	0.000	6.2	45.609	OK
SWC-05	53.200	50.500	50.565	0.065	7.5	0.010	0.000	7.5	55.539	OK
SWC-06	53.200	50.200	50.284	0.084	9.9	0.013	0.000	9.9	73.148	OK
SWC-16 - Pump	51.000	48.800	49.997	1.197	0.4	0.761	0.000	0.0	0.477	OK
SWC-10	51.400	49.450	49.997	0.547	21.9	0.155	0.000	21.9	160.108	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 480 mins: Winter

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.226	0.026	1.4	0.004	0.000	1.4	15.721	OK
SWC-14	53.000	50.628	50.662	0.033	2.3	0.005	0.000	2.3	26.475	OK
SWC-15	52.650	50.000	50.123	0.123	3.8	0.020	0.000	3.8	42.909	Surcharged
SWC-09	51.300	49.500	50.123	0.623	12.2	0.099	0.000	12.1	136.489	Surcharged
SWC-08	52.450	49.750	50.123	0.373	10.4	0.059	0.000	10.4	117.255	Surcharged
SWC-07	52.900	49.950	50.123	0.173	8.3	0.028	0.000	8.3	94.718	Surcharged
SWC-01	53.400	51.400	51.423	0.023	1.0	0.004	0.000	1.0	10.951	OK
SWC-02	53.500	51.150	51.184	0.034	2.0	0.005	0.000	2.0	22.388	OK
SWC-03	53.750	50.900	50.942	0.042	3.0	0.007	0.000	3.0	33.838	OK
SWC-04	53.200	50.750	50.802	0.052	4.5	0.008	0.000	4.5	51.108	OK
SWC-05	53.200	50.500	50.554	0.054	5.5	0.009	0.000	5.5	62.226	OK
SWC-06	53.200	50.200	50.269	0.069	7.2	0.011	0.000	7.2	81.934	OK
SWC-16 - Pump	51.000	48.800	50.123	1.323	0.2	0.841	0.000	0.0	0.185	OK
SWC-10	51.400	49.450	50.123	0.673	15.8	0.191	0.000	15.8	178.792	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 600 mins: Summer

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.228	0.028	1.6	0.004	0.000	1.6	14.672	OK
SWC-14	53.000	50.628	50.664	0.036	2.7	0.006	0.000	2.7	24.711	OK
SWC-15	52.650	50.000	50.047	0.047	4.4	0.007	0.000	4.4	40.278	OK
SWC-09	51.300	49.500	50.047	0.547	14.1	0.087	0.000	14.1	128.104	Surcharged
SWC-08	52.450	49.750	50.047	0.297	12.0	0.047	0.000	12.0	109.992	Surcharged
SWC-07	52.900	49.950	50.047	0.097	9.7	0.015	0.000	9.7	88.830	OK
SWC-01	53.400	51.400	51.425	0.025	1.1	0.004	0.000	1.1	10.273	OK
SWC-02	53.500	51.150	51.187	0.037	2.3	0.006	0.000	2.3	20.925	OK
SWC-03	53.750	50.900	50.946	0.046	3.4	0.007	0.000	3.4	31.588	OK
SWC-04	53.200	50.750	50.807	0.057	5.2	0.009	0.000	5.2	47.797	OK
SWC-05	53.200	50.500	50.559	0.059	6.3	0.009	0.000	6.3	58.195	OK
SWC-06	53.200	50.200	50.275	0.075	8.3	0.012	0.000	8.3	76.641	OK
SWC-16 - Pump	51.000	48.800	50.047	1.247	0.2	0.793	0.000	0.0	0.524	OK
SWC-10	51.400	49.450	50.047	0.597	18.4	0.169	0.000	18.5	167.802	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Junctions Summary Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 600 mins: Winter

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.224	0.024	1.1	0.004	0.000	1.1	16.423	OK
SWC-14	53.000	50.628	50.659	0.031	1.9	0.005	0.000	1.9	27.681	OK
SWC-15	52.650	50.000	50.180	0.180	3.1	0.029	0.000	3.2	44.902	Surcharged
SWC-09	51.300	49.500	50.180	0.680	10.2	0.108	0.000	10.1	143.290	Surcharged
SWC-08	52.450	49.750	50.180	0.430	8.7	0.068	0.000	8.7	122.823	Surcharged
SWC-07	52.900	49.950	50.180	0.230	7.0	0.037	0.000	7.0	99.220	Surcharged
SWC-01	53.400	51.400	51.421	0.021	0.8	0.003	0.000	0.8	11.467	OK
SWC-02	53.500	51.150	51.181	0.031	1.6	0.005	0.000	1.6	23.420	OK
SWC-03	53.750	50.900	50.939	0.039	2.5	0.006	0.000	2.5	35.409	OK
SWC-04	53.200	50.750	50.797	0.047	3.8	0.008	0.000	3.8	53.543	OK
SWC-05	53.200	50.500	50.550	0.050	4.6	0.008	0.000	4.6	65.196	OK
SWC-06	53.200	50.200	50.262	0.062	6.0	0.010	0.000	6.0	85.830	OK
SWC-16 - Pump	51.000	48.800	50.180	1.380	0.2	0.878	0.000	0.0	0.390	OK
SWC-10	51.400	49.450	50.180	0.730	13.2	0.207	0.000	13.1	187.290	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 720 mins: Summer

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.226	0.026	1.4	0.004	0.000	1.4	15.229	OK
SWC-14	53.000	50.628	50.662	0.034	2.3	0.005	0.000	2.3	25.665	OK
SWC-15	52.650	50.000	50.089	0.089	3.8	0.014	0.000	3.8	41.795	OK
SWC-09	51.300	49.500	50.089	0.589	12.2	0.094	0.000	12.0	133.068	Surcharged
SWC-08	52.450	49.750	50.089	0.339	10.4	0.054	0.000	10.4	114.226	Surcharged
SWC-07	52.900	49.950	50.089	0.139	8.4	0.022	0.000	8.4	92.198	OK
SWC-01	53.400	51.400	51.423	0.023	1.0	0.004	0.000	1.0	10.657	OK
SWC-02	53.500	51.150	51.184	0.034	2.0	0.005	0.000	2.0	21.723	OK
SWC-03	53.750	50.900	50.943	0.043	3.0	0.007	0.000	3.0	32.812	OK
SWC-04	53.200	50.750	50.802	0.052	4.5	0.008	0.000	4.5	49.651	OK
SWC-05	53.200	50.500	50.555	0.055	5.5	0.009	0.000	5.5	60.475	OK
SWC-06	53.200	50.200	50.269	0.069	7.2	0.011	0.000	7.2	79.624	OK
SWC-16 - Pump	51.000	48.800	50.089	1.289	0.3	0.820	0.000	0.0	0.246	OK
SWC-10	51.400	49.450	50.089	0.639	15.8	0.181	0.000	15.8	174.235	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 720 mins: Winter

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.222	0.022	1.0	0.004	0.000	1.0	17.076	OK
SWC-14	53.000	50.628	50.656	0.028	1.7	0.004	0.000	1.7	28.760	OK
SWC-15	52.650	50.000	50.228	0.228	2.7	0.036	0.000	2.7	46.682	Surcharged
SWC-09	51.300	49.500	50.228	0.728	8.8	0.116	0.000	8.7	148.554	Surcharged
SWC-08	52.450	49.750	50.228	0.478	7.5	0.076	0.000	7.5	127.571	Surcharged
SWC-07	52.900	49.950	50.228	0.278	6.1	0.044	0.000	6.1	103.218	Surcharged
SWC-01	53.400	51.400	51.420	0.020	0.7	0.003	0.000	0.7	11.905	OK
SWC-02	53.500	51.150	51.179	0.029	1.4	0.005	0.000	1.4	24.326	OK
SWC-03	53.750	50.900	50.936	0.036	2.2	0.006	0.000	2.2	36.758	OK
SWC-04	53.200	50.750	50.794	0.044	3.3	0.007	0.000	3.3	55.618	OK
SWC-05	53.200	50.500	50.546	0.046	4.0	0.007	0.000	4.0	67.693	OK
SWC-06	53.200	50.200	50.257	0.057	5.2	0.009	0.000	5.2	89.247	OK
SWC-16 - Pump	51.000	48.800	50.228	1.428	0.2	0.908	0.000	0.0	0.294	OK
SWC-10	51.400	49.450	50.228	0.778	11.4	0.220	0.000	11.3	194.442	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 960 mins: Summer

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.223	0.023	1.1	0.004	0.000	1.1	16.159	OK
SWC-14	53.000	50.628	50.658	0.030	1.9	0.005	0.000	1.9	27.242	OK
SWC-15	52.650	50.000	50.161	0.161	3.0	0.026	0.000	3.0	44.326	Surcharged
SWC-09	51.300	49.500	50.161	0.661	9.7	0.105	0.000	9.6	141.094	Surcharged
SWC-08	52.450	49.750	50.161	0.411	8.3	0.065	0.000	8.3	121.144	Surcharged
SWC-07	52.900	49.950	50.161	0.211	6.7	0.034	0.000	6.7	97.771	Surcharged
SWC-01	53.400	51.400	51.421	0.021	0.8	0.003	0.000	0.8	11.287	OK
SWC-02	53.500	51.150	51.181	0.031	1.6	0.005	0.000	1.6	23.048	OK
SWC-03	53.750	50.900	50.938	0.038	2.4	0.006	0.000	2.4	34.827	OK
SWC-04	53.200	50.750	50.796	0.046	3.6	0.007	0.000	3.6	52.703	OK
SWC-05	53.200	50.500	50.548	0.048	4.4	0.008	0.000	4.4	64.181	OK
SWC-06	53.200	50.200	50.260	0.060	5.7	0.010	0.000	5.7	84.497	OK
SWC-16 - Pump	51.000	48.800	50.161	1.361	0.2	0.865	0.000	0.0	0.802	OK
SWC-10	51.400	49.450	50.161	0.711	12.6	0.201	0.000	12.5	184.855	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 960 mins: Winter

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.220	0.020	0.8	0.003	0.000	0.8	18.114	OK
SWC-14	53.000	50.628	50.653	0.025	1.3	0.004	0.000	1.3	30.535	OK
SWC-15	52.650	50.000	50.306	0.306	2.2	0.049	0.000	2.2	49.496	Surcharged
SWC-09	51.300	49.500	50.306	0.806	7.0	0.128	0.000	6.9	157.567	Surcharged
SWC-08	52.450	49.750	50.306	0.556	6.0	0.088	0.000	6.0	135.268	Surcharged
SWC-07	52.900	49.950	50.306	0.356	4.8	0.057	0.000	4.8	109.421	Surcharged
SWC-01	53.400	51.400	51.418	0.018	0.6	0.003	0.000	0.6	12.655	OK
SWC-02	53.500	51.150	51.176	0.026	1.1	0.004	0.000	1.1	25.825	OK
SWC-03	53.750	50.900	50.932	0.032	1.7	0.005	0.000	1.7	38.995	OK
SWC-04	53.200	50.750	50.789	0.039	2.6	0.006	0.000	2.6	58.947	OK
SWC-05	53.200	50.500	50.541	0.041	3.2	0.007	0.000	3.2	71.800	OK
SWC-06	53.200	50.200	50.306	0.106	4.2	0.017	0.000	4.2	94.595	OK
SWC-16 - Pump	51.000	48.800	50.306	1.506	0.2	0.958	0.000	0.0	0.391	OK
SWC-10	51.400	49.450	50.306	0.856	9.1	0.242	0.000	9.0	206.220	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 1440 mins: Summer

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.220	0.020	0.8	0.003	0.000	0.8	17.526	OK
SWC-14	53.000	50.628	50.653	0.025	1.3	0.004	0.000	1.3	29.569	OK
SWC-15	52.650	50.000	50.263	0.263	2.2	0.042	0.000	2.2	48.109	Surcharged
SWC-09	51.300	49.500	50.263	0.763	7.0	0.121	0.000	6.9	153.270	Surcharged
SWC-08	52.450	49.750	50.263	0.513	6.0	0.082	0.000	6.0	131.523	Surcharged
SWC-07	52.900	49.950	50.263	0.313	4.8	0.050	0.000	4.8	106.440	Surcharged
SWC-01	53.400	51.400	51.418	0.018	0.6	0.003	0.000	0.6	12.271	OK
SWC-02	53.500	51.150	51.176	0.026	1.1	0.004	0.000	1.1	25.009	OK
SWC-03	53.750	50.900	50.932	0.032	1.7	0.005	0.000	1.7	37.759	OK
SWC-04	53.200	50.750	50.789	0.039	2.6	0.006	0.000	2.6	57.147	OK
SWC-05	53.200	50.500	50.541	0.041	3.2	0.007	0.000	3.2	69.535	OK
SWC-06	53.200	50.200	50.263	0.063	4.2	0.010	0.000	4.2	91.835	OK
SWC-16 - Pump	51.000	48.800	50.263	1.463	0.2	0.930	0.000	0.0	0.518	OK
SWC-10	51.400	49.450	50.263	0.813	9.1	0.230	0.000	9.0	200.652	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 1440 mins: Winter

Junction	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	53.200	51.200	51.217	0.017	0.6	0.003	0.000	0.6	19.608	OK
SWC-14	53.000	50.628	50.650	0.021	1.0	0.003	0.000	1.0	33.073	OK
SWC-15	52.650	50.000	50.418	0.418	1.6	0.066	0.000	1.6	53.667	Surcharged
SWC-09	51.300	49.500	50.418	0.918	5.1	0.146	0.000	5.0	170.359	Surcharged
SWC-08	52.450	49.750	50.418	0.668	4.3	0.106	0.000	4.3	146.268	Surcharged
SWC-07	52.900	49.950	50.418	0.468	3.5	0.074	0.000	3.5	118.140	Surcharged
SWC-01	53.400	51.400	51.415	0.015	0.4	0.002	0.000	0.4	13.728	OK
SWC-02	53.500	51.150	51.172	0.022	0.8	0.004	0.000	0.8	27.924	OK
SWC-03	53.750	50.900	50.927	0.027	1.2	0.004	0.000	1.2	42.145	OK
SWC-04	53.200	50.750	50.783	0.033	1.9	0.005	0.000	1.9	63.757	OK
SWC-05	53.200	50.500	50.535	0.035	2.3	0.006	0.000	2.3	77.630	OK
SWC-06	53.200	50.200	50.418	0.218	3.0	0.035	0.000	3.0	102.067	Surcharged
SWC-16 - Pump	51.000	48.800	50.418	1.618	0.1	1.029	0.000	0.0	0.528	OK
SWC-10	51.400	49.450	50.418	0.968	6.6	0.274	0.000	6.5	223.430	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 15 mins: Summer

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	49.312	49.312	0.412	0.412	58.8	59.466	0.000	0.000	0.7	0.605	1417	74.317	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 15 mins: Winter

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	49.358	49.358	0.458	0.458	62.4	66.049	0.000	0.000	1.2	0.660	1071	71.474	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 30 mins: Summer

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	49.439	49.439	0.539	0.539	57.1	77.770	0.000	0.000	0.5	0.752	1715	66.412	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 30 mins: Winter

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	49.502	49.502	0.602	0.602	59.5	86.952	0.000	0.000	0.5	0.828	1863	62.446	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 60 mins: Summer

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	49.571	49.571	0.671	0.671	53.4	96.833	0.000	0.000	0.4	0.924	2146	58.179	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 60 mins: Winter

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	49.649	49.649	0.749	0.749	52.6	108.161	0.000	0.000	1.1	1.026	1310	53.286	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 120 mins: Summer

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	49.709	49.709	0.809	0.809	44.9	116.799	0.000	0.000	0.4	1.170	2684	49.555	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 120 mins: Winter

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	49.802	49.802	0.902	0.902	40.4	130.282	0.000	0.000	0.3	1.263	3441	43.733	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

FSR: 100 years: Increase Rainfall (%): +45: 180 mins: Summer

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	49.791	49.791	0.891	0.891	38.5	128.667	0.000	0.000	0.3	1.320	3509	44.430	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 180 mins: Winter

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	49.895	49.895	0.995	0.995	32.7	143.644	0.000	0.000	0.5	1.410	3602	37.961	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 240 mins: Summer

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	49.850	49.850	0.950	0.950	33.9	137.166	0.000	0.000	0.5	1.447	3240	40.759	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 240 mins: Winter

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	49.961	49.961	1.061	1.061	26.7	153.237	0.000	0.000	0.2	1.555	6440	33.818	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

FSR: 100 years: Increase Rainfall (%): +45: 360 mins: Summer

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	49.933	49.933	1.033	1.033	25.9	149.156	0.000	0.000	0.2	1.660	5946	35.581	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 360 mins: Winter

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	50.053	50.053	1.153	1.153	19.8	166.439	0.000	0.000	0.2	1.804	8601	28.116	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 480 mins: Summer

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	49.997	49.997	1.097	1.097	21.9	158.344	0.000	0.000	0.4	1.879	5198	31.613	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 480 mins: Winter

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	50.123	50.123	1.223	1.223	15.8	176.563	0.000	0.000	0.2	2.009	9173	23.744	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 600 mins: Summer

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	50.047	50.047	1.147	1.147	18.5	165.590	0.000	0.000	0.2	2.098	7410	28.483	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 600 mins: Winter

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	50.180	50.180	1.280	1.280	13.1	184.822	0.000	0.000	0.2	2.266	9538	20.177	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 720 mins: Summer

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	50.089	50.089	1.189	1.189	15.8	171.652	0.000	0.000	0.3	2.250	6559	25.865	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 720 mins: Winter

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	50.228	50.228	1.328	1.328	11.3	191.692	0.000	0.000	0.2	2.403	9834	17.210	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 960 mins: Summer

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	50.160	50.160	1.260	1.260	12.5	182.010	0.000	0.000	0.2	2.648	10256	21.392	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 960 mins: Winter

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	50.306	50.306	1.406	1.406	9.0	203.013	0.000	0.000	0.2	2.738	11267	12.321	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 1440 mins: Summer

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	50.263	50.263	1.363	1.363	9.0	196.786	0.000	0.000	0.2	3.188	14215	15.010	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 1440 mins: Winter

Stormwater Control	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Att Tank	50.418	50.418	1.518	1.518	6.5	219.140	0.000	0.000	0.1	3.468	19141	5.356	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 15 mins: Summer

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.970	0.100	5.148	1.0	0.65	6.1	Surcharged
SWP-14	Pipe	SWC-14	SWC-15	53.000	51.780	0.100	8.773	1.3	1.1	10.6	Surcharged
SWP-01	Pipe	SWC-01	SWC-02	53.400	52.675	0.150	3.628	0.5	0.19	3.6	Surcharged
SWP-02	Pipe	SWC-02	SWC-03	53.500	52.668	0.150	7.428	0.6	0.42	7.2	Surcharged
SWP-03	Pipe	SWC-03	SWC-04	53.750	52.640	0.150	11.258	0.7	0.63	10.8	Surcharged
SWP-04	Pipe	SWC-04	SWC-05	53.200	52.601	0.150	16.998	0.9	0.82	14.6	Surcharged
SWP-05	Pipe	SWC-05	SWC-06	53.200	52.479	0.150	20.702	1.0	0.94	18.2	Surcharged
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	49.312	0.100	0.597	0.7	0.04	0.7	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	52.287	0.150	27.223	1.3	1.33	22.7	Surcharged
SWP-08	Pipe	SWC-07	SWC-08	52.900	51.926	0.150	31.591	1.6	1.69	27.5	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	51.442	0.150	39.197	2.0	1.96	34.8	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.587	0.150	45.768	2.3	2.1	40.8	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.277	0.150	59.989	3.3	2.01	58.8	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	51.151	0.100	14.255	2.1	1.33	16.6	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 15 mins: Winter

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	52.182	0.100	5.759	1.1	0.66	6.2	Surcharged
SWP-14	Pipe	SWC-14	SWC-15	53.000	51.979	0.100	9.783	1.4	1.15	11.0	Surcharged
SWP-01	Pipe	SWC-01	SWC-02	53.400	52.942	0.150	4.064	0.5	0.2	3.8	Surcharged
SWP-02	Pipe	SWC-02	SWC-03	53.500	52.935	0.150	8.308	0.7	0.44	7.6	Surcharged
SWP-03	Pipe	SWC-03	SWC-04	53.750	52.907	0.150	12.589	0.7	0.67	11.4	Surcharged
SWP-04	Pipe	SWC-04	SWC-05	53.200	52.868	0.150	19.006	0.9	0.86	15.4	Surcharged
SWP-05	Pipe	SWC-05	SWC-06	53.200	52.741	0.150	23.127	1.1	0.99	19.3	Surcharged
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	49.358	0.100	0.650	0.6	0.07	1.2	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	52.545	0.150	30.381	1.3	1.39	23.7	Surcharged
SWP-08	Pipe	SWC-07	SWC-08	52.900	52.164	0.150	35.182	1.6	1.77	28.8	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	51.652	0.150	43.574	2.1	2.07	36.8	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.720	0.150	50.836	2.5	2.24	43.6	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.373	0.150	66.650	3.5	2.13	62.4	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	51.321	0.100	15.918	2.2	1.41	17.5	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 30 mins: Summer

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.777	0.100	6.748	0.9	0.74	7.0	Surcharged
SWP-14	Pipe	SWC-14	SWC-15	53.000	51.579	0.100	11.412	1.2	1.01	9.7	Surcharged
SWP-01	Pipe	SWC-01	SWC-02	53.400	52.578	0.150	4.726	0.5	0.28	5.2	Surcharged
SWP-02	Pipe	SWC-02	SWC-03	53.500	52.570	0.150	9.716	0.6	0.39	6.9	Surcharged
SWP-03	Pipe	SWC-03	SWC-04	53.750	52.536	0.150	14.703	0.7	0.6	10.3	Surcharged
SWP-04	Pipe	SWC-04	SWC-05	53.200	52.489	0.150	22.198	0.9	0.8	14.3	Surcharged
SWP-05	Pipe	SWC-05	SWC-06	53.200	52.350	0.150	27.030	1.0	0.92	17.9	Surcharged
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	49.439	0.100	0.745	0.7	0.03	0.5	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	52.134	0.150	35.566	1.3	1.35	23.1	Surcharged
SWP-08	Pipe	SWC-07	SWC-08	52.900	51.751	0.150	41.300	1.6	1.69	27.5	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	51.360	0.150	51.286	1.9	1.88	33.5	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.565	0.150	59.950	2.4	2.16	41.9	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.236	0.150	78.478	3.2	1.95	57.1	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	51.069	0.100	18.548	2.0	1.29	16.0	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 30 mins: Winter

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.909	0.100	7.550	1.0	0.66	6.2	Surcharged
SWP-14	Pipe	SWC-14	SWC-15	53.000	51.704	0.100	12.765	1.3	1.06	10.2	Surcharged
SWP-01	Pipe	SWC-01	SWC-02	53.400	52.860	0.150	5.306	0.5	0.2	3.8	Surcharged
SWP-02	Pipe	SWC-02	SWC-03	53.500	52.852	0.150	10.835	0.7	0.42	7.3	Surcharged
SWP-03	Pipe	SWC-03	SWC-04	53.750	52.819	0.150	16.410	0.7	0.63	10.9	Surcharged
SWP-04	Pipe	SWC-04	SWC-05	53.200	52.772	0.150	24.807	0.9	0.85	15.2	Surcharged
SWP-05	Pipe	SWC-05	SWC-06	53.200	52.626	0.150	30.276	1.1	0.96	18.8	Surcharged
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	49.502	0.100	0.819	0.8	0.03	0.5	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	52.404	0.150	39.834	1.4	1.42	24.3	Surcharged
SWP-08	Pipe	SWC-07	SWC-08	52.900	51.998	0.150	46.231	1.6	1.77	28.9	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	51.503	0.150	57.397	2.0	2	35.6	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.653	0.150	67.079	2.5	2.26	43.8	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.298	0.150	87.713	3.4	2.03	59.5	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	51.176	0.100	20.744	2.1	1.33	16.6	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 60 mins: Summer

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.546	0.100	8.451	1.0	0.69	6.5	Surcharged
SWP-14	Pipe	SWC-14	SWC-15	53.000	51.365	0.100	14.277	1.2	0.94	9.1	Surcharged
SWP-01	Pipe	SWC-01	SWC-02	53.400	52.354	0.150	5.910	0.5	0.24	4.6	Surcharged
SWP-02	Pipe	SWC-02	SWC-03	53.500	52.347	0.150	12.073	0.7	0.38	6.5	Surcharged
SWP-03	Pipe	SWC-03	SWC-04	53.750	52.317	0.150	18.303	0.7	0.57	9.8	Surcharged
SWP-04	Pipe	SWC-04	SWC-05	53.200	52.276	0.150	27.635	0.9	0.77	13.8	Surcharged
SWP-05	Pipe	SWC-05	SWC-06	53.200	52.147	0.150	33.686	1.0	0.87	17.0	Surcharged
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	49.571	0.100	0.899	0.1	0.03	0.4	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	51.951	0.150	44.349	1.2	1.29	22.0	Surcharged
SWP-08	Pipe	SWC-07	SWC-08	52.900	51.595	0.150	51.481	1.5	1.6	26.0	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	51.164	0.150	63.951	1.8	1.81	32.2	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.436	0.150	74.665	2.2	2.02	39.1	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.144	0.150	97.652	3.0	1.83	53.4	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.888	0.100	23.186	1.9	1.2	14.9	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 60 mins: Winter

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.431	0.100	9.465	1.1	0.63	6.0	Surcharged
SWP-14	Pipe	SWC-14	SWC-15	53.000	51.268	0.100	15.996	1.1	0.91	8.8	Surcharged
SWP-01	Pipe	SWC-01	SWC-02	53.400	52.355	0.150	6.618	0.6	0.17	3.2	Surcharged
SWP-02	Pipe	SWC-02	SWC-03	53.500	52.348	0.150	13.542	0.7	0.37	6.4	Surcharged
SWP-03	Pipe	SWC-03	SWC-04	53.750	52.321	0.150	20.495	0.8	0.57	9.7	Surcharged
SWP-04	Pipe	SWC-04	SWC-05	53.200	52.284	0.150	30.948	0.9	0.78	13.9	Surcharged
SWP-05	Pipe	SWC-05	SWC-06	53.200	52.158	0.150	37.693	1.0	0.88	17.2	Surcharged
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	49.649	0.100	0.987	0.2	0.07	1.1	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	51.972	0.150	49.613	1.2	1.28	21.9	Surcharged
SWP-08	Pipe	SWC-07	SWC-08	52.900	51.621	0.150	57.567	1.5	1.58	25.8	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	51.178	0.150	71.492	1.8	1.83	32.5	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.403	0.150	83.333	2.2	1.97	38.3	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.123	0.150	108.999	3.0	1.8	52.6	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.800	0.100	25.962	1.8	1.14	14.3	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 120 mins: Summer

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.252	0.100	10.245	1.2	0.52	4.9	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.889	0.100	17.283	1.1	0.79	7.6	Surcharged
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.737	0.150	7.168	0.6	0.18	3.3	Surcharged
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.732	0.150	14.626	0.7	0.38	6.6	Surcharged
SWP-03	Pipe	SWC-03	SWC-04	53.750	51.708	0.150	22.139	0.8	0.49	8.4	Surcharged
SWP-04	Pipe	SWC-04	SWC-05	53.200	51.674	0.150	33.458	1.0	0.68	12.1	Surcharged
SWP-05	Pipe	SWC-05	SWC-06	53.200	51.567	0.150	40.736	0.9	0.76	14.9	Surcharged
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	49.709	0.100	1.062	0.3	0.03	0.4	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	51.409	0.150	53.631	1.1	1.12	19.1	Surcharged
SWP-08	Pipe	SWC-07	SWC-08	52.900	51.118	0.150	62.238	1.3	1.37	22.4	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.759	0.150	77.289	1.6	1.57	27.9	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.166	0.150	90.073	1.9	1.7	32.9	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	49.950	0.150	117.730	2.5	1.53	44.9	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.493	0.100	28.064	1.6	0.98	12.3	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Connections Summary Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 120 mins: Winter

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.246	0.045	11.467	1.1	0.42	3.9	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.690	0.100	19.324	1.1	0.68	6.6	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.449	0.150	8.025	0.6	0.15	2.7	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.443	0.150	16.372	0.7	0.32	5.5	Surcharged
SWP-03	Pipe	SWC-03	SWC-04	53.750	51.422	0.150	24.741	0.8	0.43	7.5	Surcharged
SWP-04	Pipe	SWC-04	SWC-05	53.200	51.392	0.150	37.397	0.9	0.62	11.0	Surcharged
SWP-05	Pipe	SWC-05	SWC-06	53.200	51.294	0.150	45.536	0.9	0.7	13.6	Surcharged
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	49.802	0.100	1.162	0.5	0.02	0.3	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	51.153	0.150	59.924	1.0	1.04	17.7	Surcharged
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.892	0.150	69.540	1.2	1.27	20.7	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.576	0.150	86.225	1.5	1.45	25.8	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.044	0.150	100.394	1.7	1.56	30.4	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	49.858	0.150	131.326	2.3	1.38	40.4	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.275	0.100	31.394	1.3	0.85	10.5	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 180 mins: Summer

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.245	0.045	11.329	1.1	0.4	3.8	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.689	0.100	19.084	1.1	0.66	6.4	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.438	0.074	7.914	0.5	0.14	2.7	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.266	0.150	16.148	0.7	0.3	5.3	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	51.245	0.150	24.415	0.7	0.46	8.0	Surcharged
SWP-04	Pipe	SWC-04	SWC-05	53.200	51.216	0.150	36.905	1.0	0.59	10.5	Surcharged
SWP-05	Pipe	SWC-05	SWC-06	53.200	51.124	0.150	44.923	0.9	0.66	12.8	Surcharged
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	49.791	0.100	1.163	0.4	0.02	0.3	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.991	0.150	59.148	1.0	0.99	16.9	Surcharged
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.749	0.150	68.655	1.1	1.21	19.7	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.455	0.150	85.160	1.4	1.37	24.4	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	49.987	0.150	99.165	1.6	1.47	28.5	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	49.821	0.150	129.724	2.2	1.32	38.5	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.215	0.100	30.999	1.3	0.82	10.2	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 180 mins: Winter

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.239	0.039	12.677	1.0	0.31	2.9	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.679	0.055	21.357	1.1	0.51	4.9	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.434	0.042	8.896	0.5	0.11	2.0	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.200	0.058	18.122	0.7	0.24	4.2	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.965	0.072	27.355	0.8	0.37	6.3	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.829	0.150	41.343	0.9	0.54	9.5	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.759	0.150	50.341	0.9	0.58	11.3	Surcharged
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	49.895	0.100	1.273	0.2	0.03	0.5	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.651	0.150	66.260	0.9	0.87	14.8	Surcharged
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.455	0.150	76.873	1.0	1.05	17.1	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.222	0.150	95.087	1.2	1.19	21.2	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	49.895	0.150	110.702	1.4	1.27	24.7	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	49.895	0.150	144.819	1.8	1.12	32.7	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.059	0.100	34.702	1.0	0.64	8.0	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 240 mins: Summer

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.241	0.040	12.112	1.1	0.33	3.1	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.681	0.058	20.407	1.1	0.55	5.3	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.435	0.043	8.451	0.5	0.12	2.2	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.202	0.059	17.257	0.7	0.26	4.5	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.967	0.092	26.068	0.7	0.39	6.8	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.875	0.150	39.429	0.9	0.56	10.0	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.804	0.150	48.012	0.9	0.59	11.5	Surcharged
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	49.850	0.100	1.229	0.5	0.03	0.5	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.691	0.150	63.188	0.9	0.89	15.1	Surcharged
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.487	0.150	73.327	1.0	1.08	17.6	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.253	0.150	90.782	1.2	1.22	21.8	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	49.866	0.150	105.656	1.4	1.31	25.4	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	49.850	0.150	138.318	1.9	1.16	33.9	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.062	0.100	33.115	1.1	0.69	8.6	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 240 mins: Winter

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.235	0.034	13.552	1.0	0.25	2.4	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.673	0.048	22.850	1.1	0.41	4.0	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.430	0.038	9.453	0.5	0.09	1.6	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.195	0.051	19.309	0.6	0.19	3.4	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.957	0.064	29.177	0.7	0.3	5.1	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.821	0.072	44.130	0.9	0.43	7.7	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.574	0.085	53.738	0.9	0.48	9.4	OK
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	49.961	0.100	1.348	0.3	0.01	0.2	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.296	0.142	70.732	0.9	0.72	12.4	OK
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.140	0.150	82.041	0.9	0.86	14.1	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.001	0.150	101.422	1.0	0.97	17.3	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	49.961	0.150	118.067	1.1	1.04	20.2	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	49.961	0.150	154.492	1.7	0.91	26.7	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.052	0.100	37.100	0.8	0.52	6.5	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 360 mins: Summer

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.235	0.034	13.186	1.0	0.25	2.3	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.673	0.048	22.213	1.1	0.41	3.9	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.430	0.037	9.195	0.5	0.09	1.6	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.195	0.051	18.762	0.6	0.19	3.3	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.957	0.064	28.348	0.7	0.29	5.0	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.820	0.072	42.910	0.9	0.43	7.6	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.573	0.084	52.259	0.9	0.48	9.2	OK
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	49.933	0.100	1.237	0.5	0.02	0.2	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.295	0.116	68.809	0.9	0.71	12.2	OK
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.088	0.150	79.828	0.9	0.86	14.0	OK
SWP-09	Pipe	SWC-08	SWC-09	52.450	49.933	0.150	98.705	1.0	0.97	17.2	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	49.934	0.150	114.845	1.1	1.03	20.1	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	49.933	0.150	150.400	1.7	0.88	25.9	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.051	0.100	36.061	0.8	0.51	6.4	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 360 mins: Winter

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.229	0.029	14.780	0.9	0.18	1.7	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.666	0.040	24.904	1.0	0.3	2.9	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.426	0.032	10.304	0.4	0.06	1.2	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.188	0.043	21.040	0.6	0.14	2.5	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.948	0.053	31.776	0.7	0.22	3.7	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.809	0.060	48.076	0.8	0.31	5.6	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.561	0.070	58.546	0.8	0.35	6.8	OK
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	50.053	0.100	1.397	0.2	0.01	0.2	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.279	0.085	77.085	0.9	0.53	9.0	OK
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.053	0.150	89.125	0.9	0.64	10.4	OK
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.053	0.150	110.169	0.9	0.73	13.0	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.053	0.150	128.235	1.1	0.78	15.1	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.053	0.150	167.796	1.6	0.68	19.8	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.053	0.100	40.340	0.7	0.38	4.7	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 480 mins: Summer

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.231	0.031	13.994	0.9	0.2	1.9	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.668	0.042	23.584	1.0	0.33	3.2	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.427	0.034	9.788	0.4	0.07	1.3	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.190	0.045	19.972	0.6	0.16	2.7	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.951	0.056	30.155	0.7	0.24	4.1	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.812	0.064	45.609	0.9	0.35	6.2	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.565	0.075	55.539	0.9	0.39	7.5	OK
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	49.997	0.100	1.246	0.2	0.02	0.4	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.284	0.091	73.148	0.9	0.58	9.9	OK
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.047	0.147	84.742	0.9	0.71	11.5	OK
SWP-09	Pipe	SWC-08	SWC-09	52.450	49.997	0.150	104.773	1.0	0.8	14.3	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	49.997	0.150	121.949	1.1	0.86	16.7	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	49.997	0.150	159.592	1.6	0.75	21.9	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.045	0.100	38.320	0.8	0.42	5.2	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 480 mins: Winter

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.226	0.026	15.721	0.8	0.15	1.4	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.662	0.064	26.475	0.9	0.24	2.3	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.423	0.029	10.951	0.4	0.05	1.0	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.184	0.038	22.388	0.6	0.11	2.0	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.942	0.047	33.838	0.6	0.17	3.0	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.802	0.053	51.108	0.8	0.25	4.5	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.554	0.062	62.226	0.8	0.28	5.5	OK
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	50.123	0.100	1.544	0.3	0.01	0.2	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.269	0.095	81.934	0.8	0.42	7.2	OK
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.123	0.150	94.598	0.9	0.51	8.3	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.123	0.150	116.961	0.9	0.59	10.4	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.123	0.150	136.036	1.0	0.62	12.1	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.123	0.150	178.086	1.5	0.54	15.8	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.123	0.100	42.769	0.7	0.3	3.8	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 600 mins: Summer

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.228	0.028	14.672	0.9	0.17	1.6	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.664	0.038	24.711	1.0	0.28	2.7	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.425	0.031	10.273	0.4	0.06	1.1	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.187	0.041	20.925	0.6	0.13	2.3	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.946	0.051	31.588	0.6	0.2	3.4	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.807	0.058	47.797	0.8	0.29	5.2	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.559	0.067	58.195	0.8	0.33	6.3	OK
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	50.047	0.100	1.272	0.3	0.02	0.2	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.275	0.081	76.641	0.9	0.49	8.3	OK
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.047	0.150	88.645	0.9	0.6	9.7	OK
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.047	0.150	109.586	0.9	0.68	12.0	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.047	0.150	127.544	1.0	0.73	14.1	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.047	0.150	166.910	1.5	0.63	18.5	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.047	0.100	40.091	0.7	0.35	4.4	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 600 mins: Winter

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.224	0.024	16.423	0.8	0.12	1.1	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.659	0.092	27.681	0.9	0.2	1.9	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.421	0.026	11.467	0.4	0.04	0.8	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.181	0.035	23.420	0.5	0.09	1.6	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.939	0.043	35.409	0.6	0.14	2.5	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.797	0.048	53.543	0.8	0.21	3.8	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.550	0.056	65.196	0.8	0.24	4.6	OK
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	50.180	0.100	1.492	0.2	0.01	0.2	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.262	0.123	85.830	0.8	0.35	6.0	OK
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.180	0.150	99.076	0.8	0.43	7.0	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.180	0.150	122.461	0.9	0.49	8.7	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.180	0.150	142.677	1.0	0.52	10.1	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.180	0.150	186.316	1.4	0.45	13.1	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.180	0.100	44.720	0.7	0.25	3.2	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 720 mins: Summer

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.226	0.026	15.229	0.9	0.15	1.4	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.662	0.048	25.665	0.9	0.24	2.3	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.423	0.029	10.657	0.4	0.05	1.0	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.184	0.038	21.723	0.6	0.11	2.0	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.943	0.047	32.812	0.6	0.17	3.0	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.802	0.053	49.651	0.8	0.25	4.5	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.555	0.062	60.475	0.8	0.28	5.5	OK
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	50.089	0.100	1.557	0.3	0.02	0.3	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.269	0.078	79.624	0.8	0.42	7.2	OK
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.089	0.150	91.984	0.9	0.52	8.4	OK
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.089	0.150	113.736	0.9	0.59	10.4	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.089	0.150	132.369	1.0	0.62	12.0	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.089	0.150	173.142	1.5	0.54	15.8	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.089	0.100	41.569	0.7	0.31	3.8	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Connections Summary Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 720 mins: Winter

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.222	0.022	17.076	0.8	0.11	1.0	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.656	0.100	28.760	0.9	0.17	1.7	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.420	0.025	11.905	0.4	0.04	0.7	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.179	0.033	24.326	0.5	0.08	1.4	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.936	0.040	36.758	0.6	0.13	2.2	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.794	0.045	55.618	0.7	0.18	3.3	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.546	0.052	67.693	0.7	0.2	4.0	OK
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	50.228	0.100	1.645	0.3	0.02	0.2	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.257	0.150	89.042	0.8	0.31	5.2	OK
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.228	0.150	102.752	0.8	0.37	6.1	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.228	0.150	127.006	0.9	0.42	7.5	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.228	0.150	147.794	1.1	0.45	8.7	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.228	0.150	193.310	1.4	0.39	11.3	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.228	0.100	46.463	0.7	0.22	2.7	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 960 mins: Summer

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.223	0.023	16.159	0.8	0.12	1.1	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.658	0.083	27.242	0.9	0.19	1.9	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.421	0.026	11.287	0.4	0.04	0.8	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.181	0.034	23.048	0.5	0.09	1.6	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.938	0.042	34.827	0.6	0.14	2.4	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.796	0.047	52.703	0.8	0.2	3.6	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.548	0.054	64.181	0.8	0.22	4.4	OK
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	50.160	0.100	1.434	0.4	0.01	0.2	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.260	0.113	84.497	0.8	0.34	5.7	OK
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.161	0.150	97.534	0.8	0.41	6.7	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.161	0.150	120.547	0.9	0.47	8.3	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.161	0.150	140.167	1.0	0.49	9.6	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.161	0.150	183.406	1.4	0.43	12.5	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.161	0.100	44.035	0.7	0.24	3.0	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Connections Summary Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 960 mins: Winter

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.220	0.020	18.114	0.7	0.08	0.8	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.653	0.100	30.535	0.8	0.14	1.3	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.418	0.022	12.655	0.3	0.03	0.6	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.176	0.029	25.825	0.5	0.07	1.1	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.932	0.036	38.995	0.5	0.1	1.7	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.789	0.040	58.947	0.7	0.15	2.6	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.541	0.058	71.800	0.7	0.16	3.2	OK
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	50.306	0.100	1.760	0.2	0.01	0.2	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.306	0.150	94.307	0.7	0.24	4.2	OK
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.306	0.150	108.784	0.8	0.3	4.8	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.306	0.150	134.523	0.8	0.34	6.0	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.306	0.150	156.576	1.0	0.36	6.9	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.306	0.150	204.748	1.3	0.31	9.0	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.306	0.100	49.214	0.7	0.17	2.2	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 1440 mins: Summer

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.220	0.020	17.526	0.7	0.08	0.8	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.653	0.100	29.569	0.8	0.14	1.3	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.418	0.022	12.271	0.3	0.03	0.6	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.176	0.029	25.009	0.5	0.07	1.1	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.932	0.036	37.759	0.5	0.1	1.7	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.789	0.040	57.147	0.7	0.15	2.6	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.541	0.046	69.535	0.7	0.16	3.2	OK
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	50.263	0.100	1.808	0.2	0.01	0.2	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.263	0.150	91.401	0.7	0.24	4.2	OK
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.263	0.150	105.479	0.8	0.3	4.8	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.263	0.150	130.393	0.8	0.34	6.0	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.263	0.150	151.815	1.0	0.36	6.9	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.263	0.150	198.506	1.2	0.31	9.0	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.263	0.100	47.697	0.7	0.17	2.2	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Pump Blockage Event 24hrs storage	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: 1440 mins: Winter

Connection	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	Pipe	SWC-13	SWC-14	53.200	51.217	0.017	19.608	0.7	0.06	0.6	OK
SWP-14	Pipe	SWC-14	SWC-15	53.000	50.650	0.100	33.073	0.7	0.1	1.0	OK
SWP-01	Pipe	SWC-01	SWC-02	53.400	51.415	0.019	13.728	0.3	0.02	0.4	OK
SWP-02	Pipe	SWC-02	SWC-03	53.500	51.172	0.025	27.924	0.4	0.05	0.8	OK
SWP-03	Pipe	SWC-03	SWC-04	53.750	50.927	0.030	42.145	0.5	0.07	1.2	OK
SWP-04	Pipe	SWC-04	SWC-05	53.200	50.783	0.034	63.757	0.6	0.1	1.9	OK
SWP-05	Pipe	SWC-05	SWC-06	53.200	50.535	0.112	77.630	0.6	0.12	2.3	OK
SWP-12	Pipe	Att Tank	SWC-16 - Pump	50.964	50.418	0.100	1.989	0.2	0.01	0.1	Surcharged
SWP-07	Pipe	SWC-06	SWC-07	53.200	50.418	0.150	101.727	0.7	0.18	3.0	Surcharged
SWP-08	Pipe	SWC-07	SWC-08	52.900	50.418	0.150	117.306	0.7	0.21	3.5	Surcharged
SWP-09	Pipe	SWC-08	SWC-09	52.450	50.418	0.150	145.159	0.7	0.24	4.3	Surcharged
SWP-10	Pipe	SWC-09	SWC-10	51.300	50.418	0.150	168.793	0.9	0.26	5.0	Surcharged
SWP-11	Pipe	SWC-10	Att Tank	51.400	50.418	0.150	221.073	1.2	0.22	6.5	Surcharged
SWC-16	Pipe	SWC-15	SWC-10	52.650	50.418	0.100	53.220	0.6	0.13	1.6	Surcharged



Phase
FSR: 100 years: Increase Rainfall (%): +45: 15 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	135.7	59.789	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 15 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	138.9	66.865	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 30 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	89.7	78.155	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 30 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	94.3	87.474	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 60 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	78.0	97.734	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 60 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	70.2	109.473	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 120 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	56.1	118.446	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 120 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	45.2	132.524	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 180 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	43.8	130.808	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 180 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	33.8	146.494	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 240 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	36.2	139.706	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 240 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	27.3	156.416	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 360 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	26.9	152.096	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 360 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	19.9	170.369	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 480 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	21.9	161.668	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 480 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	15.9	181.068	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 600 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	18.4	169.357	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 600 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	13.3	189.673	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 720 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	16.0	175.911	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 720 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	11.5	197.005	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 960 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	12.7	186.623	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 960 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	9.2	209.087	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 1440 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	9.2	202.451	0.0	0.000



Phase
FSR: 100 years: Increase Rainfall (%): +45: 1440 mins: Winter

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
SWC-16 - Pump			0.0	0.000
TOTAL	6.6	226.219	0.0	0.000

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
SWC-13	Outlet	SWP-13	Free Discharge
SWC-14	Outlet	SWP-14	Free Discharge
SWC-15	Outlet	SWC-16	Free Discharge
SWC-09	Outlet	SWP-10	Free Discharge
SWC-08	Outlet	SWP-09	Free Discharge
SWC-07	Outlet	SWP-08	Free Discharge
SWC-01	Outlet	SWP-01	Free Discharge
SWC-02	Outlet	SWP-02	Free Discharge
SWC-03	Outlet	SWP-03	Free Discharge
SWC-04	Outlet	SWP-04	Free Discharge
SWC-05	Outlet	SWP-05	Free Discharge
SWC-06	Outlet	SWP-07	Free Discharge
SWC-16 - Pump	Outlet	SWP-17	Pump
	Invert Elevation (m)	48.800	
	Depth (m)	Outflow (L/s)	
	0.100	0.4	
	2.000	0.4	
SWC-10	Outlet	SWP-11	Free Discharge
SWC-17	Outlet	SWP-18	Free Discharge



Att Tank

Type : Cellular Storage

Dimensions

Exceedance Elevation (m)	51.000
Depth (m)	1.600
Base Elevation (m)	48.900
Number of Crates Long	19
Number of Crates Wide	16
Number of Crates High	4
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	231.540

Inlets

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	SWP-11
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	SWP-12
Outlet Type	Free Discharge

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analyzed (ha)
Catchment Area	SWC-03		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (1)	SWC-04		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (1) (1)	SWC-05		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (2)	SWC-02		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (3)	SWC-01		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (4)	SWC-06		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (5)	SWC-06		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (6)	SWC-13		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (7)	SWC-14		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (8)	SWC-15		Time of Concentration	0.010	100	0	100	0.010
Catchment Area (9)	SWC-15		Time of Concentration	0.011	100	0	100	0.011
Catchment Area (10)	SWC-09		Time of Concentration	0.026	100	0	100	0.026
Catchment Area (11)	SWC-08		Time of Concentration	0.030	100	0	100	0.030
Catchment Area (12)	SWC-07		Time of Concentration	0.017	100	0	100	0.017
Catchment Area (13)	SWC-13		Time of Concentration	0.006	100	0	100	0.006
Catchment Area (14)	SWC-04		Time of Concentration	0.008	100	0	100	0.008
TOTAL		**0.0**		**0.236**				**0.236**

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Title: Rainfall Analysis Criteria	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England and Wales
M5-60 (mm)	18.8
Ratio R	0.400
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	45.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Inflow

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.9	4.197
Catchment Area (1)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.7	4.107
Catchment Area (2)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.9	4.185
Catchment Area (3)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.5	4.025
Catchment Area (1) (1)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.7	4.083
Catchment Area (4)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	7.6	3.565
Catchment Area (5)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	7.8	3.664
Catchment Area (6)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.4	3.944
Catchment Area (7)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.4	3.944
Catchment Area (8)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	6.0	2.818
Catchment Area (9)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	6.9	3.237
Catchment Area (10)	FSR: 100 years: +45 %: 15 mins: Winter	0.03	15.6	7.349
Catchment Area (11)	FSR: 100 years: +45 %: 15 mins: Winter	0.03	17.9	8.451
Catchment Area (12)	FSR: 100 years: +45 %: 15 mins: Winter	0.02	10.2	4.820
Catchment Area (13)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	3.9	1.813
Catchment Area (14)	FSR: 100 years: +45 %: 15 mins: Winter	0.01	4.8	2.255

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	FSR: 100 years: +45 %: 15 mins: Winter	53.200	51.200	52.148	0.948	12.2	0.151	0.000	6.2	5.704	Surcharged
SWC-14	FSR: 100 years: +45 %: 15 mins: Winter	53.000	50.628	51.948	1.319	14.6	0.210	0.000	11.0	9.683	Surcharged
SWC-15	FSR: 100 years: +45 %: 15 mins: Winter	52.650	50.000	51.291	1.291	21.6	0.205	0.000	17.3	15.741	Surcharged
SWC-09	FSR: 100 years: +45 %: 15 mins: Winter	51.300	49.500	50.696	1.196	46.7	0.190	0.000	43.0	50.339	Surcharged
SWC-08	FSR: 100 years: +45 %: 15 mins: Winter	52.450	49.750	51.617	1.867	38.3	0.297	0.000	36.5	43.102	Surcharged
SWC-07	FSR: 100 years: +45 %: 15 mins: Winter	52.900	49.950	52.128	2.178	28.1	0.346	0.000	28.7	34.752	Surcharged
SWC-01	FSR: 100 years: +45 %: 15 mins: Winter	53.400	51.400	52.909	1.509	8.5	0.240	0.000	3.8	4.019	Surcharged
SWC-02	FSR: 100 years: +45 %: 15 mins: Winter	53.500	51.150	52.902	1.752	9.8	0.279	0.000	7.6	8.200	Surcharged
SWC-03	FSR: 100 years: +45 %: 15 mins: Winter	53.750	50.900	52.874	1.974	11.2	0.314	0.000	11.4	12.413	Surcharged
SWC-04	FSR: 100 years: +45 %: 15 mins: Winter	53.200	50.750	52.834	2.084	17.1	0.331	0.000	15.3	18.754	Surcharged
SWC-05	FSR: 100 years: +45 %: 15 mins: Winter	53.200	50.500	52.706	2.206	18.1	0.351	0.000	19.2	22.812	Surcharged
SWC-06	FSR: 100 years: +45 %: 15 mins: Winter	53.200	50.200	52.508	2.308	25.8	0.367	0.000	23.6	29.997	Surcharged
SWC-16 - Pump	FSR: 100 years: +45 %: 2160 mins: Winter	51.000	48.800	50.222	1.422	0.4	0.904	0.000	0.4	101.522	Surcharged
SWC-10	FSR: 100 years: +45 %: 15 mins: Winter	51.400	49.450	50.357	0.907	60.4	0.257	0.000	61.8	65.994	Surcharged
SWC-17	FSR: 100 years: +45 %: 15 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	0.568	OK
Y- Junction	FSR: 100 years: +45 %: 15 mins: Summer		50.470	50.485	0.015	0.4			0.4	0.568	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)
Att Tank	FSR: 100 years: +45 %: 2160 mins: Winter	50.222	50.222	1.322	1.322	4.8	190.867	0.000	0.000	0.4	102.872	3653	17.566

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

Status
OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.780	0.100	6.714	0.9	0.74	7.0	Surcharged
SWP-14	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-14	SWC-15	53.000	51.948	0.100	9.683	1.4	1.14	11.0	Surcharged
SWP-01	FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-01	SWC-02	53.400	52.548	0.150	4.699	0.5	0.28	5.3	Surcharged
SWP-02	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-02	SWC-03	53.500	52.902	0.150	8.200	0.7	0.43	7.6	Surcharged
SWP-03	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-03	SWC-04	53.750	52.874	0.150	12.413	0.7	0.66	11.4	Surcharged
SWP-04	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-04	SWC-05	53.200	52.834	0.150	18.754	0.9	0.86	15.3	Surcharged
SWP-05	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-05	SWC-06	53.200	52.706	0.150	22.812	1.1	0.98	19.2	Surcharged
SWP-12	FSR: 100 years: +45 %: 60 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.557	0.100	3.548	0.3	0.1	1.5	Surcharged
SWP-07	FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-06	SWC-07	53.200	52.377	0.150	39.484	1.4	1.42	24.2	Surcharged
SWP-08	FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-07	SWC-08	52.900	51.973	0.150	45.830	1.6	1.77	28.8	Surcharged
SWP-09	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-08	SWC-09	52.450	51.617	0.150	43.102	2.1	2.05	36.5	Surcharged
SWP-10	FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.655	0.150	66.583	2.5	2.26	43.9	Surcharged
SWP-11	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.357	0.150	65.994	3.5	2.11	61.8	Surcharged
SWC-16	FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-15	SWC-10	52.650	51.291	0.100	15.741	2.2	1.39	17.3	Surcharged

SWP-17	FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.302	0.008	0.587	0.0	0.07	0.4	Surcharged
SWP-18	FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	0.568	0.5	0.05	0.4	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Phase Management Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		



Phase
FSR: 100 years: Increase Rainfall (%): +45: 15 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
Y- Junction			0.4	0.568
TOTAL	135.6	59.386	0.4	0.568

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Junctions Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
SWC-13	Outlet	SWP-13	Free Discharge
SWC-14	Outlet	SWP-14	Free Discharge
SWC-15	Outlet	SWC-16	Free Discharge
SWC-09	Outlet	SWP-10	Free Discharge
SWC-08	Outlet	SWP-09	Free Discharge
SWC-07	Outlet	SWP-08	Free Discharge
SWC-01	Outlet	SWP-01	Free Discharge
SWC-02	Outlet	SWP-02	Free Discharge
SWC-03	Outlet	SWP-03	Free Discharge
SWC-04	Outlet	SWP-04	Free Discharge
SWC-05	Outlet	SWP-05	Free Discharge
SWC-06	Outlet	SWP-07	Free Discharge
SWC-16 - Pump	Outlet	SWP-17	Pump
	Invert Elevation (m)	48.800	
	Depth (m)	Outflow (L/s)	
	0.100	0.4	
	2.000	0.4	
SWC-10	Outlet	SWP-11	Free Discharge
SWC-17	Outlet	SWP-18	Free Discharge



Att Tank

Type : Cellular Storage

Dimensions

Exceedance Elevation (m)	51.000
Depth (m)	1.600
Base Elevation (m)	48.900
Number of Crates Long	19
Number of Crates Wide	16
Number of Crates High	4
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	231.540

Inlets

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	SWP-11
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	SWP-12
Outlet Type	Free Discharge

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analyzed (ha)
Catchment Area	SWC-03		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (1)	SWC-04		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (1) (1)	SWC-05		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (2)	SWC-02		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (3)	SWC-01		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (4)	SWC-06		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (5)	SWC-06		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (6)	SWC-13		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (7)	SWC-14		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (8)	SWC-15		Time of Concentration	0.010	100	0	100	0.010
Catchment Area (9)	SWC-15		Time of Concentration	0.011	100	0	100	0.011
Catchment Area (10)	SWC-09		Time of Concentration	0.026	100	0	100	0.026
Catchment Area (11)	SWC-08		Time of Concentration	0.030	100	0	100	0.030
Catchment Area (12)	SWC-07		Time of Concentration	0.017	100	0	100	0.017
Catchment Area (13)	SWC-13		Time of Concentration	0.006	100	0	100	0.006
Catchment Area (14)	SWC-04		Time of Concentration	0.008	100	0	100	0.008
TOTAL		**0.0**		**0.236**				**0.236**

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Title: Rainfall Analysis Criteria	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England and Wales
M5-60 (mm)	18.8
Ratio R	0.400
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	45.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area: Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.01	8.5	3.748
FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.9	4.197
FSR: 100 years: +45 %: 30 mins: Summer	0.01	5.7	4.909
FSR: 100 years: +45 %: 30 mins: Winter	0.01	6.0	5.497
FSR: 100 years: +45 %: 60 mins: Summer	0.01	4.9	6.155
FSR: 100 years: +45 %: 60 mins: Winter	0.01	4.4	6.888
FSR: 100 years: +45 %: 120 mins: Summer	0.01	3.5	7.469
FSR: 100 years: +45 %: 120 mins: Winter	0.01	2.9	8.351
FSR: 100 years: +45 %: 180 mins: Summer	0.01	2.8	8.249
FSR: 100 years: +45 %: 180 mins: Winter	0.01	2.1	9.233
FSR: 100 years: +45 %: 240 mins: Summer	0.01	2.3	8.813
FSR: 100 years: +45 %: 240 mins: Winter	0.01	1.7	9.868
FSR: 100 years: +45 %: 360 mins: Summer	0.01	1.7	9.586
FSR: 100 years: +45 %: 360 mins: Winter	0.01	1.3	10.737

FSR: 100 years: +45 %: 480 mins: Summer	0.01	1.4	10.184
FSR: 100 years: +45 %: 480 mins: Winter	0.01	1.0	11.450
FSR: 100 years: +45 %: 600 mins: Summer	0.01	1.2	10.664
FSR: 100 years: +45 %: 600 mins: Winter	0.01	0.8	11.990
FSR: 100 years: +45 %: 720 mins: Summer	0.01	1.0	11.090
FSR: 100 years: +45 %: 720 mins: Winter	0.01	0.7	12.434
FSR: 100 years: +45 %: 960 mins: Summer	0.01	0.8	11.779
FSR: 100 years: +45 %: 960 mins: Winter	0.01	0.6	13.171
FSR: 100 years: +45 %: 1440 mins: Summer	0.01	0.6	12.751
FSR: 100 years: +45 %: 1440 mins: Winter	0.01	0.4	14.221
FSR: 100 years: +45 %: 2160 mins: Summer	0.01	0.4	13.879
FSR: 100 years: +45 %: 2160 mins: Winter	0.01	0.3	15.391
FSR: 100 years: +45 %: 2880 mins: Summer	0.01	0.3	14.586
FSR: 100 years: +45 %: 2880 mins: Winter	0.01	0.2	16.320
FSR: 100 years: +45 %: 4320 mins: Summer	0.01	0.2	15.666
FSR: 100 years: +45 %: 4320 mins: Winter	0.01	0.2	17.568
FSR: 100 years: +45 %: 5760 mins: Summer	0.01	0.2	16.800

FSR: 100 years: +45 %: 5760 mins: Winter	0.01	0.1	18.378
FSR: 100 years: +45 %: 7200 mins: Summer	0.01	0.2	17.118
FSR: 100 years: +45 %: 7200 mins: Winter	0.01	0.1	19.356
FSR: 100 years: +45 %: 8640 mins: Summer	0.01	0.1	17.526
FSR: 100 years: +45 %: 8640 mins: Winter	0.01	0.1	20.430
FSR: 100 years: +45 %: 10080 mins: Summer	0.01	0.1	18.150
FSR: 100 years: +45 %: 10080 mins: Winter	0.01	0.1	21.060

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (1): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.01	8.3	3.667
FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.7	4.107
FSR: 100 years: +45 %: 30 mins: Summer	0.01	5.5	4.807
FSR: 100 years: +45 %: 30 mins: Winter	0.01	5.8	5.383
FSR: 100 years: +45 %: 60 mins: Summer	0.01	4.8	6.023
FSR: 100 years: +45 %: 60 mins: Winter	0.01	4.3	6.744
FSR: 100 years: +45 %: 120 mins: Summer	0.01	3.5	7.313
FSR: 100 years: +45 %: 120 mins: Winter	0.01	2.8	8.183
FSR: 100 years: +45 %: 180 mins: Summer	0.01	2.7	8.063
FSR: 100 years: +45 %: 180 mins: Winter	0.01	2.1	9.035
FSR: 100 years: +45 %: 240 mins: Summer	0.01	2.2	8.627
FSR: 100 years: +45 %: 240 mins: Winter	0.01	1.7	9.658
FSR: 100 years: +45 %: 360 mins: Summer	0.01	1.7	9.399
FSR: 100 years: +45 %: 360 mins: Winter	0.01	1.2	10.521

FSR: 100 years: +45 %: 480 mins: Summer	0.01	1.4	9.968
FSR: 100 years: +45 %: 480 mins: Winter	0.01	1.0	11.150
FSR: 100 years: +45 %: 600 mins: Summer	0.01	1.1	10.466
FSR: 100 years: +45 %: 600 mins: Winter	0.01	0.8	11.696
FSR: 100 years: +45 %: 720 mins: Summer	0.01	1.0	10.874
FSR: 100 years: +45 %: 720 mins: Winter	0.01	0.7	12.175
FSR: 100 years: +45 %: 960 mins: Summer	0.01	0.8	11.527
FSR: 100 years: +45 %: 960 mins: Winter	0.01	0.6	12.895
FSR: 100 years: +45 %: 1440 mins: Summer	0.01	0.6	12.487
FSR: 100 years: +45 %: 1440 mins: Winter	0.01	0.4	13.939
FSR: 100 years: +45 %: 2160 mins: Summer	0.01	0.4	13.531
FSR: 100 years: +45 %: 2160 mins: Winter	0.01	0.3	15.109
FSR: 100 years: +45 %: 2880 mins: Summer	0.01	0.3	14.334
FSR: 100 years: +45 %: 2880 mins: Winter	0.01	0.2	15.954
FSR: 100 years: +45 %: 4320 mins: Summer	0.01	0.2	15.336
FSR: 100 years: +45 %: 4320 mins: Winter	0.01	0.2	17.256
FSR: 100 years: +45 %: 5760 mins: Summer	0.01	0.2	16.524

FSR: 100 years: +45 %: 5760 mins: Winter	0.01	0.1	17.844
FSR: 100 years: +45 %: 7200 mins: Summer	0.01	0.2	16.764
FSR: 100 years: +45 %: 7200 mins: Winter	0.01	0.1	19.092
FSR: 100 years: +45 %: 8640 mins: Summer	0.01	0.1	17.118
FSR: 100 years: +45 %: 8640 mins: Winter	0.01	0.1	19.908
FSR: 100 years: +45 %: 10080 mins: Summer	0.01	0.1	18.006
FSR: 100 years: +45 %: 10080 mins: Winter	0.01	0.1	19.710

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (2): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.01	8.4	3.742
FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.9	4.185
FSR: 100 years: +45 %: 30 mins: Summer	0.01	5.7	4.903
FSR: 100 years: +45 %: 30 mins: Winter	0.01	5.9	5.491
FSR: 100 years: +45 %: 60 mins: Summer	0.01	4.9	6.137
FSR: 100 years: +45 %: 60 mins: Winter	0.01	4.4	6.888
FSR: 100 years: +45 %: 120 mins: Summer	0.01	3.5	7.451
FSR: 100 years: +45 %: 120 mins: Winter	0.01	2.9	8.351
FSR: 100 years: +45 %: 180 mins: Summer	0.01	2.8	8.243
FSR: 100 years: +45 %: 180 mins: Winter	0.01	2.1	9.227
FSR: 100 years: +45 %: 240 mins: Summer	0.01	2.3	8.807
FSR: 100 years: +45 %: 240 mins: Winter	0.01	1.7	9.856
FSR: 100 years: +45 %: 360 mins: Summer	0.01	1.7	9.567
FSR: 100 years: +45 %: 360 mins: Winter	0.01	1.3	10.737

FSR: 100 years: +45 %: 480 mins: Summer	0.01	1.4	10.184
FSR: 100 years: +45 %: 480 mins: Winter	0.01	1.0	11.438
FSR: 100 years: +45 %: 600 mins: Summer	0.01	1.2	10.652
FSR: 100 years: +45 %: 600 mins: Winter	0.01	0.8	11.954
FSR: 100 years: +45 %: 720 mins: Summer	0.01	1.0	11.066
FSR: 100 years: +45 %: 720 mins: Winter	0.01	0.7	12.422
FSR: 100 years: +45 %: 960 mins: Summer	0.01	0.8	11.761
FSR: 100 years: +45 %: 960 mins: Winter	0.01	0.6	13.171
FSR: 100 years: +45 %: 1440 mins: Summer	0.01	0.6	12.739
FSR: 100 years: +45 %: 1440 mins: Winter	0.01	0.4	14.197
FSR: 100 years: +45 %: 2160 mins: Summer	0.01	0.4	13.837
FSR: 100 years: +45 %: 2160 mins: Winter	0.01	0.3	15.367
FSR: 100 years: +45 %: 2880 mins: Summer	0.01	0.3	14.556
FSR: 100 years: +45 %: 2880 mins: Winter	0.01	0.2	16.314
FSR: 100 years: +45 %: 4320 mins: Summer	0.01	0.2	15.660
FSR: 100 years: +45 %: 4320 mins: Winter	0.01	0.2	17.526
FSR: 100 years: +45 %: 5760 mins: Summer	0.01	0.2	16.800

FSR: 100 years: +45 %: 5760 mins: Winter	0.01	0.1	18.318
FSR: 100 years: +45 %: 7200 mins: Summer	0.01	0.2	17.112
FSR: 100 years: +45 %: 7200 mins: Winter	0.01	0.1	19.350
FSR: 100 years: +45 %: 8640 mins: Summer	0.01	0.1	17.430
FSR: 100 years: +45 %: 8640 mins: Winter	0.01	0.1	20.430
FSR: 100 years: +45 %: 10080 mins: Summer	0.01	0.1	18.150
FSR: 100 years: +45 %: 10080 mins: Winter	0.01	0.1	21.060

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (3): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.01	8.1	3.594
FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.5	4.025
FSR: 100 years: +45 %: 30 mins: Summer	0.01	5.4	4.711
FSR: 100 years: +45 %: 30 mins: Winter	0.01	5.7	5.281
FSR: 100 years: +45 %: 60 mins: Summer	0.01	4.7	5.903
FSR: 100 years: +45 %: 60 mins: Winter	0.01	4.3	6.612
FSR: 100 years: +45 %: 120 mins: Summer	0.01	3.4	7.169
FSR: 100 years: +45 %: 120 mins: Winter	0.01	2.7	8.027
FSR: 100 years: +45 %: 180 mins: Summer	0.01	2.6	7.912
FSR: 100 years: +45 %: 180 mins: Winter	0.01	2.0	8.896
FSR: 100 years: +45 %: 240 mins: Summer	0.01	2.2	8.453
FSR: 100 years: +45 %: 240 mins: Winter	0.01	1.6	9.454
FSR: 100 years: +45 %: 360 mins: Summer	0.01	1.6	9.195
FSR: 100 years: +45 %: 360 mins: Winter	0.01	1.2	10.304

FSR: 100 years: +45 %: 480 mins: Summer	0.01	1.3	9.788
FSR: 100 years: +45 %: 480 mins: Winter	0.01	1.0	10.952
FSR: 100 years: +45 %: 600 mins: Summer	0.01	1.1	10.274
FSR: 100 years: +45 %: 600 mins: Winter	0.01	0.8	11.468
FSR: 100 years: +45 %: 720 mins: Summer	0.01	1.0	10.657
FSR: 100 years: +45 %: 720 mins: Winter	0.01	0.7	11.905
FSR: 100 years: +45 %: 960 mins: Summer	0.01	0.8	11.287
FSR: 100 years: +45 %: 960 mins: Winter	0.01	0.6	12.655
FSR: 100 years: +45 %: 1440 mins: Summer	0.01	0.6	12.271
FSR: 100 years: +45 %: 1440 mins: Winter	0.01	0.4	13.729
FSR: 100 years: +45 %: 2160 mins: Summer	0.01	0.4	13.291
FSR: 100 years: +45 %: 2160 mins: Winter	0.01	0.3	14.875
FSR: 100 years: +45 %: 2880 mins: Summer	0.01	0.3	14.076
FSR: 100 years: +45 %: 2880 mins: Winter	0.01	0.2	15.630
FSR: 100 years: +45 %: 4320 mins: Summer	0.01	0.2	15.138
FSR: 100 years: +45 %: 4320 mins: Winter	0.01	0.2	17.046
FSR: 100 years: +45 %: 5760 mins: Summer	0.01	0.2	16.374

FSR: 100 years: +45 %: 5760 mins: Winter	0.01	0.1	17.748
FSR: 100 years: +45 %: 7200 mins: Summer	0.01	0.2	16.656
FSR: 100 years: +45 %: 7200 mins: Winter	0.01	0.1	18.822
FSR: 100 years: +45 %: 8640 mins: Summer	0.01	0.1	17.004
FSR: 100 years: +45 %: 8640 mins: Winter	0.01	0.1	19.590
FSR: 100 years: +45 %: 10080 mins: Summer	0.01	0.1	17.424
FSR: 100 years: +45 %: 10080 mins: Winter	0.01	0.1	19.356

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (1) (1): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.01	8.2	3.649
FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.7	4.083
FSR: 100 years: +45 %: 30 mins: Summer	0.01	5.5	4.777
FSR: 100 years: +45 %: 30 mins: Winter	0.01	5.8	5.353
FSR: 100 years: +45 %: 60 mins: Summer	0.01	4.8	5.993
FSR: 100 years: +45 %: 60 mins: Winter	0.01	4.3	6.720
FSR: 100 years: +45 %: 120 mins: Summer	0.01	3.5	7.265
FSR: 100 years: +45 %: 120 mins: Winter	0.01	2.8	8.147
FSR: 100 years: +45 %: 180 mins: Summer	0.01	2.7	8.021
FSR: 100 years: +45 %: 180 mins: Winter	0.01	2.1	9.005
FSR: 100 years: +45 %: 240 mins: Summer	0.01	2.2	8.591
FSR: 100 years: +45 %: 240 mins: Winter	0.01	1.7	9.610
FSR: 100 years: +45 %: 360 mins: Summer	0.01	1.6	9.351
FSR: 100 years: +45 %: 360 mins: Winter	0.01	1.2	10.473

FSR: 100 years: +45 %: 480 mins: Summer	0.01	1.4	9.932
FSR: 100 years: +45 %: 480 mins: Winter	0.01	1.0	11.120
FSR: 100 years: +45 %: 600 mins: Summer	0.01	1.1	10.400
FSR: 100 years: +45 %: 600 mins: Winter	0.01	0.8	11.654
FSR: 100 years: +45 %: 720 mins: Summer	0.01	1.0	10.825
FSR: 100 years: +45 %: 720 mins: Winter	0.01	0.7	12.073
FSR: 100 years: +45 %: 960 mins: Summer	0.01	0.8	11.479
FSR: 100 years: +45 %: 960 mins: Winter	0.01	0.6	12.847
FSR: 100 years: +45 %: 1440 mins: Summer	0.01	0.6	12.385
FSR: 100 years: +45 %: 1440 mins: Winter	0.01	0.4	13.867
FSR: 100 years: +45 %: 2160 mins: Summer	0.01	0.4	13.477
FSR: 100 years: +45 %: 2160 mins: Winter	0.01	0.3	14.989
FSR: 100 years: +45 %: 2880 mins: Summer	0.01	0.3	14.244
FSR: 100 years: +45 %: 2880 mins: Winter	0.01	0.2	15.906
FSR: 100 years: +45 %: 4320 mins: Summer	0.01	0.2	15.240
FSR: 100 years: +45 %: 4320 mins: Winter	0.01	0.2	17.160
FSR: 100 years: +45 %: 5760 mins: Summer	0.01	0.2	16.518

FSR: 100 years: +45 %: 5760 mins: Winter	0.01	0.1	17.832
FSR: 100 years: +45 %: 7200 mins: Summer	0.01	0.2	16.764
FSR: 100 years: +45 %: 7200 mins: Winter	0.01	0.1	18.930
FSR: 100 years: +45 %: 8640 mins: Summer	0.01	0.1	17.112
FSR: 100 years: +45 %: 8640 mins: Winter	0.01	0.1	19.806
FSR: 100 years: +45 %: 10080 mins: Summer	0.01	0.1	17.892
FSR: 100 years: +45 %: 10080 mins: Winter	0.01	0.1	19.710

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (4): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.01	7.2	3.188
FSR: 100 years: +45 %: 15 mins: Winter	0.01	7.6	3.565
FSR: 100 years: +45 %: 30 mins: Summer	0.01	4.8	4.170
FSR: 100 years: +45 %: 30 mins: Winter	0.01	5.1	4.680
FSR: 100 years: +45 %: 60 mins: Summer	0.01	4.2	5.224
FSR: 100 years: +45 %: 60 mins: Winter	0.01	3.8	5.861
FSR: 100 years: +45 %: 120 mins: Summer	0.01	3.0	6.346
FSR: 100 years: +45 %: 120 mins: Winter	0.01	2.4	7.096
FSR: 100 years: +45 %: 180 mins: Summer	0.01	2.3	7.012
FSR: 100 years: +45 %: 180 mins: Winter	0.01	1.8	7.852
FSR: 100 years: +45 %: 240 mins: Summer	0.01	1.9	7.492
FSR: 100 years: +45 %: 240 mins: Winter	0.01	1.5	8.380
FSR: 100 years: +45 %: 360 mins: Summer	0.01	1.4	8.169
FSR: 100 years: +45 %: 360 mins: Winter	0.01	1.1	9.140

FSR: 100 years: +45 %: 480 mins: Summer	0.01	1.2	8.690
FSR: 100 years: +45 %: 480 mins: Winter	0.01	0.9	9.710
FSR: 100 years: +45 %: 600 mins: Summer	0.01	1.0	9.092
FSR: 100 years: +45 %: 600 mins: Winter	0.01	0.7	10.171
FSR: 100 years: +45 %: 720 mins: Summer	0.01	0.9	9.439
FSR: 100 years: +45 %: 720 mins: Winter	0.01	0.6	10.561
FSR: 100 years: +45 %: 960 mins: Summer	0.01	0.7	10.021
FSR: 100 years: +45 %: 960 mins: Winter	0.01	0.5	11.257
FSR: 100 years: +45 %: 1440 mins: Summer	0.01	0.5	10.861
FSR: 100 years: +45 %: 1440 mins: Winter	0.01	0.4	12.133
FSR: 100 years: +45 %: 2160 mins: Summer	0.01	0.4	11.737
FSR: 100 years: +45 %: 2160 mins: Winter	0.01	0.3	13.224
FSR: 100 years: +45 %: 2880 mins: Summer	0.01	0.3	12.528
FSR: 100 years: +45 %: 2880 mins: Winter	0.01	0.2	14.064
FSR: 100 years: +45 %: 4320 mins: Summer	0.01	0.2	13.572
FSR: 100 years: +45 %: 4320 mins: Winter	0.01	0.2	15.198
FSR: 100 years: +45 %: 5760 mins: Summer	0.01	0.2	14.094

FSR: 100 years: +45 %: 5760 mins: Winter	0.01	0.1	15.756
FSR: 100 years: +45 %: 7200 mins: Summer	0.01	0.1	14.436
FSR: 100 years: +45 %: 7200 mins: Winter	0.01	0.1	16.854
FSR: 100 years: +45 %: 8640 mins: Summer	0.01	0.1	15.234
FSR: 100 years: +45 %: 8640 mins: Winter	0.01	0.1	16.692
FSR: 100 years: +45 %: 10080 mins: Summer	0.01	0.1	15.594
FSR: 100 years: +45 %: 10080 mins: Winter	0.01	0.1	17.064

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (5): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.01	7.4	3.272
FSR: 100 years: +45 %: 15 mins: Winter	0.01	7.8	3.664
FSR: 100 years: +45 %: 30 mins: Summer	0.01	4.9	4.297
FSR: 100 years: +45 %: 30 mins: Winter	0.01	5.2	4.800
FSR: 100 years: +45 %: 60 mins: Summer	0.01	4.3	5.374
FSR: 100 years: +45 %: 60 mins: Winter	0.01	3.9	6.023
FSR: 100 years: +45 %: 120 mins: Summer	0.01	3.1	6.521
FSR: 100 years: +45 %: 120 mins: Winter	0.01	2.5	7.294
FSR: 100 years: +45 %: 180 mins: Summer	0.01	2.4	7.210
FSR: 100 years: +45 %: 180 mins: Winter	0.01	1.9	8.074
FSR: 100 years: +45 %: 240 mins: Summer	0.01	2.0	7.684
FSR: 100 years: +45 %: 240 mins: Winter	0.01	1.5	8.620
FSR: 100 years: +45 %: 360 mins: Summer	0.01	1.5	8.379
FSR: 100 years: +45 %: 360 mins: Winter	0.01	1.1	9.386

FSR: 100 years: +45 %: 480 mins: Summer	0.01	1.2	8.912
FSR: 100 years: +45 %: 480 mins: Winter	0.01	0.9	9.986
FSR: 100 years: +45 %: 600 mins: Summer	0.01	1.0	9.344
FSR: 100 years: +45 %: 600 mins: Winter	0.01	0.7	10.454
FSR: 100 years: +45 %: 720 mins: Summer	0.01	0.9	9.697
FSR: 100 years: +45 %: 720 mins: Winter	0.01	0.6	10.837
FSR: 100 years: +45 %: 960 mins: Summer	0.01	0.7	10.285
FSR: 100 years: +45 %: 960 mins: Winter	0.01	0.5	11.533
FSR: 100 years: +45 %: 1440 mins: Summer	0.01	0.5	11.155
FSR: 100 years: +45 %: 1440 mins: Winter	0.01	0.4	12.445
FSR: 100 years: +45 %: 2160 mins: Summer	0.01	0.4	12.013
FSR: 100 years: +45 %: 2160 mins: Winter	0.01	0.3	13.573
FSR: 100 years: +45 %: 2880 mins: Summer	0.01	0.3	12.786
FSR: 100 years: +45 %: 2880 mins: Winter	0.01	0.2	14.394
FSR: 100 years: +45 %: 4320 mins: Summer	0.01	0.2	13.800
FSR: 100 years: +45 %: 4320 mins: Winter	0.01	0.2	15.612
FSR: 100 years: +45 %: 5760 mins: Summer	0.01	0.2	14.706

FSR: 100 years: +45 %: 5760 mins: Winter	0.01	0.1	16.302
FSR: 100 years: +45 %: 7200 mins: Summer	0.01	0.1	15.102
FSR: 100 years: +45 %: 7200 mins: Winter	0.01	0.1	17.196
FSR: 100 years: +45 %: 8640 mins: Summer	0.01	0.1	15.540
FSR: 100 years: +45 %: 8640 mins: Winter	0.01	0.1	17.832
FSR: 100 years: +45 %: 10080 mins: Summer	0.01	0.1	16.086
FSR: 100 years: +45 %: 10080 mins: Winter	0.01	0.1	17.538

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (6): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.01	8.0	3.525
FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.4	3.944
FSR: 100 years: +45 %: 30 mins: Summer	0.01	5.3	4.621
FSR: 100 years: +45 %: 30 mins: Winter	0.01	5.6	5.178
FSR: 100 years: +45 %: 60 mins: Summer	0.01	4.6	5.794
FSR: 100 years: +45 %: 60 mins: Winter	0.01	4.2	6.491
FSR: 100 years: +45 %: 120 mins: Summer	0.01	3.3	7.025
FSR: 100 years: +45 %: 120 mins: Winter	0.01	2.7	7.859
FSR: 100 years: +45 %: 180 mins: Summer	0.01	2.6	7.756
FSR: 100 years: +45 %: 180 mins: Winter	0.01	2.0	8.680
FSR: 100 years: +45 %: 240 mins: Summer	0.01	2.2	8.296
FSR: 100 years: +45 %: 240 mins: Winter	0.01	1.6	9.298
FSR: 100 years: +45 %: 360 mins: Summer	0.01	1.6	9.027
FSR: 100 years: +45 %: 360 mins: Winter	0.01	1.2	10.124

FSR: 100 years: +45 %: 480 mins: Summer	0.01	1.3	9.590
FSR: 100 years: +45 %: 480 mins: Winter	0.01	0.9	10.754
FSR: 100 years: +45 %: 600 mins: Summer	0.01	1.1	10.040
FSR: 100 years: +45 %: 600 mins: Winter	0.01	0.8	11.258
FSR: 100 years: +45 %: 720 mins: Summer	0.01	0.9	10.435
FSR: 100 years: +45 %: 720 mins: Winter	0.01	0.7	11.683
FSR: 100 years: +45 %: 960 mins: Summer	0.01	0.8	11.083
FSR: 100 years: +45 %: 960 mins: Winter	0.01	0.5	12.421
FSR: 100 years: +45 %: 1440 mins: Summer	0.01	0.5	12.043
FSR: 100 years: +45 %: 1440 mins: Winter	0.01	0.4	13.465
FSR: 100 years: +45 %: 2160 mins: Summer	0.01	0.4	12.997
FSR: 100 years: +45 %: 2160 mins: Winter	0.01	0.3	14.521
FSR: 100 years: +45 %: 2880 mins: Summer	0.01	0.3	13.818
FSR: 100 years: +45 %: 2880 mins: Winter	0.01	0.2	15.372
FSR: 100 years: +45 %: 4320 mins: Summer	0.01	0.2	14.832
FSR: 100 years: +45 %: 4320 mins: Winter	0.01	0.2	16.692
FSR: 100 years: +45 %: 5760 mins: Summer	0.01	0.2	15.828

FSR: 100 years: +45 %: 5760 mins: Winter	0.01	0.1	17.478
FSR: 100 years: +45 %: 7200 mins: Summer	0.01	0.2	16.062
FSR: 100 years: +45 %: 7200 mins: Winter	0.01	0.1	18.396
FSR: 100 years: +45 %: 8640 mins: Summer	0.01	0.1	16.686
FSR: 100 years: +45 %: 8640 mins: Winter	0.01	0.1	19.188
FSR: 100 years: +45 %: 10080 mins: Summer	0.01	0.1	17.064
FSR: 100 years: +45 %: 10080 mins: Winter	0.01	0.1	18.882

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (7): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.01	8.0	3.525
FSR: 100 years: +45 %: 15 mins: Winter	0.01	8.4	3.944
FSR: 100 years: +45 %: 30 mins: Summer	0.01	5.3	4.621
FSR: 100 years: +45 %: 30 mins: Winter	0.01	5.6	5.178
FSR: 100 years: +45 %: 60 mins: Summer	0.01	4.6	5.794
FSR: 100 years: +45 %: 60 mins: Winter	0.01	4.2	6.491
FSR: 100 years: +45 %: 120 mins: Summer	0.01	3.3	7.025
FSR: 100 years: +45 %: 120 mins: Winter	0.01	2.7	7.859
FSR: 100 years: +45 %: 180 mins: Summer	0.01	2.6	7.756
FSR: 100 years: +45 %: 180 mins: Winter	0.01	2.0	8.680
FSR: 100 years: +45 %: 240 mins: Summer	0.01	2.2	8.296
FSR: 100 years: +45 %: 240 mins: Winter	0.01	1.6	9.298
FSR: 100 years: +45 %: 360 mins: Summer	0.01	1.6	9.027
FSR: 100 years: +45 %: 360 mins: Winter	0.01	1.2	10.124

FSR: 100 years: +45 %: 480 mins: Summer	0.01	1.3	9.590
FSR: 100 years: +45 %: 480 mins: Winter	0.01	0.9	10.754
FSR: 100 years: +45 %: 600 mins: Summer	0.01	1.1	10.040
FSR: 100 years: +45 %: 600 mins: Winter	0.01	0.8	11.258
FSR: 100 years: +45 %: 720 mins: Summer	0.01	0.9	10.435
FSR: 100 years: +45 %: 720 mins: Winter	0.01	0.7	11.683
FSR: 100 years: +45 %: 960 mins: Summer	0.01	0.8	11.083
FSR: 100 years: +45 %: 960 mins: Winter	0.01	0.5	12.421
FSR: 100 years: +45 %: 1440 mins: Summer	0.01	0.5	12.043
FSR: 100 years: +45 %: 1440 mins: Winter	0.01	0.4	13.465
FSR: 100 years: +45 %: 2160 mins: Summer	0.01	0.4	12.997
FSR: 100 years: +45 %: 2160 mins: Winter	0.01	0.3	14.521
FSR: 100 years: +45 %: 2880 mins: Summer	0.01	0.3	13.818
FSR: 100 years: +45 %: 2880 mins: Winter	0.01	0.2	15.372
FSR: 100 years: +45 %: 4320 mins: Summer	0.01	0.2	14.832
FSR: 100 years: +45 %: 4320 mins: Winter	0.01	0.2	16.692
FSR: 100 years: +45 %: 5760 mins: Summer	0.01	0.2	15.828

FSR: 100 years: +45 %: 5760 mins: Winter	0.01	0.1	17.478
FSR: 100 years: +45 %: 7200 mins: Summer	0.01	0.2	16.062
FSR: 100 years: +45 %: 7200 mins: Winter	0.01	0.1	18.396
FSR: 100 years: +45 %: 8640 mins: Summer	0.01	0.1	16.686
FSR: 100 years: +45 %: 8640 mins: Winter	0.01	0.1	19.188
FSR: 100 years: +45 %: 10080 mins: Summer	0.01	0.1	17.064
FSR: 100 years: +45 %: 10080 mins: Winter	0.01	0.1	18.882

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (8): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.01	5.7	2.516
FSR: 100 years: +45 %: 15 mins: Winter	0.01	6.0	2.818
FSR: 100 years: +45 %: 30 mins: Summer	0.01	3.8	3.299
FSR: 100 years: +45 %: 30 mins: Winter	0.01	4.0	3.695
FSR: 100 years: +45 %: 60 mins: Summer	0.01	3.3	4.131
FSR: 100 years: +45 %: 60 mins: Winter	0.01	3.0	4.636
FSR: 100 years: +45 %: 120 mins: Summer	0.01	2.4	5.020
FSR: 100 years: +45 %: 120 mins: Winter	0.01	1.9	5.619
FSR: 100 years: +45 %: 180 mins: Summer	0.01	1.9	5.547
FSR: 100 years: +45 %: 180 mins: Winter	0.01	1.4	6.213
FSR: 100 years: +45 %: 240 mins: Summer	0.01	1.5	5.931
FSR: 100 years: +45 %: 240 mins: Winter	0.01	1.2	6.633
FSR: 100 years: +45 %: 360 mins: Summer	0.01	1.1	6.440
FSR: 100 years: +45 %: 360 mins: Winter	0.01	0.8	7.214

FSR: 100 years: +45 %: 480 mins: Summer	0.01	0.9	6.853
FSR: 100 years: +45 %: 480 mins: Winter	0.01	0.7	7.663
FSR: 100 years: +45 %: 600 mins: Summer	0.01	0.8	7.183
FSR: 100 years: +45 %: 600 mins: Winter	0.01	0.6	8.035
FSR: 100 years: +45 %: 720 mins: Summer	0.01	0.7	7.459
FSR: 100 years: +45 %: 720 mins: Winter	0.01	0.5	8.377
FSR: 100 years: +45 %: 960 mins: Summer	0.01	0.5	7.921
FSR: 100 years: +45 %: 960 mins: Winter	0.01	0.4	8.875
FSR: 100 years: +45 %: 1440 mins: Summer	0.01	0.4	8.599
FSR: 100 years: +45 %: 1440 mins: Winter	0.01	0.3	9.595
FSR: 100 years: +45 %: 2160 mins: Summer	0.01	0.3	9.330
FSR: 100 years: +45 %: 2160 mins: Winter	0.01	0.2	10.500
FSR: 100 years: +45 %: 2880 mins: Summer	0.01	0.2	9.810
FSR: 100 years: +45 %: 2880 mins: Winter	0.01	0.2	11.058
FSR: 100 years: +45 %: 4320 mins: Summer	0.01	0.2	10.542
FSR: 100 years: +45 %: 4320 mins: Winter	0.01	0.1	11.814
FSR: 100 years: +45 %: 5760 mins: Summer	0.01	0.1	11.118

FSR: 100 years: +45 %: 5760 mins: Winter	0.01	0.1	12.786
FSR: 100 years: +45 %: 7200 mins: Summer	0.01	0.1	11.652
FSR: 100 years: +45 %: 7200 mins: Winter	0.01	0.1	12.708
FSR: 100 years: +45 %: 8640 mins: Summer	0.01	0.1	12.138
FSR: 100 years: +45 %: 8640 mins: Winter	0.01	0.1	13.176
FSR: 100 years: +45 %: 10080 mins: Summer	0.01	0.1	12.822
FSR: 100 years: +45 %: 10080 mins: Winter	0.01	0.1	13.794

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (9): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.01	6.5	2.895
FSR: 100 years: +45 %: 15 mins: Winter	0.01	6.9	3.237
FSR: 100 years: +45 %: 30 mins: Summer	0.01	4.4	3.798
FSR: 100 years: +45 %: 30 mins: Winter	0.01	4.6	4.247
FSR: 100 years: +45 %: 60 mins: Summer	0.01	3.8	4.750
FSR: 100 years: +45 %: 60 mins: Winter	0.01	3.4	5.315
FSR: 100 years: +45 %: 120 mins: Summer	0.01	2.7	5.758
FSR: 100 years: +45 %: 120 mins: Winter	0.01	2.2	6.460
FSR: 100 years: +45 %: 180 mins: Summer	0.01	2.1	6.376
FSR: 100 years: +45 %: 180 mins: Winter	0.01	1.6	7.144
FSR: 100 years: +45 %: 240 mins: Summer	0.01	1.8	6.790
FSR: 100 years: +45 %: 240 mins: Winter	0.01	1.3	7.629
FSR: 100 years: +45 %: 360 mins: Summer	0.01	1.3	7.419
FSR: 100 years: +45 %: 360 mins: Winter	0.01	1.0	8.306

FSR: 100 years: +45 %: 480 mins: Summer	0.01	1.1	7.892
FSR: 100 years: +45 %: 480 mins: Winter	0.01	0.8	8.816
FSR: 100 years: +45 %: 600 mins: Summer	0.01	0.9	8.269
FSR: 100 years: +45 %: 600 mins: Winter	0.01	0.6	9.241
FSR: 100 years: +45 %: 720 mins: Summer	0.01	0.8	8.581
FSR: 100 years: +45 %: 720 mins: Winter	0.01	0.6	9.625
FSR: 100 years: +45 %: 960 mins: Summer	0.01	0.6	9.091
FSR: 100 years: +45 %: 960 mins: Winter	0.01	0.4	10.201
FSR: 100 years: +45 %: 1440 mins: Summer	0.01	0.4	9.871
FSR: 100 years: +45 %: 1440 mins: Winter	0.01	0.3	11.077
FSR: 100 years: +45 %: 2160 mins: Summer	0.01	0.3	10.686
FSR: 100 years: +45 %: 2160 mins: Winter	0.01	0.2	11.976
FSR: 100 years: +45 %: 2880 mins: Summer	0.01	0.3	11.172
FSR: 100 years: +45 %: 2880 mins: Winter	0.01	0.2	12.546
FSR: 100 years: +45 %: 4320 mins: Summer	0.01	0.2	12.396
FSR: 100 years: +45 %: 4320 mins: Winter	0.01	0.1	13.386
FSR: 100 years: +45 %: 5760 mins: Summer	0.01	0.2	12.648

FSR: 100 years: +45 %: 5760 mins: Winter	0.01	0.1	14.574
FSR: 100 years: +45 %: 7200 mins: Summer	0.01	0.1	13.134
FSR: 100 years: +45 %: 7200 mins: Winter	0.01	0.1	15.300
FSR: 100 years: +45 %: 8640 mins: Summer	0.01	0.1	13.776
FSR: 100 years: +45 %: 8640 mins: Winter	0.01	0.1	15.036
FSR: 100 years: +45 %: 10080 mins: Summer	0.01	0.1	14.274
FSR: 100 years: +45 %: 10080 mins: Winter	0.01	0.1	15.606

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (10): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.03	14.8	6.568
FSR: 100 years: +45 %: 15 mins: Winter	0.03	15.6	7.349
FSR: 100 years: +45 %: 30 mins: Summer	0.03	9.9	8.617
FSR: 100 years: +45 %: 30 mins: Winter	0.03	10.4	9.642
FSR: 100 years: +45 %: 60 mins: Summer	0.03	8.6	10.796
FSR: 100 years: +45 %: 60 mins: Winter	0.03	7.8	12.094
FSR: 100 years: +45 %: 120 mins: Summer	0.03	6.2	13.089
FSR: 100 years: +45 %: 120 mins: Winter	0.03	5.0	14.655
FSR: 100 years: +45 %: 180 mins: Summer	0.03	4.8	14.468
FSR: 100 years: +45 %: 180 mins: Winter	0.03	3.7	16.202
FSR: 100 years: +45 %: 240 mins: Summer	0.03	4.0	15.446
FSR: 100 years: +45 %: 240 mins: Winter	0.03	3.0	17.293
FSR: 100 years: +45 %: 360 mins: Summer	0.03	3.0	16.812
FSR: 100 years: +45 %: 360 mins: Winter	0.03	2.2	18.851

FSR: 100 years: +45 %: 480 mins: Summer	0.03	2.4	17.884
FSR: 100 years: +45 %: 480 mins: Winter	0.03	1.8	20.020
FSR: 100 years: +45 %: 600 mins: Summer	0.03	2.0	18.729
FSR: 100 years: +45 %: 600 mins: Winter	0.03	1.5	20.973
FSR: 100 years: +45 %: 720 mins: Summer	0.03	1.8	19.437
FSR: 100 years: +45 %: 720 mins: Winter	0.03	1.3	21.789
FSR: 100 years: +45 %: 960 mins: Summer	0.03	1.4	20.612
FSR: 100 years: +45 %: 960 mins: Winter	0.03	1.0	23.120
FSR: 100 years: +45 %: 1440 mins: Summer	0.03	1.0	22.424
FSR: 100 years: +45 %: 1440 mins: Winter	0.03	0.7	25.051
FSR: 100 years: +45 %: 2160 mins: Summer	0.03	0.7	24.229
FSR: 100 years: +45 %: 2160 mins: Winter	0.03	0.5	27.085
FSR: 100 years: +45 %: 2880 mins: Summer	0.03	0.6	25.609
FSR: 100 years: +45 %: 2880 mins: Winter	0.03	0.4	28.675
FSR: 100 years: +45 %: 4320 mins: Summer	0.03	0.4	27.780
FSR: 100 years: +45 %: 4320 mins: Winter	0.03	0.3	30.810
FSR: 100 years: +45 %: 5760 mins: Summer	0.03	0.3	29.106

FSR: 100 years: +45 %: 5760 mins: Winter	0.03	0.2	32.634
FSR: 100 years: +45 %: 7200 mins: Summer	0.03	0.3	30.498
FSR: 100 years: +45 %: 7200 mins: Winter	0.03	0.2	34.308
FSR: 100 years: +45 %: 8640 mins: Summer	0.03	0.2	31.320
FSR: 100 years: +45 %: 8640 mins: Winter	0.03	0.2	35.052
FSR: 100 years: +45 %: 10080 mins: Summer	0.03	0.2	32.298
FSR: 100 years: +45 %: 10080 mins: Winter	0.03	0.2	36.516

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (11): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.03	17.0	7.550
FSR: 100 years: +45 %: 15 mins: Winter	0.03	17.9	8.451
FSR: 100 years: +45 %: 30 mins: Summer	0.03	11.4	9.903
FSR: 100 years: +45 %: 30 mins: Winter	0.03	12.0	11.090
FSR: 100 years: +45 %: 60 mins: Summer	0.03	9.9	12.406
FSR: 100 years: +45 %: 60 mins: Winter	0.03	8.9	13.896
FSR: 100 years: +45 %: 120 mins: Summer	0.03	7.1	15.047
FSR: 100 years: +45 %: 120 mins: Winter	0.03	5.8	16.858
FSR: 100 years: +45 %: 180 mins: Summer	0.03	5.6	16.629
FSR: 100 years: +45 %: 180 mins: Winter	0.03	4.3	18.639
FSR: 100 years: +45 %: 240 mins: Summer	0.03	4.6	17.764
FSR: 100 years: +45 %: 240 mins: Winter	0.03	3.5	19.892
FSR: 100 years: +45 %: 360 mins: Summer	0.03	3.4	19.345
FSR: 100 years: +45 %: 360 mins: Winter	0.03	2.5	21.647

FSR: 100 years: +45 %: 480 mins: Summer	0.03	2.8	20.566
FSR: 100 years: +45 %: 480 mins: Winter	0.03	2.0	23.032
FSR: 100 years: +45 %: 600 mins: Summer	0.03	2.3	21.526
FSR: 100 years: +45 %: 600 mins: Winter	0.03	1.7	24.130
FSR: 100 years: +45 %: 720 mins: Summer	0.03	2.0	22.383
FSR: 100 years: +45 %: 720 mins: Winter	0.03	1.5	25.053
FSR: 100 years: +45 %: 960 mins: Summer	0.03	1.6	23.720
FSR: 100 years: +45 %: 960 mins: Winter	0.03	1.2	26.612
FSR: 100 years: +45 %: 1440 mins: Summer	0.03	1.2	25.730
FSR: 100 years: +45 %: 1440 mins: Winter	0.03	0.8	28.838
FSR: 100 years: +45 %: 2160 mins: Summer	0.03	0.8	27.865
FSR: 100 years: +45 %: 2160 mins: Winter	0.03	0.6	31.285
FSR: 100 years: +45 %: 2880 mins: Summer	0.03	0.7	29.449
FSR: 100 years: +45 %: 2880 mins: Winter	0.03	0.5	32.935
FSR: 100 years: +45 %: 4320 mins: Summer	0.03	0.5	31.831
FSR: 100 years: +45 %: 4320 mins: Winter	0.03	0.3	35.527
FSR: 100 years: +45 %: 5760 mins: Summer	0.03	0.4	33.510

FSR: 100 years: +45 %: 5760 mins: Winter	0.03	0.3	37.608
FSR: 100 years: +45 %: 7200 mins: Summer	0.03	0.3	35.088
FSR: 100 years: +45 %: 7200 mins: Winter	0.03	0.2	39.066
FSR: 100 years: +45 %: 8640 mins: Summer	0.03	0.3	36.192
FSR: 100 years: +45 %: 8640 mins: Winter	0.03	0.2	40.146
FSR: 100 years: +45 %: 10080 mins: Summer	0.03	0.2	36.894
FSR: 100 years: +45 %: 10080 mins: Winter	0.03	0.2	41.496

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (12): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.02	9.7	4.308
FSR: 100 years: +45 %: 15 mins: Winter	0.02	10.2	4.820
FSR: 100 years: +45 %: 30 mins: Summer	0.02	6.5	5.649
FSR: 100 years: +45 %: 30 mins: Winter	0.02	6.8	6.326
FSR: 100 years: +45 %: 60 mins: Summer	0.02	5.7	7.073
FSR: 100 years: +45 %: 60 mins: Winter	0.02	5.1	7.915
FSR: 100 years: +45 %: 120 mins: Summer	0.02	4.1	8.574
FSR: 100 years: +45 %: 120 mins: Winter	0.02	3.3	9.612
FSR: 100 years: +45 %: 180 mins: Summer	0.02	3.2	9.497
FSR: 100 years: +45 %: 180 mins: Winter	0.02	2.5	10.619
FSR: 100 years: +45 %: 240 mins: Summer	0.02	2.6	10.133
FSR: 100 years: +45 %: 240 mins: Winter	0.02	2.0	11.345
FSR: 100 years: +45 %: 360 mins: Summer	0.02	1.9	11.014
FSR: 100 years: +45 %: 360 mins: Winter	0.02	1.4	12.345

FSR: 100 years: +45 %: 480 mins: Summer	0.02	1.6	11.714
FSR: 100 years: +45 %: 480 mins: Winter	0.02	1.1	13.118
FSR: 100 years: +45 %: 600 mins: Summer	0.02	1.3	12.278
FSR: 100 years: +45 %: 600 mins: Winter	0.02	1.0	13.772
FSR: 100 years: +45 %: 720 mins: Summer	0.02	1.2	12.746
FSR: 100 years: +45 %: 720 mins: Winter	0.02	0.8	14.294
FSR: 100 years: +45 %: 960 mins: Summer	0.02	0.9	13.525
FSR: 100 years: +45 %: 960 mins: Winter	0.02	0.7	15.145
FSR: 100 years: +45 %: 1440 mins: Summer	0.02	0.7	14.695
FSR: 100 years: +45 %: 1440 mins: Winter	0.02	0.5	16.375
FSR: 100 years: +45 %: 2160 mins: Summer	0.02	0.5	15.877
FSR: 100 years: +45 %: 2160 mins: Winter	0.02	0.3	17.755
FSR: 100 years: +45 %: 2880 mins: Summer	0.02	0.4	16.752
FSR: 100 years: +45 %: 2880 mins: Winter	0.02	0.3	18.810
FSR: 100 years: +45 %: 4320 mins: Summer	0.02	0.3	18.144
FSR: 100 years: +45 %: 4320 mins: Winter	0.02	0.2	20.172
FSR: 100 years: +45 %: 5760 mins: Summer	0.02	0.2	19.158

FSR: 100 years: +45 %: 5760 mins: Winter	0.02	0.2	21.498
FSR: 100 years: +45 %: 7200 mins: Summer	0.02	0.2	20.460
FSR: 100 years: +45 %: 7200 mins: Winter	0.02	0.1	22.194
FSR: 100 years: +45 %: 8640 mins: Summer	0.02	0.2	20.436
FSR: 100 years: +45 %: 8640 mins: Winter	0.02	0.1	23.124
FSR: 100 years: +45 %: 10080 mins: Summer	0.02	0.1	21.042
FSR: 100 years: +45 %: 10080 mins: Winter	0.02	0.1	24.078

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (13): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.01	3.7	1.624
FSR: 100 years: +45 %: 15 mins: Winter	0.01	3.9	1.813
FSR: 100 years: +45 %: 30 mins: Summer	0.01	2.5	2.127
FSR: 100 years: +45 %: 30 mins: Winter	0.01	2.6	2.373
FSR: 100 years: +45 %: 60 mins: Summer	0.01	2.1	2.666
FSR: 100 years: +45 %: 60 mins: Winter	0.01	1.9	2.985
FSR: 100 years: +45 %: 120 mins: Summer	0.01	1.5	3.230
FSR: 100 years: +45 %: 120 mins: Winter	0.01	1.2	3.608
FSR: 100 years: +45 %: 180 mins: Summer	0.01	1.2	3.572
FSR: 100 years: +45 %: 180 mins: Winter	0.01	0.9	3.998
FSR: 100 years: +45 %: 240 mins: Summer	0.01	1.0	3.818
FSR: 100 years: +45 %: 240 mins: Winter	0.01	0.7	4.256
FSR: 100 years: +45 %: 360 mins: Summer	0.01	0.7	4.160
FSR: 100 years: +45 %: 360 mins: Winter	0.01	0.5	4.657

FSR: 100 years: +45 %: 480 mins: Summer	0.01	0.6	4.405
FSR: 100 years: +45 %: 480 mins: Winter	0.01	0.4	4.969
FSR: 100 years: +45 %: 600 mins: Summer	0.01	0.5	4.633
FSR: 100 years: +45 %: 600 mins: Winter	0.01	0.4	5.167
FSR: 100 years: +45 %: 720 mins: Summer	0.01	0.4	4.795
FSR: 100 years: +45 %: 720 mins: Winter	0.01	0.3	5.395
FSR: 100 years: +45 %: 960 mins: Summer	0.01	0.3	5.077
FSR: 100 years: +45 %: 960 mins: Winter	0.01	0.3	5.695
FSR: 100 years: +45 %: 1440 mins: Summer	0.01	0.3	5.484
FSR: 100 years: +45 %: 1440 mins: Winter	0.01	0.2	6.144
FSR: 100 years: +45 %: 2160 mins: Summer	0.01	0.2	6.126
FSR: 100 years: +45 %: 2160 mins: Winter	0.01	0.1	6.654
FSR: 100 years: +45 %: 2880 mins: Summer	0.01	0.1	6.252
FSR: 100 years: +45 %: 2880 mins: Winter	0.01	0.1	7.122
FSR: 100 years: +45 %: 4320 mins: Summer	0.01	0.1	6.744
FSR: 100 years: +45 %: 4320 mins: Winter	0.01	0.1	7.458
FSR: 100 years: +45 %: 5760 mins: Summer	0.01	0.1	7.464

FSR: 100 years: +45 %: 5760 mins: Winter	0.01	0.1	8.022
FSR: 100 years: +45 %: 7200 mins: Summer	0.01	0.1	8.118
FSR: 100 years: +45 %: 7200 mins: Winter	0.01	0.0	8.640
FSR: 100 years: +45 %: 8640 mins: Summer	0.01	0.1	8.400
FSR: 100 years: +45 %: 8640 mins: Winter	0.01	0.0	8.922
FSR: 100 years: +45 %: 10080 mins: Summer	0.01	0.0	8.106
FSR: 100 years: +45 %: 10080 mins: Winter	0.01	0.0	9.552

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Catchment Area (14): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.01	4.5	2.016
FSR: 100 years: +45 %: 15 mins: Winter	0.01	4.8	2.255
FSR: 100 years: +45 %: 30 mins: Summer	0.01	3.0	2.638
FSR: 100 years: +45 %: 30 mins: Winter	0.01	3.2	2.962
FSR: 100 years: +45 %: 60 mins: Summer	0.01	2.6	3.297
FSR: 100 years: +45 %: 60 mins: Winter	0.01	2.4	3.705
FSR: 100 years: +45 %: 120 mins: Summer	0.01	1.9	4.017
FSR: 100 years: +45 %: 120 mins: Winter	0.01	1.5	4.485
FSR: 100 years: +45 %: 180 mins: Summer	0.01	1.5	4.437
FSR: 100 years: +45 %: 180 mins: Winter	0.01	1.1	4.959
FSR: 100 years: +45 %: 240 mins: Summer	0.01	1.2	4.743
FSR: 100 years: +45 %: 240 mins: Winter	0.01	0.9	5.294
FSR: 100 years: +45 %: 360 mins: Summer	0.01	0.9	5.162
FSR: 100 years: +45 %: 360 mins: Winter	0.01	0.7	5.779

FSR: 100 years: +45 %: 480 mins: Summer	0.01	0.7	5.485
FSR: 100 years: +45 %: 480 mins: Winter	0.01	0.5	6.121
FSR: 100 years: +45 %: 600 mins: Summer	0.01	0.6	5.743
FSR: 100 years: +45 %: 600 mins: Winter	0.01	0.4	6.439
FSR: 100 years: +45 %: 720 mins: Summer	0.01	0.5	5.965
FSR: 100 years: +45 %: 720 mins: Winter	0.01	0.4	6.685
FSR: 100 years: +45 %: 960 mins: Summer	0.01	0.4	6.349
FSR: 100 years: +45 %: 960 mins: Winter	0.01	0.3	7.057
FSR: 100 years: +45 %: 1440 mins: Summer	0.01	0.3	6.900
FSR: 100 years: +45 %: 1440 mins: Winter	0.01	0.2	7.674
FSR: 100 years: +45 %: 2160 mins: Summer	0.01	0.2	7.404
FSR: 100 years: +45 %: 2160 mins: Winter	0.01	0.2	8.358
FSR: 100 years: +45 %: 2880 mins: Summer	0.01	0.2	7.914
FSR: 100 years: +45 %: 2880 mins: Winter	0.01	0.1	8.742
FSR: 100 years: +45 %: 4320 mins: Summer	0.01	0.1	8.382
FSR: 100 years: +45 %: 4320 mins: Winter	0.01	0.1	9.696
FSR: 100 years: +45 %: 5760 mins: Summer	0.01	0.1	8.862

FSR: 100 years: +45 %: 5760 mins: Winter	0.01	0.1	9.756
FSR: 100 years: +45 %: 7200 mins: Summer	0.01	0.1	9.426
FSR: 100 years: +45 %: 7200 mins: Winter	0.01	0.1	10.368
FSR: 100 years: +45 %: 8640 mins: Summer	0.01	0.1	10.266
FSR: 100 years: +45 %: 8640 mins: Winter	0.01	0.0	10.788
FSR: 100 years: +45 %: 10080 mins: Summer	0.01	0.1	10.656
FSR: 100 years: +45 %: 10080 mins: Winter	0.01	0.0	11.262

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-13: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	53.200	51.200	51.934	0.734	11.6	0.117	0.000	6.2	5.097	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	53.200	51.200	52.148	0.948	12.2	0.151	0.000	6.2	5.704	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	53.200	51.200	51.780	0.580	7.8	0.092	0.000	7.0	6.714	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	53.200	51.200	51.913	0.713	8.2	0.113	0.000	6.1	7.515	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	53.200	51.200	51.548	0.348	6.8	0.055	0.000	6.6	8.430	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	53.200	51.200	51.431	0.231	6.1	0.037	0.000	6.0	9.449	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	53.200	51.200	51.252	0.052	4.9	0.008	0.000	4.9	10.237	OK
FSR: 100 years: +45 %: 120 mins: Winter	53.200	51.200	51.246	0.046	3.9	0.007	0.000	3.9	11.464	OK
FSR: 100 years: +45 %: 180 mins: Summer	53.200	51.200	51.245	0.045	3.8	0.007	0.000	3.8	11.325	OK
FSR: 100 years: +45 %: 180 mins: Winter	53.200	51.200	51.239	0.039	2.9	0.006	0.000	2.9	12.676	OK
FSR: 100 years: +45 %: 240 mins: Summer	53.200	51.200	51.241	0.041	3.1	0.006	0.000	3.1	12.112	OK
FSR: 100 years: +45 %: 240 mins: Winter	53.200	51.200	51.235	0.035	2.4	0.006	0.000	2.4	13.551	OK
FSR: 100 years: +45 %: 360 mins: Summer	53.200	51.200	51.235	0.035	2.3	0.005	0.000	2.3	13.184	OK
FSR: 100 years: +45 %: 360 mins: Winter	53.200	51.200	51.229	0.029	1.7	0.005	0.000	1.7	14.779	OK
FSR: 100 years: +45 %: 480 mins: Summer	53.200	51.200	51.231	0.031	1.9	0.005	0.000	1.9	13.993	OK
FSR: 100 years: +45 %: 480 mins: Winter	53.200	51.200	51.226	0.026	1.4	0.004	0.000	1.4	15.721	OK
FSR: 100 years: +45 %: 600 mins: Summer	53.200	51.200	51.228	0.028	1.6	0.004	0.000	1.6	14.670	OK
FSR: 100 years: +45 %: 600 mins: Winter	53.200	51.200	51.224	0.024	1.1	0.004	0.000	1.1	16.423	OK
FSR: 100 years: +45 %: 720 mins: Summer	53.200	51.200	51.226	0.026	1.4	0.004	0.000	1.4	15.228	OK

FSR: 100 years: +45 %: 720 mins: Winter	53.200	51.200	51.222	0.022	1.0	0.004	0.000	1.0	17.076	OK
FSR: 100 years: +45 %: 960 mins: Summer	53.200	51.200	51.223	0.023	1.1	0.004	0.000	1.1	16.158	OK
FSR: 100 years: +45 %: 960 mins: Winter	53.200	51.200	51.220	0.020	0.8	0.003	0.000	0.8	18.114	OK
FSR: 100 years: +45 %: 1440 mins: Summer	53.200	51.200	51.220	0.020	0.8	0.003	0.000	0.8	17.526	OK
FSR: 100 years: +45 %: 1440 mins: Winter	53.200	51.200	51.217	0.017	0.6	0.003	0.000	0.6	19.608	OK
FSR: 100 years: +45 %: 2160 mins: Summer	53.200	51.200	51.217	0.017	0.6	0.003	0.000	0.6	19.121	OK
FSR: 100 years: +45 %: 2160 mins: Winter	53.200	51.200	51.214	0.014	0.4	0.002	0.000	0.4	21.173	OK
FSR: 100 years: +45 %: 2880 mins: Summer	53.200	51.200	51.215	0.015	0.4	0.002	0.000	0.4	20.069	OK
FSR: 100 years: +45 %: 2880 mins: Winter	53.200	51.200	51.213	0.013	0.3	0.002	0.000	0.3	22.493	OK
FSR: 100 years: +45 %: 4320 mins: Summer	53.200	51.200	51.213	0.013	0.3	0.002	0.000	0.3	21.575	OK
FSR: 100 years: +45 %: 4320 mins: Winter	53.200	51.200	51.211	0.011	0.2	0.002	0.000	0.2	24.149	OK
FSR: 100 years: +45 %: 5760 mins: Summer	53.200	51.200	51.212	0.012	0.3	0.002	0.000	0.3	23.291	OK
FSR: 100 years: +45 %: 5760 mins: Winter	53.200	51.200	51.210	0.010	0.2	0.002	0.000	0.2	25.499	OK
FSR: 100 years: +45 %: 7200 mins: Summer	53.200	51.200	51.211	0.011	0.2	0.002	0.000	0.2	24.179	OK
FSR: 100 years: +45 %: 7200 mins: Winter	53.200	51.200	51.209	0.009	0.2	0.001	0.000	0.2	27.035	OK
FSR: 100 years: +45 %: 8640 mins: Summer	53.200	51.200	51.210	0.010	0.2	0.002	0.000	0.2	25.085	OK
FSR: 100 years: +45 %: 8640 mins: Winter	53.200	51.200	51.208	0.008	0.1	0.001	0.000	0.1	28.109	OK
FSR: 100 years: +45 %: 10080 mins: Summer	53.200	51.200	51.209	0.009	0.2	0.001	0.000	0.2	25.169	OK
FSR: 100 years: +45 %: 10080 mins: Winter	53.200	51.200	51.208	0.008	0.1	0.001	0.000	0.1	28.433	OK

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-14: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	53.000	50.628	51.746	1.118	14.1	0.178	0.000	10.5	8.652	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	53.000	50.628	51.948	1.319	14.6	0.210	0.000	11.0	9.683	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	53.000	50.628	51.582	0.954	12.3	0.152	0.000	9.7	11.353	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	53.000	50.628	51.708	1.080	11.7	0.172	0.000	10.2	12.712	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	53.000	50.628	51.367	0.739	11.2	0.117	0.000	9.1	14.231	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	53.000	50.628	51.260	0.632	10.1	0.100	0.000	8.8	15.949	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	53.000	50.628	50.890	0.262	8.2	0.042	0.000	7.6	17.265	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	53.000	50.628	50.690	0.062	6.6	0.010	0.000	6.6	19.318	OK
FSR: 100 years: +45 %: 180 mins: Summer	53.000	50.628	50.689	0.061	6.4	0.010	0.000	6.4	19.078	OK
FSR: 100 years: +45 %: 180 mins: Winter	53.000	50.628	50.679	0.051	4.9	0.008	0.000	4.9	21.354	OK
FSR: 100 years: +45 %: 240 mins: Summer	53.000	50.628	50.681	0.053	5.3	0.008	0.000	5.3	20.406	OK
FSR: 100 years: +45 %: 240 mins: Winter	53.000	50.628	50.673	0.045	4.0	0.007	0.000	4.0	22.847	OK
FSR: 100 years: +45 %: 360 mins: Summer	53.000	50.628	50.673	0.045	3.9	0.007	0.000	3.9	22.210	OK
FSR: 100 years: +45 %: 360 mins: Winter	53.000	50.628	50.666	0.038	2.9	0.006	0.000	2.9	24.902	OK
FSR: 100 years: +45 %: 480 mins: Summer	53.000	50.628	50.668	0.040	3.2	0.006	0.000	3.2	23.581	OK
FSR: 100 years: +45 %: 480 mins: Winter	53.000	50.628	50.662	0.033	2.3	0.005	0.000	2.3	26.474	OK
FSR: 100 years: +45 %: 600 mins: Summer	53.000	50.628	50.664	0.036	2.7	0.006	0.000	2.7	24.709	OK
FSR: 100 years: +45 %: 600 mins: Winter	53.000	50.628	50.659	0.031	1.9	0.005	0.000	1.9	27.680	OK
FSR: 100 years: +45 %: 720 mins: Summer	53.000	50.628	50.662	0.034	2.3	0.005	0.000	2.3	25.663	OK

FSR: 100 years: +45 %: 720 mins: Winter	53.000	50.628	50.656	0.028	1.7	0.004	0.000	1.7	28.759	OK
FSR: 100 years: +45 %: 960 mins: Summer	53.000	50.628	50.658	0.030	1.9	0.005	0.000	1.9	27.240	OK
FSR: 100 years: +45 %: 960 mins: Winter	53.000	50.628	50.653	0.025	1.3	0.004	0.000	1.3	30.535	OK
FSR: 100 years: +45 %: 1440 mins: Summer	53.000	50.628	50.653	0.025	1.3	0.004	0.000	1.3	29.568	OK
FSR: 100 years: +45 %: 1440 mins: Winter	53.000	50.628	50.650	0.021	1.0	0.003	0.000	1.0	33.072	OK
FSR: 100 years: +45 %: 2160 mins: Summer	53.000	50.628	50.650	0.021	1.0	0.003	0.000	1.0	32.117	OK
FSR: 100 years: +45 %: 2160 mins: Winter	53.000	50.628	50.646	0.018	0.7	0.003	0.000	0.7	35.694	OK
FSR: 100 years: +45 %: 2880 mins: Summer	53.000	50.628	50.647	0.019	0.8	0.003	0.000	0.8	33.887	OK
FSR: 100 years: +45 %: 2880 mins: Winter	53.000	50.628	50.645	0.016	0.6	0.003	0.000	0.6	37.865	OK
FSR: 100 years: +45 %: 4320 mins: Summer	53.000	50.628	50.644	0.016	0.5	0.003	0.000	0.5	36.407	OK
FSR: 100 years: +45 %: 4320 mins: Winter	53.000	50.628	50.642	0.014	0.4	0.002	0.000	0.4	40.841	OK
FSR: 100 years: +45 %: 5760 mins: Summer	53.000	50.628	50.643	0.015	0.4	0.002	0.000	0.4	39.119	OK
FSR: 100 years: +45 %: 5760 mins: Winter	53.000	50.628	50.641	0.013	0.3	0.002	0.000	0.3	42.977	OK
FSR: 100 years: +45 %: 7200 mins: Summer	53.000	50.628	50.642	0.014	0.4	0.002	0.000	0.4	40.240	OK
FSR: 100 years: +45 %: 7200 mins: Winter	53.000	50.628	50.640	0.012	0.3	0.002	0.000	0.3	45.431	OK
FSR: 100 years: +45 %: 8640 mins: Summer	53.000	50.628	50.641	0.013	0.3	0.002	0.000	0.3	41.770	OK
FSR: 100 years: +45 %: 8640 mins: Winter	53.000	50.628	50.639	0.011	0.2	0.002	0.000	0.2	47.297	OK
FSR: 100 years: +45 %: 10080 mins: Summer	53.000	50.628	50.640	0.012	0.3	0.002	0.000	0.3	42.232	OK
FSR: 100 years: +45 %: 10080 mins: Winter	53.000	50.628	50.638	0.010	0.2	0.002	0.000	0.2	47.315	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-15: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	52.650	50.000	51.120	1.120	20.9	0.178	0.000	16.4	14.061	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	52.650	50.000	51.291	1.291	21.6	0.205	0.000	17.3	15.741	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	52.650	50.000	51.071	1.071	17.5	0.170	0.000	16.0	18.442	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	52.650	50.000	51.179	1.179	18.2	0.188	0.000	16.6	20.643	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	52.650	50.000	50.889	0.889	15.9	0.141	0.000	14.9	23.109	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	52.650	50.000	50.801	0.801	15.0	0.127	0.000	14.3	25.889	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	52.650	50.000	50.493	0.493	12.7	0.078	0.000	12.3	28.030	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	52.650	50.000	50.275	0.275	10.7	0.044	0.000	10.5	31.384	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	52.650	50.000	50.215	0.215	10.4	0.034	0.000	10.2	30.988	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	52.650	50.000	50.059	0.059	8.0	0.009	0.000	8.0	34.696	OK
FSR: 100 years: +45 %: 240 mins: Summer	52.650	50.000	50.062	0.062	8.6	0.010	0.000	8.6	33.113	OK
FSR: 100 years: +45 %: 240 mins: Winter	52.650	50.000	50.052	0.052	6.5	0.008	0.000	6.5	37.095	OK
FSR: 100 years: +45 %: 360 mins: Summer	52.650	50.000	50.051	0.051	6.4	0.008	0.000	6.4	36.056	OK
FSR: 100 years: +45 %: 360 mins: Winter	52.650	50.000	50.043	0.043	4.7	0.007	0.000	4.7	40.411	OK
FSR: 100 years: +45 %: 480 mins: Summer	52.650	50.000	50.045	0.045	5.2	0.007	0.000	5.2	38.317	OK
FSR: 100 years: +45 %: 480 mins: Winter	52.650	50.000	50.051	0.051	3.7	0.008	0.000	3.7	42.979	OK
FSR: 100 years: +45 %: 600 mins: Summer	52.650	50.000	50.041	0.041	4.4	0.006	0.000	4.4	40.153	OK
FSR: 100 years: +45 %: 600 mins: Winter	52.650	50.000	50.089	0.089	3.2	0.014	0.000	3.2	44.947	OK
FSR: 100 years: +45 %: 720 mins: Summer	52.650	50.000	50.038	0.038	3.8	0.006	0.000	3.8	41.695	OK

FSR: 100 years: +45 %: 720 mins: Winter	52.650	50.000	50.119	0.119	2.7	0.019	0.000	2.7	46.795	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	52.650	50.000	50.034	0.034	3.0	0.005	0.000	3.0	44.252	OK
FSR: 100 years: +45 %: 960 mins: Winter	52.650	50.000	50.163	0.163	2.2	0.026	0.000	2.2	49.685	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	52.650	50.000	50.041	0.041	2.2	0.007	0.000	2.2	48.067	OK
FSR: 100 years: +45 %: 1440 mins: Winter	52.650	50.000	50.204	0.204	1.6	0.032	0.000	1.6	53.823	Surcharged
FSR: 100 years: +45 %: 2160 mins: Summer	52.650	50.000	50.041	0.041	1.6	0.006	0.000	1.6	52.166	OK
FSR: 100 years: +45 %: 2160 mins: Winter	52.650	50.000	50.222	0.222	1.1	0.035	0.000	1.1	58.284	Surcharged
FSR: 100 years: +45 %: 2880 mins: Summer	52.650	50.000	50.021	0.021	1.2	0.003	0.000	1.2	54.887	OK
FSR: 100 years: +45 %: 2880 mins: Winter	52.650	50.000	50.208	0.208	0.9	0.033	0.000	0.9	61.647	Surcharged
FSR: 100 years: +45 %: 4320 mins: Summer	52.650	50.000	50.018	0.018	0.9	0.003	0.000	0.9	59.343	OK
FSR: 100 years: +45 %: 4320 mins: Winter	52.650	50.000	50.134	0.134	0.6	0.021	0.000	0.6	66.224	Surcharged
FSR: 100 years: +45 %: 5760 mins: Summer	52.650	50.000	50.017	0.017	0.7	0.003	0.000	0.7	62.884	OK
FSR: 100 years: +45 %: 5760 mins: Winter	52.650	50.000	50.051	0.051	0.5	0.008	0.000	0.5	70.465	OK
FSR: 100 years: +45 %: 7200 mins: Summer	52.650	50.000	50.015	0.015	0.6	0.002	0.000	0.6	65.026	OK
FSR: 100 years: +45 %: 7200 mins: Winter	52.650	50.000	50.013	0.013	0.4	0.002	0.000	0.4	73.438	OK
FSR: 100 years: +45 %: 8640 mins: Summer	52.650	50.000	50.014	0.014	0.5	0.002	0.000	0.5	67.684	OK
FSR: 100 years: +45 %: 8640 mins: Winter	52.650	50.000	50.012	0.012	0.4	0.002	0.000	0.4	75.508	OK
FSR: 100 years: +45 %: 10080 mins: Summer	52.650	50.000	50.013	0.013	0.4	0.002	0.000	0.4	69.328	OK
FSR: 100 years: +45 %: 10080 mins: Winter	52.650	50.000	50.011	0.011	0.3	0.002	0.000	0.3	76.714	OK

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-09: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	51.300	49.500	50.562	1.062	44.5	0.169	0.000	40.2	45.202	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	51.300	49.500	50.696	1.196	46.7	0.190	0.000	43.0	50.339	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	51.300	49.500	50.566	1.066	43.2	0.169	0.000	42.0	59.455	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	51.300	49.500	50.655	1.155	45.2	0.184	0.000	43.9	66.583	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	51.300	49.500	50.437	0.937	40.1	0.149	0.000	39.2	74.336	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	51.300	49.500	50.398	0.898	38.8	0.143	0.000	38.2	83.058	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	51.300	49.500	50.166	0.666	33.4	0.106	0.000	32.9	89.939	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	51.300	49.500	50.044	0.544	30.3	0.086	0.000	30.4	100.496	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	51.300	49.500	49.987	0.487	28.8	0.077	0.000	28.5	99.304	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	51.300	49.500	49.866	0.366	24.8	0.058	0.000	24.8	110.900	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	51.300	49.500	49.866	0.366	25.5	0.058	0.000	25.4	106.004	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	51.300	49.500	49.924	0.424	20.6	0.067	0.000	20.4	118.273	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	51.300	49.500	49.875	0.375	20.3	0.060	0.000	20.3	115.276	Surcharged
FSR: 100 years: +45 %: 360 mins: Winter	51.300	49.500	49.999	0.499	15.1	0.079	0.000	15.2	128.814	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	51.300	49.500	49.921	0.421	16.7	0.067	0.000	16.7	122.528	Surcharged
FSR: 100 years: +45 %: 480 mins: Winter	51.300	49.500	50.051	0.551	12.1	0.088	0.000	12.1	136.863	Surcharged
FSR: 100 years: +45 %: 600 mins: Summer	51.300	49.500	49.953	0.453	14.1	0.072	0.000	14.0	128.354	Surcharged
FSR: 100 years: +45 %: 600 mins: Winter	51.300	49.500	50.089	0.589	10.2	0.094	0.000	10.1	143.385	Surcharged
FSR: 100 years: +45 %: 720 mins: Summer	51.300	49.500	49.978	0.478	12.2	0.076	0.000	12.2	133.356	Surcharged

FSR: 100 years: +45 %: 720 mins: Winter	51.300	49.500	50.119	0.619	8.8	0.098	0.000	8.8	148.913	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	51.300	49.500	50.012	0.512	9.7	0.081	0.000	9.7	141.555	Surcharged
FSR: 100 years: +45 %: 960 mins: Winter	51.300	49.500	50.163	0.663	7.0	0.105	0.000	7.0	158.177	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	51.300	49.500	50.041	0.541	7.0	0.086	0.000	7.0	153.862	Surcharged
FSR: 100 years: +45 %: 1440 mins: Winter	51.300	49.500	50.204	0.704	5.1	0.112	0.000	5.1	171.561	Surcharged
FSR: 100 years: +45 %: 2160 mins: Summer	51.300	49.500	50.041	0.541	5.1	0.086	0.000	5.1	167.018	Surcharged
FSR: 100 years: +45 %: 2160 mins: Winter	51.300	49.500	50.222	0.722	3.7	0.115	0.000	3.8	186.614	Surcharged
FSR: 100 years: +45 %: 2880 mins: Summer	51.300	49.500	50.011	0.511	4.0	0.081	0.000	4.0	177.219	Surcharged
FSR: 100 years: +45 %: 2880 mins: Winter	51.300	49.500	50.208	0.708	2.9	0.113	0.000	3.0	197.949	Surcharged
FSR: 100 years: +45 %: 4320 mins: Summer	51.300	49.500	49.936	0.436	2.9	0.069	0.000	2.9	191.002	Surcharged
FSR: 100 years: +45 %: 4320 mins: Winter	51.300	49.500	50.134	0.634	2.1	0.101	0.000	2.1	214.701	Surcharged
FSR: 100 years: +45 %: 5760 mins: Summer	51.300	49.500	49.880	0.380	2.3	0.060	0.000	2.3	203.023	Surcharged
FSR: 100 years: +45 %: 5760 mins: Winter	51.300	49.500	50.052	0.552	1.7	0.088	0.000	1.7	224.813	Surcharged
FSR: 100 years: +45 %: 7200 mins: Summer	51.300	49.500	49.832	0.332	1.9	0.053	0.000	1.9	209.966	Surcharged
FSR: 100 years: +45 %: 7200 mins: Winter	51.300	49.500	49.991	0.491	1.4	0.078	0.000	1.4	236.295	Surcharged
FSR: 100 years: +45 %: 8640 mins: Summer	51.300	49.500	49.788	0.288	1.7	0.046	0.000	1.7	215.511	Surcharged
FSR: 100 years: +45 %: 8640 mins: Winter	51.300	49.500	49.925	0.425	1.2	0.068	0.000	1.2	244.545	Surcharged
FSR: 100 years: +45 %: 10080 mins: Summer	51.300	49.500	49.743	0.243	1.4	0.039	0.000	1.4	222.319	Surcharged
FSR: 100 years: +45 %: 10080 mins: Winter	51.300	49.500	49.864	0.364	1.0	0.058	0.000	1.0	249.528	Surcharged

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-08: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	52.450	49.750	51.405	1.655	36.7	0.263	0.000	34.5	38.674	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	52.450	49.750	51.617	1.867	38.3	0.297	0.000	36.5	43.102	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	52.450	49.750	51.360	1.610	35.4	0.256	0.000	33.3	50.839	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	52.450	49.750	51.505	1.755	37.0	0.279	0.000	35.4	56.944	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	52.450	49.750	51.165	1.415	33.1	0.225	0.000	32.0	63.610	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	52.450	49.750	51.169	1.419	32.2	0.226	0.000	32.4	71.207	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	52.450	49.750	50.752	1.002	28.0	0.159	0.000	27.8	77.139	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	52.450	49.750	50.575	0.825	25.8	0.131	0.000	25.8	86.261	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	52.450	49.750	50.454	0.704	24.4	0.112	0.000	24.4	85.198	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	52.450	49.750	50.218	0.468	21.2	0.074	0.000	21.3	95.206	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	52.450	49.750	50.253	0.503	21.8	0.080	0.000	21.8	90.980	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	52.450	49.750	49.978	0.228	17.7	0.036	0.000	17.6	101.536	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	52.450	49.750	49.931	0.181	17.4	0.029	0.000	17.3	98.936	Surcharged
FSR: 100 years: +45 %: 360 mins: Winter	52.450	49.750	49.999	0.249	13.0	0.040	0.000	12.9	110.579	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	52.450	49.750	49.922	0.172	14.3	0.027	0.000	14.3	105.138	Surcharged
FSR: 100 years: +45 %: 480 mins: Winter	52.450	49.750	50.051	0.301	10.4	0.048	0.000	10.4	117.503	Surcharged
FSR: 100 years: +45 %: 600 mins: Summer	52.450	49.750	49.954	0.204	12.0	0.032	0.000	12.0	110.120	Surcharged
FSR: 100 years: +45 %: 600 mins: Winter	52.450	49.750	50.089	0.339	8.7	0.054	0.000	8.7	123.078	Surcharged
FSR: 100 years: +45 %: 720 mins: Summer	52.450	49.750	49.979	0.229	10.4	0.036	0.000	10.4	114.415	Surcharged

FSR: 100 years: +45 %: 720 mins: Winter	52.450	49.750	50.119	0.369	7.5	0.059	0.000	7.5	127.801	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	52.450	49.750	50.012	0.262	8.3	0.042	0.000	8.3	121.425	Surcharged
FSR: 100 years: +45 %: 960 mins: Winter	52.450	49.750	50.163	0.413	6.0	0.066	0.000	6.0	135.737	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	52.450	49.750	50.041	0.291	6.0	0.046	0.000	6.0	131.797	Surcharged
FSR: 100 years: +45 %: 1440 mins: Winter	52.450	49.750	50.204	0.454	4.3	0.072	0.000	4.3	147.032	Surcharged
FSR: 100 years: +45 %: 2160 mins: Summer	52.450	49.750	50.041	0.291	4.3	0.046	0.000	4.3	142.874	Surcharged
FSR: 100 years: +45 %: 2160 mins: Winter	52.450	49.750	50.222	0.472	3.1	0.075	0.000	3.1	159.759	Surcharged
FSR: 100 years: +45 %: 2880 mins: Summer	52.450	49.750	50.011	0.261	3.4	0.042	0.000	3.4	151.194	Surcharged
FSR: 100 years: +45 %: 2880 mins: Winter	52.450	49.750	50.208	0.458	2.5	0.073	0.000	2.5	169.167	Surcharged
FSR: 100 years: +45 %: 4320 mins: Summer	52.450	49.750	49.936	0.186	2.5	0.030	0.000	2.5	162.732	Surcharged
FSR: 100 years: +45 %: 4320 mins: Winter	52.450	49.750	50.134	0.384	1.8	0.061	0.000	1.8	182.755	Surcharged
FSR: 100 years: +45 %: 5760 mins: Summer	52.450	49.750	49.880	0.130	1.9	0.021	0.000	1.9	173.316	OK
FSR: 100 years: +45 %: 5760 mins: Winter	52.450	49.750	50.052	0.302	1.4	0.048	0.000	1.4	190.964	Surcharged
FSR: 100 years: +45 %: 7200 mins: Summer	52.450	49.750	49.832	0.082	1.6	0.013	0.000	1.6	178.903	OK
FSR: 100 years: +45 %: 7200 mins: Winter	52.450	49.750	49.991	0.241	1.2	0.038	0.000	1.2	201.180	Surcharged
FSR: 100 years: +45 %: 8640 mins: Summer	52.450	49.750	49.788	0.038	1.4	0.006	0.000	1.4	183.849	OK
FSR: 100 years: +45 %: 8640 mins: Winter	52.450	49.750	49.925	0.175	1.0	0.028	0.000	1.0	208.697	Surcharged
FSR: 100 years: +45 %: 10080 mins: Summer	52.450	49.750	49.777	0.027	1.2	0.004	0.000	1.2	189.894	OK
FSR: 100 years: +45 %: 10080 mins: Winter	52.450	49.750	49.865	0.115	0.9	0.018	0.000	0.9	212.300	OK

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-07: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	52.900	49.950	51.888	1.938	27.3	0.308	0.000	27.4	31.140	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	52.900	49.950	52.128	2.178	28.1	0.346	0.000	28.7	34.752	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	52.900	49.950	51.739	1.789	26.7	0.284	0.000	27.4	40.910	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	52.900	49.950	51.973	2.023	27.9	0.322	0.000	28.8	45.830	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	52.900	49.950	51.576	1.626	25.2	0.259	0.000	25.9	51.179	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	52.900	49.950	51.611	1.661	25.4	0.264	0.000	25.7	57.321	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	52.900	49.950	51.111	1.161	21.9	0.185	0.000	22.4	62.098	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	52.900	49.950	50.892	0.942	20.6	0.150	0.000	20.7	69.491	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	52.900	49.950	50.747	0.797	19.5	0.127	0.000	19.7	68.604	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	52.900	49.950	50.453	0.503	17.2	0.080	0.000	17.2	76.860	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	52.900	49.950	50.488	0.538	17.5	0.085	0.000	17.6	73.318	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	52.900	49.950	50.124	0.174	14.3	0.028	0.000	14.2	82.059	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	52.900	49.950	50.088	0.138	14.1	0.022	0.000	14.0	79.815	OK
FSR: 100 years: +45 %: 360 mins: Winter	52.900	49.950	50.041	0.091	10.4	0.014	0.000	10.4	89.414	OK
FSR: 100 years: +45 %: 480 mins: Summer	52.900	49.950	50.047	0.097	11.5	0.015	0.000	11.5	84.858	OK
FSR: 100 years: +45 %: 480 mins: Winter	52.900	49.950	50.051	0.101	8.3	0.016	0.000	8.3	94.981	OK
FSR: 100 years: +45 %: 600 mins: Summer	52.900	49.950	50.036	0.086	9.7	0.014	0.000	9.7	88.911	OK
FSR: 100 years: +45 %: 600 mins: Winter	52.900	49.950	50.089	0.139	7.0	0.022	0.000	7.0	99.475	OK
FSR: 100 years: +45 %: 720 mins: Summer	52.900	49.950	50.029	0.079	8.4	0.013	0.000	8.4	92.359	OK

FSR: 100 years: +45 %: 720 mins: Winter	52.900	49.950	50.119	0.169	6.1	0.027	0.000	6.1	103.259	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	52.900	49.950	50.018	0.068	6.7	0.011	0.000	6.7	98.015	OK
FSR: 100 years: +45 %: 960 mins: Winter	52.900	49.950	50.163	0.213	4.8	0.034	0.000	4.8	109.612	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	52.900	49.950	50.042	0.092	4.8	0.015	0.000	4.8	106.248	OK
FSR: 100 years: +45 %: 1440 mins: Winter	52.900	49.950	50.204	0.254	3.5	0.040	0.000	3.5	118.600	Surcharged
FSR: 100 years: +45 %: 2160 mins: Summer	52.900	49.950	50.041	0.091	3.5	0.014	0.000	3.5	115.052	OK
FSR: 100 years: +45 %: 2160 mins: Winter	52.900	49.950	50.222	0.272	2.5	0.043	0.000	2.5	128.731	Surcharged
FSR: 100 years: +45 %: 2880 mins: Summer	52.900	49.950	50.011	0.061	2.8	0.010	0.000	2.8	121.793	OK
FSR: 100 years: +45 %: 2880 mins: Winter	52.900	49.950	50.208	0.258	2.0	0.041	0.000	2.0	136.222	Surcharged
FSR: 100 years: +45 %: 4320 mins: Summer	52.900	49.950	49.986	0.036	2.0	0.006	0.000	2.0	130.945	OK
FSR: 100 years: +45 %: 4320 mins: Winter	52.900	49.950	50.134	0.184	1.4	0.029	0.000	1.4	147.301	Surcharged
FSR: 100 years: +45 %: 5760 mins: Summer	52.900	49.950	49.982	0.032	1.6	0.005	0.000	1.6	139.840	OK
FSR: 100 years: +45 %: 5760 mins: Winter	52.900	49.950	50.052	0.102	1.1	0.016	0.000	1.1	153.484	OK
FSR: 100 years: +45 %: 7200 mins: Summer	52.900	49.950	49.979	0.029	1.3	0.005	0.000	1.3	143.838	OK
FSR: 100 years: +45 %: 7200 mins: Winter	52.900	49.950	49.991	0.041	0.9	0.007	0.000	0.9	162.191	OK
FSR: 100 years: +45 %: 8640 mins: Summer	52.900	49.950	49.977	0.027	1.1	0.004	0.000	1.1	147.664	OK
FSR: 100 years: +45 %: 8640 mins: Winter	52.900	49.950	49.973	0.023	0.8	0.004	0.000	0.8	168.605	OK
FSR: 100 years: +45 %: 10080 mins: Summer	52.900	49.950	49.975	0.025	1.0	0.004	0.000	1.0	152.997	OK
FSR: 100 years: +45 %: 10080 mins: Winter	52.900	49.950	49.972	0.022	0.7	0.003	0.000	0.7	170.838	OK

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-01: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	53.400	51.400	52.640	1.240	8.1	0.197	0.000	3.6	3.588	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	53.400	51.400	52.909	1.509	8.5	0.240	0.000	3.8	4.019	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	53.400	51.400	52.548	1.148	5.4	0.182	0.000	5.3	4.699	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	53.400	51.400	52.836	1.436	5.7	0.228	0.000	3.7	5.272	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	53.400	51.400	52.335	0.935	4.7	0.149	0.000	4.6	5.892	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	53.400	51.400	52.345	0.945	4.3	0.150	0.000	3.2	6.603	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	53.400	51.400	51.730	0.330	3.4	0.052	0.000	3.3	7.162	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	53.400	51.400	51.449	0.049	2.7	0.008	0.000	2.7	8.023	OK
FSR: 100 years: +45 %: 180 mins: Summer	53.400	51.400	51.438	0.038	2.6	0.006	0.000	2.7	7.911	OK
FSR: 100 years: +45 %: 180 mins: Winter	53.400	51.400	51.434	0.034	2.0	0.005	0.000	2.0	8.895	OK
FSR: 100 years: +45 %: 240 mins: Summer	53.400	51.400	51.435	0.035	2.2	0.006	0.000	2.2	8.451	OK
FSR: 100 years: +45 %: 240 mins: Winter	53.400	51.400	51.430	0.030	1.6	0.005	0.000	1.6	9.452	OK
FSR: 100 years: +45 %: 360 mins: Summer	53.400	51.400	51.430	0.030	1.6	0.005	0.000	1.6	9.194	OK
FSR: 100 years: +45 %: 360 mins: Winter	53.400	51.400	51.426	0.026	1.2	0.004	0.000	1.2	10.303	OK
FSR: 100 years: +45 %: 480 mins: Summer	53.400	51.400	51.427	0.027	1.3	0.004	0.000	1.3	9.787	OK
FSR: 100 years: +45 %: 480 mins: Winter	53.400	51.400	51.423	0.023	1.0	0.004	0.000	1.0	10.951	OK
FSR: 100 years: +45 %: 600 mins: Summer	53.400	51.400	51.425	0.025	1.1	0.004	0.000	1.1	10.273	OK
FSR: 100 years: +45 %: 600 mins: Winter	53.400	51.400	51.421	0.021	0.8	0.003	0.000	0.8	11.467	OK
FSR: 100 years: +45 %: 720 mins: Summer	53.400	51.400	51.423	0.023	1.0	0.004	0.000	1.0	10.656	OK

FSR: 100 years: +45 %: 720 mins: Winter	53.400	51.400	51.420	0.020	0.7	0.003	0.000	0.7	11.905	OK
FSR: 100 years: +45 %: 960 mins: Summer	53.400	51.400	51.421	0.021	0.8	0.003	0.000	0.8	11.286	OK
FSR: 100 years: +45 %: 960 mins: Winter	53.400	51.400	51.418	0.018	0.6	0.003	0.000	0.6	12.654	OK
FSR: 100 years: +45 %: 1440 mins: Summer	53.400	51.400	51.418	0.018	0.6	0.003	0.000	0.6	12.270	OK
FSR: 100 years: +45 %: 1440 mins: Winter	53.400	51.400	51.415	0.015	0.4	0.002	0.000	0.4	13.728	OK
FSR: 100 years: +45 %: 2160 mins: Summer	53.400	51.400	51.415	0.015	0.4	0.002	0.000	0.4	13.290	OK
FSR: 100 years: +45 %: 2160 mins: Winter	53.400	51.400	51.413	0.013	0.3	0.002	0.000	0.3	14.874	OK
FSR: 100 years: +45 %: 2880 mins: Summer	53.400	51.400	51.414	0.014	0.3	0.002	0.000	0.3	14.076	OK
FSR: 100 years: +45 %: 2880 mins: Winter	53.400	51.400	51.412	0.012	0.2	0.002	0.000	0.2	15.630	OK
FSR: 100 years: +45 %: 4320 mins: Summer	53.400	51.400	51.412	0.012	0.2	0.002	0.000	0.2	15.138	OK
FSR: 100 years: +45 %: 4320 mins: Winter	53.400	51.400	51.410	0.010	0.2	0.002	0.000	0.2	17.046	OK
FSR: 100 years: +45 %: 5760 mins: Summer	53.400	51.400	51.411	0.011	0.2	0.002	0.000	0.2	16.374	OK
FSR: 100 years: +45 %: 5760 mins: Winter	53.400	51.400	51.409	0.009	0.1	0.001	0.000	0.1	17.748	OK
FSR: 100 years: +45 %: 7200 mins: Summer	53.400	51.400	51.410	0.010	0.2	0.002	0.000	0.2	16.656	OK
FSR: 100 years: +45 %: 7200 mins: Winter	53.400	51.400	51.408	0.008	0.1	0.001	0.000	0.1	18.822	OK
FSR: 100 years: +45 %: 8640 mins: Summer	53.400	51.400	51.409	0.009	0.1	0.001	0.000	0.1	17.004	OK
FSR: 100 years: +45 %: 8640 mins: Winter	53.400	51.400	51.408	0.008	0.1	0.001	0.000	0.1	19.590	OK
FSR: 100 years: +45 %: 10080 mins: Summer	53.400	51.400	51.408	0.008	0.1	0.001	0.000	0.1	17.424	OK
FSR: 100 years: +45 %: 10080 mins: Winter	53.400	51.400	51.407	0.007	0.1	0.001	0.000	0.1	19.356	OK

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-02: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	53.500	51.150	52.633	1.483	9.4	0.236	0.000	7.2	7.319	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	53.500	51.150	52.902	1.752	9.8	0.279	0.000	7.6	8.200	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	53.500	51.150	52.540	1.390	10.9	0.221	0.000	6.8	9.600	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	53.500	51.150	52.828	1.678	9.6	0.267	0.000	7.2	10.774	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	53.500	51.150	52.328	1.178	9.5	0.187	0.000	6.5	12.020	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	53.500	51.150	52.339	1.189	6.7	0.189	0.000	6.4	13.482	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	53.500	51.150	51.724	0.574	6.8	0.091	0.000	6.6	14.602	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	53.500	51.150	51.443	0.293	5.6	0.047	0.000	5.5	16.365	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	53.500	51.150	51.264	0.114	5.4	0.018	0.000	5.3	16.143	OK
FSR: 100 years: +45 %: 180 mins: Winter	53.500	51.150	51.200	0.050	4.2	0.008	0.000	4.2	18.119	OK
FSR: 100 years: +45 %: 240 mins: Summer	53.500	51.150	51.202	0.052	4.5	0.008	0.000	4.5	17.255	OK
FSR: 100 years: +45 %: 240 mins: Winter	53.500	51.150	51.195	0.045	3.4	0.007	0.000	3.4	19.307	OK
FSR: 100 years: +45 %: 360 mins: Summer	53.500	51.150	51.195	0.045	3.3	0.007	0.000	3.3	18.759	OK
FSR: 100 years: +45 %: 360 mins: Winter	53.500	51.150	51.188	0.038	2.5	0.006	0.000	2.5	21.039	OK
FSR: 100 years: +45 %: 480 mins: Summer	53.500	51.150	51.190	0.040	2.7	0.006	0.000	2.7	19.970	OK
FSR: 100 years: +45 %: 480 mins: Winter	53.500	51.150	51.184	0.034	2.0	0.005	0.000	2.0	22.388	OK
FSR: 100 years: +45 %: 600 mins: Summer	53.500	51.150	51.187	0.037	2.3	0.006	0.000	2.3	20.923	OK
FSR: 100 years: +45 %: 600 mins: Winter	53.500	51.150	51.181	0.031	1.6	0.005	0.000	1.6	23.419	OK
FSR: 100 years: +45 %: 720 mins: Summer	53.500	51.150	51.184	0.034	2.0	0.005	0.000	2.0	21.721	OK

FSR: 100 years: +45 %: 720 mins: Winter	53.500	51.150	51.179	0.029	1.4	0.005	0.000	1.4	24.325	OK
FSR: 100 years: +45 %: 960 mins: Summer	53.500	51.150	51.181	0.031	1.6	0.005	0.000	1.6	23.046	OK
FSR: 100 years: +45 %: 960 mins: Winter	53.500	51.150	51.176	0.026	1.1	0.004	0.000	1.1	25.825	OK
FSR: 100 years: +45 %: 1440 mins: Summer	53.500	51.150	51.176	0.026	1.1	0.004	0.000	1.1	25.008	OK
FSR: 100 years: +45 %: 1440 mins: Winter	53.500	51.150	51.172	0.022	0.8	0.004	0.000	0.8	27.924	OK
FSR: 100 years: +45 %: 2160 mins: Summer	53.500	51.150	51.172	0.022	0.8	0.004	0.000	0.8	27.126	OK
FSR: 100 years: +45 %: 2160 mins: Winter	53.500	51.150	51.169	0.019	0.6	0.003	0.000	0.6	30.240	OK
FSR: 100 years: +45 %: 2880 mins: Summer	53.500	51.150	51.170	0.020	0.7	0.003	0.000	0.6	28.631	OK
FSR: 100 years: +45 %: 2880 mins: Winter	53.500	51.150	51.167	0.017	0.5	0.003	0.000	0.5	31.944	OK
FSR: 100 years: +45 %: 4320 mins: Summer	53.500	51.150	51.167	0.017	0.5	0.003	0.000	0.5	30.797	OK
FSR: 100 years: +45 %: 4320 mins: Winter	53.500	51.150	51.165	0.015	0.3	0.002	0.000	0.3	34.571	OK
FSR: 100 years: +45 %: 5760 mins: Summer	53.500	51.150	51.165	0.015	0.4	0.002	0.000	0.4	33.173	OK
FSR: 100 years: +45 %: 5760 mins: Winter	53.500	51.150	51.163	0.013	0.3	0.002	0.000	0.3	36.065	OK
FSR: 100 years: +45 %: 7200 mins: Summer	53.500	51.150	51.164	0.014	0.3	0.002	0.000	0.3	33.767	OK
FSR: 100 years: +45 %: 7200 mins: Winter	53.500	51.150	51.162	0.012	0.2	0.002	0.000	0.2	38.171	OK
FSR: 100 years: +45 %: 8640 mins: Summer	53.500	51.150	51.163	0.013	0.3	0.002	0.000	0.3	34.433	OK
FSR: 100 years: +45 %: 8640 mins: Winter	53.500	51.150	51.161	0.011	0.2	0.002	0.000	0.2	40.019	OK
FSR: 100 years: +45 %: 10080 mins: Summer	53.500	51.150	51.162	0.012	0.2	0.002	0.000	0.2	35.573	OK
FSR: 100 years: +45 %: 10080 mins: Winter	53.500	51.150	51.161	0.011	0.2	0.002	0.000	0.2	40.415	OK

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-03: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	53.750	50.900	52.604	1.704	10.8	0.271	0.000	10.8	11.086	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	53.750	50.900	52.874	1.974	11.2	0.314	0.000	11.4	12.413	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	53.750	50.900	52.506	1.606	9.7	0.255	0.000	10.2	14.536	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	53.750	50.900	52.794	1.894	11.9	0.301	0.000	10.9	16.304	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	53.750	50.900	52.298	1.398	9.1	0.222	0.000	9.8	18.188	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	53.750	50.900	52.312	1.412	9.4	0.224	0.000	9.7	20.383	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	53.750	50.900	51.700	0.800	10.1	0.127	0.000	8.4	22.083	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	53.750	50.900	51.421	0.521	8.3	0.083	0.000	7.5	24.719	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	53.750	50.900	51.243	0.343	8.0	0.055	0.000	8.0	24.396	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	53.750	50.900	50.965	0.065	6.3	0.010	0.000	6.3	27.351	OK
FSR: 100 years: +45 %: 240 mins: Summer	53.750	50.900	50.967	0.067	6.8	0.011	0.000	6.8	26.066	OK
FSR: 100 years: +45 %: 240 mins: Winter	53.750	50.900	50.957	0.057	5.1	0.009	0.000	5.1	29.173	OK
FSR: 100 years: +45 %: 360 mins: Summer	53.750	50.900	50.957	0.057	5.0	0.009	0.000	5.0	28.343	OK
FSR: 100 years: +45 %: 360 mins: Winter	53.750	50.900	50.948	0.048	3.7	0.008	0.000	3.7	31.774	OK
FSR: 100 years: +45 %: 480 mins: Summer	53.750	50.900	50.951	0.051	4.1	0.008	0.000	4.1	30.152	OK
FSR: 100 years: +45 %: 480 mins: Winter	53.750	50.900	50.942	0.042	3.0	0.007	0.000	3.0	33.837	OK
FSR: 100 years: +45 %: 600 mins: Summer	53.750	50.900	50.946	0.046	3.4	0.007	0.000	3.4	31.585	OK
FSR: 100 years: +45 %: 600 mins: Winter	53.750	50.900	50.939	0.039	2.5	0.006	0.000	2.5	35.408	OK
FSR: 100 years: +45 %: 720 mins: Summer	53.750	50.900	50.943	0.043	3.0	0.007	0.000	3.0	32.809	OK

FSR: 100 years: +45 %: 720 mins: Winter	53.750	50.900	50.936	0.036	2.2	0.006	0.000	2.2	36.758	OK
FSR: 100 years: +45 %: 960 mins: Summer	53.750	50.900	50.938	0.038	2.4	0.006	0.000	2.4	34.824	OK
FSR: 100 years: +45 %: 960 mins: Winter	53.750	50.900	50.932	0.032	1.7	0.005	0.000	1.7	38.995	OK
FSR: 100 years: +45 %: 1440 mins: Summer	53.750	50.900	50.932	0.032	1.7	0.005	0.000	1.7	37.758	OK
FSR: 100 years: +45 %: 1440 mins: Winter	53.750	50.900	50.927	0.027	1.2	0.004	0.000	1.2	42.144	OK
FSR: 100 years: +45 %: 2160 mins: Summer	53.750	50.900	50.927	0.027	1.2	0.004	0.000	1.2	41.004	OK
FSR: 100 years: +45 %: 2160 mins: Winter	53.750	50.900	50.923	0.023	0.9	0.004	0.000	0.9	45.630	OK
FSR: 100 years: +45 %: 2880 mins: Summer	53.750	50.900	50.924	0.024	1.0	0.004	0.000	1.0	43.217	OK
FSR: 100 years: +45 %: 2880 mins: Winter	53.750	50.900	50.921	0.021	0.7	0.003	0.000	0.7	48.263	OK
FSR: 100 years: +45 %: 4320 mins: Summer	53.750	50.900	50.921	0.021	0.7	0.003	0.000	0.7	46.463	OK
FSR: 100 years: +45 %: 4320 mins: Winter	53.750	50.900	50.918	0.018	0.5	0.003	0.000	0.5	52.139	OK
FSR: 100 years: +45 %: 5760 mins: Summer	53.750	50.900	50.919	0.019	0.6	0.003	0.000	0.6	49.973	OK
FSR: 100 years: +45 %: 5760 mins: Winter	53.750	50.900	50.916	0.016	0.4	0.003	0.000	0.4	54.443	OK
FSR: 100 years: +45 %: 7200 mins: Summer	53.750	50.900	50.917	0.017	0.5	0.003	0.000	0.5	50.885	OK
FSR: 100 years: +45 %: 7200 mins: Winter	53.750	50.900	50.915	0.015	0.3	0.002	0.000	0.3	57.527	OK
FSR: 100 years: +45 %: 8640 mins: Summer	53.750	50.900	50.916	0.016	0.4	0.003	0.000	0.4	51.959	OK
FSR: 100 years: +45 %: 8640 mins: Winter	53.750	50.900	50.914	0.014	0.3	0.002	0.000	0.3	60.449	OK
FSR: 100 years: +45 %: 10080 mins: Summer	53.750	50.900	50.915	0.015	0.3	0.002	0.000	0.3	53.723	OK
FSR: 100 years: +45 %: 10080 mins: Winter	53.750	50.900	50.913	0.013	0.3	0.002	0.000	0.3	61.475	OK

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-04: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	53.200	50.750	52.564	1.814	16.7	0.288	0.000	14.4	16.753	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	53.200	50.750	52.834	2.084	17.1	0.331	0.000	15.3	18.754	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	53.200	50.750	52.458	1.708	14.8	0.272	0.000	14.2	21.972	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	53.200	50.750	52.746	1.996	15.8	0.317	0.000	15.1	24.636	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	53.200	50.750	52.256	1.506	13.9	0.240	0.000	13.7	27.483	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	53.200	50.750	52.274	1.524	13.6	0.242	0.000	13.9	30.808	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	53.200	50.750	51.667	0.917	13.0	0.146	0.000	12.0	33.394	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	53.200	50.750	51.392	0.642	11.4	0.102	0.000	11.0	37.371	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	53.200	50.750	51.214	0.464	12.2	0.074	0.000	10.5	36.882	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	53.200	50.750	50.829	0.079	9.6	0.013	0.000	9.5	41.337	OK
FSR: 100 years: +45 %: 240 mins: Summer	53.200	50.750	50.875	0.125	10.2	0.020	0.000	10.0	39.426	OK
FSR: 100 years: +45 %: 240 mins: Winter	53.200	50.750	50.821	0.071	7.7	0.011	0.000	7.7	44.124	OK
FSR: 100 years: +45 %: 360 mins: Summer	53.200	50.750	50.820	0.070	7.6	0.011	0.000	7.6	42.903	OK
FSR: 100 years: +45 %: 360 mins: Winter	53.200	50.750	50.809	0.059	5.6	0.009	0.000	5.6	48.073	OK
FSR: 100 years: +45 %: 480 mins: Summer	53.200	50.750	50.812	0.062	6.2	0.010	0.000	6.2	45.604	OK
FSR: 100 years: +45 %: 480 mins: Winter	53.200	50.750	50.802	0.052	4.5	0.008	0.000	4.5	51.107	OK
FSR: 100 years: +45 %: 600 mins: Summer	53.200	50.750	50.807	0.057	5.2	0.009	0.000	5.2	47.793	OK
FSR: 100 years: +45 %: 600 mins: Winter	53.200	50.750	50.797	0.047	3.8	0.008	0.000	3.8	53.542	OK
FSR: 100 years: +45 %: 720 mins: Summer	53.200	50.750	50.802	0.052	4.5	0.008	0.000	4.5	49.647	OK

FSR: 100 years: +45 %: 720 mins: Winter	53.200	50.750	50.794	0.044	3.3	0.007	0.000	3.3	55.617	OK
FSR: 100 years: +45 %: 960 mins: Summer	53.200	50.750	50.796	0.046	3.6	0.007	0.000	3.6	52.699	OK
FSR: 100 years: +45 %: 960 mins: Winter	53.200	50.750	50.789	0.039	2.6	0.006	0.000	2.6	58.946	OK
FSR: 100 years: +45 %: 1440 mins: Summer	53.200	50.750	50.789	0.039	2.6	0.006	0.000	2.6	57.144	OK
FSR: 100 years: +45 %: 1440 mins: Winter	53.200	50.750	50.783	0.033	1.9	0.005	0.000	1.9	63.757	OK
FSR: 100 years: +45 %: 2160 mins: Summer	53.200	50.750	50.783	0.033	1.9	0.005	0.000	1.9	61.938	OK
FSR: 100 years: +45 %: 2160 mins: Winter	53.200	50.750	50.778	0.028	1.4	0.004	0.000	1.4	69.096	OK
FSR: 100 years: +45 %: 2880 mins: Summer	53.200	50.750	50.779	0.029	1.5	0.005	0.000	1.5	65.465	OK
FSR: 100 years: +45 %: 2880 mins: Winter	53.200	50.750	50.775	0.025	1.1	0.004	0.000	1.1	72.959	OK
FSR: 100 years: +45 %: 4320 mins: Summer	53.200	50.750	50.775	0.025	1.1	0.004	0.000	1.1	70.181	OK
FSR: 100 years: +45 %: 4320 mins: Winter	53.200	50.750	50.771	0.021	0.8	0.003	0.000	0.8	79.091	OK
FSR: 100 years: +45 %: 5760 mins: Summer	53.200	50.750	50.772	0.022	0.8	0.004	0.000	0.8	75.358	OK
FSR: 100 years: +45 %: 5760 mins: Winter	53.200	50.750	50.769	0.019	0.6	0.003	0.000	0.6	82.043	OK
FSR: 100 years: +45 %: 7200 mins: Summer	53.200	50.750	50.770	0.020	0.7	0.003	0.000	0.7	77.074	OK
FSR: 100 years: +45 %: 7200 mins: Winter	53.200	50.750	50.767	0.017	0.5	0.003	0.000	0.5	86.987	OK
FSR: 100 years: +45 %: 8640 mins: Summer	53.200	50.750	50.769	0.019	0.6	0.003	0.000	0.6	79.342	OK
FSR: 100 years: +45 %: 8640 mins: Winter	53.200	50.750	50.766	0.016	0.4	0.003	0.000	0.4	91.145	OK
FSR: 100 years: +45 %: 10080 mins: Summer	53.200	50.750	50.768	0.018	0.5	0.003	0.000	0.5	82.384	OK
FSR: 100 years: +45 %: 10080 mins: Winter	53.200	50.750	50.765	0.015	0.4	0.002	0.000	0.4	92.446	OK

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-05: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	53.200	50.500	52.441	1.941	18.1	0.309	0.000	18.1	20.391	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	53.200	50.500	52.706	2.206	18.1	0.351	0.000	19.2	22.812	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	53.200	50.500	52.318	1.818	16.8	0.289	0.000	17.9	26.751	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	53.200	50.500	52.601	2.101	17.6	0.334	0.000	18.7	29.992	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	53.200	50.500	52.127	1.627	16.0	0.259	0.000	16.9	33.482	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	53.200	50.500	52.148	1.648	16.3	0.262	0.000	17.2	37.521	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	53.200	50.500	51.559	1.059	14.2	0.168	0.000	14.8	40.652	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	53.200	50.500	51.294	0.794	13.4	0.126	0.000	13.6	45.506	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	53.200	50.500	51.123	0.623	13.1	0.099	0.000	12.8	44.892	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	53.200	50.500	50.759	0.259	11.6	0.041	0.000	11.3	50.333	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	53.200	50.500	50.804	0.304	12.2	0.048	0.000	11.5	48.009	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	53.200	50.500	50.574	0.074	9.4	0.012	0.000	9.4	53.731	OK
FSR: 100 years: +45 %: 360 mins: Summer	53.200	50.500	50.573	0.073	9.3	0.012	0.000	9.2	52.251	OK
FSR: 100 years: +45 %: 360 mins: Winter	53.200	50.500	50.561	0.061	6.8	0.010	0.000	6.8	58.543	OK
FSR: 100 years: +45 %: 480 mins: Summer	53.200	50.500	50.565	0.065	7.5	0.010	0.000	7.5	55.534	OK
FSR: 100 years: +45 %: 480 mins: Winter	53.200	50.500	50.554	0.054	5.5	0.009	0.000	5.5	62.226	OK
FSR: 100 years: +45 %: 600 mins: Summer	53.200	50.500	50.559	0.059	6.3	0.009	0.000	6.3	58.191	OK
FSR: 100 years: +45 %: 600 mins: Winter	53.200	50.500	50.550	0.050	4.6	0.008	0.000	4.6	65.194	OK
FSR: 100 years: +45 %: 720 mins: Summer	53.200	50.500	50.555	0.055	5.5	0.009	0.000	5.5	60.470	OK

FSR: 100 years: +45 %: 720 mins: Winter	53.200	50.500	50.546	0.046	4.0	0.007	0.000	4.0	67.689	OK
FSR: 100 years: +45 %: 960 mins: Summer	53.200	50.500	50.548	0.048	4.4	0.008	0.000	4.4	64.177	OK
FSR: 100 years: +45 %: 960 mins: Winter	53.200	50.500	50.541	0.041	3.2	0.007	0.000	3.2	71.792	OK
FSR: 100 years: +45 %: 1440 mins: Summer	53.200	50.500	50.541	0.041	3.2	0.007	0.000	3.2	69.528	OK
FSR: 100 years: +45 %: 1440 mins: Winter	53.200	50.500	50.535	0.035	2.3	0.006	0.000	2.3	77.623	OK
FSR: 100 years: +45 %: 2160 mins: Summer	53.200	50.500	50.535	0.035	2.3	0.006	0.000	2.3	75.413	OK
FSR: 100 years: +45 %: 2160 mins: Winter	53.200	50.500	50.530	0.030	1.6	0.005	0.000	1.6	84.085	OK
FSR: 100 years: +45 %: 2880 mins: Summer	53.200	50.500	50.531	0.031	1.8	0.005	0.000	1.8	79.708	OK
FSR: 100 years: +45 %: 2880 mins: Winter	53.200	50.500	50.526	0.026	1.3	0.004	0.000	1.3	88.865	OK
FSR: 100 years: +45 %: 4320 mins: Summer	53.200	50.500	50.526	0.026	1.3	0.004	0.000	1.3	85.420	OK
FSR: 100 years: +45 %: 4320 mins: Winter	53.200	50.500	50.523	0.023	0.9	0.004	0.000	0.9	96.251	OK
FSR: 100 years: +45 %: 5760 mins: Summer	53.200	50.500	50.523	0.023	1.0	0.004	0.000	1.0	91.876	OK
FSR: 100 years: +45 %: 5760 mins: Winter	53.200	50.500	50.520	0.020	0.7	0.003	0.000	0.7	99.874	OK
FSR: 100 years: +45 %: 7200 mins: Summer	53.200	50.500	50.521	0.021	0.9	0.003	0.000	0.9	93.838	OK
FSR: 100 years: +45 %: 7200 mins: Winter	53.200	50.500	50.518	0.018	0.6	0.003	0.000	0.6	105.916	OK
FSR: 100 years: +45 %: 8640 mins: Summer	53.200	50.500	50.520	0.020	0.7	0.003	0.000	0.7	96.454	OK
FSR: 100 years: +45 %: 8640 mins: Winter	53.200	50.500	50.517	0.017	0.5	0.003	0.000	0.5	110.950	OK
FSR: 100 years: +45 %: 10080 mins: Summer	53.200	50.500	50.519	0.019	0.6	0.003	0.000	0.6	100.276	OK
FSR: 100 years: +45 %: 10080 mins: Winter	53.200	50.500	50.516	0.016	0.5	0.003	0.000	0.5	112.156	OK

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-06: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	53.200	50.200	52.248	2.048	25.4	0.326	0.000	22.6	26.835	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	53.200	50.200	52.508	2.308	25.8	0.367	0.000	23.6	29.997	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	53.200	50.200	52.102	1.902	23.3	0.302	0.000	23.0	35.228	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	53.200	50.200	52.377	2.177	24.3	0.346	0.000	24.2	39.484	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	53.200	50.200	51.931	1.731	21.9	0.275	0.000	21.9	44.085	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	53.200	50.200	51.962	1.762	21.7	0.280	0.000	21.9	49.402	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	53.200	50.200	51.401	1.201	19.0	0.191	0.000	19.1	53.516	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	53.200	50.200	51.152	0.952	17.7	0.151	0.000	17.7	59.886	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	53.200	50.200	50.989	0.789	17.1	0.125	0.000	16.9	59.108	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	53.200	50.200	50.650	0.450	15.0	0.072	0.000	14.8	66.249	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	53.200	50.200	50.690	0.490	15.3	0.078	0.000	15.1	63.182	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	53.200	50.200	50.296	0.096	12.3	0.015	0.000	12.4	70.725	OK
FSR: 100 years: +45 %: 360 mins: Summer	53.200	50.200	50.295	0.095	12.2	0.015	0.000	12.2	68.798	OK
FSR: 100 years: +45 %: 360 mins: Winter	53.200	50.200	50.279	0.079	9.0	0.013	0.000	9.0	77.076	OK
FSR: 100 years: +45 %: 480 mins: Summer	53.200	50.200	50.284	0.084	9.9	0.013	0.000	9.9	73.135	OK
FSR: 100 years: +45 %: 480 mins: Winter	53.200	50.200	50.269	0.069	7.2	0.011	0.000	7.2	81.932	OK
FSR: 100 years: +45 %: 600 mins: Summer	53.200	50.200	50.275	0.075	8.3	0.012	0.000	8.3	76.625	OK
FSR: 100 years: +45 %: 600 mins: Winter	53.200	50.200	50.262	0.062	6.0	0.010	0.000	6.0	85.830	OK
FSR: 100 years: +45 %: 720 mins: Summer	53.200	50.200	50.269	0.069	7.2	0.011	0.000	7.2	79.609	OK

FSR: 100 years: +45 %: 720 mins: Winter	53.200	50.200	50.257	0.057	5.2	0.009	0.000	5.2	89.099	OK
FSR: 100 years: +45 %: 960 mins: Summer	53.200	50.200	50.260	0.060	5.7	0.010	0.000	5.7	84.488	OK
FSR: 100 years: +45 %: 960 mins: Winter	53.200	50.200	50.251	0.051	4.2	0.008	0.000	4.2	94.592	OK
FSR: 100 years: +45 %: 1440 mins: Summer	53.200	50.200	50.251	0.051	4.2	0.008	0.000	4.2	91.550	OK
FSR: 100 years: +45 %: 1440 mins: Winter	53.200	50.200	50.243	0.043	3.0	0.007	0.000	3.0	102.206	OK
FSR: 100 years: +45 %: 2160 mins: Summer	53.200	50.200	50.243	0.043	3.0	0.007	0.000	3.0	99.169	OK
FSR: 100 years: +45 %: 2160 mins: Winter	53.200	50.200	50.236	0.036	2.2	0.006	0.000	2.2	110.887	OK
FSR: 100 years: +45 %: 2880 mins: Summer	53.200	50.200	50.238	0.038	2.4	0.006	0.000	2.4	105.027	OK
FSR: 100 years: +45 %: 2880 mins: Winter	53.200	50.200	50.232	0.032	1.7	0.005	0.000	1.7	117.330	OK
FSR: 100 years: +45 %: 4320 mins: Summer	53.200	50.200	50.232	0.032	1.7	0.005	0.000	1.7	112.792	OK
FSR: 100 years: +45 %: 4320 mins: Winter	53.200	50.200	50.227	0.027	1.2	0.004	0.000	1.2	127.070	OK
FSR: 100 years: +45 %: 5760 mins: Summer	53.200	50.200	50.229	0.029	1.3	0.005	0.000	1.3	120.676	OK
FSR: 100 years: +45 %: 5760 mins: Winter	53.200	50.200	50.224	0.024	1.0	0.004	0.000	1.0	131.939	OK
FSR: 100 years: +45 %: 7200 mins: Summer	53.200	50.200	50.226	0.026	1.1	0.004	0.000	1.1	123.376	OK
FSR: 100 years: +45 %: 7200 mins: Winter	53.200	50.200	50.222	0.022	0.8	0.004	0.000	0.8	139.967	OK
FSR: 100 years: +45 %: 8640 mins: Summer	53.200	50.200	50.224	0.024	1.0	0.004	0.000	1.0	127.227	OK
FSR: 100 years: +45 %: 8640 mins: Winter	53.200	50.200	50.221	0.021	0.7	0.003	0.000	0.7	145.474	OK
FSR: 100 years: +45 %: 10080 mins: Summer	53.200	50.200	50.223	0.023	0.9	0.004	0.000	0.9	131.955	OK
FSR: 100 years: +45 %: 10080 mins: Winter	53.200	50.200	50.220	0.020	0.6	0.003	0.000	0.6	146.758	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-16 - Pump: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	51.000	48.800	49.302	0.502	0.9	0.319	0.000	0.4	0.590	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	51.000	48.800	49.349	0.549	1.2	0.349	0.000	0.4	0.602	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	51.000	48.800	49.427	0.627	0.9	0.399	0.000	0.4	1.274	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	51.000	48.800	49.491	0.691	0.9	0.439	0.000	0.4	1.281	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	51.000	48.800	49.557	0.757	1.5	0.481	0.000	0.4	2.674	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	51.000	48.800	49.635	0.835	1.5	0.531	0.000	0.4	2.668	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	51.000	48.800	49.687	0.887	0.8	0.564	0.000	0.4	5.498	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	51.000	48.800	49.782	0.982	0.7	0.625	0.000	0.4	5.463	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	51.000	48.800	49.761	0.961	0.9	0.612	0.000	0.4	8.334	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	51.000	48.800	49.866	1.066	0.7	0.678	0.000	0.4	8.272	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	51.000	48.800	49.812	1.012	0.7	0.643	0.000	0.4	11.175	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	51.000	48.800	49.924	1.124	0.8	0.715	0.000	0.4	11.087	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	51.000	48.800	49.875	1.075	0.6	0.684	0.000	0.4	16.865	Surcharged
FSR: 100 years: +45 %: 360 mins: Winter	51.000	48.800	49.998	1.198	0.6	0.762	0.000	0.4	16.724	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	51.000	48.800	49.921	1.121	0.6	0.713	0.000	0.4	22.562	Surcharged
FSR: 100 years: +45 %: 480 mins: Winter	51.000	48.800	50.051	1.251	0.5	0.795	0.000	0.4	22.368	Surcharged
FSR: 100 years: +45 %: 600 mins: Summer	51.000	48.800	49.953	1.153	0.5	0.734	0.000	0.4	28.264	Surcharged
FSR: 100 years: +45 %: 600 mins: Winter	51.000	48.800	50.089	1.289	0.5	0.820	0.000	0.4	28.021	Surcharged
FSR: 100 years: +45 %: 720 mins: Summer	51.000	48.800	49.978	1.178	0.5	0.749	0.000	0.4	33.969	Surcharged

FSR: 100 years: +45 %: 720 mins: Winter	51.000	48.800	50.119	1.319	0.6	0.839	0.000	0.4	33.676	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	51.000	48.800	50.012	1.212	0.5	0.771	0.000	0.4	45.389	Surcharged
FSR: 100 years: +45 %: 960 mins: Winter	51.000	48.800	50.163	1.363	0.5	0.867	0.000	0.4	44.996	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	51.000	48.800	50.041	1.241	0.5	0.789	0.000	0.4	68.239	Surcharged
FSR: 100 years: +45 %: 1440 mins: Winter	51.000	48.800	50.204	1.404	0.5	0.893	0.000	0.4	67.620	Surcharged
FSR: 100 years: +45 %: 2160 mins: Summer	51.000	48.800	50.041	1.241	0.4	0.789	0.000	0.4	102.440	Surcharged
FSR: 100 years: +45 %: 2160 mins: Winter	51.000	48.800	50.222	1.422	0.4	0.904	0.000	0.4	101.522	Surcharged
FSR: 100 years: +45 %: 2880 mins: Summer	51.000	48.800	50.011	1.211	0.4	0.770	0.000	0.4	136.714	Surcharged
FSR: 100 years: +45 %: 2880 mins: Winter	51.000	48.800	50.207	1.407	0.4	0.895	0.000	0.4	135.444	Surcharged
FSR: 100 years: +45 %: 4320 mins: Summer	51.000	48.800	49.936	1.136	0.4	0.722	0.000	0.4	203.196	Surcharged
FSR: 100 years: +45 %: 4320 mins: Winter	51.000	48.800	50.134	1.334	0.4	0.848	0.000	0.4	202.932	Surcharged
FSR: 100 years: +45 %: 5760 mins: Summer	51.000	48.800	49.879	1.079	0.4	0.686	0.000	0.4	264.696	Surcharged
FSR: 100 years: +45 %: 5760 mins: Winter	51.000	48.800	50.051	1.251	0.4	0.796	0.000	0.4	268.313	Surcharged
FSR: 100 years: +45 %: 7200 mins: Summer	51.000	48.800	49.831	1.031	0.4	0.656	0.000	0.4	274.161	Surcharged
FSR: 100 years: +45 %: 7200 mins: Winter	51.000	48.800	49.991	1.191	0.4	0.757	0.000	0.4	308.647	Surcharged
FSR: 100 years: +45 %: 8640 mins: Summer	51.000	48.800	49.787	0.987	0.4	0.628	0.000	0.4	282.609	Surcharged
FSR: 100 years: +45 %: 8640 mins: Winter	51.000	48.800	49.924	1.124	0.4	0.715	0.000	0.4	318.969	Surcharged
FSR: 100 years: +45 %: 10080 mins: Summer	51.000	48.800	49.743	0.943	0.4	0.599	0.000	0.4	291.330	Surcharged
FSR: 100 years: +45 %: 10080 mins: Winter	51.000	48.800	49.864	1.064	0.4	0.677	0.000	0.4	325.226	Surcharged

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-10: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	51.400	49.450	50.260	0.810	56.6	0.229	0.000	58.1	59.233	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	51.400	49.450	50.357	0.907	60.4	0.257	0.000	61.8	65.994	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	51.400	49.450	50.236	0.786	58.0	0.222	0.000	57.1	77.861	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	51.400	49.450	50.299	0.849	60.5	0.240	0.000	59.5	87.134	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	51.400	49.450	50.144	0.694	54.1	0.196	0.000	53.4	97.263	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	51.400	49.450	50.119	0.669	52.4	0.189	0.000	52.4	108.670	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	51.400	49.450	49.950	0.500	45.2	0.142	0.000	44.9	117.642	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	51.400	49.450	49.858	0.408	40.4	0.115	0.000	40.4	131.438	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	51.400	49.450	49.821	0.371	38.7	0.105	0.000	38.5	129.895	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	51.400	49.450	49.866	0.416	32.7	0.118	0.000	32.7	145.065	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	51.400	49.450	49.812	0.362	34.0	0.102	0.000	33.9	138.658	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	51.400	49.450	49.924	0.474	26.9	0.134	0.000	26.7	154.771	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	51.400	49.450	49.875	0.425	26.6	0.120	0.000	26.6	150.813	Surcharged
FSR: 100 years: +45 %: 360 mins: Winter	51.400	49.450	49.998	0.548	19.9	0.155	0.000	19.9	168.563	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	51.400	49.450	49.921	0.471	21.9	0.133	0.000	21.9	160.288	Surcharged
FSR: 100 years: +45 %: 480 mins: Winter	51.400	49.450	50.051	0.601	15.9	0.170	0.000	15.9	179.156	Surcharged
FSR: 100 years: +45 %: 600 mins: Summer	51.400	49.450	49.953	0.503	18.4	0.142	0.000	18.4	167.926	Surcharged
FSR: 100 years: +45 %: 600 mins: Winter	51.400	49.450	50.089	0.639	13.3	0.181	0.000	13.3	187.603	Surcharged
FSR: 100 years: +45 %: 720 mins: Summer	51.400	49.450	49.978	0.528	16.0	0.150	0.000	16.0	174.460	Surcharged

FSR: 100 years: +45 %: 720 mins: Winter	51.400	49.450	50.119	0.669	11.5	0.189	0.000	11.4	194.965	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	51.400	49.450	50.012	0.562	12.7	0.159	0.000	12.7	185.217	Surcharged
FSR: 100 years: +45 %: 960 mins: Winter	51.400	49.450	50.164	0.714	9.2	0.202	0.000	9.1	207.109	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	51.400	49.450	50.041	0.591	9.2	0.167	0.000	9.2	201.300	Surcharged
FSR: 100 years: +45 %: 1440 mins: Winter	51.400	49.450	50.204	0.754	6.7	0.213	0.000	6.5	224.527	Surcharged
FSR: 100 years: +45 %: 2160 mins: Summer	51.400	49.450	50.041	0.591	6.6	0.167	0.000	6.6	218.536	Surcharged
FSR: 100 years: +45 %: 2160 mins: Winter	51.400	49.450	50.223	0.773	4.9	0.219	0.000	4.8	243.921	Surcharged
FSR: 100 years: +45 %: 2880 mins: Summer	51.400	49.450	50.012	0.562	5.2	0.159	0.000	5.2	231.333	Surcharged
FSR: 100 years: +45 %: 2880 mins: Winter	51.400	49.450	50.208	0.758	3.9	0.214	0.000	3.8	258.534	Surcharged
FSR: 100 years: +45 %: 4320 mins: Summer	51.400	49.450	49.936	0.486	3.8	0.138	0.000	3.8	249.696	Surcharged
FSR: 100 years: +45 %: 4320 mins: Winter	51.400	49.450	50.135	0.685	2.8	0.194	0.000	2.7	279.298	Surcharged
FSR: 100 years: +45 %: 5760 mins: Summer	51.400	49.450	49.880	0.430	3.0	0.122	0.000	3.0	265.077	Surcharged
FSR: 100 years: +45 %: 5760 mins: Winter	51.400	49.450	50.052	0.602	2.2	0.170	0.000	2.2	293.476	Surcharged
FSR: 100 years: +45 %: 7200 mins: Summer	51.400	49.450	49.832	0.382	2.5	0.108	0.000	2.5	274.202	Surcharged
FSR: 100 years: +45 %: 7200 mins: Winter	51.400	49.450	49.991	0.541	1.8	0.153	0.000	1.8	308.639	Surcharged
FSR: 100 years: +45 %: 8640 mins: Summer	51.400	49.450	49.788	0.338	2.2	0.096	0.000	2.2	282.621	Surcharged
FSR: 100 years: +45 %: 8640 mins: Winter	51.400	49.450	49.925	0.475	1.6	0.134	0.000	1.6	318.954	Surcharged
FSR: 100 years: +45 %: 10080 mins: Summer	51.400	49.450	49.743	0.293	1.9	0.083	0.000	1.9	291.403	Surcharged
FSR: 100 years: +45 %: 10080 mins: Winter	51.400	49.450	49.865	0.415	1.4	0.117	0.000	1.4	325.265	Surcharged

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-17: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	0.568	OK
FSR: 100 years: +45 %: 15 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	0.578	OK
FSR: 100 years: +45 %: 30 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	1.254	OK
FSR: 100 years: +45 %: 30 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	1.260	OK
FSR: 100 years: +45 %: 60 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	2.655	OK
FSR: 100 years: +45 %: 60 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	2.649	OK
FSR: 100 years: +45 %: 120 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	5.479	OK
FSR: 100 years: +45 %: 120 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	5.444	OK
FSR: 100 years: +45 %: 180 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	8.315	OK
FSR: 100 years: +45 %: 180 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	8.253	OK
FSR: 100 years: +45 %: 240 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	11.156	OK
FSR: 100 years: +45 %: 240 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	11.068	OK
FSR: 100 years: +45 %: 360 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	16.846	OK
FSR: 100 years: +45 %: 360 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	16.705	OK
FSR: 100 years: +45 %: 480 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	22.543	OK
FSR: 100 years: +45 %: 480 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	22.349	OK
FSR: 100 years: +45 %: 600 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	28.244	OK
FSR: 100 years: +45 %: 600 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	28.002	OK
FSR: 100 years: +45 %: 720 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	33.950	OK

FSR: 100 years: +45 %: 720 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	33.657	OK
FSR: 100 years: +45 %: 960 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	45.370	OK
FSR: 100 years: +45 %: 960 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	44.977	OK
FSR: 100 years: +45 %: 1440 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	68.220	OK
FSR: 100 years: +45 %: 1440 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	67.601	OK
FSR: 100 years: +45 %: 2160 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	102.421	OK
FSR: 100 years: +45 %: 2160 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	101.503	OK
FSR: 100 years: +45 %: 2880 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	136.695	OK
FSR: 100 years: +45 %: 2880 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	135.425	OK
FSR: 100 years: +45 %: 4320 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	203.177	OK
FSR: 100 years: +45 %: 4320 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	202.913	OK
FSR: 100 years: +45 %: 5760 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	264.689	OK
FSR: 100 years: +45 %: 5760 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	268.294	OK
FSR: 100 years: +45 %: 7200 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	274.160	OK
FSR: 100 years: +45 %: 7200 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	308.646	OK
FSR: 100 years: +45 %: 8640 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	282.608	OK
FSR: 100 years: +45 %: 8640 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	318.968	OK
FSR: 100 years: +45 %: 10080 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	291.329	OK
FSR: 100 years: +45 %: 10080 mins: Winter	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	325.225	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Y- Junction: Rank By: Max. Depth

Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 100 years: +45 %: 15 mins: Summer		50.470	50.485	0.015	0.4			0.4	0.568	OK
FSR: 100 years: +45 %: 15 mins: Winter		50.470	50.485	0.015	0.4			0.4	0.578	OK
FSR: 100 years: +45 %: 30 mins: Summer		50.470	50.485	0.015	0.4			0.4	1.254	OK
FSR: 100 years: +45 %: 30 mins: Winter		50.470	50.485	0.015	0.4			0.4	1.260	OK
FSR: 100 years: +45 %: 60 mins: Summer		50.470	50.485	0.015	0.4			0.4	2.655	OK
FSR: 100 years: +45 %: 60 mins: Winter		50.470	50.485	0.015	0.4			0.4	2.649	OK
FSR: 100 years: +45 %: 120 mins: Summer		50.470	50.485	0.015	0.4			0.4	5.479	OK
FSR: 100 years: +45 %: 120 mins: Winter		50.470	50.485	0.015	0.4			0.4	5.444	OK
FSR: 100 years: +45 %: 180 mins: Summer		50.470	50.485	0.015	0.4			0.4	8.315	OK
FSR: 100 years: +45 %: 180 mins: Winter		50.470	50.485	0.015	0.4			0.4	8.253	OK
FSR: 100 years: +45 %: 240 mins: Summer		50.470	50.485	0.015	0.4			0.4	11.156	OK
FSR: 100 years: +45 %: 240 mins: Winter		50.470	50.485	0.015	0.4			0.4	11.068	OK
FSR: 100 years: +45 %: 360 mins: Summer		50.470	50.485	0.015	0.4			0.4	16.846	OK
FSR: 100 years: +45 %: 360 mins: Winter		50.470	50.485	0.015	0.4			0.4	16.705	OK
FSR: 100 years: +45 %: 480 mins: Summer		50.470	50.485	0.015	0.4			0.4	22.543	OK
FSR: 100 years: +45 %: 480 mins: Winter		50.470	50.485	0.015	0.4			0.4	22.349	OK
FSR: 100 years: +45 %: 600 mins: Summer		50.470	50.485	0.015	0.4			0.4	28.244	OK
FSR: 100 years: +45 %: 600 mins: Winter		50.470	50.485	0.015	0.4			0.4	28.002	OK
FSR: 100 years: +45 %: 720 mins: Summer		50.470	50.485	0.015	0.4			0.4	33.950	OK

FSR: 100 years: +45 %: 720 mins: Winter	50.470	50.485	0.015	0.4	0.4	33.657	OK
FSR: 100 years: +45 %: 960 mins: Summer	50.470	50.485	0.015	0.4	0.4	45.370	OK
FSR: 100 years: +45 %: 960 mins: Winter	50.470	50.485	0.015	0.4	0.4	44.977	OK
FSR: 100 years: +45 %: 1440 mins: Summer	50.470	50.485	0.015	0.4	0.4	68.220	OK
FSR: 100 years: +45 %: 1440 mins: Winter	50.470	50.485	0.015	0.4	0.4	67.601	OK
FSR: 100 years: +45 %: 2160 mins: Summer	50.470	50.485	0.015	0.4	0.4	102.421	OK
FSR: 100 years: +45 %: 2160 mins: Winter	50.470	50.485	0.015	0.4	0.4	101.503	OK
FSR: 100 years: +45 %: 2880 mins: Summer	50.470	50.485	0.015	0.4	0.4	136.695	OK
FSR: 100 years: +45 %: 2880 mins: Winter	50.470	50.485	0.015	0.4	0.4	135.425	OK
FSR: 100 years: +45 %: 4320 mins: Summer	50.470	50.485	0.015	0.4	0.4	203.177	OK
FSR: 100 years: +45 %: 4320 mins: Winter	50.470	50.485	0.015	0.4	0.4	202.913	OK
FSR: 100 years: +45 %: 5760 mins: Summer	50.470	50.485	0.015	0.4	0.4	264.689	OK
FSR: 100 years: +45 %: 5760 mins: Winter	50.470	50.485	0.015	0.4	0.4	268.294	OK
FSR: 100 years: +45 %: 7200 mins: Summer	50.470	50.485	0.015	0.4	0.4	274.160	OK
FSR: 100 years: +45 %: 7200 mins: Winter	50.470	50.485	0.015	0.4	0.4	308.646	OK
FSR: 100 years: +45 %: 8640 mins: Summer	50.470	50.485	0.015	0.4	0.4	282.608	OK
FSR: 100 years: +45 %: 8640 mins: Winter	50.470	50.485	0.015	0.4	0.4	318.968	OK
FSR: 100 years: +45 %: 10080 mins: Summer	50.470	50.485	0.015	0.4	0.4	291.329	OK
FSR: 100 years: +45 %: 10080 mins: Winter	50.470	50.485	0.015	0.4	0.4	325.225	OK

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for Att Tank: Rank By: Max. Avg. Depth

Storm Event	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)	Status
FSR: 100 years: +45 %: 15 mins: Summer	49.302	49.302	0.402	0.402	58.1	58.098	0.000	0.000	0.9	1.177	897	74.908	OK
FSR: 100 years: +45 %: 15 mins: Winter	49.349	49.349	0.449	0.449	61.8	64.779	0.000	0.000	1.2	1.243	842	72.023	OK
FSR: 100 years: +45 %: 30 mins: Summer	49.427	49.427	0.527	0.527	57.1	76.166	0.000	0.000	0.9	2.004	895	67.105	OK
FSR: 100 years: +45 %: 30 mins: Winter	49.491	49.491	0.591	0.591	59.5	85.341	0.000	0.000	0.9	2.085	994	63.142	OK
FSR: 100 years: +45 %: 60 mins: Summer	49.557	49.557	0.657	0.657	53.4	94.820	0.000	0.000	1.5	3.548	757	59.048	OK
FSR: 100 years: +45 %: 60 mins: Winter	49.635	49.635	0.735	0.735	52.4	106.185	0.000	0.000	1.5	3.635	845	54.140	OK
FSR: 100 years: +45 %: 120 mins: Summer	49.687	49.687	0.787	0.787	44.9	113.676	0.000	0.000	0.8	6.521	1315	50.905	OK
FSR: 100 years: +45 %: 120 mins: Winter	49.782	49.782	0.882	0.882	40.4	127.404	0.000	0.000	0.7	6.590	1507	44.976	OK
FSR: 100 years: +45 %: 180 mins: Summer	49.762	49.762	0.862	0.862	38.5	124.420	0.000	0.000	0.9	9.438	1306	46.264	OK
FSR: 100 years: +45 %: 180 mins: Winter	49.866	49.866	0.966	0.966	32.7	139.542	0.000	0.000	0.7	9.485	1989	39.733	OK
FSR: 100 years: +45 %: 240 mins: Summer	49.812	49.812	0.912	0.912	33.9	131.654	0.000	0.000	0.7	12.314	1887	43.140	OK
FSR: 100 years: +45 %: 240 mins: Winter	49.924	49.924	1.024	1.024	26.7	147.825	0.000	0.000	0.8	12.355	1913	36.156	OK
FSR: 100 years: +45 %: 360 mins: Summer	49.875	49.875	0.975	0.975	26.6	140.832	0.000	0.000	0.6	18.055	2094	39.176	OK
FSR: 100 years: +45 %: 360 mins: Winter	49.999	49.999	1.099	1.099	19.9	158.626	0.000	0.000	0.6	18.058	2472	31.491	OK

FSR: 100 years: +45 %: 480 mins: Summer	49.921	49.921	1.021	1.021	21.9	147.382	0.000	0.000	0.6	23.783	2170	36.347	OK
FSR: 100 years: +45 %: 480 mins: Winter	50.051	50.051	1.151	1.151	15.9	166.180	0.000	0.000	0.5	23.741	2725	28.228	OK
FSR: 100 years: +45 %: 600 mins: Summer	49.953	49.953	1.053	1.053	18.4	152.120	0.000	0.000	0.5	29.499	2442	34.301	OK
FSR: 100 years: +45 %: 600 mins: Winter	50.089	50.089	1.189	1.189	13.3	171.693	0.000	0.000	0.5	29.417	2902	25.847	OK
FSR: 100 years: +45 %: 720 mins: Summer	49.978	49.978	1.078	1.078	16.0	155.712	0.000	0.000	0.5	35.211	2566	32.749	OK
FSR: 100 years: +45 %: 720 mins: Winter	50.119	50.119	1.219	1.219	11.4	176.057	0.000	0.000	0.6	35.106	2746	23.962	OK
FSR: 100 years: +45 %: 960 mins: Summer	50.012	50.012	1.112	1.112	12.7	160.525	0.000	0.000	0.5	46.627	2747	30.671	OK
FSR: 100 years: +45 %: 960 mins: Winter	50.163	50.163	1.263	1.263	9.1	182.338	0.000	0.000	0.5	46.451	3046	21.250	OK
FSR: 100 years: +45 %: 1440 mins: Summer	50.041	50.041	1.141	1.141	9.2	164.772	0.000	0.000	0.5	69.424	2950	28.837	OK
FSR: 100 years: +45 %: 1440 mins: Winter	50.204	50.204	1.304	1.304	6.5	188.275	0.000	0.000	0.5	69.072	3330	18.686	OK
FSR: 100 years: +45 %: 2160 mins: Summer	50.041	50.041	1.141	1.141	6.6	164.708	0.000	0.000	0.4	103.496	3055	28.864	OK
FSR: 100 years: +45 %: 2160 mins: Winter	50.222	50.222	1.322	1.322	4.8	190.867	0.000	0.000	0.4	102.872	3653	17.566	OK
FSR: 100 years: +45 %: 2880 mins: Summer	50.011	50.011	1.111	1.111	5.2	160.386	0.000	0.000	0.4	137.615	3090	30.731	OK
FSR: 100 years: +45 %: 2880 mins: Winter	50.208	50.208	1.308	1.308	3.8	188.811	0.000	0.000	0.4	136.624	3718	18.454	OK
FSR: 100 years: +45 %: 4320 mins: Summer	49.936	49.936	1.036	1.036	3.8	149.568	0.000	0.000	0.4	203.709	2936	35.403	OK
FSR: 100 years: +45 %: 4320 mins: Winter	50.134	50.134	1.234	1.234	2.7	178.173	0.000	0.000	0.4	203.716	3565	23.049	OK
FSR: 100 years: +45 %: 5760 mins: Summer	49.879	49.879	0.979	0.979	3.0	141.432	0.000	0.000	0.4	264.733	2806	38.917	OK

FSR: 100 years: +45 %: 5760 mins: Winter	50.051	50.051	1.151	1.151	2.2	166.235	0.000	0.000	0.4	268.664	3338	28.204	OK
FSR: 100 years: +45 %: 7200 mins: Summer	49.831	49.831	0.931	0.931	2.5	134.503	0.000	0.000	0.4	274.198	2712	41.909	OK
FSR: 100 years: +45 %: 7200 mins: Winter	49.991	49.991	1.091	1.091	1.8	157.535	0.000	0.000	0.4	308.677	3164	31.962	OK
FSR: 100 years: +45 %: 8640 mins: Summer	49.787	49.787	0.887	0.887	2.2	128.150	0.000	0.000	0.4	282.612	2586	44.653	OK
FSR: 100 years: +45 %: 8640 mins: Winter	49.924	49.924	1.024	1.024	1.6	147.927	0.000	0.000	0.4	319.001	3000	36.112	OK
FSR: 100 years: +45 %: 10080 mins: Summer	49.743	49.743	0.843	0.843	1.9	121.682	0.000	0.000	0.4	291.334	2457	47.447	OK
FSR: 100 years: +45 %: 10080 mins: Winter	49.864	49.864	0.964	0.964	1.4	139.237	0.000	0.000	0.4	325.265	2847	39.865	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-13: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.934	0.100	5.097	1.0	0.65	6.2	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-13	SWC-14	53.200	52.148	0.100	5.704	1.1	0.66	6.2	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.780	0.100	6.714	0.9	0.74	7.0	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.913	0.100	7.515	1.0	0.65	6.1	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.548	0.100	8.430	1.0	0.7	6.6	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.431	0.100	9.449	1.1	0.64	6.0	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.252	0.100	10.237	1.2	0.52	4.9	OK
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.246	0.045	11.464	1.1	0.42	3.9	OK
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.245	0.045	11.325	1.1	0.4	3.8	OK
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.239	0.039	12.676	1.0	0.31	2.9	OK
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.241	0.040	12.112	1.1	0.33	3.1	OK
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.235	0.034	13.551	1.0	0.25	2.4	OK
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.235	0.034	13.184	1.0	0.25	2.3	OK
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.229	0.029	14.779	0.9	0.18	1.7	OK
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.231	0.031	13.993	0.9	0.2	1.9	OK
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.226	0.026	15.721	0.8	0.15	1.4	OK
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.228	0.028	14.670	0.9	0.17	1.6	OK
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.224	0.024	16.423	0.8	0.12	1.1	OK
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.226	0.026	15.228	0.9	0.15	1.4	OK
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.222	0.022	17.076	0.8	0.11	1.0	OK
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.223	0.023	16.158	0.8	0.12	1.1	OK
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.220	0.020	18.114	0.7	0.08	0.8	OK
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.220	0.020	17.526	0.7	0.08	0.8	OK
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.217	0.017	19.608	0.7	0.06	0.6	OK
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.217	0.017	19.121	0.7	0.06	0.6	OK
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.214	0.014	21.173	0.6	0.04	0.4	OK
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.215	0.015	20.069	0.6	0.05	0.4	OK
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.213	0.013	22.493	0.6	0.04	0.3	OK

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.213	0.013	21.575	0.6	0.03	0.3	OK
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.211	0.011	24.149	0.5	0.02	0.2	OK
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.212	0.012	23.291	0.5	0.03	0.3	OK
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.210	0.010	25.499	0.5	0.02	0.2	OK
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.211	0.011	24.179	0.5	0.02	0.2	OK
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.209	0.009	27.035	0.4	0.02	0.2	OK
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.210	0.010	25.085	0.5	0.02	0.2	OK
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.208	0.008	28.109	0.4	0.01	0.1	OK
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.209	0.009	25.169	0.4	0.02	0.2	OK
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.208	0.008	28.433	0.4	0.01	0.1	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-14: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-14	SWC-15	53.000	51.746	0.100	8.652	1.3	1.09	10.5	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-14	SWC-15	53.000	51.948	0.100	9.683	1.4	1.14	11.0	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-14	SWC-15	53.000	51.582	0.100	11.353	1.2	1.01	9.7	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-14	SWC-15	53.000	51.708	0.100	12.712	1.3	1.06	10.2	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-14	SWC-15	53.000	51.367	0.100	14.231	1.2	0.94	9.1	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-14	SWC-15	53.000	51.260	0.100	15.949	1.1	0.91	8.8	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.890	0.100	17.265	1.1	0.79	7.6	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.690	0.100	19.318	1.1	0.68	6.6	OK
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.689	0.100	19.078	1.1	0.66	6.4	OK
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.679	0.055	21.354	1.1	0.51	4.9	OK
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.681	0.058	20.406	1.1	0.55	5.3	OK
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.673	0.048	22.847	1.1	0.41	4.0	OK
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.673	0.048	22.210	1.1	0.41	3.9	OK
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.666	0.040	24.902	1.0	0.3	2.9	OK
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.668	0.042	23.581	1.0	0.33	3.2	OK
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.662	0.036	26.474	0.9	0.24	2.3	OK
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.664	0.038	24.709	1.0	0.28	2.7	OK
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.659	0.048	27.680	0.9	0.2	1.9	OK
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.662	0.036	25.663	0.9	0.24	2.3	OK
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.656	0.063	28.759	0.9	0.17	1.7	OK
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.658	0.032	27.240	0.9	0.19	1.9	OK
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.653	0.084	30.535	0.8	0.14	1.3	OK
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.653	0.027	29.568	0.8	0.14	1.3	OK
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.650	0.100	33.072	0.7	0.1	1.0	OK
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.650	0.023	32.117	0.7	0.1	1.0	OK
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.646	0.100	35.694	0.7	0.07	0.7	OK
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.647	0.020	33.887	0.7	0.08	0.8	OK
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.645	0.100	37.865	0.6	0.06	0.6	OK

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.644	0.017	36.407	0.6	0.06	0.5	OK
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.642	0.070	40.841	0.6	0.04	0.4	OK
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.643	0.016	39.119	0.6	0.05	0.4	OK
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.641	0.028	42.977	0.5	0.03	0.3	OK
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.642	0.014	40.240	0.5	0.04	0.4	OK
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.640	0.012	45.431	0.5	0.03	0.3	OK
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.641	0.013	41.770	0.5	0.03	0.3	OK
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.639	0.011	47.297	0.5	0.02	0.2	OK
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-14	SWC-15	53.000	50.640	0.012	42.232	0.5	0.03	0.3	OK
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.638	0.011	47.315	0.5	0.02	0.2	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-01: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-01	SWC-02	53.400	52.640	0.150	3.588	0.5	0.19	3.6	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-01	SWC-02	53.400	52.909	0.150	4.019	0.5	0.2	3.8	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-01	SWC-02	53.400	52.548	0.150	4.699	0.5	0.28	5.3	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-01	SWC-02	53.400	52.836	0.150	5.272	0.5	0.2	3.7	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-01	SWC-02	53.400	52.335	0.150	5.892	0.5	0.25	4.6	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-01	SWC-02	53.400	52.345	0.150	6.603	0.6	0.17	3.2	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.730	0.150	7.162	0.6	0.18	3.3	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.449	0.150	8.023	0.6	0.15	2.7	OK
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.438	0.073	7.911	0.5	0.14	2.7	OK
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.434	0.042	8.895	0.5	0.11	2.0	OK
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.435	0.043	8.451	0.5	0.12	2.2	OK
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.430	0.038	9.452	0.5	0.09	1.6	OK
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.430	0.037	9.194	0.5	0.09	1.6	OK
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.426	0.032	10.303	0.4	0.06	1.2	OK
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.427	0.034	9.787	0.4	0.07	1.3	OK
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.423	0.029	10.951	0.4	0.05	1.0	OK
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.425	0.031	10.273	0.4	0.06	1.1	OK
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.421	0.026	11.467	0.4	0.04	0.8	OK
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.423	0.029	10.656	0.4	0.05	1.0	OK
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.420	0.025	11.905	0.4	0.04	0.7	OK
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.421	0.026	11.286	0.4	0.04	0.8	OK
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.418	0.022	12.654	0.3	0.03	0.6	OK
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.418	0.022	12.270	0.3	0.03	0.6	OK
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.415	0.019	13.728	0.3	0.02	0.4	OK
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.415	0.019	13.290	0.3	0.02	0.4	OK
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.413	0.016	14.874	0.3	0.02	0.3	OK
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.414	0.017	14.076	0.3	0.02	0.3	OK
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.412	0.014	15.630	0.3	0.01	0.2	OK

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.412	0.014	15.138	0.3	0.01	0.2	OK
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.410	0.013	17.046	0.2	0.01	0.2	OK
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.411	0.013	16.374	0.2	0.01	0.2	OK
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.409	0.011	17.748	0.2	0.01	0.1	OK
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.410	0.012	16.656	0.2	0.01	0.2	OK
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.408	0.010	18.822	0.2	0.01	0.1	OK
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.409	0.011	17.004	0.2	0.01	0.1	OK
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.408	0.009	19.590	0.2	0	0.1	OK
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.408	0.010	17.424	0.2	0.01	0.1	OK
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.407	0.009	19.356	0.2	0	0.1	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-02: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-02	SWC-03	53.500	52.633	0.150	7.319	0.6	0.41	7.2	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-02	SWC-03	53.500	52.902	0.150	8.200	0.7	0.43	7.6	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-02	SWC-03	53.500	52.540	0.150	9.600	0.6	0.39	6.8	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-02	SWC-03	53.500	52.828	0.150	10.774	0.7	0.42	7.2	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-02	SWC-03	53.500	52.328	0.150	12.020	0.7	0.37	6.5	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-02	SWC-03	53.500	52.339	0.150	13.482	0.7	0.37	6.4	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.724	0.150	14.602	0.7	0.38	6.6	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.443	0.150	16.365	0.7	0.32	5.5	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.264	0.150	16.143	0.7	0.3	5.3	OK
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.200	0.058	18.119	0.7	0.24	4.2	OK
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.202	0.059	17.255	0.7	0.26	4.5	OK
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.195	0.051	19.307	0.6	0.19	3.4	OK
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.195	0.051	18.759	0.6	0.19	3.3	OK
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.188	0.043	21.039	0.6	0.14	2.5	OK
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.190	0.045	19.970	0.6	0.16	2.7	OK
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.184	0.038	22.388	0.6	0.11	2.0	OK
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.187	0.041	20.923	0.6	0.13	2.3	OK
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.181	0.035	23.419	0.5	0.09	1.6	OK
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.184	0.038	21.721	0.6	0.11	2.0	OK
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.179	0.033	24.325	0.5	0.08	1.4	OK
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.181	0.034	23.046	0.5	0.09	1.6	OK
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.176	0.029	25.825	0.5	0.07	1.1	OK
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.176	0.029	25.008	0.5	0.07	1.1	OK
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.172	0.025	27.924	0.4	0.05	0.8	OK
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.172	0.025	27.126	0.4	0.05	0.8	OK
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.169	0.021	30.240	0.4	0.03	0.6	OK
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.170	0.022	28.631	0.4	0.04	0.6	OK
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.167	0.019	31.944	0.4	0.03	0.5	OK

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.167	0.019	30.797	0.4	0.03	0.5	OK
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.165	0.016	34.571	0.3	0.02	0.3	OK
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.165	0.017	33.173	0.3	0.02	0.4	OK
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.163	0.015	36.065	0.3	0.02	0.3	OK
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.164	0.016	33.767	0.3	0.02	0.3	OK
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.162	0.013	38.171	0.3	0.01	0.2	OK
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.163	0.015	34.433	0.3	0.02	0.3	OK
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.161	0.012	40.019	0.3	0.01	0.2	OK
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-02	SWC-03	53.500	51.162	0.014	35.573	0.3	0.01	0.2	OK
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.161	0.012	40.415	0.3	0.01	0.2	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-03: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-03	SWC-04	53.750	52.604	0.150	11.086	0.7	0.63	10.8	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-03	SWC-04	53.750	52.874	0.150	12.413	0.7	0.66	11.4	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-03	SWC-04	53.750	52.506	0.150	14.536	0.7	0.6	10.2	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-03	SWC-04	53.750	52.794	0.150	16.304	0.7	0.63	10.9	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-03	SWC-04	53.750	52.298	0.150	18.188	0.7	0.57	9.8	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-03	SWC-04	53.750	52.312	0.150	20.383	0.8	0.56	9.7	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-03	SWC-04	53.750	51.700	0.150	22.083	0.8	0.49	8.4	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-03	SWC-04	53.750	51.421	0.150	24.719	0.8	0.43	7.5	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-03	SWC-04	53.750	51.243	0.150	24.396	0.7	0.46	8.0	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.965	0.072	27.351	0.8	0.37	6.3	OK
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-03	SWC-04	53.750	50.967	0.092	26.066	0.7	0.39	6.8	OK
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.957	0.064	29.173	0.7	0.3	5.1	OK
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-03	SWC-04	53.750	50.957	0.064	28.343	0.7	0.29	5.0	OK
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.948	0.053	31.774	0.7	0.22	3.7	OK
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-03	SWC-04	53.750	50.951	0.056	30.152	0.7	0.24	4.1	OK
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.942	0.047	33.837	0.6	0.17	3.0	OK
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-03	SWC-04	53.750	50.946	0.051	31.585	0.6	0.2	3.4	OK
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.939	0.043	35.408	0.6	0.14	2.5	OK
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-03	SWC-04	53.750	50.943	0.047	32.809	0.6	0.17	3.0	OK
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.936	0.040	36.758	0.6	0.13	2.2	OK
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-03	SWC-04	53.750	50.938	0.042	34.824	0.6	0.14	2.4	OK
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.932	0.036	38.995	0.5	0.1	1.7	OK
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-03	SWC-04	53.750	50.932	0.036	37.758	0.5	0.1	1.7	OK
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.927	0.030	42.144	0.5	0.07	1.2	OK
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-03	SWC-04	53.750	50.927	0.030	41.004	0.5	0.07	1.2	OK
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.923	0.026	45.630	0.4	0.05	0.9	OK
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-03	SWC-04	53.750	50.924	0.027	43.217	0.5	0.06	1.0	OK
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.921	0.023	48.263	0.4	0.04	0.7	OK

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-03	SWC-04	53.750	50.921	0.023	46.463	0.4	0.04	0.7	OK
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.918	0.020	52.139	0.4	0.03	0.5	OK
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-03	SWC-04	53.750	50.919	0.020	49.973	0.4	0.03	0.6	OK
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.916	0.018	54.443	0.4	0.02	0.4	OK
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-03	SWC-04	53.750	50.917	0.019	50.885	0.4	0.03	0.5	OK
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.915	0.016	57.527	0.3	0.02	0.3	OK
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-03	SWC-04	53.750	50.916	0.018	51.959	0.4	0.02	0.4	OK
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.914	0.015	60.449	0.3	0.02	0.3	OK
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-03	SWC-04	53.750	50.915	0.016	53.723	0.3	0.02	0.3	OK
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.913	0.014	61.475	0.3	0.02	0.3	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-04: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-04	SWC-05	53.200	52.564	0.150	16.753	0.9	0.81	14.4	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-04	SWC-05	53.200	52.834	0.150	18.754	0.9	0.86	15.3	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-04	SWC-05	53.200	52.458	0.150	21.972	0.9	0.8	14.2	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-04	SWC-05	53.200	52.746	0.150	24.636	0.9	0.85	15.1	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-04	SWC-05	53.200	52.256	0.150	27.483	0.9	0.77	13.7	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-04	SWC-05	53.200	52.274	0.150	30.808	0.9	0.78	13.9	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-04	SWC-05	53.200	51.667	0.150	33.394	1.0	0.68	12.0	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-04	SWC-05	53.200	51.392	0.150	37.371	0.9	0.62	11.0	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-04	SWC-05	53.200	51.214	0.150	36.882	1.0	0.59	10.5	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.829	0.150	41.337	0.9	0.54	9.5	OK
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-04	SWC-05	53.200	50.875	0.150	39.426	0.9	0.56	10.0	OK
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.821	0.072	44.124	0.9	0.43	7.7	OK
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-04	SWC-05	53.200	50.820	0.072	42.903	0.9	0.43	7.6	OK
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.809	0.060	48.073	0.8	0.31	5.6	OK
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-04	SWC-05	53.200	50.812	0.064	45.604	0.9	0.35	6.2	OK
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.802	0.053	51.107	0.8	0.25	4.5	OK
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-04	SWC-05	53.200	50.807	0.058	47.793	0.8	0.29	5.2	OK
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.797	0.048	53.542	0.8	0.21	3.8	OK
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-04	SWC-05	53.200	50.802	0.053	49.647	0.8	0.25	4.5	OK
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.794	0.045	55.617	0.7	0.18	3.3	OK
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-04	SWC-05	53.200	50.796	0.047	52.699	0.8	0.2	3.6	OK
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.789	0.040	58.946	0.7	0.15	2.6	OK
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-04	SWC-05	53.200	50.789	0.040	57.144	0.7	0.15	2.6	OK
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.783	0.034	63.757	0.6	0.1	1.9	OK
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-04	SWC-05	53.200	50.783	0.034	61.938	0.6	0.1	1.9	OK
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.778	0.029	69.096	0.6	0.08	1.4	OK
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-04	SWC-05	53.200	50.779	0.030	65.465	0.6	0.08	1.5	OK
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.775	0.026	72.959	0.5	0.06	1.1	OK

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-04	SWC-05	53.200	50.775	0.026	70.181	0.5	0.06	1.1	OK
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.771	0.022	79.091	0.5	0.04	0.8	OK
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-04	SWC-05	53.200	50.772	0.023	75.358	0.5	0.05	0.8	OK
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.769	0.020	82.043	0.4	0.03	0.6	OK
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-04	SWC-05	53.200	50.770	0.021	77.074	0.5	0.04	0.7	OK
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.767	0.018	86.987	0.4	0.03	0.5	OK
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-04	SWC-05	53.200	50.769	0.020	79.342	0.4	0.03	0.6	OK
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.766	0.017	91.145	0.4	0.02	0.4	OK
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-04	SWC-05	53.200	50.768	0.018	82.384	0.4	0.03	0.5	OK
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.765	0.016	92.446	0.4	0.02	0.4	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-05: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-05	SWC-06	53.200	52.441	0.150	20.391	1.0	0.93	18.1	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-05	SWC-06	53.200	52.706	0.150	22.812	1.1	0.98	19.2	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-05	SWC-06	53.200	52.318	0.150	26.751	1.0	0.92	17.9	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-05	SWC-06	53.200	52.601	0.150	29.992	1.1	0.96	18.7	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-05	SWC-06	53.200	52.127	0.150	33.482	1.0	0.87	16.9	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-05	SWC-06	53.200	52.148	0.150	37.521	1.0	0.88	17.2	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-05	SWC-06	53.200	51.559	0.150	40.652	0.9	0.76	14.8	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-05	SWC-06	53.200	51.294	0.150	45.506	0.9	0.7	13.6	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-05	SWC-06	53.200	51.123	0.150	44.892	0.9	0.66	12.8	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.759	0.150	50.333	0.9	0.58	11.3	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-05	SWC-06	53.200	50.804	0.150	48.009	0.9	0.59	11.5	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.574	0.085	53.731	0.9	0.48	9.4	OK
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-05	SWC-06	53.200	50.573	0.084	52.251	0.9	0.48	9.2	OK
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.561	0.070	58.543	0.8	0.35	6.8	OK
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-05	SWC-06	53.200	50.565	0.075	55.534	0.9	0.39	7.5	OK
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.554	0.062	62.226	0.8	0.28	5.5	OK
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-05	SWC-06	53.200	50.559	0.067	58.191	0.8	0.33	6.3	OK
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.550	0.056	65.194	0.8	0.24	4.6	OK
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-05	SWC-06	53.200	50.555	0.062	60.470	0.8	0.28	5.5	OK
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.546	0.052	67.689	0.7	0.2	4.0	OK
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-05	SWC-06	53.200	50.548	0.054	64.177	0.8	0.22	4.4	OK
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.541	0.046	71.792	0.7	0.16	3.2	OK
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-05	SWC-06	53.200	50.541	0.046	69.528	0.7	0.16	3.2	OK
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.535	0.039	77.623	0.6	0.12	2.3	OK
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-05	SWC-06	53.200	50.535	0.039	75.413	0.6	0.12	2.3	OK
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.530	0.033	84.085	0.6	0.08	1.6	OK
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-05	SWC-06	53.200	50.531	0.034	79.708	0.6	0.09	1.8	OK
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.526	0.029	88.865	0.5	0.07	1.3	OK

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-05	SWC-06	53.200	50.526	0.029	85.420	0.5	0.07	1.3	OK
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.523	0.025	96.251	0.5	0.05	0.9	OK
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-05	SWC-06	53.200	50.523	0.026	91.876	0.5	0.05	1.0	OK
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.520	0.022	99.874	0.5	0.04	0.7	OK
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-05	SWC-06	53.200	50.521	0.024	93.838	0.5	0.04	0.9	OK
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.518	0.020	105.916	0.4	0.03	0.6	OK
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-05	SWC-06	53.200	50.520	0.022	96.454	0.5	0.04	0.7	OK
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.517	0.019	110.950	0.4	0.03	0.5	OK
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-05	SWC-06	53.200	50.519	0.021	100.276	0.4	0.03	0.6	OK
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.516	0.018	112.156	0.4	0.02	0.5	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-12: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.302	0.100	1.174	0.8	0.05	0.9	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	49.349	0.100	1.238	0.7	0.07	1.2	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.427	0.100	2.003	0.8	0.05	0.9	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	49.491	0.100	2.084	0.8	0.06	0.9	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.557	0.100	3.548	0.3	0.1	1.5	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	49.635	0.100	3.635	0.3	0.1	1.5	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.687	0.100	6.513	0.4	0.05	0.8	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	49.782	0.100	6.590	0.6	0.05	0.7	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.762	0.100	9.425	0.5	0.06	0.9	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	49.866	0.100	9.485	0.3	0.04	0.7	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.812	0.100	12.314	0.5	0.04	0.7	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	49.924	0.100	12.355	0.4	0.05	0.8	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.875	0.100	18.055	0.3	0.04	0.6	Surcharged
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	49.999	0.100	18.058	0.3	0.04	0.6	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.921	0.100	23.783	0.3	0.04	0.6	Surcharged
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	50.051	0.100	23.741	0.4	0.03	0.5	Surcharged
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.953	0.100	29.499	0.4	0.03	0.5	Surcharged
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	50.089	0.100	29.417	0.3	0.03	0.5	Surcharged
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.978	0.100	35.211	0.4	0.03	0.5	Surcharged
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	50.119	0.100	35.085	0.4	0.04	0.6	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	50.012	0.100	46.627	0.3	0.03	0.5	Surcharged
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	50.163	0.100	46.410	0.4	0.03	0.5	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	50.041	0.100	69.422	0.3	0.03	0.5	Surcharged
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	50.204	0.100	68.993	0.3	0.03	0.5	Surcharged
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	50.041	0.100	103.488	0.3	0.03	0.4	Surcharged
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	50.222	0.100	102.779	0.3	0.03	0.4	Surcharged
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	50.011	0.100	137.591	0.4	0.03	0.4	Surcharged
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	50.208	0.100	136.548	0.3	0.03	0.4	Surcharged

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.936	0.100	203.689	0.3	0.03	0.4	Surcharged
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	50.134	0.100	203.665	0.3	0.03	0.4	Surcharged
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.879	0.100	264.713	0.3	0.03	0.4	Surcharged
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	50.051	0.100	268.638	0.3	0.03	0.4	Surcharged
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.831	0.100	274.165	0.3	0.03	0.4	Surcharged
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	49.991	0.100	308.651	0.3	0.03	0.4	Surcharged
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.787	0.100	282.612	0.3	0.03	0.4	Surcharged
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	49.924	0.100	318.974	0.3	0.03	0.4	Surcharged
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.743	0.100	291.334	0.3	0.03	0.4	Surcharged
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	49.864	0.100	325.232	0.3	0.03	0.4	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-07: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-06	SWC-07	53.200	52.248	0.150	26.835	1.3	1.32	22.6	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-06	SWC-07	53.200	52.508	0.150	29.997	1.3	1.38	23.6	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-06	SWC-07	53.200	52.102	0.150	35.228	1.3	1.35	23.0	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-06	SWC-07	53.200	52.377	0.150	39.484	1.4	1.42	24.2	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-06	SWC-07	53.200	51.931	0.150	44.085	1.2	1.28	21.9	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-06	SWC-07	53.200	51.962	0.150	49.402	1.2	1.28	21.9	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-06	SWC-07	53.200	51.401	0.150	53.516	1.1	1.12	19.1	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-06	SWC-07	53.200	51.152	0.150	59.886	1.0	1.04	17.7	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.989	0.150	59.108	1.0	0.99	16.9	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.650	0.150	66.249	0.9	0.87	14.8	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.690	0.150	63.182	0.9	0.89	15.1	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.296	0.133	70.725	0.9	0.72	12.4	OK
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.295	0.116	68.798	0.9	0.71	12.2	OK
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.279	0.085	77.076	0.9	0.53	9.0	OK
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.284	0.091	73.135	0.9	0.58	9.9	OK
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.269	0.074	81.932	0.8	0.42	7.2	OK
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.275	0.081	76.625	0.9	0.49	8.3	OK
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.262	0.079	85.830	0.8	0.35	6.0	OK
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.269	0.074	79.609	0.8	0.42	7.2	OK
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.257	0.093	89.099	0.8	0.31	5.2	OK
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.260	0.064	84.488	0.8	0.34	5.7	OK
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.251	0.114	94.592	0.7	0.24	4.2	OK
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.251	0.054	91.550	0.7	0.24	4.2	OK
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.243	0.133	102.206	0.7	0.18	3.0	OK
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.243	0.051	99.169	0.7	0.18	3.0	OK
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.236	0.147	110.887	0.6	0.13	2.2	OK
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.238	0.040	105.027	0.6	0.14	2.4	OK
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.232	0.135	117.330	0.6	0.1	1.7	OK

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.232	0.034	112.792	0.6	0.1	1.7	OK
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.227	0.097	127.070	0.5	0.07	1.2	OK
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.229	0.030	120.676	0.5	0.08	1.3	OK
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.224	0.056	131.939	0.5	0.06	1.0	OK
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.226	0.027	123.376	0.5	0.07	1.1	OK
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.222	0.026	139.967	0.5	0.05	0.8	OK
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.224	0.026	127.227	0.5	0.06	1.0	OK
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.221	0.022	145.474	0.4	0.04	0.7	OK
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-06	SWC-07	53.200	50.223	0.024	131.955	0.5	0.05	0.9	OK
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.220	0.021	146.758	0.4	0.04	0.6	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-08: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-07	SWC-08	52.900	51.888	0.150	31.140	1.6	1.68	27.4	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-07	SWC-08	52.900	52.128	0.150	34.752	1.6	1.76	28.7	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-07	SWC-08	52.900	51.739	0.150	40.910	1.5	1.68	27.4	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-07	SWC-08	52.900	51.973	0.150	45.830	1.6	1.77	28.8	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-07	SWC-08	52.900	51.576	0.150	51.179	1.5	1.59	25.9	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-07	SWC-08	52.900	51.611	0.150	57.321	1.5	1.58	25.7	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-07	SWC-08	52.900	51.111	0.150	62.098	1.3	1.37	22.4	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.892	0.150	69.491	1.2	1.27	20.7	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-07	SWC-08	52.900	50.747	0.150	68.604	1.1	1.21	19.7	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.453	0.150	76.860	1.0	1.06	17.2	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-07	SWC-08	52.900	50.488	0.150	73.318	1.0	1.08	17.6	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.124	0.150	82.059	0.9	0.87	14.2	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-07	SWC-08	52.900	50.088	0.150	79.815	0.9	0.86	14.0	OK
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.041	0.149	89.414	0.9	0.64	10.4	OK
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-07	SWC-08	52.900	50.047	0.101	84.858	0.9	0.71	11.5	OK
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.051	0.150	94.981	0.9	0.51	8.3	OK
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-07	SWC-08	52.900	50.036	0.113	88.911	0.9	0.6	9.7	OK
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.089	0.150	99.475	0.8	0.43	7.0	OK
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-07	SWC-08	52.900	50.029	0.129	92.359	0.9	0.52	8.4	OK
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.119	0.150	103.235	0.8	0.37	6.1	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-07	SWC-08	52.900	50.018	0.150	98.015	0.8	0.41	6.7	OK
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.163	0.150	109.567	0.8	0.3	4.8	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-07	SWC-08	52.900	50.042	0.150	106.248	0.8	0.3	4.8	OK
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.204	0.150	118.522	0.7	0.21	3.5	Surcharged
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-07	SWC-08	52.900	50.041	0.150	115.052	0.7	0.21	3.5	OK
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.222	0.150	128.643	0.6	0.15	2.5	Surcharged
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-07	SWC-08	52.900	50.011	0.150	121.793	0.6	0.17	2.8	OK
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.208	0.150	136.153	0.6	0.12	2.0	Surcharged

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-07	SWC-08	52.900	49.986	0.099	130.945	0.6	0.12	2.0	OK
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.134	0.150	147.272	0.5	0.09	1.4	Surch arged
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-07	SWC-08	52.900	49.982	0.071	139.840	0.6	0.1	1.6	OK
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.052	0.150	153.484	0.5	0.07	1.1	OK
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-07	SWC-08	52.900	49.979	0.047	143.838	0.5	0.08	1.3	OK
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-07	SWC-08	52.900	49.991	0.141	162.191	0.5	0.06	0.9	OK
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-07	SWC-08	52.900	49.977	0.028	147.664	0.5	0.07	1.1	OK
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-07	SWC-08	52.900	49.973	0.093	168.605	0.5	0.05	0.8	OK
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-07	SWC-08	52.900	49.975	0.026	152.997	0.5	0.06	1.0	OK
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-07	SWC-08	52.900	49.972	0.063	170.838	0.4	0.04	0.7	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-09: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-08	SWC-09	52.450	51.405	0.150	38.674	1.9	1.94	34.5	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-08	SWC-09	52.450	51.617	0.150	43.102	2.1	2.05	36.5	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-08	SWC-09	52.450	51.360	0.150	50.839	1.9	1.87	33.3	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-08	SWC-09	52.450	51.505	0.150	56.944	2.0	1.99	35.4	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-08	SWC-09	52.450	51.165	0.150	63.610	1.8	1.8	32.0	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-08	SWC-09	52.450	51.169	0.150	71.207	1.8	1.82	32.4	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-08	SWC-09	52.450	50.752	0.150	77.139	1.6	1.57	27.8	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-08	SWC-09	52.450	50.575	0.150	86.261	1.5	1.45	25.8	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-08	SWC-09	52.450	50.454	0.150	85.198	1.4	1.37	24.4	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-08	SWC-09	52.450	50.218	0.150	95.206	1.2	1.2	21.3	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-08	SWC-09	52.450	50.253	0.150	90.980	1.2	1.22	21.8	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-08	SWC-09	52.450	49.978	0.150	101.536	1.0	0.99	17.6	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-08	SWC-09	52.450	49.931	0.150	98.936	1.0	0.97	17.3	Surcharged
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-08	SWC-09	52.450	49.999	0.150	110.579	0.9	0.73	12.9	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-08	SWC-09	52.450	49.922	0.150	105.138	1.0	0.81	14.3	Surcharged
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-08	SWC-09	52.450	50.051	0.150	117.503	0.9	0.58	10.4	Surcharged
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-08	SWC-09	52.450	49.954	0.150	110.120	0.9	0.68	12.0	Surcharged
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-08	SWC-09	52.450	50.089	0.150	123.078	0.9	0.49	8.7	Surcharged
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-08	SWC-09	52.450	49.979	0.150	114.415	0.9	0.59	10.4	Surcharged
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-08	SWC-09	52.450	50.119	0.150	127.750	0.9	0.42	7.5	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-08	SWC-09	52.450	50.012	0.150	121.425	0.9	0.47	8.3	Surcharged
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-08	SWC-09	52.450	50.163	0.150	135.641	0.8	0.34	6.0	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-08	SWC-09	52.450	50.041	0.150	131.797	0.8	0.34	6.0	Surcharged
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-08	SWC-09	52.450	50.204	0.150	146.859	0.8	0.24	4.3	Surcharged
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-08	SWC-09	52.450	50.041	0.150	142.874	0.8	0.24	4.3	Surcharged
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-08	SWC-09	52.450	50.222	0.150	159.565	0.7	0.18	3.1	Surcharged
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-08	SWC-09	52.450	50.011	0.150	151.194	0.7	0.19	3.4	Surcharged
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-08	SWC-09	52.450	50.208	0.150	169.018	0.7	0.14	2.5	Surcharged

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-08	SWC-09	52.450	49.936	0.150	162.732	0.7	0.14	2.5	Surcharged
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-08	SWC-09	52.450	50.134	0.150	182.693	0.6	0.1	1.8	Surcharged
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-08	SWC-09	52.450	49.880	0.150	173.316	0.6	0.11	1.9	OK
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-08	SWC-09	52.450	50.052	0.150	190.964	0.6	0.08	1.4	Surcharged
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-08	SWC-09	52.450	49.832	0.150	178.903	0.6	0.09	1.6	OK
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-08	SWC-09	52.450	49.991	0.150	201.180	0.6	0.07	1.2	Surcharged
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-08	SWC-09	52.450	49.788	0.150	183.849	0.6	0.08	1.4	OK
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-08	SWC-09	52.450	49.925	0.150	208.697	0.5	0.06	1.0	Surcharged
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-08	SWC-09	52.450	49.777	0.128	189.894	0.5	0.07	1.2	OK
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-08	SWC-09	52.450	49.865	0.150	212.300	0.5	0.05	0.9	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-10: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-09	SWC-10	51.300	50.562	0.150	45.202	2.3	2.07	40.2	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.696	0.150	50.339	2.4	2.22	43.0	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-09	SWC-10	51.300	50.566	0.150	59.455	2.4	2.16	42.0	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.655	0.150	66.583	2.5	2.26	43.9	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-09	SWC-10	51.300	50.437	0.150	74.336	2.2	2.02	39.2	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.398	0.150	83.058	2.2	1.97	38.2	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-09	SWC-10	51.300	50.166	0.150	89.932	1.9	1.7	32.9	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.044	0.150	100.496	1.7	1.56	30.4	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-09	SWC-10	51.300	49.987	0.150	99.291	1.6	1.47	28.5	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-09	SWC-10	51.300	49.866	0.150	110.900	1.4	1.28	24.8	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-09	SWC-10	51.300	49.866	0.150	106.004	1.4	1.31	25.4	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-09	SWC-10	51.300	49.924	0.150	118.273	1.2	1.05	20.4	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-09	SWC-10	51.300	49.875	0.150	115.276	1.1	1.04	20.3	Surcharged
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-09	SWC-10	51.300	49.999	0.150	128.814	1.1	0.78	15.2	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-09	SWC-10	51.300	49.921	0.150	122.528	1.1	0.86	16.7	Surcharged
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.051	0.150	136.863	1.0	0.62	12.1	Surcharged
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-09	SWC-10	51.300	49.953	0.150	128.354	1.0	0.72	14.0	Surcharged
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.089	0.150	143.384	1.0	0.52	10.1	Surcharged
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-09	SWC-10	51.300	49.978	0.150	133.356	1.0	0.63	12.2	Surcharged
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.119	0.150	148.859	1.1	0.45	8.8	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-09	SWC-10	51.300	50.012	0.150	141.555	1.0	0.5	9.7	Surcharged
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.163	0.150	158.077	1.0	0.36	7.0	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-09	SWC-10	51.300	50.041	0.150	153.862	1.0	0.36	7.0	Surcharged
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.204	0.150	171.375	0.9	0.26	5.1	Surcharged
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-09	SWC-10	51.300	50.041	0.150	167.005	0.9	0.26	5.1	Surcharged
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.222	0.150	186.398	0.9	0.19	3.8	Surcharged
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-09	SWC-10	51.300	50.011	0.150	177.179	0.9	0.21	4.0	Surcharged
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.208	0.150	197.780	0.8	0.15	3.0	Surcharged

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-09	SWC-10	51.300	49.936	0.150	190.972	0.8	0.15	2.9	Surcharged
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.134	0.150	214.596	0.7	0.11	2.1	Surcharged
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-09	SWC-10	51.300	49.880	0.150	202.991	0.8	0.12	2.3	Surcharged
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.052	0.150	224.775	0.7	0.09	1.7	Surcharged
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-09	SWC-10	51.300	49.832	0.150	209.929	0.7	0.1	1.9	Surcharged
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-09	SWC-10	51.300	49.991	0.150	236.257	0.7	0.07	1.4	Surcharged
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-09	SWC-10	51.300	49.788	0.150	215.511	0.7	0.09	1.7	Surcharged
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-09	SWC-10	51.300	49.925	0.150	244.506	0.6	0.06	1.2	Surcharged
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-09	SWC-10	51.300	49.743	0.150	222.319	0.7	0.07	1.4	Surcharged
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-09	SWC-10	51.300	49.864	0.150	249.472	0.6	0.05	1.0	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-11: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-10	Att Tank	51.400	50.260	0.150	59.233	3.3	1.99	58.1	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.357	0.150	65.994	3.5	2.11	61.8	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-10	Att Tank	51.400	50.236	0.150	77.861	3.2	1.95	57.1	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.299	0.150	87.134	3.4	2.04	59.5	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-10	Att Tank	51.400	50.144	0.150	97.263	3.0	1.83	53.4	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.119	0.150	108.670	3.0	1.79	52.4	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-10	Att Tank	51.400	49.950	0.150	117.627	2.5	1.53	44.9	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-10	Att Tank	51.400	49.858	0.150	131.438	2.3	1.38	40.4	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-10	Att Tank	51.400	49.821	0.150	129.868	2.2	1.32	38.5	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-10	Att Tank	51.400	49.866	0.150	145.065	1.8	1.12	32.7	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-10	Att Tank	51.400	49.812	0.150	138.658	1.9	1.16	33.9	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-10	Att Tank	51.400	49.924	0.150	154.771	1.7	0.91	26.7	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-10	Att Tank	51.400	49.875	0.150	150.813	1.7	0.91	26.6	Surcharged
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-10	Att Tank	51.400	49.998	0.150	168.563	1.6	0.68	19.9	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-10	Att Tank	51.400	49.921	0.150	160.288	1.6	0.75	21.9	Surcharged
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.051	0.150	179.120	1.5	0.54	15.9	Surcharged
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-10	Att Tank	51.400	49.953	0.150	167.926	1.6	0.63	18.4	Surcharged
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.089	0.150	187.603	1.5	0.45	13.3	Surcharged
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-10	Att Tank	51.400	49.978	0.150	174.460	1.5	0.55	16.0	Surcharged
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.119	0.150	194.869	1.4	0.39	11.4	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-10	Att Tank	51.400	50.012	0.150	185.211	1.4	0.43	12.7	Surcharged
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.164	0.150	206.927	1.3	0.31	9.1	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-10	Att Tank	51.400	50.041	0.150	201.270	1.3	0.31	9.2	Surcharged
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.204	0.150	224.282	1.2	0.22	6.5	Surcharged
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-10	Att Tank	51.400	50.041	0.150	218.495	1.2	0.23	6.6	Surcharged
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.223	0.150	243.625	1.1	0.16	4.8	Surcharged
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-10	Att Tank	51.400	50.012	0.150	231.264	1.1	0.18	5.2	Surcharged
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.208	0.150	258.229	1.1	0.13	3.8	Surcharged

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-10	Att Tank	51.400	49.936	0.150	249.646	1.1	0.13	3.8	Surcharged
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.135	0.150	279.088	1.0	0.09	2.7	Surcharged
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-10	Att Tank	51.400	49.880	0.150	265.025	1.0	0.1	3.0	Surcharged
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.052	0.150	293.401	0.9	0.07	2.2	Surcharged
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-10	Att Tank	51.400	49.832	0.150	274.133	1.0	0.09	2.5	Surcharged
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-10	Att Tank	51.400	49.991	0.150	308.575	0.9	0.06	1.8	Surcharged
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-10	Att Tank	51.400	49.788	0.150	282.621	0.9	0.07	2.2	Surcharged
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-10	Att Tank	51.400	49.925	0.150	318.889	0.8	0.05	1.6	Surcharged
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-10	Att Tank	51.400	49.743	0.150	291.403	0.9	0.06	1.9	Surcharged
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-10	Att Tank	51.400	49.865	0.150	325.175	0.8	0.05	1.4	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWC-16: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-15	SWC-10	52.650	51.120	0.100	14.061	2.1	1.31	16.4	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-15	SWC-10	52.650	51.291	0.100	15.741	2.2	1.39	17.3	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-15	SWC-10	52.650	51.071	0.100	18.442	2.0	1.29	16.0	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-15	SWC-10	52.650	51.179	0.100	20.643	2.1	1.34	16.6	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.889	0.100	23.109	1.9	1.2	14.9	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.801	0.100	25.889	1.8	1.14	14.3	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.493	0.100	28.030	1.6	0.98	12.3	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.275	0.100	31.384	1.3	0.85	10.5	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.215	0.100	30.988	1.3	0.82	10.2	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.059	0.100	34.696	1.0	0.64	8.0	OK
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.062	0.100	33.113	1.1	0.69	8.6	OK
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.052	0.100	37.095	0.8	0.52	6.5	OK
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.051	0.100	36.056	0.8	0.51	6.4	OK
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.043	0.100	40.411	0.8	0.38	4.7	OK
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.045	0.100	38.317	0.8	0.42	5.2	OK
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.051	0.100	42.943	0.7	0.3	3.7	OK
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.041	0.100	40.153	0.7	0.35	4.4	OK
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.089	0.100	44.947	0.7	0.25	3.2	OK
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.038	0.100	41.695	0.7	0.3	3.8	OK
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.119	0.100	46.747	0.7	0.22	2.7	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.034	0.100	44.246	0.7	0.24	3.0	OK
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.163	0.100	49.593	0.7	0.17	2.2	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.041	0.100	48.038	0.7	0.17	2.2	OK
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.204	0.100	53.749	0.6	0.13	1.6	Surcharged
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.041	0.100	52.144	0.6	0.13	1.6	OK
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.222	0.100	58.190	0.6	0.09	1.1	Surcharged
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.021	0.100	54.881	0.6	0.1	1.2	OK
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.208	0.100	61.506	0.5	0.07	0.9	Surcharged

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.018	0.100	59.343	0.5	0.07	0.9	OK
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.134	0.100	66.139	0.5	0.05	0.6	Surcharged
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.017	0.100	62.884	0.5	0.06	0.7	OK
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.051	0.100	70.454	0.5	0.04	0.5	OK
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.015	0.100	65.026	0.5	0.05	0.6	OK
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.013	0.100	73.438	0.4	0.04	0.4	OK
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.014	0.100	67.684	0.4	0.04	0.5	OK
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.012	0.100	75.508	0.4	0.03	0.4	OK
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-15	SWC-10	52.650	50.013	0.100	69.328	0.4	0.04	0.4	OK
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.011	0.100	76.714	0.4	0.03	0.3	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-17: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.302	0.008	0.587	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	49.349	0.008	0.597	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.427	0.009	1.273	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	49.491	0.009	1.279	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.557	0.009	2.673	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	49.635	0.009	2.668	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.687	0.009	5.497	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	49.782	0.009	5.463	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.761	0.009	8.334	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	49.866	0.009	8.271	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.812	0.009	11.175	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	49.924	0.009	11.086	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.875	0.009	16.864	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	49.998	0.009	16.724	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.921	0.009	22.562	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	50.051	0.009	22.367	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.953	0.009	28.263	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	50.089	0.009	28.020	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.978	0.009	33.968	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	50.119	0.009	33.675	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	50.012	0.009	45.389	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	50.163	0.009	44.995	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	50.041	0.009	68.238	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	50.204	0.009	67.620	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	50.041	0.009	102.440	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	50.222	0.009	101.521	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	50.011	0.009	136.713	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	50.207	0.009	135.443	0.0	0.07	0.4	Surcharged

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.936	0.009	203.195	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	50.134	0.009	202.931	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.879	0.009	264.696	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	50.051	0.009	268.312	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.831	0.009	274.161	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	49.991	0.009	308.647	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.787	0.009	282.609	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	49.924	0.009	318.969	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.743	0.009	291.330	0.0	0.07	0.4	Surcharged
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-16 - Pump	SWC-17	51.000	49.864	0.009	325.226	0.0	0.07	0.4	Surcharged

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +45: Summary Results for SWP-18: Rank By: Max. Flow

Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 100 years: +45 %: 15 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	0.568	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 15 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	0.578	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 30 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	1.254	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 30 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	1.260	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 60 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	2.655	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 60 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	2.649	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 120 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	5.479	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 120 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	5.444	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 180 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	8.315	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 180 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	8.253	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 240 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	11.156	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 240 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	11.068	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 360 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	16.846	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 360 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	16.705	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 480 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	22.543	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 480 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	22.349	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 600 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	28.244	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 600 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	28.002	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 720 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	33.950	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 720 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	33.657	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 960 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	45.370	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 960 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	44.977	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 1440 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	68.220	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 1440 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	67.601	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 2160 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	102.421	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 2160 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	101.503	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 2880 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	136.695	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 2880 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	135.425	0.5	0.05	0.4	OK

FSR: 100 years: +45 %: 4320 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	203.177	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 4320 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	202.913	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 5760 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	264.689	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 5760 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	268.294	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 7200 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	274.160	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 7200 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	308.646	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 8640 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	282.608	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 8640 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	318.968	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 10080 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	291.329	0.5	0.05	0.4	OK
FSR: 100 years: +45 %: 10080 mins: Winter	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	325.225	0.5	0.05	0.4	OK

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Phase Management Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		



Phase
FSR: 100 years: Increase Rainfall (%): +45: 15 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
Y- Junction			0.4	0.568
TOTAL	135.6	59.386	0.4	0.568

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Junctions Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
SWC-13	Outlet	SWP-13	Free Discharge
SWC-14	Outlet	SWP-14	Free Discharge
SWC-15	Outlet	SWC-16	Free Discharge
SWC-09	Outlet	SWP-10	Free Discharge
SWC-08	Outlet	SWP-09	Free Discharge
SWC-07	Outlet	SWP-08	Free Discharge
SWC-01	Outlet	SWP-01	Free Discharge
SWC-02	Outlet	SWP-02	Free Discharge
SWC-03	Outlet	SWP-03	Free Discharge
SWC-04	Outlet	SWP-04	Free Discharge
SWC-05	Outlet	SWP-05	Free Discharge
SWC-06	Outlet	SWP-07	Free Discharge
SWC-16 - Pump	Outlet	SWP-17	Pump
	Invert Elevation (m)	48.800	
	Depth (m)	Outflow (L/s)	
	0.100	0.4	
	2.000	0.4	
SWC-10	Outlet	SWP-11	Free Discharge
SWC-17	Outlet	SWP-18	Free Discharge

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Stormwater Controls Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		



Att Tank

Type : Cellular Storage

Dimensions

Exceedance Elevation (m)	51.000
Depth (m)	1.600
Base Elevation (m)	48.900
Number of Crates Long	19
Number of Crates Wide	16
Number of Crates High	4
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	231.540

Inlets

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	SWP-11
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	SWP-12
Outlet Type	Free Discharge

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analyzed (ha)
Catchment Area	SWC-03		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (1)	SWC-04		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (1) (1)	SWC-05		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (2)	SWC-02		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (3)	SWC-01		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (4)	SWC-06		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (5)	SWC-06		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (6)	SWC-13		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (7)	SWC-14		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (8)	SWC-15		Time of Concentration	0.010	100	0	100	0.010
Catchment Area (9)	SWC-15		Time of Concentration	0.011	100	0	100	0.011
Catchment Area (10)	SWC-09		Time of Concentration	0.026	100	0	100	0.026
Catchment Area (11)	SWC-08		Time of Concentration	0.030	100	0	100	0.030
Catchment Area (12)	SWC-07		Time of Concentration	0.017	100	0	100	0.017
Catchment Area (13)	SWC-13		Time of Concentration	0.006	100	0	100	0.006
Catchment Area (14)	SWC-04		Time of Concentration	0.008	100	0	100	0.008
TOTAL		**0.0**		**0.236**				**0.236**

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Title: Rainfall Analysis Criteria	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England and Wales
M5-60 (mm)	18.8
Ratio R	0.400
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	0.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			



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

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 100 years: +0 %: 15 mins: Winter	0.01	6.1	2.895
Catchment Area (1)	FSR: 100 years: +0 %: 15 mins: Winter	0.01	6.0	2.829
Catchment Area (2)	FSR: 100 years: +0 %: 15 mins: Winter	0.01	6.1	2.892
Catchment Area (3)	FSR: 100 years: +0 %: 15 mins: Winter	0.01	5.9	2.775
Catchment Area (1) (1)	FSR: 100 years: +0 %: 15 mins: Winter	0.01	6.0	2.820
Catchment Area (4)	FSR: 100 years: +0 %: 15 mins: Winter	0.01	5.2	2.462
Catchment Area (5)	FSR: 100 years: +0 %: 15 mins: Winter	0.01	5.4	2.528
Catchment Area (6)	FSR: 100 years: +0 %: 15 mins: Winter	0.01	5.8	2.721
Catchment Area (7)	FSR: 100 years: +0 %: 15 mins: Winter	0.01	5.8	2.721
Catchment Area (8)	FSR: 100 years: +0 %: 15 mins: Winter	0.01	4.1	1.946
Catchment Area (9)	FSR: 100 years: +0 %: 15 mins: Winter	0.01	4.7	2.236
Catchment Area (10)	FSR: 100 years: +0 %: 15 mins: Winter	0.03	10.8	5.077
Catchment Area (11)	FSR: 100 years: +0 %: 15 mins: Winter	0.03	12.4	5.836
Catchment Area (12)	FSR: 100 years: +0 %: 15 mins: Winter	0.02	7.1	3.326
Catchment Area (13)	FSR: 100 years: +0 %: 15 mins: Winter	0.01	2.7	1.253
Catchment Area (14)	FSR: 100 years: +0 %: 15 mins: Winter	0.01	3.3	1.555

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

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

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	FSR: 100 years: +0 %: 15 mins: Winter	53.200	51.200	51.349	0.149	8.4	0.024	0.000	6.2	3.934	Surcharged
SWC-14	FSR: 100 years: +0 %: 15 mins: Winter	53.000	50.628	51.192	0.564	12.0	0.090	0.000	8.9	6.674	Surcharged
SWC-15	FSR: 100 years: +0 %: 15 mins: Winter	52.650	50.000	50.683	0.683	17.3	0.109	0.000	13.7	10.852	Surcharged
SWC-09	FSR: 100 years: +0 %: 15 mins: Winter	51.300	49.500	50.254	0.754	36.6	0.120	0.000	33.9	35.014	Surcharged
SWC-08	FSR: 100 years: +0 %: 15 mins: Winter	52.450	49.750	50.903	1.153	30.7	0.183	0.000	29.2	29.952	Surcharged
SWC-07	FSR: 100 years: +0 %: 15 mins: Winter	52.900	49.950	51.291	1.341	23.7	0.213	0.000	23.6	24.099	Surcharged
SWC-01	FSR: 100 years: +0 %: 15 mins: Winter	53.400	51.400	51.931	0.531	5.9	0.084	0.000	5.0	2.762	Surcharged
SWC-02	FSR: 100 years: +0 %: 15 mins: Winter	53.500	51.150	51.925	0.775	11.2	0.123	0.000	6.2	5.659	Surcharged
SWC-03	FSR: 100 years: +0 %: 15 mins: Winter	53.750	50.900	51.899	0.999	12.4	0.159	0.000	9.1	8.592	Surcharged
SWC-04	FSR: 100 years: +0 %: 15 mins: Winter	53.200	50.750	51.864	1.114	16.0	0.177	0.000	12.4	12.955	Surcharged
SWC-05	FSR: 100 years: +0 %: 15 mins: Winter	53.200	50.500	51.756	1.256	16.5	0.200	0.000	15.6	15.769	Surcharged
SWC-06	FSR: 100 years: +0 %: 15 mins: Winter	53.200	50.200	51.591	1.391	22.0	0.221	0.000	19.7	20.755	Surcharged
SWC-16 - Pump	FSR: 100 years: +0 %: 1440 mins: Winter	51.000	48.800	49.743	0.943	0.5	0.600	0.000	0.4	67.275	Surcharged
SWC-10	FSR: 100 years: +0 %: 15 mins: Winter	51.400	49.450	50.030	0.580	47.6	0.164	0.000	48.6	45.860	Surcharged
SWC-17	FSR: 100 years: +0 %: 15 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	0.551	OK
Y- Junction	FSR: 100 years: +0 %: 15 mins: Summer		50.470	50.485	0.015	0.4			0.4	0.551	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)
Att Tank	FSR: 100 years: +0 %: 1440 mins: Winter	49.743	49.743	0.843	0.843	4.6	121.775	0.000	0.000	0.5	68.130	2290	47.407

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

Status
OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

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

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	FSR: 100 years: +0 %: 15 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.283	0.100	3.512	0.9	0.71	6.7	OK
SWP-14	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWC-14	SWC-15	53.000	51.192	0.100	6.674	1.1	0.93	8.9	Surcharged
SWP-01	FSR: 100 years: +0 %: 15 mins: Summer	Pipe	SWC-01	SWC-02	53.400	51.760	0.150	2.469	0.4	0.29	5.5	Surcharged
SWP-02	FSR: 100 years: +0 %: 30 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.762	0.150	7.410	0.6	0.44	7.6	Surcharged
SWP-03	FSR: 100 years: +0 %: 30 mins: Summer	Pipe	SWC-03	SWC-04	53.750	51.557	0.150	10.028	0.7	0.63	10.8	Surcharged
SWP-04	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWC-04	SWC-05	53.200	51.864	0.150	12.955	0.9	0.7	12.4	Surcharged
SWP-05	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWC-05	SWC-06	53.200	51.756	0.150	15.769	0.9	0.8	15.6	Surcharged
SWP-12	FSR: 100 years: +0 %: 240 mins: Winter	Pipe	Att Tank	SWC-16 - Pump	50.964	49.599	0.100	11.906	0.5	0.05	0.8	Surcharged
SWP-07	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWC-06	SWC-07	53.200	51.591	0.150	20.755	1.1	1.15	19.7	Surcharged
SWP-08	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWC-07	SWC-08	52.900	51.291	0.150	24.099	1.3	1.45	23.6	Surcharged
SWP-09	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWC-08	SWC-09	52.450	50.903	0.150	29.952	1.7	1.64	29.2	Surcharged
SWP-10	FSR: 100 years: +0 %: 30 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.240	0.150	45.931	2.0	1.78	34.5	Surcharged
SWP-11	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.030	0.150	45.860	2.8	1.66	48.6	Surcharged
SWC-16	FSR: 100 years: +0 %: 15 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.683	0.100	10.852	1.7	1.1	13.7	Surcharged

SWP-17	FSR: 100 years: +0 %: 15 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.177	0.009	0.569	0.0	0.07	0.4	Surcharged
SWP-18	FSR: 100 years: +0 %: 15 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	0.551	0.5	0.05	0.4	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 100 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Phase Management Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		



Phase
FSR: 100 years: Increase Rainfall (%): +0: 15 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
Y- Junction			0.4	0.551
TOTAL	93.2	40.984	0.4	0.551

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Junctions Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
SWC-13	Outlet	SWP-13	Free Discharge
SWC-14	Outlet	SWP-14	Free Discharge
SWC-15	Outlet	SWC-16	Free Discharge
SWC-09	Outlet	SWP-10	Free Discharge
SWC-08	Outlet	SWP-09	Free Discharge
SWC-07	Outlet	SWP-08	Free Discharge
SWC-01	Outlet	SWP-01	Free Discharge
SWC-02	Outlet	SWP-02	Free Discharge
SWC-03	Outlet	SWP-03	Free Discharge
SWC-04	Outlet	SWP-04	Free Discharge
SWC-05	Outlet	SWP-05	Free Discharge
SWC-06	Outlet	SWP-07	Free Discharge
SWC-16 - Pump	Outlet	SWP-17	Pump
	Invert Elevation (m)	48.800	
	Depth (m)	Outflow (L/s)	
	0.100	0.4	
	2.000	0.4	
SWC-10	Outlet	SWP-11	Free Discharge
SWC-17	Outlet	SWP-18	Free Discharge

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Stormwater Controls Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		



Att Tank

Type : Cellular Storage

Dimensions

Exceedance Elevation (m)	51.000
Depth (m)	1.600
Base Elevation (m)	48.900
Number of Crates Long	19
Number of Crates Wide	16
Number of Crates High	4
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	231.540

Inlets

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	SWP-11
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	SWP-12
Outlet Type	Free Discharge

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analyzed (ha)
Catchment Area	SWC-03		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (1)	SWC-04		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (1) (1)	SWC-05		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (2)	SWC-02		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (3)	SWC-01		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (4)	SWC-06		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (5)	SWC-06		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (6)	SWC-13		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (7)	SWC-14		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (8)	SWC-15		Time of Concentration	0.010	100	0	100	0.010
Catchment Area (9)	SWC-15		Time of Concentration	0.011	100	0	100	0.011
Catchment Area (10)	SWC-09		Time of Concentration	0.026	100	0	100	0.026
Catchment Area (11)	SWC-08		Time of Concentration	0.030	100	0	100	0.030
Catchment Area (12)	SWC-07		Time of Concentration	0.017	100	0	100	0.017
Catchment Area (13)	SWC-13		Time of Concentration	0.006	100	0	100	0.006
Catchment Area (14)	SWC-04		Time of Concentration	0.008	100	0	100	0.008
TOTAL		**0.0**		**0.236**				**0.236**

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Title: Rainfall Analysis Criteria	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England and Wales
M5-60 (mm)	18.8
Ratio R	0.400
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
30.0	45.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			



FSR: 30 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Inflow

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 30 years: +45 %: 15 mins: Winter	0.01	6.9	3.238
Catchment Area (1)	FSR: 30 years: +45 %: 15 mins: Winter	0.01	6.7	3.169
Catchment Area (2)	FSR: 30 years: +45 %: 15 mins: Winter	0.01	6.9	3.235
Catchment Area (3)	FSR: 30 years: +45 %: 15 mins: Winter	0.01	6.6	3.112
Catchment Area (1) (1)	FSR: 30 years: +45 %: 15 mins: Winter	0.01	6.7	3.154
Catchment Area (4)	FSR: 30 years: +45 %: 15 mins: Winter	0.01	5.8	2.756
Catchment Area (5)	FSR: 30 years: +45 %: 15 mins: Winter	0.01	6.0	2.829
Catchment Area (6)	FSR: 30 years: +45 %: 15 mins: Winter	0.01	6.5	3.048
Catchment Area (7)	FSR: 30 years: +45 %: 15 mins: Winter	0.01	6.5	3.048
Catchment Area (8)	FSR: 30 years: +45 %: 15 mins: Winter	0.01	4.6	2.175
Catchment Area (9)	FSR: 30 years: +45 %: 15 mins: Winter	0.01	5.3	2.500
Catchment Area (10)	FSR: 30 years: +45 %: 15 mins: Winter	0.03	12.1	5.681
Catchment Area (11)	FSR: 30 years: +45 %: 15 mins: Winter	0.03	13.9	6.528
Catchment Area (12)	FSR: 30 years: +45 %: 15 mins: Winter	0.02	7.9	3.723
Catchment Area (13)	FSR: 30 years: +45 %: 15 mins: Winter	0.01	3.0	1.401
Catchment Area (14)	FSR: 30 years: +45 %: 15 mins: Winter	0.01	3.7	1.741

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Junctions Summary Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 30 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	FSR: 30 years: +45 %: 15 mins: Winter	53.200	51.200	51.556	0.356	9.4	0.057	0.000	6.0	4.405	Surcharged
SWC-14	FSR: 30 years: +45 %: 15 mins: Winter	53.000	50.628	51.387	0.759	12.4	0.121	0.000	9.5	7.477	Surcharged
SWC-15	FSR: 30 years: +45 %: 15 mins: Winter	52.650	50.000	50.838	0.838	18.4	0.133	0.000	14.7	12.150	Surcharged
SWC-09	FSR: 30 years: +45 %: 15 mins: Winter	51.300	49.500	50.365	0.865	39.3	0.138	0.000	36.3	39.139	Surcharged
SWC-08	FSR: 30 years: +45 %: 15 mins: Winter	52.450	49.750	51.085	1.335	32.7	0.212	0.000	31.2	33.479	Surcharged
SWC-07	FSR: 30 years: +45 %: 15 mins: Winter	52.900	49.950	51.506	1.556	24.8	0.247	0.000	24.9	26.942	Surcharged
SWC-01	FSR: 30 years: +45 %: 15 mins: Winter	53.400	51.400	52.184	0.784	6.6	0.125	0.000	3.3	3.099	Surcharged
SWC-02	FSR: 30 years: +45 %: 15 mins: Winter	53.500	51.150	52.178	1.028	8.5	0.163	0.000	6.5	6.327	Surcharged
SWC-03	FSR: 30 years: +45 %: 15 mins: Winter	53.750	50.900	52.152	1.252	11.3	0.199	0.000	9.8	9.593	Surcharged
SWC-04	FSR: 30 years: +45 %: 15 mins: Winter	53.200	50.750	52.115	1.365	16.7	0.217	0.000	13.2	14.481	Surcharged
SWC-05	FSR: 30 years: +45 %: 15 mins: Winter	53.200	50.500	52.002	1.502	17.5	0.239	0.000	16.5	17.625	Surcharged
SWC-06	FSR: 30 years: +45 %: 15 mins: Winter	53.200	50.200	51.828	1.628	23.1	0.259	0.000	20.7	23.206	Surcharged
SWC-16 - Pump	FSR: 30 years: +45 %: 1440 mins: Winter	51.000	48.800	49.887	1.087	0.5	0.691	0.000	0.4	67.427	Surcharged
SWC-10	FSR: 30 years: +45 %: 15 mins: Winter	51.400	49.450	50.112	0.662	51.0	0.187	0.000	52.2	51.277	Surcharged
SWC-17	FSR: 30 years: +45 %: 15 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	0.556	OK
Y- Junction	FSR: 30 years: +45 %: 15 mins: Summer		50.470	50.485	0.015	0.4			0.4	0.556	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

FSR: 30 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)
Att Tank	FSR: 30 years: +45 %: 1440 mins: Winter	49.887	49.887	0.987	0.987	5.2	142.483	0.000	0.000	0.5	68.430	2662	38.463

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

Status
OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

FSR: 30 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	FSR: 30 years: +45 %: 15 mins: Summer	Pipe	SWC-13	SWC-14	53.200	51.402	0.100	3.936	0.9	0.65	6.1	Surcharged
SWP-14	FSR: 30 years: +45 %: 15 mins: Winter	Pipe	SWC-14	SWC-15	53.000	51.387	0.100	7.477	1.2	0.98	9.5	Surcharged
SWP-01	FSR: 30 years: +45 %: 30 mins: Winter	Pipe	SWC-01	SWC-02	53.400	52.022	0.150	4.027	0.6	0.22	4.2	Surcharged
SWP-02	FSR: 30 years: +45 %: 30 mins: Winter	Pipe	SWC-02	SWC-03	53.500	52.015	0.150	8.230	0.6	0.47	8.2	Surcharged
SWP-03	FSR: 30 years: +45 %: 15 mins: Winter	Pipe	SWC-03	SWC-04	53.750	52.152	0.150	9.593	0.7	0.57	9.8	Surcharged
SWP-04	FSR: 30 years: +45 %: 15 mins: Winter	Pipe	SWC-04	SWC-05	53.200	52.115	0.150	14.481	0.9	0.74	13.2	Surcharged
SWP-05	FSR: 30 years: +45 %: 15 mins: Winter	Pipe	SWC-05	SWC-06	53.200	52.002	0.150	17.625	0.9	0.85	16.5	Surcharged
SWP-12	FSR: 30 years: +45 %: 120 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.496	0.100	6.254	0.5	0.06	1.0	Surcharged
SWP-07	FSR: 30 years: +45 %: 15 mins: Winter	Pipe	SWC-06	SWC-07	53.200	51.828	0.150	23.206	1.2	1.21	20.7	Surcharged
SWP-08	FSR: 30 years: +45 %: 15 mins: Winter	Pipe	SWC-07	SWC-08	52.900	51.506	0.150	26.942	1.4	1.53	24.9	Surcharged
SWP-09	FSR: 30 years: +45 %: 15 mins: Winter	Pipe	SWC-08	SWC-09	52.450	51.085	0.150	33.479	1.8	1.75	31.2	Surcharged
SWP-10	FSR: 30 years: +45 %: 30 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.338	0.150	50.974	2.1	1.9	36.9	Surcharged
SWP-11	FSR: 30 years: +45 %: 15 mins: Winter	Pipe	SWC-10	Att Tank	51.400	50.112	0.150	51.277	3.0	1.78	52.2	Surcharged
SWC-16	FSR: 30 years: +45 %: 15 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.838	0.100	12.150	1.9	1.18	14.7	Surcharged

SWP-17	FSR: 30 years: +45 %: 15 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.211	0.009	0.575	0.0	0.07	0.4	Surcharged
SWP-18	FSR: 30 years: +45 %: 15 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	0.556	0.5	0.05	0.4	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +45% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Phase Management Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		



Phase
FSR: 30 years: Increase Rainfall (%): +45: 15 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
Y- Junction			0.4	0.556
TOTAL	103.7	45.901	0.4	0.556

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Junctions Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
SWC-13	Outlet	SWP-13	Free Discharge
SWC-14	Outlet	SWP-14	Free Discharge
SWC-15	Outlet	SWC-16	Free Discharge
SWC-09	Outlet	SWP-10	Free Discharge
SWC-08	Outlet	SWP-09	Free Discharge
SWC-07	Outlet	SWP-08	Free Discharge
SWC-01	Outlet	SWP-01	Free Discharge
SWC-02	Outlet	SWP-02	Free Discharge
SWC-03	Outlet	SWP-03	Free Discharge
SWC-04	Outlet	SWP-04	Free Discharge
SWC-05	Outlet	SWP-05	Free Discharge
SWC-06	Outlet	SWP-07	Free Discharge
SWC-16 - Pump	Outlet	SWP-17	Pump
	Invert Elevation (m)	48.800	
	Depth (m)	Outflow (L/s)	
	0.100	0.4	
	2.000	0.4	
SWC-10	Outlet	SWP-11	Free Discharge
SWC-17	Outlet	SWP-18	Free Discharge

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Stormwater Controls Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		



Att Tank

Type : Cellular Storage

Dimensions

Exceedance Elevation (m)	51.000
Depth (m)	1.600
Base Elevation (m)	48.900
Number of Crates Long	19
Number of Crates Wide	16
Number of Crates High	4
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	231.540

Inlets

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	SWP-11
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	SWP-12
Outlet Type	Free Discharge

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analyzed (ha)
Catchment Area	SWC-03		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (1)	SWC-04		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (1) (1)	SWC-05		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (2)	SWC-02		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (3)	SWC-01		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (4)	SWC-06		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (5)	SWC-06		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (6)	SWC-13		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (7)	SWC-14		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (8)	SWC-15		Time of Concentration	0.010	100	0	100	0.010
Catchment Area (9)	SWC-15		Time of Concentration	0.011	100	0	100	0.011
Catchment Area (10)	SWC-09		Time of Concentration	0.026	100	0	100	0.026
Catchment Area (11)	SWC-08		Time of Concentration	0.030	100	0	100	0.030
Catchment Area (12)	SWC-07		Time of Concentration	0.017	100	0	100	0.017
Catchment Area (13)	SWC-13		Time of Concentration	0.006	100	0	100	0.006
Catchment Area (14)	SWC-04		Time of Concentration	0.008	100	0	100	0.008
TOTAL		**0.0**		**0.236**				**0.236**

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Title: Rainfall Analysis Criteria	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England and Wales
M5-60 (mm)	18.8
Ratio R	0.400
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
30.0	0.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			



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

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	FSR: 30 years: +0 %: 15 mins: Winter	0.01	4.7	2.236
Catchment Area (1)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	4.6	2.187
Catchment Area (2)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	4.7	2.236
Catchment Area (3)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	4.6	2.148
Catchment Area (1) (1)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	4.6	2.175
Catchment Area (4)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	4.0	1.898
Catchment Area (5)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	4.1	1.949
Catchment Area (6)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	4.5	2.103
Catchment Area (7)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	4.5	2.103
Catchment Area (8)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	3.2	1.500
Catchment Area (9)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	3.7	1.726
Catchment Area (10)	FSR: 30 years: +0 %: 15 mins: Winter	0.03	8.3	3.920
Catchment Area (11)	FSR: 30 years: +0 %: 15 mins: Winter	0.03	9.6	4.507
Catchment Area (12)	FSR: 30 years: +0 %: 15 mins: Winter	0.02	5.4	2.567
Catchment Area (13)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	2.1	0.967
Catchment Area (14)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	2.5	1.202

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

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

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	FSR: 30 years: +0 %: 15 mins: Winter	53.200	51.200	51.262	0.062	6.5	0.010	0.000	6.4	3.036	OK
SWC-14	FSR: 30 years: +0 %: 15 mins: Winter	53.000	50.628	50.819	0.190	10.8	0.030	0.000	7.9	5.155	Surcharged
SWC-15	FSR: 30 years: +0 %: 15 mins: Winter	52.650	50.000	50.382	0.382	14.8	0.061	0.000	12.1	8.383	Surcharged
SWC-09	FSR: 30 years: +0 %: 15 mins: Winter	51.300	49.500	50.050	0.550	31.2	0.087	0.000	29.2	27.026	Surcharged
SWC-08	FSR: 30 years: +0 %: 15 mins: Winter	52.450	49.750	50.566	0.816	26.7	0.130	0.000	25.5	23.117	Surcharged
SWC-07	FSR: 30 years: +0 %: 15 mins: Winter	52.900	49.950	50.891	0.941	21.2	0.150	0.000	20.9	18.590	Surcharged
SWC-01	FSR: 30 years: +0 %: 15 mins: Winter	53.400	51.400	51.458	0.058	4.6	0.009	0.000	4.4	2.137	OK
SWC-02	FSR: 30 years: +0 %: 15 mins: Winter	53.500	51.150	51.452	0.302	9.2	0.048	0.000	8.6	4.354	Surcharged
SWC-03	FSR: 30 years: +0 %: 15 mins: Winter	53.750	50.900	51.429	0.529	13.4	0.084	0.000	8.9	6.620	Surcharged
SWC-04	FSR: 30 years: +0 %: 15 mins: Winter	53.200	50.750	51.395	0.645	16.1	0.103	0.000	11.2	9.992	Surcharged
SWC-05	FSR: 30 years: +0 %: 15 mins: Winter	53.200	50.500	51.298	0.798	15.8	0.127	0.000	13.7	12.163	Surcharged
SWC-06	FSR: 30 years: +0 %: 15 mins: Winter	53.200	50.200	51.150	0.950	19.8	0.151	0.000	17.6	16.004	Surcharged
SWC-16 - Pump	FSR: 30 years: +0 %: 1440 mins: Winter	51.000	48.800	49.521	0.721	0.4	0.459	0.000	0.4	67.009	Surcharged
SWC-10	FSR: 30 years: +0 %: 15 mins: Winter	51.400	49.450	49.879	0.429	41.0	0.121	0.000	41.5	35.406	Surcharged
SWC-17	FSR: 30 years: +0 %: 15 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	0.538	OK
Y- Junction	FSR: 30 years: +0 %: 15 mins: Summer		50.470	50.485	0.015	0.4			0.4	0.538	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

FSR: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)
Att Tank	FSR: 30 years: +0 %: 1440 mins: Winter	49.521	49.521	0.621	0.621	3.6	89.725	0.000	0.000	0.4	67.572	1734	61.248

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

Status
OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

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

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.262	0.100	3.036	0.9	0.68	6.4	OK
SWP-14	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.819	0.100	5.155	1.0	0.82	7.9	Surcharged
SWP-01	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.458	0.150	2.137	0.6	0.24	4.4	OK
SWP-02	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.452	0.150	4.354	0.6	0.5	8.6	Surcharged
SWP-03	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWC-03	SWC-04	53.750	51.429	0.150	6.620	0.6	0.52	8.9	Surcharged
SWP-04	FSR: 30 years: +0 %: 30 mins: Winter	Pipe	SWC-04	SWC-05	53.200	51.213	0.150	12.965	0.9	0.74	13.1	Surcharged
SWP-05	FSR: 30 years: +0 %: 30 mins: Summer	Pipe	SWC-05	SWC-06	53.200	51.047	0.150	14.099	0.8	0.7	13.7	Surcharged
SWP-12	FSR: 30 years: +0 %: 30 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	49.176	0.100	1.663	0.3	0.09	1.5	Surcharged
SWP-07	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWC-06	SWC-07	53.200	51.150	0.150	16.004	1.0	1.03	17.6	Surcharged
SWP-08	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.891	0.150	18.590	1.2	1.29	20.9	Surcharged
SWP-09	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWC-08	SWC-09	52.450	50.566	0.150	23.117	1.4	1.43	25.5	Surcharged
SWP-10	FSR: 30 years: +0 %: 30 mins: Winter	Pipe	SWC-09	SWC-10	51.300	50.035	0.150	35.133	1.7	1.51	29.4	Surcharged
SWP-11	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWC-10	Att Tank	51.400	49.879	0.150	35.406	2.3	1.42	41.5	Surcharged
SWC-16	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.382	0.100	8.383	1.5	0.97	12.1	Surcharged

SWP-17	FSR: 30 years: +0 %: 15 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	49.113	0.009	0.557	0.0	0.07	0.4	Surcharged
SWP-18	FSR: 30 years: +0 %: 15 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	0.538	0.5	0.05	0.4	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 30 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Phase Management Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			



Phase
FSR: 30 years: Increase Rainfall (%): +0: 15 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
Y- Junction			0.4	0.538
TOTAL	71.7	31.657	0.4	0.538

Charters, Oxford Road, Reading, RG31 6TQ:	Date:		
Erection of 4 blocks of 8 flats. 1 in 1 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	29/10/2024		
	Designed by:	Checked by:	Approved By:
	N.E	S.L	S.L
Report Details:	Company Address:		
Type: Junctions Storm Phase: Phase	Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
SWC-13	Outlet	SWP-13	Free Discharge
SWC-14	Outlet	SWP-14	Free Discharge
SWC-15	Outlet	SWC-16	Free Discharge
SWC-09	Outlet	SWP-10	Free Discharge
SWC-08	Outlet	SWP-09	Free Discharge
SWC-07	Outlet	SWP-08	Free Discharge
SWC-01	Outlet	SWP-01	Free Discharge
SWC-02	Outlet	SWP-02	Free Discharge
SWC-03	Outlet	SWP-03	Free Discharge
SWC-04	Outlet	SWP-04	Free Discharge
SWC-05	Outlet	SWP-05	Free Discharge
SWC-06	Outlet	SWP-07	Free Discharge
SWC-16 - Pump	Outlet	SWP-17	Pump
	Invert Elevation (m)	48.800	
	Depth (m)	Outflow (L/s)	
	0.100	0.4	
	2.000	0.4	
SWC-10	Outlet	SWP-11	Free Discharge
SWC-17	Outlet	SWP-18	Free Discharge

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 1 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		



Att Tank

Type : Cellular Storage

Dimensions

Exceedance Elevation (m)	51.000
Depth (m)	1.600
Base Elevation (m)	48.900
Number of Crates Long	19
Number of Crates Wide	16
Number of Crates High	4
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	231.540

Inlets

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	SWP-11
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	SWP-12
Outlet Type	Free Discharge

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 1 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analyzed (ha)
Catchment Area	SWC-03		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (1)	SWC-04		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (1) (1)	SWC-05		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (2)	SWC-02		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (3)	SWC-01		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (4)	SWC-06		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (5)	SWC-06		Time of Concentration	0.013	100	0	100	0.013
Catchment Area (6)	SWC-13		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (7)	SWC-14		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (8)	SWC-15		Time of Concentration	0.010	100	0	100	0.010
Catchment Area (9)	SWC-15		Time of Concentration	0.011	100	0	100	0.011
Catchment Area (10)	SWC-09		Time of Concentration	0.026	100	0	100	0.026
Catchment Area (11)	SWC-08		Time of Concentration	0.030	100	0	100	0.030
Catchment Area (12)	SWC-07		Time of Concentration	0.017	100	0	100	0.017
Catchment Area (13)	SWC-13		Time of Concentration	0.006	100	0	100	0.006
Catchment Area (14)	SWC-04		Time of Concentration	0.008	100	0	100	0.008
TOTAL		**0.0**		**0.236**				**0.236**

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 1 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Title: Rainfall Analysis Criteria	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England and Wales
M5-60 (mm)	18.8
Ratio R	0.400
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
1.0	0.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 1 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m^3)
Catchment Area	FSR: 1 years: +0 %: 15 mins: Winter	0.01	2.0	0.908
Catchment Area (1)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	1.9	0.890
Catchment Area (2)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	2.0	0.908
Catchment Area (3)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	1.9	0.872
Catchment Area (1) (1)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	1.9	0.887
Catchment Area (4)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	1.7	0.770
Catchment Area (5)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	1.7	0.791
Catchment Area (6)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	1.8	0.854
Catchment Area (7)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	1.8	0.854
Catchment Area (8)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	1.3	0.611
Catchment Area (9)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	1.5	0.701
Catchment Area (10)	FSR: 1 years: +0 %: 15 mins: Winter	0.03	3.4	1.592
Catchment Area (11)	FSR: 1 years: +0 %: 15 mins: Winter	0.03	4.0	1.831
Catchment Area (12)	FSR: 1 years: +0 %: 15 mins: Winter	0.02	2.3	1.043
Catchment Area (13)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	0.8	0.393
Catchment Area (14)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	1.1	0.486

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 1 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024		
	Designed by: N.E	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London		

FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SWC-13	FSR: 1 years: +0 %: 15 mins: Winter	53.200	51.200	51.237	0.037	2.7	0.006	0.000	2.6	1.245	OK
SWC-14	FSR: 1 years: +0 %: 15 mins: Winter	53.000	50.628	50.675	0.047	4.4	0.007	0.000	4.3	2.097	OK
SWC-15	FSR: 1 years: +0 %: 15 mins: Winter	52.650	50.000	50.054	0.054	7.2	0.009	0.000	7.0	3.407	OK
SWC-09	FSR: 1 years: +0 %: 15 mins: Winter	51.300	49.500	49.659	0.159	19.7	0.025	0.000	18.7	10.919	Surcharged
SWC-08	FSR: 1 years: +0 %: 15 mins: Winter	52.450	49.750	49.866	0.116	17.1	0.018	0.000	16.3	9.337	OK
SWC-07	FSR: 1 years: +0 %: 15 mins: Winter	52.900	49.950	50.059	0.109	14.1	0.017	0.000	13.1	7.510	OK
SWC-01	FSR: 1 years: +0 %: 15 mins: Winter	53.400	51.400	51.432	0.032	1.9	0.005	0.000	1.8	0.871	OK
SWC-02	FSR: 1 years: +0 %: 15 mins: Winter	53.500	51.150	51.196	0.046	3.8	0.007	0.000	3.6	1.775	OK
SWC-03	FSR: 1 years: +0 %: 15 mins: Winter	53.750	50.900	50.959	0.059	5.5	0.009	0.000	5.2	2.678	OK
SWC-04	FSR: 1 years: +0 %: 15 mins: Winter	53.200	50.750	50.822	0.072	8.2	0.011	0.000	7.8	4.050	OK
SWC-05	FSR: 1 years: +0 %: 15 mins: Winter	53.200	50.500	50.574	0.074	9.7	0.012	0.000	9.2	4.930	OK
SWC-06	FSR: 1 years: +0 %: 15 mins: Winter	53.200	50.200	50.296	0.096	12.6	0.015	0.000	11.8	6.482	OK
SWC-16 - Pump	FSR: 1 years: +0 %: 600 mins: Winter	51.000	48.800	49.131	0.331	0.4	0.211	0.000	0.4	27.165	Surcharged
SWC-10	FSR: 1 years: +0 %: 15 mins: Winter	51.400	49.450	49.580	0.130	25.7	0.037	0.000	25.0	14.315	OK
SWC-17	FSR: 1 years: +0 %: 15 mins: Summer	52.600	50.600	50.616	0.016	0.4	0.003	0.000	0.4	0.489	OK
Y- Junction	FSR: 1 years: +0 %: 15 mins: Summer		50.470	50.485	0.015	0.4			0.4	0.489	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 1 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (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)	Half Drain Down Time (mins)	Percentage Available (%)
Att Tank	FSR: 1 years: +0 %: 600 mins: Winter	49.131	49.131	0.231	0.231	3.3	33.406	0.000	0.000	0.4	27.436	651	85.572

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 1 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

Status
OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 1 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			

FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
SWP-13	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SWC-13	SWC-14	53.200	51.237	0.036	1.245	1.0	0.27	2.6	OK
SWP-14	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SWC-14	SWC-15	53.000	50.675	0.050	2.097	1.1	0.45	4.3	OK
SWP-01	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SWC-01	SWC-02	53.400	51.432	0.039	0.871	0.5	0.1	1.8	OK
SWP-02	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SWC-02	SWC-03	53.500	51.196	0.052	1.775	0.6	0.21	3.6	OK
SWP-03	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SWC-03	SWC-04	53.750	50.959	0.065	2.678	0.7	0.3	5.2	OK
SWP-04	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SWC-04	SWC-05	53.200	50.822	0.073	4.050	0.9	0.44	7.8	OK
SWP-05	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SWC-05	SWC-06	53.200	50.574	0.085	4.930	0.9	0.47	9.2	OK
SWP-12	FSR: 1 years: +0 %: 15 mins: Summer	Pipe	Att Tank	SWC-16 - Pump	50.964	48.984	0.100	0.723	0.4	0.16	2.6	OK
SWP-07	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SWC-06	SWC-07	53.200	50.296	0.102	6.482	0.9	0.69	11.8	OK
SWP-08	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SWC-07	SWC-08	52.900	50.059	0.112	7.510	0.9	0.81	13.1	OK
SWP-09	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SWC-08	SWC-09	52.450	49.866	0.138	9.337	1.0	0.92	16.3	OK
SWP-10	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SWC-09	SWC-10	51.300	49.659	0.145	10.919	1.1	0.96	18.7	Surcharged
SWP-11	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SWC-10	Att Tank	51.400	49.580	0.118	14.315	1.7	0.86	25.0	OK
SWC-16	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SWC-15	SWC-10	52.650	50.054	0.092	3.407	0.9	0.56	7.0	OK
SWP-17	FSR: 1 years: +0 %: 15 mins: Summer	Pipe	SWC-16 - Pump	SWC-17	51.000	48.984	0.007	0.508	0.0	0.07	0.4	Surcharged
SWP-18	FSR: 1 years: +0 %: 15 mins: Summer	Pipe	SWC-17	Y-Junction	52.600	50.616	0.015	0.489	0.5	0.05	0.4	OK

Charters, Oxford Road, Reading, RG31 6TQ: Erection of 4 blocks of 8 flats. 1 in 1 Year Storm Event +0% Climate Change, Maximum Discharge Restricted to 0.4l/s	Date: 29/10/2024			Nimbus ENGINEERING CONSULTANTS
	Designed by: N.E	Checked by: S.L	Approved By: S.L	
Report Details: Type: Phase Management Storm Phase: Phase	Company Address: Nimbus Engineering Consultants Ltd. Kemp House, 124 City Road, EC1V 2NX, London			



Phase
FSR: 1 years: Increase Rainfall (%): +0: 15 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
Y- Junction			0.4	0.489
TOTAL	29.7	12.836	0.4	0.489

APPENDIX C – THAMES WATER ASSET PLANS

Asset Location Search

Property Searches

Nimbus Engineering Consultants LTD
Michealson Square,Office 8 Michealson Square

LIVINGSTON
EH54 7DP

Search address supplied

Charters Garage
Oxford Road
Tilehurst
Reading
RG31 6TQ

Your reference C3411

Our reference ALS/ALS Standard/2024_5071565

Search date 28 October 2024

Notification of Price Changes

From 1st April 2024 Thames Water Property Searches will be increasing the prices of its CON29DW Residential and Commercial searches along with the Asset Location Search. Costs will rise in line with RPI as per previous years, which is sat at 6%.

Customers will be emailed with the new prices by February 28th 2024.

Any orders received with a higher payment prior to the 1st April 2024 will be non-refundable. For further details on the price increase please visit our website at www.thameswater-propertysearches.co.uk.

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0800 009 4540

Asset Location Search

Property Searches

Search address supplied: Charters Garage, Oxford Road, Tilehurst, Reading, RG31 6TQ

Dear Sir / Madam

An Asset Location Search is recommended when undertaking a site development. It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This search provides maps showing the position, size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0800 009 4540, or use the address below:

Thames Water Utilities Ltd
Property Searches
PO Box 3189
Slough
SL1 4WW

Email: searches@thameswater.co.uk
Web: www.thameswater-propertysearches.co.uk

Asset Location Search

Thames Water Property Searches

Waste Water Services

Please provide a copy extract from the public sewer map.

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority.

Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners.

This report relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus.

The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further Information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an ‘as constructed’ record. It is recommended these details be checked with the developer.

Clean Water Services

Please provide a copy extract from the public water main map.

Enclosed is a map showing the approximate positions of our water mains and associated apparatus. Please note that records are not kept of the positions of individual domestic supplies.

For your information, there will be a pressure of at least 10m head at the outside stop valve. If you would like to know the static pressure, please contact our Customer Centre on 0800 316 9800. The Customer Centre can also arrange for a full flow and pressure test to be carried out for a fee.

For your guidance:

- Assets other than vested water mains may be shown on the plan, for information only.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Payment for this Search

A charge will be added to your suppliers account.

Further contacts:

Waste Water queries

Should you require verification of the invert levels of public sewers, by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. For further information please contact our Customer Centre on Tel: 0845 920 0800. Alternatively, a survey can be arranged, for a fee, through our Customer Centre on the above number.

If you have any questions regarding sewer connections, budget estimates, diversions, building over issues or any other questions regarding operational issues please direct them to our service desk. Which can be contacted by writing to:

Developer Services (Waste Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

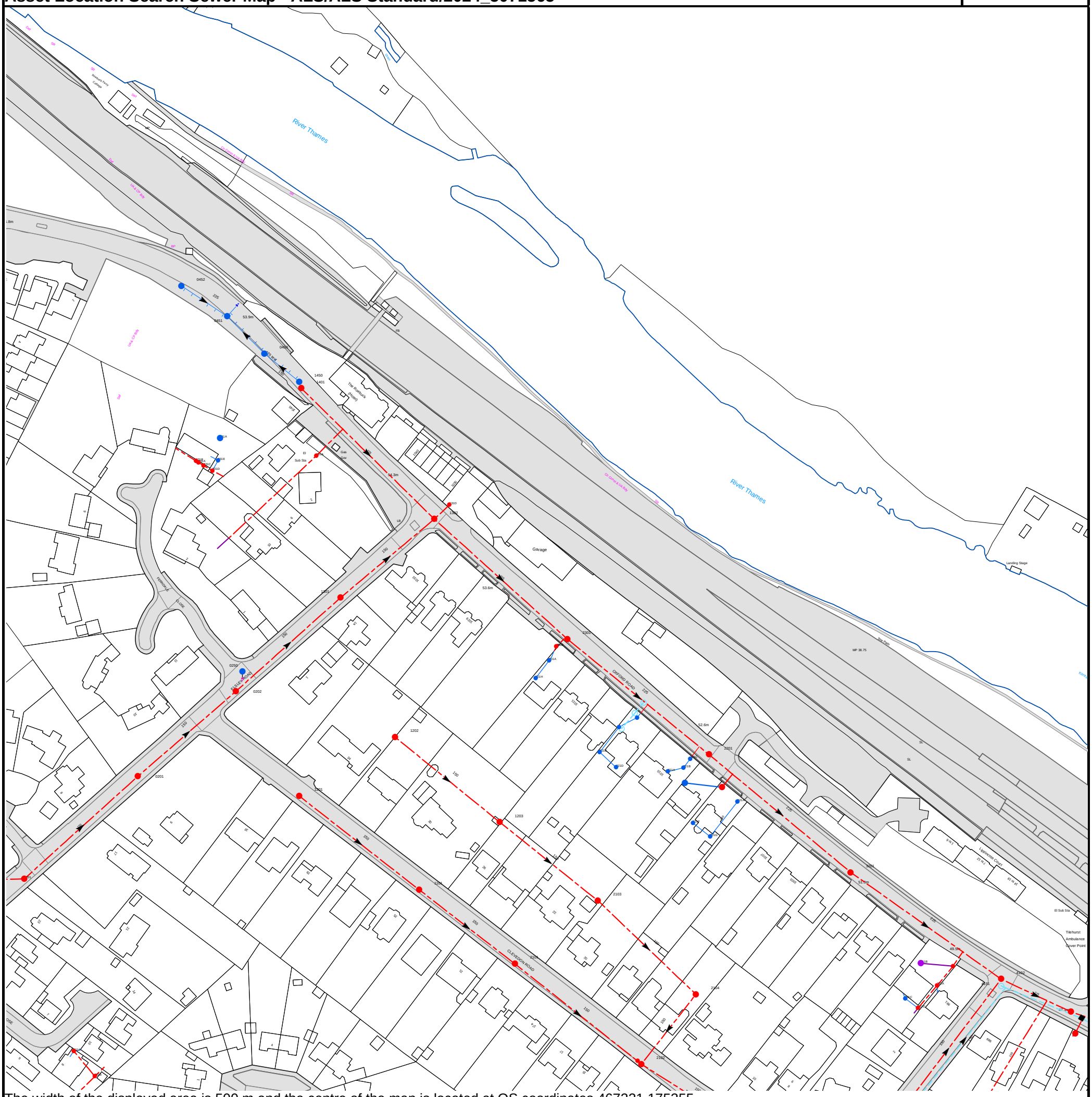
Clean Water queries

Should you require any advice concerning clean water operational issues or clean water connections, please contact:

Developer Services (Clean Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Asset Location Search Sewer Map - ALS/ALS Standard/2024_5071565



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 467221,175355

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map (2020) with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
0451	53.81	52.94
0452	54	53.18
131D	n/a	n/a
031D	n/a	n/a
031C	n/a	n/a
031A	n/a	n/a
031B	n/a	n/a
031E	n/a	n/a
131A	n/a	n/a
041A	n/a	n/a
1401	54.21	51.88
1450	54.18	n/a
0450	53.87	53.17
9201	68.45	66.84
011A	n/a	n/a
011B	n/a	n/a
0201	68.06	66.39
0202	64.26	62.81
0250	n/a	n/a
1201	64.84	63.42
1301	58.86	57.41
1202	61.42	60.16
1101	63.48	61.84
1302	54.11	51.46
1203	n/a	n/a
2101	61.74	60.26
221H	n/a	n/a
231A	n/a	n/a
231B	n/a	n/a
2301	53.29	50.94
2103	n/a	n/a
221E	n/a	n/a
221D	n/a	n/a
22NK	n/a	n/a
22ND	n/a	n/a
22NC	n/a	n/a
22NF	n/a	n/a
22MN	n/a	n/a
221A	n/a	n/a
221B	n/a	n/a
22NH	n/a	n/a
221C	n/a	n/a
221F	n/a	n/a
2104	n/a	n/a
2201	52.51	50.39
221G	n/a	n/a
311D	n/a	n/a
311C	n/a	n/a
4151	48.36	45.67
311A	n/a	n/a
4102	48.37	46.12
41MN	n/a	n/a
311B	n/a	n/a
3201	51.27	49.33
321A	n/a	n/a
32NJ	n/a	n/a
41ND	n/a	n/a
4101	46.9	n/a
2102	59.16	56.46

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Asset Location Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

Foul Sewer: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.

Surface Water Sewer: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.

Combined Sewer: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.

- Storm Sewer
- Sludge Sewer
- Foul Trunk Sewer
- Surface Trunk Sewer
- Combined Trunk Sewer
- Foul Rising Main
- Surface Water Rising Main
- Combined Rising Main
- Vacuum
- Thames Water Proposed
- Vent Pipe
- Gallery

Other Sewer Types (Not operated and maintained by Thames Water)

- Sewer
- Culverted Watercourse
- Proposed
- Decommissioned Sewer
- Content of this drainage network is currently unknown
- Ownership of this drainage network is currently unknown

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

- Air Valve
- Meter
- Dam Chase
- Vent
- Fitting

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

- Ancillary
- Drop Pipe
- Control Valve
- Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol. Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

- Inlet
- Outfall
- Undefined End

Other Symbols

Symbols used on maps which do not fall under other general categories.

- Change of Characteristic Indicator
- Public / Private Pumping Station
- Invert Level
- Summit

Areas

Lines denoting areas of underground surveys, etc.

- Agreement
- Chamber
- Operational Site

Ducts or Crossings

- Casement

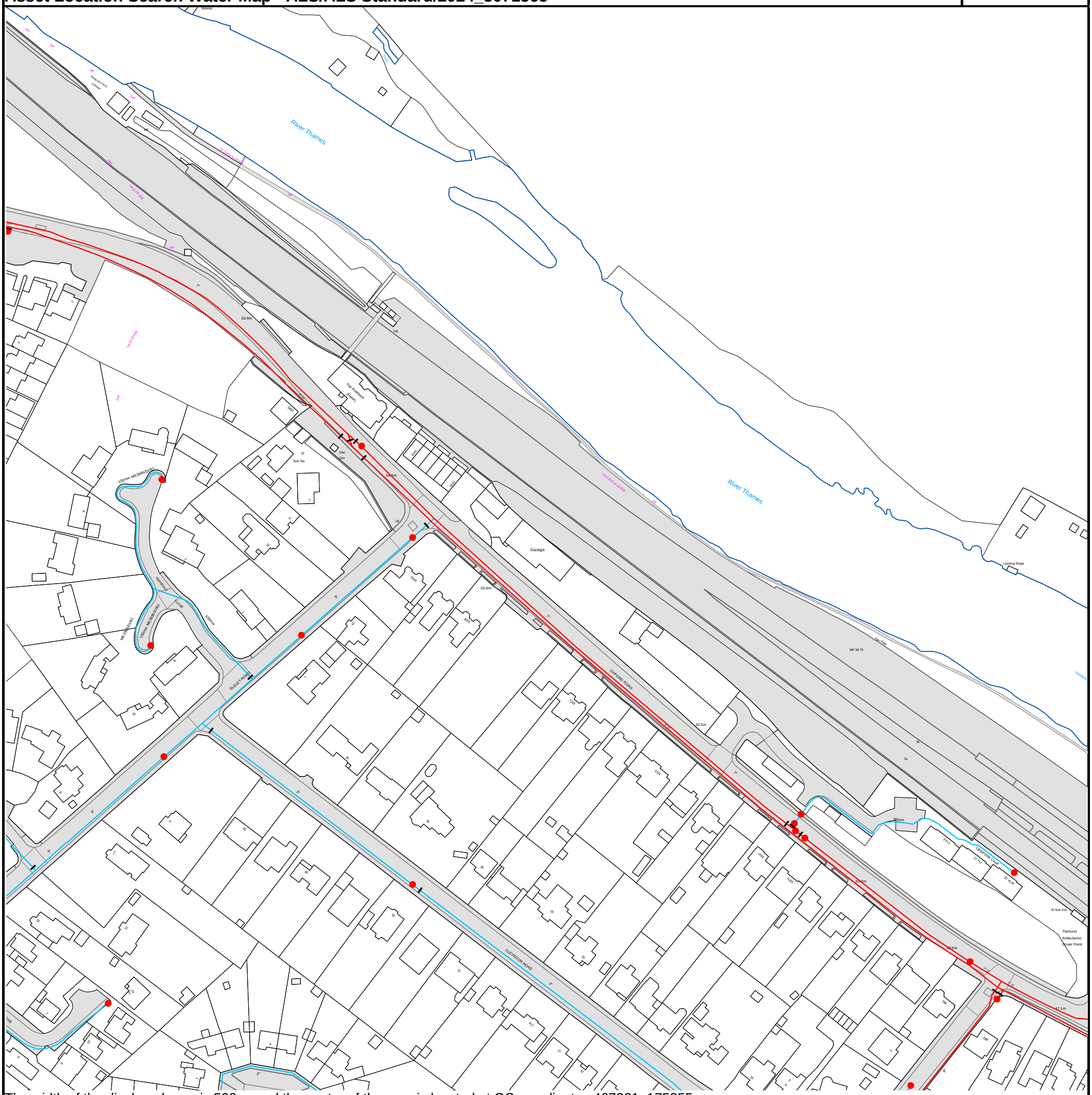
Ducts may contain high voltage cables. Please check with Thames Water.

- Conduit Bridge
- Subway
- Tunnel

Notes:

1) All levels associated with the plans are to Ordnance Datum Newlyn.
2) All measurements on the plan are metric.
3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate the direction of flow.
4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
5) 'na' or '0' on a manhole indicates that data is unavailable.
6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimeters. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology, please contact Property Searches on 0800 009 4540.

Asset Location Search Water Map - ALS/ALS Standard/2024_5071565



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 467221, 175355.

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map (2020) with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

Asset Location Search - Water Key

Water Pipes (Operated & Maintained by Thames Water)

4"

Distribution Main: The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.

16"

Trunk Main: A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.

3" SUPPLY

Supply Main: A supply main indicates that the water main is used as a supply for a single property or group of properties.

3" FIRE

Fire Main: Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.

3" METERED

Metered Pipe: A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.

Transmission Tunnel: A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.

Proposed Main: A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

PIPE DIAMETER	DEPTH BELOW GROUND
Up to 300mm (12")	900mm (3')
300mm - 600mm (12" - 24")	1100mm (3' 8")
600mm and bigger (24" plus)	1200mm (4')

Valves

- General Purpose Valve
- Air Valve
- Pressure Control Valve
- Customer Valve

Hydrants

- Single Hydrant

Meters

- Meter

End Items

Symbol indicating what happens at the end of a water main.

- Blank Flange
- Capped End
- Emptying Pit
- Undefined End
- Manifold
- Customer Supply
- Fire Supply

Operational Sites

- Booster Station
- Other
- Other (Proposed)
- Pumping Station
- Service Reservoir
- Shaft Inspection
- Treatment Works
- Unknown
- Water Tower

Other Symbols

- Data Logger
- **Casement:** Ducts may contain high voltage cables. Please check with Thames Water.

Other Water Pipes (Not Operated or Maintained by Thames Water)

Other Water Company Main: Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are denoted in purple and in most cases have the owner of the pipe displayed along them.

Private Main: Indiates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.

Payment Terms and Conditions

All sales are made in accordance with Thames Water Utilities Limited (TWUL) standard terms and conditions unless previously agreed in writing.

1. All goods remain in the property of Thames Water Utilities Ltd until full payment is received.
2. Provision of service will be in accordance with all legal requirements and published TWUL policies.
3. All invoices are strictly due for payment within 14 days of the date of the invoice. Any other terms must be accepted/agreed in writing prior to provision of goods or service or will be held to be invalid.
4. Penalty interest may be invoked by TWUL in the event of unjustifiable payment delay. Interest charges will be in line with UK Statute Law 'The Late Payment of Commercial Debts (Interest) Act 1998'.
5. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
6. A charge may be made at the discretion of the company for increased administration costs.

A copy of Thames Water's standard terms and conditions are available from the Commercial Billing Team (cashoperations@thameswater.co.uk).

We publish several Codes of Practice including a guaranteed standards scheme. You can obtain copies of these leaflets by calling us on 0800 980 8800.

If you are unhappy with our service, you can speak to your original goods or customer service provider. If you are still not satisfied with the outcome provided, we will refer the matter to a Senior Manager for resolution who will provide you with a response.

If you are still dissatisfied with our final response, and in certain circumstances such as you are buying a residential property or commercial property within certain parameters, The Property Ombudsman will investigate your case and give an independent view. The Ombudsman can award compensation of up to £25,000 to you if he finds that you have suffered actual financial loss and/or aggravation, distress, or inconvenience because of your search not keeping to the Code. Further information can be obtained by visiting www.tpos.co.uk or by sending an email to admin@tpos.co.uk.

If the Goods or Services covered by this invoice falls under the regulation of the 1991 Water Industry Act, and you remain dissatisfied you can refer your complaint to Consumer Council for Water on 0300 034 2222 or write to them at Consumer Council for Water, 1st Floor, Victoria Square House, Victoria Square, Birmingham, B2 4AJ.

Ways to pay your bill

Credit Card	**BACS Payment**	**Telephone Banking**
Please Call **0800 009 4540** quoting your invoice number starting CBA or ADS	Account number **90478703** Sort code **60-00-01** A remittance advice must be sent to: **Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW.** or email **ps.billing@thameswater.co.uk**	By calling your bank and quoting: Account number **90478703** Sort code **60-00-01** and your invoice number