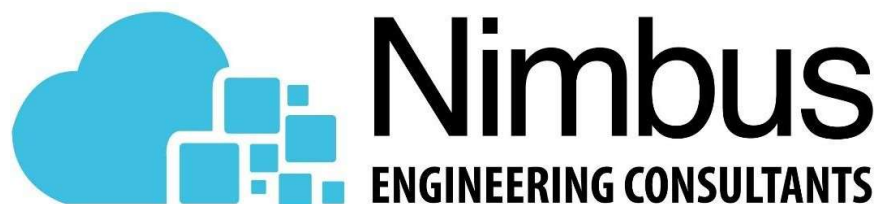


SUDS REPORT FOR 205-213 + REAR GARDENS OF 215-219 HENLEY ROAD, CAVERSHAM, RG4 6LJ.

DOCUMENT NUMBER.: C2827-R1-REV-B

PREPARED BY



Contents

1. INTRODUCTION 3

1.1 Appointment..... 3

1.2 Limitations 3

2. GEOLOGY OF THE AREA 4

3. SUSTAINABLE URBAN DRAINAGE SYSTEMS..... 5

4. SuDS PROPOSALS FOR DEVELOPMENT 9

5. PROPOSED SOLUTION 11

6. TIMESCALE AND MAINTENANCE OF WORKS 13

7. CONCLUSIONS..... 21

APPENDIX A – DRAWINGS

APPENDIX B – HYDRAULIC MODELLING REPORTS

1. INTRODUCTION

1.1 Appointment

Nimbus Engineering have been appointed by Henley Road Limited to provide a solution on the management of Surface Water runoff and to ensure that there is no risk of flooding caused by the proposed development consisting of the demolition of 205-213 Henley Road and the rear gardens of 215-219 Henley Road to construct 2 retirement living apartments. The proposed site plans, can be found in Appendix A.

1.2 Limitations

The general limitations of this report are:

- A number of data and information sources have been used to prepare this report. Whilst Nimbus Engineering believes them to be trustworthy, Nimbus Engineering is unable to guarantee the accuracy of data and information that has been provided by others;
- This report has been prepared using the best data and information that was available at the time of writing. There is the potential for further information or data to become available, leading to changes in the conclusions drawn by this report, for which Nimbus Engineering cannot be held responsible.

2. GEOLOGY OF THE AREA

According to the British Geological Survey (BGS), the superficial deposits at the site are of the Alluvium member, as shown in Figure 1 below. The bedrock in the area is the Seaford Chalk Formation consisting of chalk, as shown in Figure 2, below.



Figure 1- Superficial deposits at the site. (Source: British Geological Society Website (Contains British Geological Survey materials © URKI [2022]. Base mapping is provided by ESRI)).

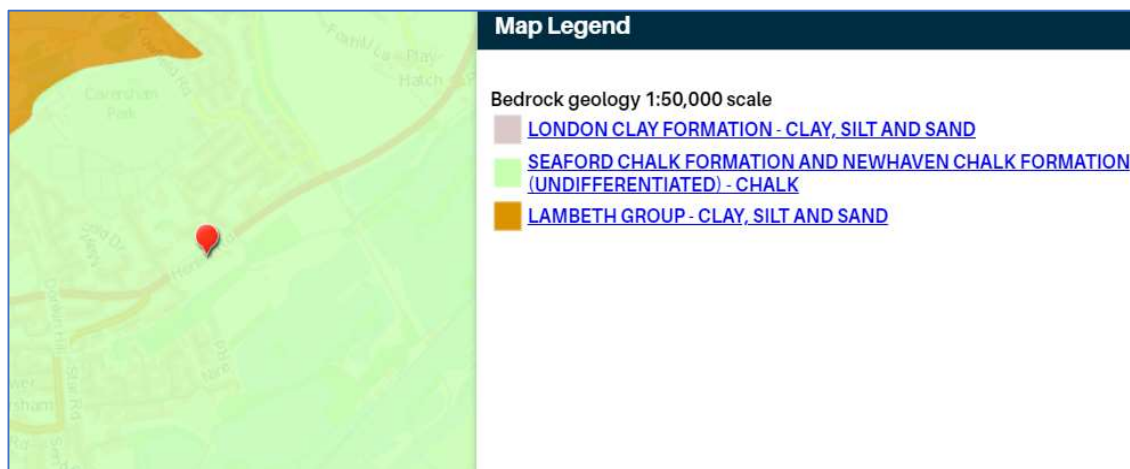


Figure 2- Bedrock at the site. (Source: British Geological Society Website (Contains British Geological Survey materials © URKI [2022]. Base mapping is provided by ESRI))

Due to the underlying geology consisting of chalk, infiltration may be feasible at this site, and with this in mind the client undertook a BRE365 Infiltration test.

3. 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 runoff 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.

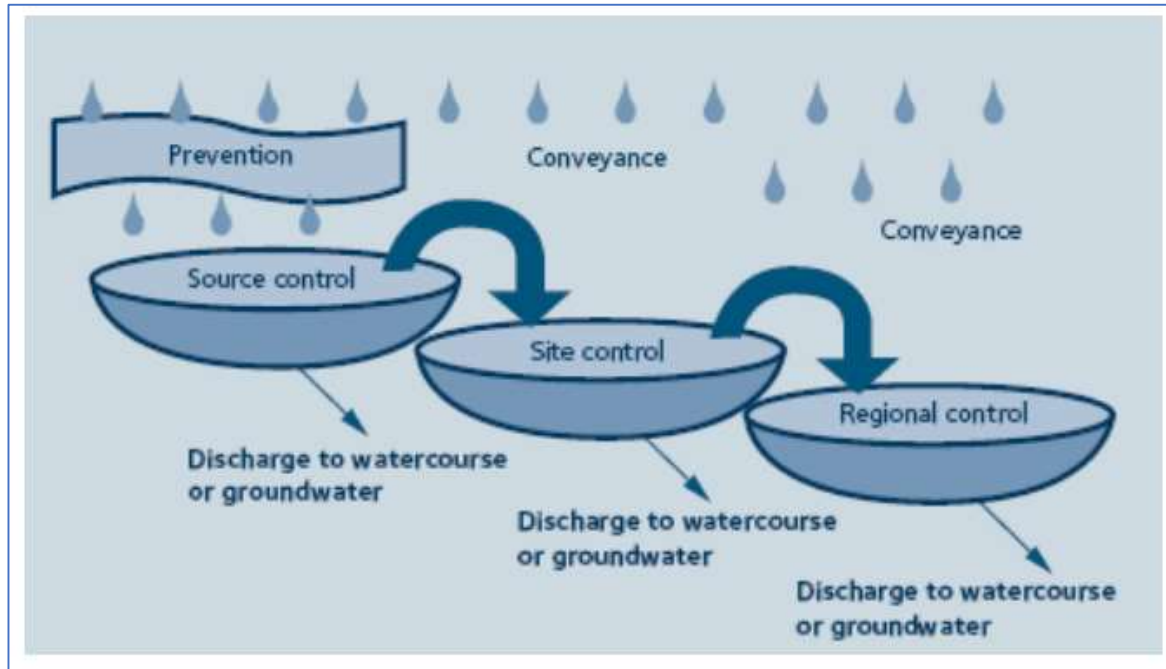


Figure 3 – SuDS Management Train

4. 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 Henley Road.

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	Two below ground rainwater harvesting tanks to promote rainwater reuse onsite.	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	Partial infiltration shown to be feasible. Therefore, northern building to have all runoff conveyed into a soakaway.	Partial.
Rainwater Partial Infiltration to Ground (Source Control)	Installation of permeable/porous surfacing	Porous surfacing proposed where feasible.	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, Swales, Detention basins, Infiltration Trenches and raingarden planters	148m ² green / sedum roof proposed. Three rainwater harvesting tanks proposed at southern block. Raingarden/bioretention area provided for the paths to the south of the site with full infiltration	Yes
Rainwater discharge direct to a watercourse	All surface water runoff on site discharged at a restricted rate to a nearby watercourse	The Berry Brook runs just to the south of the site boundary, therefore, all surface water that is not discharged via a soakaway will discharge at a reduced rate of 2l/s	Yes

		into the Berry Brook.	
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	N/A due to the above.	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	N/A due to the above.	No

Table 1: SuDS Control Measures for Development

5. PROPOSED SOLUTION

The total site area is 3771.6m², with the existing impermeable areas accounting for 1,463m². Following the development at this site, the impermeable areas will have increased to 3,560m². While modelling this site, an urban creep value of 10% was added to the impermeable areas.

In order to ensure that the SuDS management train has been considered fully, raingarden planters will be provided from three of the downpipes, where possible, and also two below ground rainwater harvesting tanks will be proposed. Hardstanding areas, where appropriate, will be formed of permeable surfacing underlain by a hydrocarbon removing geotextile membrane at the car parking areas, in order to deal with as much of the surface water runoff at source, with the surface water runoff from the sloped areas to be caught by slot / filter drains.

In order to ensure a workable solution was developed, all surface water from the north building, and associated hardstanding areas, was conveyed via gravity into a soakaway. As seen in the previous report, the soakaway is close to the trial pits 2 and 3. However, in order to ensure a conservative estimate, a rate of 0.38m/hr was taken for the infiltration rate.

The path areas to the south of the site which are at a lower level than the rest of the site will drain to raingarden/bioretention areas with full infiltration.

The remaining surface water runoff will be discharged via gravity into one of two

attenuation tanks, designed to a 1 in 100 Year +40% CC storm event. These tanks were split in order to provide sufficient falls for reaching the brook without pumping. The total storage capacities of the two tanks is 68.020m³. The flows will then discharge into one of two flow control chambers, both sized at 1.0l/s. The results of the hydraulic model can be found in Appendix B.

We believe the Sustainable Urban Drainage System hierarchy has been considered fully with respect to the type of development, the proposals will reduce flood risk at the site and elsewhere.

6. 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, and the managers of the site will be responsible to oversee the long-term maintenance of the drains. The following outline maintenance strategy sets out recommended timescales for maintenance of the proposed drainage works, in line with CIRIA SuDS Design Guide. A management and maintenance plan drawing has also been included in Appendix A.

- Regular inspection will comprise the inspection and cleaning of catchment, gutters and filters to reduce the likelihood of contamination, this is recommended to be carried out every 3 to 6 months
- The catchpit chambers for the attenuation tank should be checked and emptied regularly or after a high storm event for the accumulation of debris/silt in order to ensure that there are no blockages
- Jet washing of permeable surfaces should be undertaken every 3 to 6 months in order to ensure that the system works properly
- Periodic inspections & removal of debris of rainwater harvesting tanks and raingarden planters that represent blockage risks

The following table outlines the maintenance requirements for the porous paving:

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 glyphosate 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 2: Operation and maintenance requirements for porous pavements.

The following table outlines the maintenance requirements for filter drains:

Maintenance schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter (including leaf litter) and debris from filter drain surface, access chambers and pre-treatment devices	Monthly (or as required)
	Inspect filter drain surface, inlet/outlet pipework and control systems for blockages, clogging, standing water and structural damage	Monthly
	Inspect pre-treatment systems, inlets and perforated pipework for silt accumulation, and establish appropriate silt removal frequencies	Six Monthly
	Remove sediment from pre-treatment devices	Six monthly, or as required
Occasional Maintenance	Remove or control tree roots where they are encroaching the sides of the filter drain, using recommended methods (e.g. NJUG, 2007 or BS 3998 2010)	As required
	At location with high pollution loads, remove surface geotextile and replace, and wash or replace overlying filter medium	Five yearly, or as required
	Clear perforated pipework of blockages	As required

Table 3: Operation and maintenance requirement for filter drains

The following table outlines the maintenance requirements for rainwater harvesting tanks:

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 4: Operation and maintenance requirement for rainwater harvesting systems

The following table outlines the maintenance requirements for the Raingardens/Bioretention areas:

Maintenance schedule	Required action	Typical Frequency
Regular maintenance	Pipe inlets to the raingarden/bioretention area should be checked every month and especially after an extreme rainstorm to ensure that there are no blockages.	Monthly
	Periodic inspections & removal of debris or other items that represent blockage risks particularly in vicinity of the inlet to the raingarden/bioretention area	Monthly
	Weeding, cutting of plants and removal of any dead plants to ensure that the system works effectively	Every three months
	For systems where rainfall infiltrates into the ground from above, check surface of filter for blockages by sediment, algae or other matter: remove and replace surface infiltration medium as necessary.	Annually
Remedial actions	Repair inlets	As required
Monitoring	Inspect/check all inlets to ensure that they are in good condition and operating as designed	Annually

Table 5: Operation and maintenance requirement for raingarden/bioretention area

The following table outlines the maintenance requirements for the attenuation tanks:

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 blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment 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
	Inspect slit accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Table 6: Operation and maintenance requirements for attenuation storage tanks

The following table outlines the maintenance requirements for the soakaway:

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 blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment 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
	Inspect slit accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Table 7: Operation and maintenance requirements for soakaway

The following table outlines the maintenance requirements for green/sedum roofs:

Maintenance schedule	Required action	Typical Frequency
Regular Inspections	Inspect all components including soil substrate vegetation, drains irrigation systems (if applicable), membranes and roof structure for proper operation integrity of waterproofing and structural stability	Annually and after severe storms
	Inspect soil substrate for evidence of erosion channels and identify any sediment sources	Annually and after severe storms
	Inspect drain inlets to ensure unrestricted runoff from the drainage layer to the conveyance or roof drain system	Annually and after severe storms
	Inspect underside of roof for evidence of leakage	Annually and after severe storms
Regular Maintenance	Remove debris and litter to prevent clogging of inlet drains and interference with plant growth	Six monthly and annually or as required
	During establishment (ie year one) replace dead plants as required	Monthly (but usually responsibility of manufacturer)
	Post establishment, replace dead plants as required (where > 5% of coverage)	Annually (in autumn)
	Remove fallen leaves and debris from deciduous plant foliage	Six monthly or as required
	Remove nuisance and invasive vegetation, including weeds	Six monthly or as required
	Mow grasses, prune shrubs and manage other planting (if appropriate) as required- clippings should be removed and not allowed to accumulate	Six monthly or as required
Remedial Actions	If erosion channels are evident, these should be stabilised with extra soil substrate similar to the original material and sources of erosion damage should be identified and controlled	As required
	If drain inlet has settled, cracked or moved, investigate and repair as appropriate	As required

Table 8: Operation and maintenance requirement for green / sedum roofs

The following table outlines the maintenance requirements for the flow control chambers:

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect from surface and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then 6 monthly intervals
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	Orifice plates within plastic chambers or vortex controls to be jetted from the surface after heavy rainfall events to remove any debris or silt	As required
	Empty catchpits upstream of SuDS features to ensure no debris is passed downstream	3 months or as required
Remedial actions*	In the event of a blockage, a vortex flow control can be removed from the chamber via the lifting cabled located at the access, this will be cleaned at surface level and reinstalled into its original location	As required
	In the event of a blockage, the orifice plate should be jetted from surface, and if blockage is not cleared the orifice plate can be removed by removing fixing bolts. These fixing bolts should be checked and replaced if needed.	As required
Monitoring	Following installation it is important that any extraneous materials i.e. building materials: granular backfill, in-situ pour concrete etc are removed from the unit and the new flow control chamber is fully jetted down	Upon installation
	Inspect/check chamber channel for any debris or silt build-up. Upstream chambers should be checked at the same time as these monitoring works to ensure network is operating at full capacity.	Annually

Table 9: Operation and maintenance requirement for flow control chambers

*All Remedial Works should be carried out by a competent and certified contractor, with no entry or removal of parts to be undertaken by landowner.

If upstream network of flow control chamber is regularly maintained, little maintenance is required within the chamber as there are no moving parts

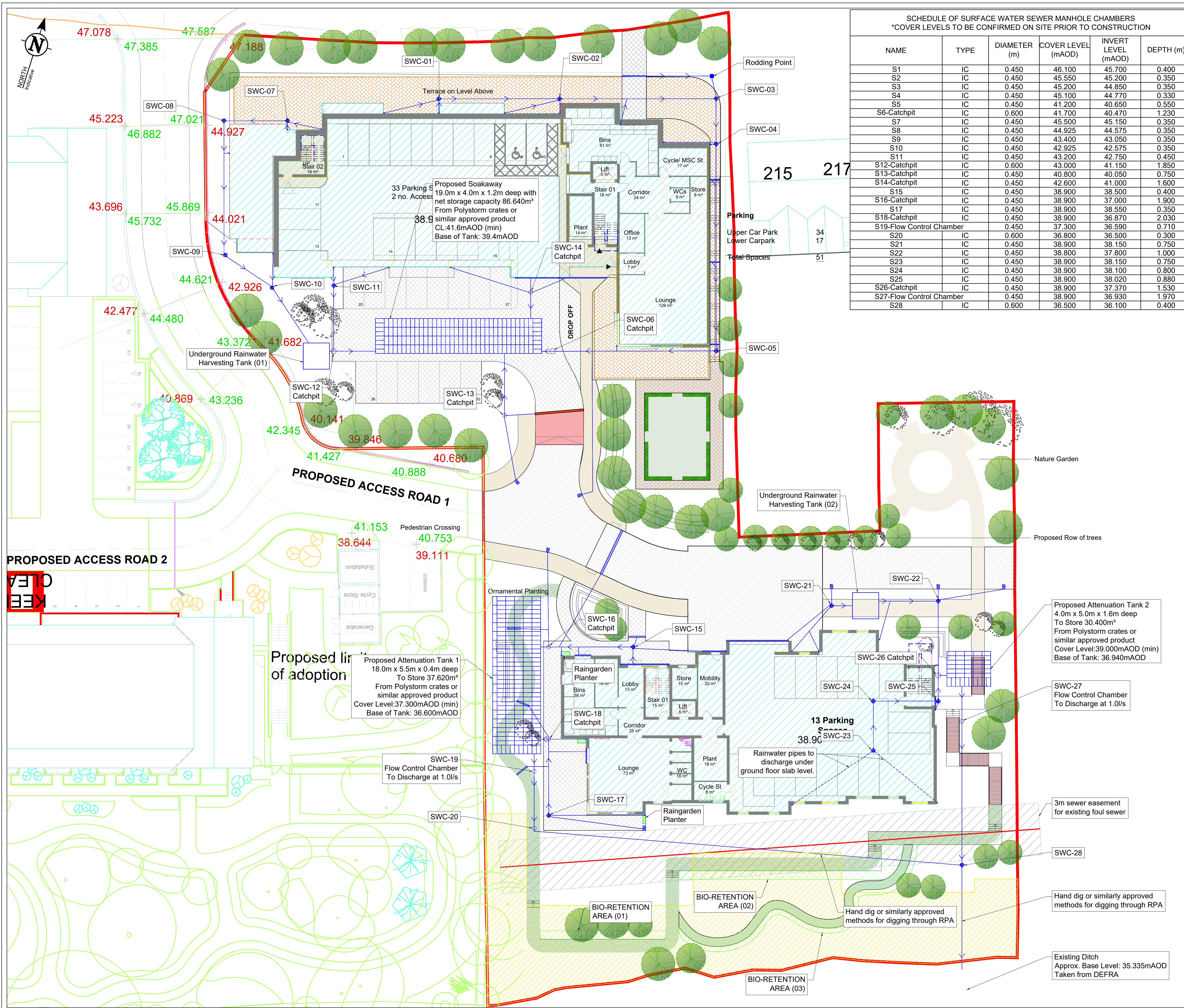
7. CONCLUSIONS

The purpose of this report and associated drawings, is to satisfy the planning condition imposed by Reading Borough Council in relation to surface water flows arising due to the development at this site.

As requested, SuDS have been incorporated into this design, in the form of:

1. All new uncovered hardstanding surfaces being formed of permeable paving, where appropriate.
2. Surface water runoff from non-adoptable trafficked areas being caught by filter drains, providing a level of treatment from all trafficked hardstanding areas.
3. The installation of 2 below ground rainwater harvesting tanks for rainwater reuse.
4. The installation of 3 raingarden/bioretention areas to provide a level of treatment for surface water roof runoff.
5. 55m² of green / sedum roofing.
6. Full infiltration of the northern half of the site.
7. All the rest discharging into the adjacent Berry Brook at a reduced rate of 2.0l/s.

APPENDIX A – DRAWINGS



SCHEDULE OF SURFACE WATER SEWER MANHOLE CHAMBERS *COVER LEVELS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION					
NAME	TYPE	DIAMETER (m)	COVER LEVEL (mAOD)	INVERT LEVEL (mAOD)	DEPTH (m)
S1	IC	0.450	46.100	45.700	0.400
S2	IC	0.450	45.550	45.200	0.350
S3	IC	0.450	45.200	44.850	0.350
S4	IC	0.450	45.100	44.770	0.330
S5	IC	0.450	41.200	40.650	0.550
S6-Catchpit	IC	0.600	41.700	40.470	1.230
S7	IC	0.450	45.500	45.150	0.350
S8	IC	0.450	44.925	44.575	0.350
S9	IC	0.450	43.400	43.050	0.350
S10	IC	0.450	42.925	42.575	0.350
S11	IC	0.450	43.200	42.750	0.450
S12-Catchpit	IC	0.600	43.000	41.150	1.850
S13-Catchpit	IC	0.450	40.800	40.050	0.750
S14-Catchpit	IC	0.450	42.600	41.000	1.600
S15	IC	0.450	38.900	38.500	0.400
S16-Catchpit	IC	0.450	38.900	37.000	1.900
S17	IC	0.450	38.900	38.550	0.350
S18-Catchpit	IC	0.450	38.900	36.870	2.030
S19-Flow Control Chamber		0.450	37.300	36.590	0.710
S20	IC	0.600	36.800	36.500	0.300
S21	IC	0.450	38.900	38.150	0.750
S22	IC	0.450	38.800	37.800	1.000
S23	IC	0.450	38.900	38.150	0.750
S24	IC	0.450	38.900	38.100	0.800
S25	IC	0.450	38.900	38.020	0.880
S26-Catchpit	IC	0.450	38.900	37.370	1.530
S27-Flow Control Chamber		0.450	38.900	36.930	1.970
S28	IC	0.600	36.500	36.100	0.400

KEY

ROOF AREAS

HARDSTANDING AREAS

POROUS SURFACING

ADOPTABLE ROAD

ROOT PROTECTION AREA

TRAPPED YARD OR ROAD GULLY WITH 100MM Ø OUTLET

PROPOSED SW UPVC PIPES, PROPOSED SURFACE WATER INSPECTION CHAMBERS.

150mm(w) SLOT DRAIN (TRAFFICKED AREAS)

100mm(w) SLOT DRAIN (PEDESTRIAN AREAS)

225mmØ FILTER DRAIN

RODDING EYE

SITE BOUNDARY

BIO-RETENTION AREAS/RAINGARDENS

0.5m² RAINGARDEN PLANTER

1:200

4m

0

4m

8m

12m

16m

20m

PROJECT:
205-213 + REAR GARDENS OF 215, 217 & 219 HENLEY ROAD, CAVERSHAM, RG4 6LJTITLE:
SuDS & SURFACE WATER DRAINAGE LAYOUT PLANCLIENT:
HENLEY ROAD LIMITED

Nimbus
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KEEP CLEAR

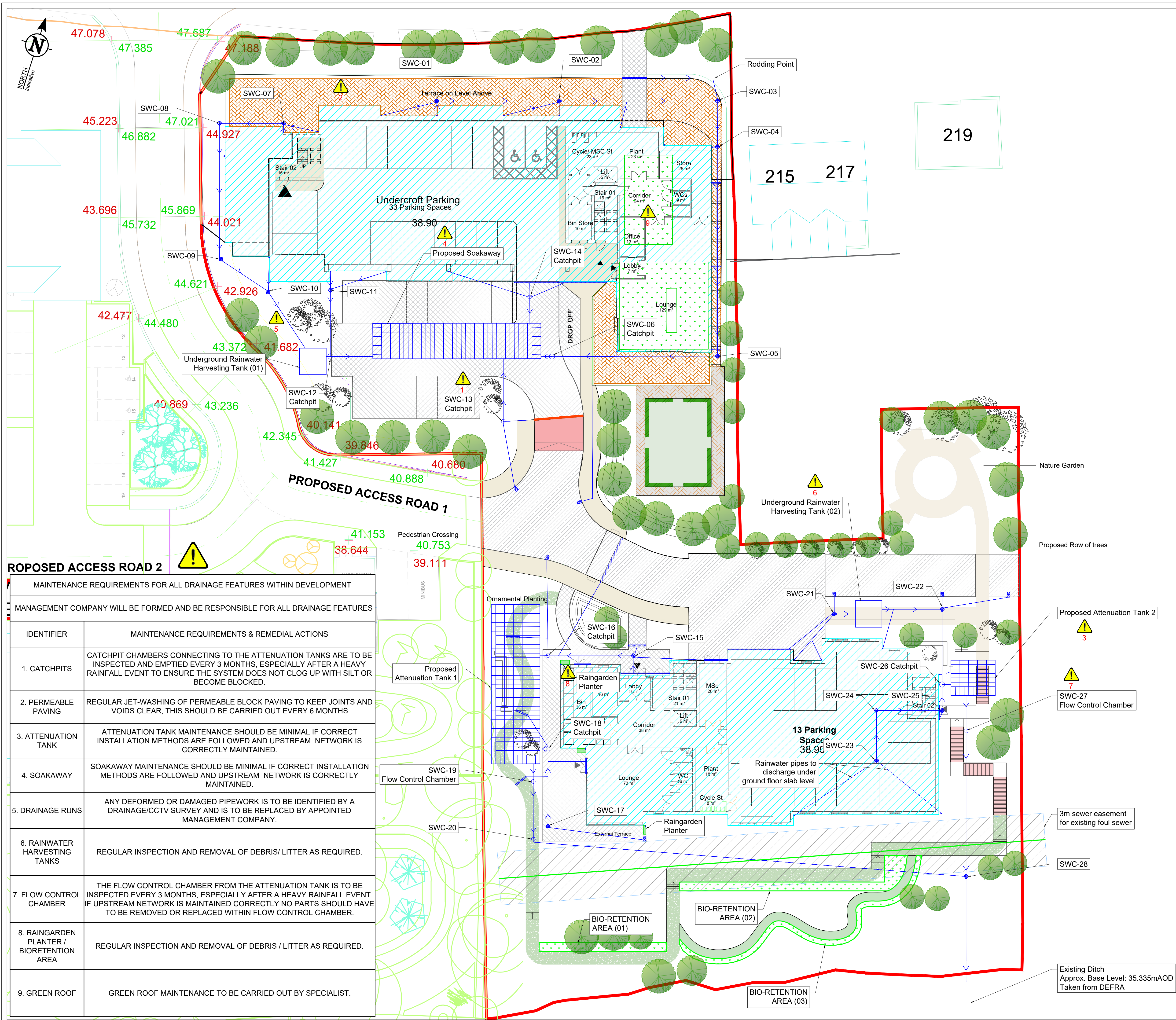
Proposed Attenuation Tank 2
4.0m x 5.0m x 1.6m deep
To Store 30.400m³
From Polystorm crates or
similar approved product
Cover Level:39.000mAOD (min)
Base of Tank: 36.940mAOD

SWC-27
Flow Control Chamber
To Discharge at 1.0l/s

3m sewer easement
for existing foul sewer

Hand dig or similarly approved
methods for digging through RPA

Existing Ditch
Approx. Base Level: 35.335mAOD
Taken from DEFRA



KEY

ROOF AREAS

HARDSTANDING AREAS

POROUS SURFACING

TRAPPED YARD OR ROAD GULLY WITH 100MM Ø OUTLET

PROPOSED SW UPVC PIPES, PROPOSED SURFACE WATER INSPECTION CHAMBERS.

SLOT DRAIN

225mmØ FILTER DRAIN

RODDING EYE

PERMAVOID ATTENUATION TANK/ SOAKAWAY TANK UNITS

SITE BOUNDARY

BIO-RETENTION AREAS/RAINGARDENS

0.5m² RAINGARDEN PLANTER

1:200

4m

0

4m

8m

12m

16m

20m

REV	DATE	DRAWN	DESCRIPTION	CHECK	APPR.
A	13-09-22	F.G	For Information	SL	SL
B	03-10-22	F.G	For Information	SL	SL

PROJECT:
205-213 + REAR GARDENS OF 215, 217 & 219 HENLEY ROAD, CAVERSHAM, RG4 6LJ

TITLE:
MANAGEMENT & MAINTENANCE PLAN

CLIENT:
HENLEY ROAD LIMITED

Nimbus
ENGINEERING CONSULTANTS
www.nimbusengineering.co.uk
info@nimbusengineering.co.uk

CHECKED BY: S.L	DATE: 13-09-22	APPROVED BY: S.L	DATE: 13-09-22
DRN BY: F.G	SCALE: 1:200	DRAWING NUMBER: C2827-03	REV: B
DATE: 13-09-22	SIZE: A1		

MAINTENANCE REQUIREMENTS FOR ALL DRAINAGE FEATURES WITHIN DEVELOPMENT	
MANAGEMENT COMPANY WILL BE FORMED AND BE RESPONSIBLE FOR ALL DRAINAGE FEATURES	
IDENTIFIER	MAINTENANCE REQUIREMENTS & REMEDIAL ACTIONS
1. CATCHPITS	CATCHPIT CHAMBERS CONNECTING TO THE ATTENUATION TANKS ARE TO BE INSPECTED AND EMPTIED EVERY 3 MONTHS, ESPECIALLY AFTER A HEAVY RAINFALL EVENT TO ENSURE THE SYSTEM DOES NOT CLOG UP WITH SILT OR BECOME BLOCKED.
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. ATTENUATION TANK	ATTENUATION TANK MAINTENANCE SHOULD BE MINIMAL IF CORRECT INSTALLATION METHODS ARE FOLLOWED AND UPSTREAM NETWORK IS CORRECTLY MAINTAINED.
4. SOAKAWAY	SOAKAWAY MAINTENANCE SHOULD BE MINIMAL IF CORRECT INSTALLATION METHODS ARE FOLLOWED AND UPSTREAM NETWORK IS CORRECTLY MAINTAINED.
5. 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.
6. RAINWATER HARVESTING TANKS	REGULAR INSPECTION AND REMOVAL OF DEBRIS/ LITTER AS REQUIRED.
7. FLOW CONTROL CHAMBER	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.
8. RAINGARDEN PLANTER / BIORETENTION AREA	REGULAR INSPECTION AND REMOVAL OF DEBRIS / LITTER AS REQUIRED.
9. GREEN ROOF	GREEN ROOF MAINTENANCE TO BE CARRIED OUT BY SPECIALIST.

Existing Ditch
Approx. Base Level: 35.335mAOD
Taken from DEFRA

APPENDIX B – HYDRAULIC MODELLING REPORTS

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Inflow Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	S13-CATCHPIT		Time of Concentration	0.008	100	10	110	0.009
Catchment Area (1)	S14-CATCHPIT		Time of Concentration	0.018	100	10	110	0.020
Catchment Area (2)	S12-CATCHPIT		Time of Concentration	0.024	100	10	110	0.027
Catchment Area (3)	S21		Time of Concentration	0.018	100	10	110	0.019
Catchment Area (4)	S22		Time of Concentration	0.007	100	10	110	0.008
Catchment Area (5)	S22		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (6)	S21		Time of Concentration	0.007	100	10	110	0.007
Catchment Area (7)	S23		Time of Concentration	0.010	100	10	110	0.011
Catchment Area (8)	S21		Time of Concentration	0.009	100	10	110	0.009
Catchment Area (9)	S23		Time of Concentration	0.012	100	10	110	0.013
Catchment Area (10)	S15		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (11)	S17		Time of Concentration	0.008	100	10	110	0.009
Catchment Area (12)	S15		Time of Concentration	0.004	100	10	110	0.004
Catchment Area (13)	S17		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (14)	RAINGARDEN PLANTER 1		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (15)	RAINGARDEN PLANTER 3		Time of Concentration	0.009	100	10	110	0.010
Catchment Area (16)	S9		Time of Concentration	0.004	100	10	110	0.004
Catchment Area (17)	S7		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (18)	S7		Time of Concentration	0.004	100	10	110	0.005
Catchment Area (19)	S10		Time of Concentration	0.004	100	10	110	0.004
Catchment Area (20)	S11		Time of Concentration	0.006	100	10	110	0.007
Catchment Area (21)	S1		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (22)	S11		Time of Concentration	0.009	100	10	110	0.010
Catchment Area (23)	S1		Time of Concentration	0.006	100	10	110	0.007
Catchment Area (24)	S14-CATCHPIT		Time of Concentration	0.010	100	10	110	0.011
Catchment Area (25)	S2		Time of Concentration	0.006	100	10	110	0.007
Catchment Area (26)	S14-CATCHPIT		Time of Concentration	0.011	100	10	110	0.013
Catchment Area (27)	S2		Time of Concentration	0.005	100	10	110	0.006
Catchment Area (28)	S4		Time of Concentration	0.009	100	10	110	0.010
Catchment Area (31)	S6-CATCHPIT		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (32)	S7		Time of Concentration	0.011	100	10	110	0.012
Catchment Area (33)	S2		Time of Concentration	0.007	100	10	110	0.008
Catchment Area (34)	S3		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (35)	S3		Time of Concentration	0.006	100	10	110	0.007
Catchment Area (36)	S5		Time of Concentration	0.001	100	10	110	0.001
Catchment Area (37)	S5		Time of Concentration	0.001	100	10	110	0.001

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by:	Checked by:	Approved By:
	FG	SL	SL
Report Details: Type: Inflow Summary Storm Phase: Phase	Kemp House: 124 City Road London EC1V 2NX		



Catchment Area (38)	S6-CATCHPIT		Time of Concentration	0.007	100	10	110	0.008
Catchment Area (39)	S17		Time of Concentration	0.004	100	10	110	0.005
Catchment Area (40)	S18 CATCHPIT		Time of Concentration	0.004	100	10	110	0.004
Catchment Area (41)	S16-Catchpit		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (42)	S15		Time of Concentration	0.002	100	10	110	0.003
Catchment Area (43)	S16-Catchpit		Time of Concentration	0.001	100	10	110	0.001
Catchment Area (44)	S18 CATCHPIT		Time of Concentration	0.002	100	10	110	0.002
Catchment Area (45)	S18 CATCHPIT		Time of Concentration	0.002	100	10	110	0.002
Catchment Area (46)	Bioretention		Time of Concentration	0.007	100	10	110	0.008
Catchment Area (47)	Bioretention (1)		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (48)	Bioretention (3)		Time of Concentration	0.004	100	10	110	0.005
Catchment Area (49)	Bioretention (2)		Time of Concentration	0.003	100	10	110	0.004
Catchment Area (50)	RAINGARDEN PLANTER 2		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (51)	S6-CATCHPIT		Time of Concentration	0.010	100	10	110	0.011
Catchment Area (52)	S16-Catchpit		Time of Concentration	0.005	100	10	110	0.006
Catchment Area (53)	S15		Time of Concentration	0.007	100	10	110	0.007
Green Roof	S5		Green Roof	0.016		10		0.018
TOTAL		0.0		0.354				0.389

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Title: Rainfall Analysis Criteria		
Kemp House: 124 City Road London EC1V 2NX			



Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	10
Junction Flood Risk Margin (mm)	200
Perform No Discharge Analysis	☐

Rainfall

FSR	Type: FSR
-----	-----------

Region	England and Wales
M5-60 (mm)	18.9
Ratio R	0.400
Summer	☐
Winter	☒

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	40

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

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Dicharge Rate		Date: 22/08/2022	
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: FG	Checked by: SL
		Approved By: SL	
		Kemp House: 124 City Road London EC1V 2NX	



S7

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	45.500	45.150	45.207	0.057	13.4	0.009	0.000	13.3	6.175	OK
FSR: 100 years: +40 %: 30 mins: Winter	45.500	45.150	45.195	0.045	8.8	0.007	0.000	8.8	8.105	OK
FSR: 100 years: +40 %: 60 mins: Winter	45.500	45.150	45.189	0.039	6.5	0.006	0.000	6.5	10.151	OK
FSR: 100 years: +40 %: 120 mins: Winter	45.500	45.150	45.181	0.031	4.2	0.005	0.000	4.2	12.329	OK
FSR: 100 years: +40 %: 180 mins: Winter	45.500	45.150	45.176	0.026	3.2	0.004	0.000	3.2	13.619	OK
FSR: 100 years: +40 %: 240 mins: Winter	45.500	45.150	45.174	0.024	2.5	0.004	0.000	2.5	14.537	OK
FSR: 100 years: +40 %: 360 mins: Winter	45.500	45.150	45.170	0.020	1.9	0.003	0.000	1.9	15.839	OK
FSR: 100 years: +40 %: 480 mins: Winter	45.500	45.150	45.168	0.018	1.5	0.003	0.000	1.5	16.835	OK
FSR: 100 years: +40 %: 600 mins: Winter	45.500	45.150	45.167	0.017	1.2	0.003	0.000	1.2	17.657	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



S8

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	44.925	44.575	44.624	0.049	13.3	0.008	0.000	13.2	6.174	OK
FSR: 100 years: +40 %: 30 mins: Winter	44.925	44.575	44.615	0.040	8.8	0.006	0.000	8.8	8.104	OK
FSR: 100 years: +40 %: 60 mins: Winter	44.925	44.575	44.609	0.034	6.5	0.005	0.000	6.5	10.150	OK
FSR: 100 years: +40 %: 120 mins: Winter	44.925	44.575	44.603	0.028	4.2	0.004	0.000	4.2	12.329	OK
FSR: 100 years: +40 %: 180 mins: Winter	44.925	44.575	44.599	0.024	3.2	0.004	0.000	3.2	13.619	OK
FSR: 100 years: +40 %: 240 mins: Winter	44.925	44.575	44.597	0.022	2.5	0.003	0.000	2.5	14.537	OK
FSR: 100 years: +40 %: 360 mins: Winter	44.925	44.575	44.594	0.019	1.9	0.003	0.000	1.9	15.839	OK
FSR: 100 years: +40 %: 480 mins: Winter	44.925	44.575	44.592	0.017	1.5	0.003	0.000	1.5	16.835	OK
FSR: 100 years: +40 %: 600 mins: Winter	44.925	44.575	44.590	0.015	1.2	0.002	0.000	1.2	17.657	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



S9

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	43.400	43.050	43.115	0.065	15.7	0.010	0.000	15.5	7.325	OK
FSR: 100 years: +40 %: 30 mins: Winter	43.400	43.050	43.101	0.051	10.4	0.008	0.000	10.4	9.615	OK
FSR: 100 years: +40 %: 60 mins: Winter	43.400	43.050	43.094	0.044	7.8	0.007	0.000	7.8	12.046	OK
FSR: 100 years: +40 %: 120 mins: Winter	43.400	43.050	43.084	0.034	5.0	0.005	0.000	5.0	14.638	OK
FSR: 100 years: +40 %: 180 mins: Winter	43.400	43.050	43.080	0.030	3.7	0.005	0.000	3.7	16.168	OK
FSR: 100 years: +40 %: 240 mins: Winter	43.400	43.050	43.077	0.027	3.0	0.004	0.000	3.0	17.266	OK
FSR: 100 years: +40 %: 360 mins: Winter	43.400	43.050	43.073	0.023	2.2	0.004	0.000	2.2	18.808	OK
FSR: 100 years: +40 %: 480 mins: Winter	43.400	43.050	43.070	0.020	1.8	0.003	0.000	1.8	19.990	OK
FSR: 100 years: +40 %: 600 mins: Winter	43.400	43.050	43.069	0.019	1.5	0.003	0.000	1.5	20.962	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate		Date: 22/08/2022	
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: FG	Checked by: SL
		Approved By: SL	
		Kemp House: 124 City Road London EC1V 2NX	



S10

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	42.925	42.575	42.628	0.053	17.9	0.008	0.000	17.8	8.455	OK
FSR: 100 years: +40 %: 30 mins: Winter	42.925	42.575	42.618	0.043	12.0	0.007	0.000	12.0	11.103	OK
FSR: 100 years: +40 %: 60 mins: Winter	42.925	42.575	42.612	0.037	9.0	0.006	0.000	9.0	13.905	OK
FSR: 100 years: +40 %: 120 mins: Winter	42.925	42.575	42.605	0.030	5.8	0.005	0.000	5.8	16.894	OK
FSR: 100 years: +40 %: 180 mins: Winter	42.925	42.575	42.601	0.026	4.3	0.004	0.000	4.3	18.664	OK
FSR: 100 years: +40 %: 240 mins: Winter	42.925	42.575	42.598	0.023	3.5	0.004	0.000	3.5	19.936	OK
FSR: 100 years: +40 %: 360 mins: Winter	42.925	42.575	42.595	0.020	2.5	0.003	0.000	2.5	21.712	OK
FSR: 100 years: +40 %: 480 mins: Winter	42.925	42.575	42.593	0.018	2.0	0.003	0.000	2.0	23.080	OK
FSR: 100 years: +40 %: 600 mins: Winter	42.925	42.575	42.591	0.016	1.7	0.003	0.000	1.7	24.202	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Dicharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



S12-CATCHPIT

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	43.000	41.150	41.238	0.088	43.7	0.025	0.000	43.5	20.442	OK
FSR: 100 years: +40 %: 30 mins: Winter	43.000	41.150	41.217	0.067	29.1	0.019	0.000	29.1	26.868	OK
FSR: 100 years: +40 %: 60 mins: Winter	43.000	41.150	41.205	0.055	21.7	0.016	0.000	21.7	33.655	OK
FSR: 100 years: +40 %: 120 mins: Winter	43.000	41.150	41.192	0.042	13.9	0.012	0.000	13.9	40.845	OK
FSR: 100 years: +40 %: 180 mins: Winter	43.000	41.150	41.186	0.036	10.4	0.010	0.000	10.4	45.171	OK
FSR: 100 years: +40 %: 240 mins: Winter	43.000	41.150	41.182	0.032	8.4	0.009	0.000	8.4	48.195	OK
FSR: 100 years: +40 %: 360 mins: Winter	43.000	41.150	41.177	0.027	6.1	0.008	0.000	6.1	52.526	OK
FSR: 100 years: +40 %: 480 mins: Winter	43.000	41.150	41.174	0.024	4.9	0.007	0.000	4.9	55.827	OK
FSR: 100 years: +40 %: 600 mins: Winter	43.000	41.150	41.171	0.021	4.1	0.006	0.000	4.1	58.533	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate		Date: 22/08/2022	
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: FG	Checked by: SL
		Approved By: SL	
		Kemp House: 124 City Road London EC1V 2NX	



S1

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	46.100	45.700	45.749	0.049	7.7	0.008	0.000	7.7	3.574	OK
FSR: 100 years: +40 %: 30 mins: Winter	46.100	45.700	45.739	0.039	5.1	0.006	0.000	5.1	4.691	OK
FSR: 100 years: +40 %: 60 mins: Winter	46.100	45.700	45.734	0.034	3.8	0.005	0.000	3.8	5.879	OK
FSR: 100 years: +40 %: 120 mins: Winter	46.100	45.700	45.727	0.027	2.4	0.004	0.000	2.4	7.134	OK
FSR: 100 years: +40 %: 180 mins: Winter	46.100	45.700	45.724	0.024	1.8	0.004	0.000	1.8	7.896	OK
FSR: 100 years: +40 %: 240 mins: Winter	46.100	45.700	45.721	0.021	1.5	0.003	0.000	1.5	8.429	OK
FSR: 100 years: +40 %: 360 mins: Winter	46.100	45.700	45.718	0.018	1.1	0.003	0.000	1.1	9.192	OK
FSR: 100 years: +40 %: 480 mins: Winter	46.100	45.700	45.716	0.016	0.9	0.003	0.000	0.9	9.761	OK
FSR: 100 years: +40 %: 600 mins: Winter	46.100	45.700	45.715	0.015	0.7	0.002	0.000	0.7	10.230	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



S2

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	45.550	45.200	45.306	0.106	19.8	0.017	0.000	19.3	9.156	OK
FSR: 100 years: +40 %: 30 mins: Winter	45.550	45.200	45.278	0.078	13.0	0.012	0.000	13.0	12.034	OK
FSR: 100 years: +40 %: 60 mins: Winter	45.550	45.200	45.265	0.065	9.7	0.010	0.000	9.7	15.070	OK
FSR: 100 years: +40 %: 120 mins: Winter	45.550	45.200	45.251	0.051	6.3	0.008	0.000	6.3	18.281	OK
FSR: 100 years: +40 %: 180 mins: Winter	45.550	45.200	45.244	0.044	4.7	0.007	0.000	4.7	20.219	OK
FSR: 100 years: +40 %: 240 mins: Winter	45.550	45.200	45.239	0.039	3.8	0.006	0.000	3.8	21.593	OK
FSR: 100 years: +40 %: 360 mins: Winter	45.550	45.200	45.234	0.034	2.8	0.005	0.000	2.8	23.555	OK
FSR: 100 years: +40 %: 480 mins: Winter	45.550	45.200	45.230	0.030	2.2	0.005	0.000	2.2	25.019	OK
FSR: 100 years: +40 %: 600 mins: Winter	45.550	45.200	45.228	0.028	1.9	0.004	0.000	1.9	26.201	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



S3

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	45.200	44.850	45.001	0.151	25.3	0.024	0.000	23.9	11.929	Flood Risk
FSR: 100 years: +40 %: 30 mins: Winter	45.200	44.850	44.956	0.106	17.0	0.017	0.000	17.0	15.680	OK
FSR: 100 years: +40 %: 60 mins: Winter	45.200	44.850	44.938	0.088	12.6	0.014	0.000	12.6	19.629	OK
FSR: 100 years: +40 %: 120 mins: Winter	45.200	44.850	44.918	0.068	8.1	0.011	0.000	8.1	23.842	OK
FSR: 100 years: +40 %: 180 mins: Winter	45.200	44.850	44.908	0.058	6.1	0.009	0.000	6.1	26.327	OK
FSR: 100 years: +40 %: 240 mins: Winter	45.200	44.850	44.902	0.052	4.9	0.008	0.000	4.9	28.168	OK
FSR: 100 years: +40 %: 360 mins: Winter	45.200	44.850	44.894	0.044	3.6	0.007	0.000	3.6	30.694	OK
FSR: 100 years: +40 %: 480 mins: Winter	45.200	44.850	44.889	0.039	2.9	0.006	0.000	2.9	32.614	OK
FSR: 100 years: +40 %: 600 mins: Winter	45.200	44.850	44.886	0.036	2.4	0.006	0.000	2.4	34.145	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



S4

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	45.100	44.770	44.836	0.066	29.7	0.010	0.000	29.8	14.629	OK
FSR: 100 years: +40 %: 30 mins: Winter	45.100	44.770	44.824	0.054	20.8	0.009	0.000	20.8	19.238	OK
FSR: 100 years: +40 %: 60 mins: Winter	45.100	44.770	44.816	0.046	15.5	0.007	0.000	15.5	24.087	OK
FSR: 100 years: +40 %: 120 mins: Winter	45.100	44.770	44.807	0.037	10.0	0.006	0.000	10.0	29.242	OK
FSR: 100 years: +40 %: 180 mins: Winter	45.100	44.770	44.802	0.032	7.4	0.005	0.000	7.4	32.296	OK
FSR: 100 years: +40 %: 240 mins: Winter	45.100	44.770	44.799	0.029	6.0	0.005	0.000	6.0	34.558	OK
FSR: 100 years: +40 %: 360 mins: Winter	45.100	44.770	44.795	0.025	4.4	0.004	0.000	4.4	37.624	OK
FSR: 100 years: +40 %: 480 mins: Winter	45.100	44.770	44.792	0.022	3.5	0.004	0.000	3.5	39.976	OK
FSR: 100 years: +40 %: 600 mins: Winter	45.100	44.770	44.790	0.020	3.0	0.003	0.000	3.0	41.902	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



S5

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	41.200	40.650	40.964	0.314	31.1	0.050	0.000	29.1	15.237	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	41.200	40.650	40.787	0.137	21.7	0.022	0.000	21.7	20.026	OK
FSR: 100 years: +40 %: 60 mins: Winter	41.200	40.650	40.738	0.088	16.1	0.014	0.000	16.1	25.081	OK
FSR: 100 years: +40 %: 120 mins: Winter	41.200	40.650	40.720	0.070	10.4	0.011	0.000	10.4	30.466	OK
FSR: 100 years: +40 %: 180 mins: Winter	41.200	40.650	40.710	0.060	7.8	0.010	0.000	7.8	33.650	OK
FSR: 100 years: +40 %: 240 mins: Winter	41.200	40.650	40.704	0.054	6.3	0.009	0.000	6.3	35.943	OK
FSR: 100 years: +40 %: 360 mins: Winter	41.200	40.650	40.696	0.046	4.6	0.007	0.000	4.6	39.219	OK
FSR: 100 years: +40 %: 480 mins: Winter	41.200	40.650	40.692	0.042	3.7	0.007	0.000	3.7	41.595	OK
FSR: 100 years: +40 %: 600 mins: Winter	41.200	40.650	40.688	0.038	3.1	0.006	0.000	3.1	43.755	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



S6-CATCHPIT

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	41.700	40.470	40.882	0.412	41.9	0.117	0.000	40.1	21.119	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	41.700	40.470	40.755	0.285	30.1	0.081	0.000	30.1	27.775	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	41.700	40.470	40.683	0.213	22.4	0.060	0.000	22.4	34.791	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	41.700	40.470	40.607	0.137	14.4	0.039	0.000	14.4	42.221	OK
FSR: 100 years: +40 %: 180 mins: Winter	41.700	40.470	40.580	0.110	10.8	0.031	0.000	10.8	46.657	OK
FSR: 100 years: +40 %: 240 mins: Winter	41.700	40.470	40.565	0.095	8.7	0.027	0.000	8.7	49.844	OK
FSR: 100 years: +40 %: 360 mins: Winter	41.700	40.470	40.547	0.077	6.3	0.022	0.000	6.3	54.332	OK
FSR: 100 years: +40 %: 480 mins: Winter	41.700	40.470	40.538	0.068	5.1	0.019	0.000	5.1	57.704	OK
FSR: 100 years: +40 %: 600 mins: Winter	41.700	40.470	40.531	0.061	4.3	0.017	0.000	4.3	60.596	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



S14-CATCHPIT

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	42.600	41.000	41.270	0.270	25.6	0.043	0.000	20.8	11.835	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	42.600	41.000	41.073	0.073	16.8	0.012	0.000	16.8	15.544	OK
FSR: 100 years: +40 %: 60 mins: Winter	42.600	41.000	41.058	0.058	12.5	0.009	0.000	12.5	19.492	OK
FSR: 100 years: +40 %: 120 mins: Winter	42.600	41.000	41.044	0.044	8.1	0.007	0.000	8.1	23.633	OK
FSR: 100 years: +40 %: 180 mins: Winter	42.600	41.000	41.037	0.037	6.0	0.006	0.000	6.0	26.124	OK
FSR: 100 years: +40 %: 240 mins: Winter	42.600	41.000	41.033	0.033	4.9	0.005	0.000	4.9	27.917	OK
FSR: 100 years: +40 %: 360 mins: Winter	42.600	41.000	41.027	0.027	3.5	0.004	0.000	3.5	30.341	OK
FSR: 100 years: +40 %: 480 mins: Winter	42.600	41.000	41.024	0.024	2.8	0.004	0.000	2.8	32.285	OK
FSR: 100 years: +40 %: 600 mins: Winter	42.600	41.000	41.022	0.022	2.4	0.004	0.000	2.4	33.821	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



S17

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	38.900	38.550	38.604	0.054	13.5	0.009	0.000	13.3	6.170	OK
FSR: 100 years: +40 %: 30 mins: Winter	38.900	38.550	38.593	0.043	8.9	0.007	0.000	8.9	8.121	OK
FSR: 100 years: +40 %: 60 mins: Winter	38.900	38.550	38.587	0.037	6.6	0.006	0.000	6.6	10.203	OK
FSR: 100 years: +40 %: 120 mins: Winter	38.900	38.550	38.579	0.029	4.2	0.005	0.000	4.2	12.381	OK
FSR: 100 years: +40 %: 180 mins: Winter	38.900	38.550	38.575	0.025	3.2	0.004	0.000	3.2	13.683	OK
FSR: 100 years: +40 %: 240 mins: Winter	38.900	38.550	38.573	0.023	2.6	0.004	0.000	2.6	14.631	OK
FSR: 100 years: +40 %: 360 mins: Winter	38.900	38.550	38.569	0.019	1.9	0.003	0.000	1.9	15.921	OK
FSR: 100 years: +40 %: 480 mins: Winter	38.900	38.550	38.567	0.017	1.5	0.003	0.000	1.5	16.905	OK
FSR: 100 years: +40 %: 600 mins: Winter	38.900	38.550	38.566	0.016	1.3	0.003	0.000	1.3	17.703	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



S18 CATCHPIT

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	38.900	36.870	37.042	0.172	19.8	0.027	0.000	18.9	9.093	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	38.900	36.870	36.982	0.112	13.1	0.018	0.000	13.1	11.981	OK
FSR: 100 years: +40 %: 60 mins: Winter	38.900	36.870	36.961	0.091	9.7	0.015	0.000	9.7	15.037	OK
FSR: 100 years: +40 %: 120 mins: Winter	38.900	36.870	36.971	0.101	6.3	0.016	0.000	6.3	18.233	OK
FSR: 100 years: +40 %: 180 mins: Winter	38.900	36.870	36.989	0.119	4.7	0.019	0.000	4.7	20.194	OK
FSR: 100 years: +40 %: 240 mins: Winter	38.900	36.870	36.995	0.125	3.8	0.020	0.000	3.8	21.613	OK
FSR: 100 years: +40 %: 360 mins: Winter	38.900	36.870	36.991	0.121	2.8	0.019	0.000	2.8	23.575	OK
FSR: 100 years: +40 %: 480 mins: Winter	38.900	36.870	36.986	0.116	2.2	0.018	0.000	2.2	24.979	OK
FSR: 100 years: +40 %: 600 mins: Winter	38.900	36.870	36.978	0.108	1.9	0.017	0.000	1.9	26.185	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



S16-Catchpit

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	38.900	37.000	37.070	0.070	23.7	0.011	0.000	23.5	10.898	OK
FSR: 100 years: +40 %: 30 mins: Winter	38.900	37.000	37.054	0.054	15.6	0.009	0.000	15.6	14.347	OK
FSR: 100 years: +40 %: 60 mins: Winter	38.900	37.000	37.043	0.043	11.6	0.007	0.000	11.6	18.008	OK
FSR: 100 years: +40 %: 120 mins: Winter	38.900	37.000	37.030	0.030	7.5	0.005	0.000	7.5	21.843	OK
FSR: 100 years: +40 %: 180 mins: Winter	38.900	37.000	37.025	0.025	5.6	0.004	0.000	5.6	24.190	OK
FSR: 100 years: +40 %: 240 mins: Winter	38.900	37.000	37.023	0.023	4.5	0.004	0.000	4.5	25.773	OK
FSR: 100 years: +40 %: 360 mins: Winter	38.900	37.000	37.020	0.020	3.3	0.003	0.000	3.3	28.149	OK
FSR: 100 years: +40 %: 480 mins: Winter	38.900	37.000	37.017	0.017	2.6	0.003	0.000	2.6	29.890	OK
FSR: 100 years: +40 %: 600 mins: Winter	38.900	37.000	37.016	0.016	2.2	0.003	0.000	2.2	31.306	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Dicharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



S15

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	38.900	38.500	38.542	0.042	11.8	0.007	0.000	11.8	5.458	OK
FSR: 100 years: +40 %: 30 mins: Winter	38.900	38.500	38.534	0.034	7.8	0.005	0.000	7.8	7.175	OK
FSR: 100 years: +40 %: 60 mins: Winter	38.900	38.500	38.529	0.029	5.8	0.005	0.000	5.8	8.999	OK
FSR: 100 years: +40 %: 120 mins: Winter	38.900	38.500	38.524	0.024	3.7	0.004	0.000	3.7	10.920	OK
FSR: 100 years: +40 %: 180 mins: Winter	38.900	38.500	38.521	0.021	2.8	0.003	0.000	2.8	12.090	OK
FSR: 100 years: +40 %: 240 mins: Winter	38.900	38.500	38.519	0.019	2.2	0.003	0.000	2.2	12.870	OK
FSR: 100 years: +40 %: 360 mins: Winter	38.900	38.500	38.516	0.016	1.6	0.003	0.000	1.6	14.034	OK
FSR: 100 years: +40 %: 480 mins: Winter	38.900	38.500	38.514	0.014	1.3	0.002	0.000	1.3	14.898	OK
FSR: 100 years: +40 %: 600 mins: Winter	38.900	38.500	38.513	0.013	1.1	0.002	0.000	1.1	15.690	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



S26-Catchpit

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	38.900	37.370	37.984	0.614	37.5	0.098	0.000	37.3	18.402	OK
FSR: 100 years: +40 %: 30 mins: Winter	38.900	37.370	38.077	0.707	27.3	0.112	0.000	27.3	24.138	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	38.900	37.370	38.281	0.911	20.3	0.145	0.000	20.3	29.837	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	38.900	37.370	38.449	1.079	13.1	0.172	0.000	13.1	36.243	Surcharged
FSR: 100 years: +40 %: 180 mins: Winter	38.900	37.370	38.516	1.146	9.7	0.182	0.000	9.7	40.659	Surcharged
FSR: 100 years: +40 %: 240 mins: Winter	38.900	37.370	38.540	1.170	7.9	0.186	0.000	7.9	43.943	Surcharged
FSR: 100 years: +40 %: 360 mins: Winter	38.900	37.370	38.533	1.163	5.7	0.185	0.000	5.7	48.429	Surcharged
FSR: 100 years: +40 %: 480 mins: Winter	38.900	37.370	38.516	1.146	4.5	0.182	0.000	4.5	51.537	Surcharged
FSR: 100 years: +40 %: 600 mins: Winter	38.900	37.370	38.493	1.123	3.8	0.179	0.000	3.8	54.055	Surcharged

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



S22

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	38.800	37.800	38.179	0.379	25.3	0.060	0.000	24.0	12.582	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	38.800	37.800	38.077	0.277	18.1	0.044	0.000	18.1	16.436	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	38.800	37.800	38.280	0.480	13.5	0.076	0.000	13.5	20.459	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	38.800	37.800	38.449	0.649	8.7	0.103	0.000	8.7	24.803	Surcharged
FSR: 100 years: +40 %: 180 mins: Winter	38.800	37.800	38.517	0.717	6.5	0.114	0.000	6.5	27.605	Surcharged
FSR: 100 years: +40 %: 240 mins: Winter	38.800	37.800	38.540	0.740	5.2	0.118	0.000	5.2	29.598	Surcharged
FSR: 100 years: +40 %: 360 mins: Winter	38.800	37.800	38.534	0.734	3.8	0.117	0.000	3.8	32.490	Surcharged
FSR: 100 years: +40 %: 480 mins: Winter	38.800	37.800	38.517	0.717	3.0	0.114	0.000	3.0	34.548	Surcharged
FSR: 100 years: +40 %: 600 mins: Winter	38.800	37.800	38.493	0.693	2.6	0.110	0.000	2.5	36.243	Surcharged

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate		Date: 22/08/2022	
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: FG	Checked by: SL
		Approved By: SL	
		Kemp House: 124 City Road London EC1V 2NX	



S21

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	38.900	38.150	38.338	0.188	21.2	0.030	0.000	19.0	9.794	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	38.900	38.150	38.220	0.070	14.0	0.011	0.000	14.0	12.879	OK
FSR: 100 years: +40 %: 60 mins: Winter	38.900	38.150	38.280	0.130	10.4	0.021	0.000	10.4	16.108	OK
FSR: 100 years: +40 %: 120 mins: Winter	38.900	38.150	38.449	0.299	6.7	0.048	0.000	6.7	19.474	Surcharged
FSR: 100 years: +40 %: 180 mins: Winter	38.900	38.150	38.517	0.367	5.0	0.058	0.000	5.0	21.619	Surcharged
FSR: 100 years: +40 %: 240 mins: Winter	38.900	38.150	38.540	0.390	4.0	0.062	0.000	4.0	23.075	Surcharged
FSR: 100 years: +40 %: 360 mins: Winter	38.900	38.150	38.534	0.384	2.9	0.061	0.000	2.9	25.164	Surcharged
FSR: 100 years: +40 %: 480 mins: Winter	38.900	38.150	38.517	0.367	2.3	0.058	0.000	2.3	26.736	Surcharged
FSR: 100 years: +40 %: 600 mins: Winter	38.900	38.150	38.493	0.343	2.0	0.055	0.000	2.0	28.044	Surcharged

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate		Date: 22/08/2022	
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: FG	Checked by: SL
		Approved By: SL	
		Kemp House: 124 City Road London EC1V 2NX	



S28

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	36.500	36.100	36.121	0.021	1.5	0.006	0.000	1.5	1.717	OK
FSR: 100 years: +40 %: 30 mins: Winter	36.500	36.100	36.123	0.023	1.7	0.006	0.000	1.7	4.383	OK
FSR: 100 years: +40 %: 60 mins: Winter	36.500	36.100	36.124	0.024	1.8	0.007	0.000	1.8	10.108	OK
FSR: 100 years: +40 %: 120 mins: Winter	36.500	36.100	36.125	0.025	2.0	0.007	0.000	2.0	21.922	OK
FSR: 100 years: +40 %: 180 mins: Winter	36.500	36.100	36.125	0.025	2.0	0.007	0.000	2.0	33.581	OK
FSR: 100 years: +40 %: 240 mins: Winter	36.500	36.100	36.125	0.025	2.0	0.007	0.000	2.0	44.745	OK
FSR: 100 years: +40 %: 360 mins: Winter	36.500	36.100	36.125	0.025	2.0	0.007	0.000	2.0	65.233	OK
FSR: 100 years: +40 %: 480 mins: Winter	36.500	36.100	36.125	0.025	2.0	0.007	0.000	2.0	82.886	OK
FSR: 100 years: +40 %: 600 mins: Winter	36.500	36.100	36.125	0.025	2.0	0.007	0.000	2.0	97.553	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



S19-FLOW CONTROL CHAMBER

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	37.300	36.590	36.804	0.214	1.0	0.034	0.000	0.8	0.983	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	37.300	36.590	36.865	0.275	1.1	0.044	0.000	0.9	2.387	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	37.300	36.590	36.922	0.332	1.0	0.053	0.000	1.0	5.419	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	37.300	36.590	36.970	0.380	1.1	0.060	0.000	1.0	11.673	Surcharged
FSR: 100 years: +40 %: 180 mins: Winter	37.300	36.590	36.989	0.399	1.1	0.063	0.000	1.1	17.817	Surcharged
FSR: 100 years: +40 %: 240 mins: Winter	37.300	36.590	36.995	0.405	1.1	0.064	0.000	1.1	23.659	Surcharged
FSR: 100 years: +40 %: 360 mins: Winter	37.300	36.590	36.991	0.401	1.1	0.064	0.000	1.1	34.279	Surcharged
FSR: 100 years: +40 %: 480 mins: Winter	37.300	36.590	36.986	0.396	1.1	0.063	0.000	1.1	43.293	Surcharged
FSR: 100 years: +40 %: 600 mins: Winter	37.300	36.590	36.978	0.388	1.1	0.062	0.000	1.1	50.728	Surcharged

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



S27-FLOW CONTROL CHAMBER

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	38.900	36.930	37.825	0.895	2.6	0.142	0.000	0.7	0.897	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	38.900	36.930	38.077	1.147	2.2	0.182	0.000	0.8	2.172	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	38.900	36.930	38.281	1.351	1.8	0.215	0.000	0.9	4.873	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	38.900	36.930	38.449	1.519	1.4	0.242	0.000	0.9	10.434	Surcharged
FSR: 100 years: +40 %: 180 mins: Winter	38.900	36.930	38.516	1.586	1.2	0.252	0.000	0.9	15.945	Surcharged
FSR: 100 years: +40 %: 240 mins: Winter	38.900	36.930	38.540	1.610	1.1	0.256	0.000	1.0	21.261	Surcharged
FSR: 100 years: +40 %: 360 mins: Winter	38.900	36.930	38.533	1.603	1.0	0.255	0.000	0.9	31.113	Surcharged
FSR: 100 years: +40 %: 480 mins: Winter	38.900	36.930	38.516	1.586	1.0	0.252	0.000	0.9	39.732	Surcharged
FSR: 100 years: +40 %: 600 mins: Winter	38.900	36.930	38.493	1.563	1.0	0.249	0.000	0.9	46.943	Surcharged

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



S13-CATCHPIT

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	40.800	40.050	40.105	0.055	5.2	0.009	0.000	5.2	2.390	OK
FSR: 100 years: +40 %: 30 mins: Winter	40.800	40.050	40.299	0.249	3.5	0.040	0.000	3.4	2.981	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	40.800	40.050	40.459	0.409	2.6	0.065	0.000	2.6	3.719	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	40.800	40.050	40.548	0.498	1.6	0.079	0.000	1.6	4.698	Surcharged
FSR: 100 years: +40 %: 180 mins: Winter	40.800	40.050	40.531	0.481	1.2	0.077	0.000	1.2	5.357	Surcharged
FSR: 100 years: +40 %: 240 mins: Winter	40.800	40.050	40.475	0.425	1.0	0.068	0.000	1.0	5.730	Surcharged
FSR: 100 years: +40 %: 360 mins: Winter	40.800	40.050	40.382	0.332	0.7	0.053	0.000	0.7	6.240	Surcharged
FSR: 100 years: +40 %: 480 mins: Winter	40.800	40.050	40.292	0.242	0.6	0.038	0.000	0.6	6.606	Surcharged
FSR: 100 years: +40 %: 600 mins: Winter	40.800	40.050	40.200	0.150	0.5	0.024	0.000	0.5	6.948	Surcharged

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



S11

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	43.200	42.750	42.791	0.041	10.1	0.007	0.000	10.1	4.681	OK
FSR: 100 years: +40 %: 30 mins: Winter	43.200	42.750	42.783	0.033	6.7	0.005	0.000	6.7	6.161	OK
FSR: 100 years: +40 %: 60 mins: Winter	43.200	42.750	42.778	0.028	5.0	0.004	0.000	5.0	7.709	OK
FSR: 100 years: +40 %: 120 mins: Winter	43.200	42.750	42.773	0.023	3.2	0.004	0.000	3.2	9.353	OK
FSR: 100 years: +40 %: 180 mins: Winter	43.200	42.750	42.770	0.020	2.4	0.003	0.000	2.4	10.361	OK
FSR: 100 years: +40 %: 240 mins: Winter	43.200	42.750	42.768	0.018	1.9	0.003	0.000	1.9	11.033	OK
FSR: 100 years: +40 %: 360 mins: Winter	43.200	42.750	42.765	0.015	1.4	0.002	0.000	1.4	12.053	OK
FSR: 100 years: +40 %: 480 mins: Winter	43.200	42.750	42.764	0.014	1.1	0.002	0.000	1.1	12.785	OK
FSR: 100 years: +40 %: 600 mins: Winter	43.200	42.750	42.763	0.013	0.9	0.002	0.000	0.9	13.445	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



S23

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	38.900	38.150	38.264	0.114	14.0	0.018	0.000	13.7	6.447	OK
FSR: 100 years: +40 %: 30 mins: Winter	38.900	38.150	38.236	0.086	9.2	0.014	0.000	9.2	8.482	OK
FSR: 100 years: +40 %: 60 mins: Winter	38.900	38.150	38.280	0.130	6.8	0.021	0.000	6.8	10.594	OK
FSR: 100 years: +40 %: 120 mins: Winter	38.900	38.150	38.449	0.299	4.4	0.048	0.000	4.4	12.802	Surcharged
FSR: 100 years: +40 %: 180 mins: Winter	38.900	38.150	38.516	0.366	3.3	0.058	0.000	3.3	14.227	Surcharged
FSR: 100 years: +40 %: 240 mins: Winter	38.900	38.150	38.540	0.390	2.6	0.062	0.000	2.7	15.209	Surcharged
FSR: 100 years: +40 %: 360 mins: Winter	38.900	38.150	38.534	0.384	1.9	0.061	0.000	1.9	16.559	Surcharged
FSR: 100 years: +40 %: 480 mins: Winter	38.900	38.150	38.517	0.367	1.5	0.058	0.000	1.5	17.609	Surcharged
FSR: 100 years: +40 %: 600 mins: Winter	38.900	38.150	38.493	0.343	1.3	0.055	0.000	1.3	18.431	Surcharged

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



S24

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	38.900	38.100	38.201	0.101	13.7	0.016	0.000	13.5	6.444	OK
FSR: 100 years: +40 %: 30 mins: Winter	38.900	38.100	38.180	0.080	9.2	0.013	0.000	9.2	8.480	OK
FSR: 100 years: +40 %: 60 mins: Winter	38.900	38.100	38.281	0.181	6.8	0.029	0.000	6.8	10.504	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	38.900	38.100	38.449	0.349	4.4	0.056	0.000	4.4	12.663	Surcharged
FSR: 100 years: +40 %: 180 mins: Winter	38.900	38.100	38.516	0.416	3.3	0.066	0.000	3.3	14.151	Surcharged
FSR: 100 years: +40 %: 240 mins: Winter	38.900	38.100	38.540	0.440	2.7	0.070	0.000	2.7	15.207	Surcharged
FSR: 100 years: +40 %: 360 mins: Winter	38.900	38.100	38.534	0.434	1.9	0.069	0.000	1.9	16.559	Surcharged
FSR: 100 years: +40 %: 480 mins: Winter	38.900	38.100	38.517	0.417	1.5	0.066	0.000	1.5	17.609	Surcharged
FSR: 100 years: +40 %: 600 mins: Winter	38.900	38.100	38.493	0.393	1.3	0.063	0.000	1.3	18.431	Surcharged

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



S25

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	38.900	38.020	38.059	0.039	13.5	0.006	0.000	13.5	6.442	OK
FSR: 100 years: +40 %: 30 mins: Winter	38.900	38.020	38.077	0.057	9.2	0.009	0.000	9.2	8.470	OK
FSR: 100 years: +40 %: 60 mins: Winter	38.900	38.020	38.281	0.261	6.8	0.041	0.000	6.8	10.321	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	38.900	38.020	38.449	0.429	4.4	0.068	0.000	4.4	12.431	Surcharged
FSR: 100 years: +40 %: 180 mins: Winter	38.900	38.020	38.516	0.496	3.3	0.079	0.000	3.3	13.983	Surcharged
FSR: 100 years: +40 %: 240 mins: Winter	38.900	38.020	38.540	0.520	2.7	0.083	0.000	2.6	15.156	Surcharged
FSR: 100 years: +40 %: 360 mins: Winter	38.900	38.020	38.533	0.513	1.9	0.082	0.000	1.9	16.559	Surcharged
FSR: 100 years: +40 %: 480 mins: Winter	38.900	38.020	38.517	0.497	1.5	0.079	0.000	1.5	17.609	Surcharged
FSR: 100 years: +40 %: 600 mins: Winter	38.900	38.020	38.493	0.473	1.3	0.075	0.000	1.3	18.431	Surcharged

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate		Date: 22/08/2022	
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: FG	Checked by: SL
		Approved By: SL	
		Kemp House: 124 City Road London EC1V 2NX	



S20

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	36.800	36.500	36.523	0.023	0.8	0.006	0.000	0.8	0.902	OK
FSR: 100 years: +40 %: 30 mins: Winter	36.800	36.500	36.524	0.024	0.9	0.007	0.000	0.9	2.300	OK
FSR: 100 years: +40 %: 60 mins: Winter	36.800	36.500	36.526	0.026	1.0	0.007	0.000	1.0	5.328	OK
FSR: 100 years: +40 %: 120 mins: Winter	36.800	36.500	36.526	0.026	1.0	0.007	0.000	1.0	11.582	OK
FSR: 100 years: +40 %: 180 mins: Winter	36.800	36.500	36.527	0.027	1.1	0.008	0.000	1.1	17.729	OK
FSR: 100 years: +40 %: 240 mins: Winter	36.800	36.500	36.527	0.027	1.1	0.008	0.000	1.1	23.573	OK
FSR: 100 years: +40 %: 360 mins: Winter	36.800	36.500	36.527	0.027	1.1	0.008	0.000	1.1	34.202	OK
FSR: 100 years: +40 %: 480 mins: Winter	36.800	36.500	36.527	0.027	1.1	0.008	0.000	1.1	43.225	OK
FSR: 100 years: +40 %: 600 mins: Winter	36.800	36.500	36.527	0.027	1.1	0.008	0.000	1.1	50.671	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate		Date: 22/08/2022	
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: FG	Checked by: SL
		Approved By: SL	
		Kemp House: 124 City Road London EC1V 2NX	



Ditch

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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: +40 %: 15 mins: Winter	36.000	35.335	35.356	0.021	1.5	0.000	0.000	1.5	1.717	OK
FSR: 100 years: +40 %: 30 mins: Winter	36.000	35.335	35.357	0.022	1.7	0.000	0.000	1.7	4.383	OK
FSR: 100 years: +40 %: 60 mins: Winter	36.000	35.335	35.358	0.023	1.8	0.000	0.000	1.8	10.108	OK
FSR: 100 years: +40 %: 120 mins: Winter	36.000	35.335	35.359	0.024	2.0	0.000	0.000	2.0	21.922	OK
FSR: 100 years: +40 %: 180 mins: Winter	36.000	35.335	35.359	0.024	2.0	0.000	0.000	2.0	33.581	OK
FSR: 100 years: +40 %: 240 mins: Winter	36.000	35.335	35.360	0.025	2.0	0.000	0.000	2.0	44.745	OK
FSR: 100 years: +40 %: 360 mins: Winter	36.000	35.335	35.359	0.024	2.0	0.000	0.000	2.0	65.233	OK
FSR: 100 years: +40 %: 480 mins: Winter	36.000	35.335	35.359	0.024	2.0	0.000	0.000	2.0	82.886	OK
FSR: 100 years: +40 %: 600 mins: Winter	36.000	35.335	35.359	0.024	2.0	0.000	0.000	2.0	97.553	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



Soakaway

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)	Status
FSR: 100 years: +40 %: 15 mins: Winter	40.106	40.106	0.706	0.706	109.6	50.946	0.000	6.926	0.0	0.000	118	41	OK
FSR: 100 years: +40 %: 30 mins: Winter	40.299	40.299	0.899	0.899	79.5	64.924	0.000	13.915	0.0	0.000	190	25	OK
FSR: 100 years: +40 %: 60 mins: Winter	40.459	40.459	1.059	1.059	59.2	76.444	0.000	27.958	0.0	0.000	199	12	OK
FSR: 100 years: +40 %: 120 mins: Winter	40.548	40.548	1.148	1.148	38.1	82.862	0.000	55.921	0.0	0.000	198	4	OK
FSR: 100 years: +40 %: 180 mins: Winter	40.531	40.531	1.131	1.131	28.5	81.680	0.000	83.845	0.0	0.000	188	6	OK
FSR: 100 years: +40 %: 240 mins: Winter	40.475	40.475	1.075	1.075	22.9	77.622	0.000	111.540	0.0	0.000	176	10	OK
FSR: 100 years: +40 %: 360 mins: Winter	40.382	40.382	0.982	0.982	16.7	70.926	0.000	143.441	0.0	0.000	158	18	OK
FSR: 100 years: +40 %: 480 mins: Winter	40.292	40.292	0.892	0.892	13.4	64.390	0.000	152.424	0.0	0.000	141	26	OK
FSR: 100 years: +40 %: 600 mins: Winter	40.200	40.200	0.800	0.800	11.2	57.794	0.000	159.900	0.0	0.000	126	33	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



Bioretention

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)	Status
FSR: 100 years: +40 %: 15 mins: Winter	36.350	36.350	0.428	0.500	4.8	2.220	0.000	0.014	0.0	0.000	4368	67	OK
FSR: 100 years: +40 %: 30 mins: Winter	36.379	36.378	0.456	0.528	3.1	2.902	0.000	0.032	0.0	0.000	3231	57	OK
FSR: 100 years: +40 %: 60 mins: Winter	36.400	36.400	0.478	0.550	2.3	3.622	0.000	0.074	0.0	0.000	3169	46	OK
FSR: 100 years: +40 %: 120 mins: Winter	36.400	36.400	0.478	0.550	1.5	4.338	0.000	0.165	0.0	0.000	3334	36	OK
FSR: 100 years: +40 %: 180 mins: Winter	36.419	36.419	0.497	0.569	1.1	4.762	0.000	0.256	0.0	0.000	3411	30	OK
FSR: 100 years: +40 %: 240 mins: Winter	36.437	36.437	0.515	0.587	0.9	5.065	0.000	0.340	0.0	0.000	3467	25	OK
FSR: 100 years: +40 %: 360 mins: Winter	36.460	36.460	0.538	0.610	0.7	5.464	0.000	0.512	0.0	0.000	3603	19	OK
FSR: 100 years: +40 %: 480 mins: Winter	36.476	36.476	0.554	0.626	0.5	5.739	0.000	0.683	0.0	0.000	3686	15	OK
FSR: 100 years: +40 %: 600 mins: Winter	36.489	36.489	0.567	0.639	0.4	5.961	0.000	0.852	0.0	0.000	3769	12	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



Bioretention (1)

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)	Status
FSR: 100 years: +40 %: 15 mins: Winter	36.262	36.262	0.412	0.412	3.7	1.736	0.000	0.017	0.0	0.000	3309	81	OK
FSR: 100 years: +40 %: 30 mins: Winter	36.276	36.276	0.426	0.426	2.5	2.270	0.000	0.040	0.0	0.000	1878	75	OK
FSR: 100 years: +40 %: 60 mins: Winter	36.282	36.282	0.432	0.432	1.8	2.818	0.000	0.094	0.0	0.000	1817	69	OK
FSR: 100 years: +40 %: 120 mins: Winter	36.276	36.276	0.426	0.426	1.2	3.370	0.000	0.216	0.0	0.000	1898	63	OK
FSR: 100 years: +40 %: 180 mins: Winter	36.268	36.268	0.418	0.418	0.9	3.678	0.000	0.333	0.0	0.000	1942	59	OK
FSR: 100 years: +40 %: 240 mins: Winter	36.276	36.276	0.426	0.426	0.7	3.901	0.000	0.450	0.0	0.000	1970	57	OK
FSR: 100 years: +40 %: 360 mins: Winter	36.288	36.288	0.438	0.438	0.5	4.174	0.000	0.677	0.0	0.000	2021	54	OK
FSR: 100 years: +40 %: 480 mins: Winter	36.295	36.295	0.445	0.445	0.4	4.341	0.000	0.907	0.0	0.000	2141	52	OK
FSR: 100 years: +40 %: 600 mins: Winter	36.301	36.301	0.451	0.451	0.3	4.472	0.000	1.136	0.0	0.000	2119	51	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



Bioretention (2)

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)	Status
FSR: 100 years: +40 %: 15 mins: Winter	36.054	36.054	0.404	0.404	2.1	0.971	0.000	0.011	0.0	0.000	2740	83	OK
FSR: 100 years: +40 %: 30 mins: Winter	36.066	36.066	0.416	0.416	1.4	1.271	0.000	0.027	0.0	0.000	1686	78	OK
FSR: 100 years: +40 %: 60 mins: Winter	36.070	36.070	0.420	0.420	1.0	1.574	0.000	0.068	0.0	0.000	1373	72	OK
FSR: 100 years: +40 %: 120 mins: Winter	36.063	36.063	0.413	0.413	0.7	1.880	0.000	0.164	0.0	0.000	1394	67	OK
FSR: 100 years: +40 %: 180 mins: Winter	36.054	36.054	0.404	0.404	0.5	2.052	0.000	0.258	0.0	0.000	1408	64	OK
FSR: 100 years: +40 %: 240 mins: Winter	36.054	36.054	0.404	0.404	0.4	2.153	0.000	0.350	0.0	0.000	1403	62	OK
FSR: 100 years: +40 %: 360 mins: Winter	36.062	36.062	0.412	0.412	0.3	2.267	0.000	0.529	0.0	0.000	1516	60	OK
FSR: 100 years: +40 %: 480 mins: Winter	36.068	36.068	0.418	0.418	0.2	2.356	0.000	0.712	0.0	0.000	1474	59	OK
FSR: 100 years: +40 %: 600 mins: Winter	36.071	36.071	0.421	0.421	0.2	2.391	0.000	0.893	0.0	0.000	1496	58	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



Bioretention (3)

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)	Status
FSR: 100 years: +40 %: 15 mins: Winter	36.330	36.330	0.480	0.480	2.7	1.242	0.000	0.007	0.0	0.000	4188	63	OK
FSR: 100 years: +40 %: 30 mins: Winter	36.363	36.363	0.513	0.513	1.8	1.622	0.000	0.016	0.0	0.000	3698	52	OK
FSR: 100 years: +40 %: 60 mins: Winter	36.390	36.390	0.540	0.540	1.3	2.027	0.000	0.036	0.0	0.000	3683	40	OK
FSR: 100 years: +40 %: 120 mins: Winter	36.396	36.396	0.546	0.546	0.8	2.439	0.000	0.080	0.0	0.000	3912	27	OK
FSR: 100 years: +40 %: 180 mins: Winter	36.421	36.421	0.571	0.571	0.6	2.682	0.000	0.123	0.0	0.000	4016	20	OK
FSR: 100 years: +40 %: 240 mins: Winter	36.441	36.441	0.591	0.591	0.5	2.854	0.000	0.165	0.0	0.000	4085	15	OK
FSR: 100 years: +40 %: 360 mins: Winter	36.468	36.468	0.618	0.618	0.4	3.085	0.000	0.248	0.0	0.000	4284	8	OK
FSR: 100 years: +40 %: 480 mins: Winter	36.485	36.485	0.635	0.635	0.3	3.228	0.000	0.327	0.0	0.000	4402	4	OK
FSR: 100 years: +40 %: 600 mins: Winter	36.498	36.498	0.648	0.648	0.3	3.341	0.000	0.409	0.0	0.000	4482	0	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



PROPOSED ATTENUATION TANK 2

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)	Status
FSR: 100 years: +40 %: 15 mins: Winter	37.825	37.825	0.885	0.885	37.3	16.810	0.000	0.000	2.6	1.921	60	45	OK
FSR: 100 years: +40 %: 30 mins: Winter	38.077	38.077	1.137	1.137	27.3	21.611	0.000	0.000	2.2	3.454	121	29	OK
FSR: 100 years: +40 %: 60 mins: Winter	38.281	38.281	1.341	1.341	20.3	25.474	0.000	0.000	1.8	6.328	142	16	OK
FSR: 100 years: +40 %: 120 mins: Winter	38.449	38.449	1.509	1.509	13.1	28.673	0.000	0.000	1.4	11.939	171	6	OK
FSR: 100 years: +40 %: 180 mins: Winter	38.516	38.516	1.576	1.576	9.7	29.948	0.000	0.000	1.2	17.386	229	1	OK
FSR: 100 years: +40 %: 240 mins: Winter	38.540	38.540	1.600	1.600	7.9	30.398	0.000	0.000	1.1	22.585	230	0	OK
FSR: 100 years: +40 %: 360 mins: Winter	38.533	38.533	1.593	1.593	5.7	30.273	0.000	0.000	1.0	32.126	275	0	OK
FSR: 100 years: +40 %: 480 mins: Winter	38.516	38.516	1.576	1.576	4.5	29.951	0.000	0.000	1.0	40.426	277	1	OK
FSR: 100 years: +40 %: 600 mins: Winter	38.493	38.493	1.553	1.553	3.8	29.509	0.000	0.000	1.0	47.365	275	3	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



RAINGARDEN PLANTER 1

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)	Status
FSR: 100 years: +40 %: 15 mins: Winter	38.928	38.927	0.348	0.347	1.8	0.076	0.000	0.000	1.8	0.766	1	76	OK
FSR: 100 years: +40 %: 30 mins: Winter	38.923	38.922	0.343	0.342	1.2	0.074	0.000	0.000	1.2	1.024	2	76	OK
FSR: 100 years: +40 %: 60 mins: Winter	38.920	38.919	0.340	0.339	0.9	0.072	0.000	0.000	0.9	1.300	1	77	OK
FSR: 100 years: +40 %: 120 mins: Winter	38.916	38.916	0.336	0.336	0.6	0.070	0.000	0.000	0.6	1.594	2	77	OK
FSR: 100 years: +40 %: 180 mins: Winter	38.914	38.914	0.334	0.334	0.4	0.069	0.000	0.000	0.4	1.756	3	78	OK
FSR: 100 years: +40 %: 240 mins: Winter	38.913	38.912	0.333	0.332	0.3	0.069	0.000	0.000	0.3	1.882	4	78	OK
FSR: 100 years: +40 %: 360 mins: Winter	38.911	38.911	0.331	0.331	0.3	0.068	0.000	0.000	0.3	2.038	5	78	OK
FSR: 100 years: +40 %: 480 mins: Winter	38.910	38.910	0.330	0.330	0.2	0.067	0.000	0.000	0.2	2.176	6	78	OK
FSR: 100 years: +40 %: 600 mins: Winter	38.909	38.909	0.329	0.329	0.2	0.067	0.000	0.000	0.2	2.302	7	79	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



RAINGARDEN PLANTER 2

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)	Status
FSR: 100 years: +40 %: 15 mins: Winter	38.918	38.913	0.338	0.333	2.0	0.070	0.000	0.000	2.0	0.868	1	77	OK
FSR: 100 years: +40 %: 30 mins: Winter	38.915	38.912	0.335	0.332	1.3	0.069	0.000	0.000	1.3	1.162	1	78	OK
FSR: 100 years: +40 %: 60 mins: Winter	38.914	38.910	0.334	0.330	1.0	0.069	0.000	0.000	1.0	1.474	1	78	OK
FSR: 100 years: +40 %: 120 mins: Winter	38.911	38.909	0.331	0.329	0.6	0.067	0.000	0.000	0.6	1.786	2	78	OK
FSR: 100 years: +40 %: 180 mins: Winter	38.909	38.908	0.329	0.328	0.5	0.067	0.000	0.000	0.5	1.978	3	79	OK
FSR: 100 years: +40 %: 240 mins: Winter	38.909	38.907	0.329	0.327	0.4	0.066	0.000	0.000	0.4	2.128	3	79	OK
FSR: 100 years: +40 %: 360 mins: Winter	38.907	38.906	0.327	0.326	0.3	0.066	0.000	0.000	0.3	2.332	4	79	OK
FSR: 100 years: +40 %: 480 mins: Winter	38.907	38.905	0.327	0.325	0.2	0.065	0.000	0.000	0.2	2.464	5	79	OK
FSR: 100 years: +40 %: 600 mins: Winter	38.906	38.905	0.326	0.325	0.2	0.065	0.000	0.000	0.2	2.543	6	79	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



RAINGARDEN PLANTER 3

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)	Status
FSR: 100 years: +40 %: 15 mins: Winter	38.856	38.853	0.356	0.353	5.7	0.080	0.000	0.000	5.6	2.553	0	80	OK
FSR: 100 years: +40 %: 30 mins: Winter	38.849	38.846	0.349	0.346	3.7	0.076	0.000	0.000	3.7	3.376	0	81	OK
FSR: 100 years: +40 %: 60 mins: Winter	38.845	38.842	0.345	0.342	2.8	0.074	0.000	0.000	2.8	4.252	0	82	OK
FSR: 100 years: +40 %: 120 mins: Winter	38.840	38.838	0.340	0.338	1.8	0.072	0.000	0.000	1.8	5.158	0	82	OK
FSR: 100 years: +40 %: 180 mins: Winter	38.837	38.835	0.337	0.335	1.3	0.071	0.000	0.000	1.3	5.698	1	82	OK
FSR: 100 years: +40 %: 240 mins: Winter	38.835	38.834	0.335	0.334	1.1	0.070	0.000	0.000	1.1	6.100	1	83	OK
FSR: 100 years: +40 %: 360 mins: Winter	38.833	38.832	0.333	0.332	0.8	0.069	0.000	0.000	0.8	6.658	2	83	OK
FSR: 100 years: +40 %: 480 mins: Winter	38.832	38.830	0.332	0.330	0.6	0.068	0.000	0.000	0.6	7.060	2	83	OK
FSR: 100 years: +40 %: 600 mins: Winter	38.831	38.830	0.331	0.330	0.5	0.068	0.000	0.000	0.5	7.390	2	83	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



Tank 1

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)	Status
FSR: 100 years: +40 %: 15 mins: Winter	36.804	36.804	0.204	0.204	42.4	19.175	0.000	0.000	1.0	1.227	159	49	OK
FSR: 100 years: +40 %: 30 mins: Winter	36.865	36.865	0.265	0.265	28.7	24.891	0.000	0.000	1.1	2.692	294	34	OK
FSR: 100 years: +40 %: 60 mins: Winter	36.922	36.922	0.322	0.322	21.4	30.318	0.000	0.000	1.0	5.769	315	19	OK
FSR: 100 years: +40 %: 120 mins: Winter	36.971	36.971	0.371	0.371	13.7	34.850	0.000	0.000	1.1	12.033	318	7	OK
FSR: 100 years: +40 %: 180 mins: Winter	36.989	36.989	0.389	0.389	10.3	36.605	0.000	0.000	1.1	18.155	370	3	OK
FSR: 100 years: +40 %: 240 mins: Winter	36.995	36.995	0.395	0.395	8.3	37.133	0.000	0.000	1.1	23.961	346	1	OK
FSR: 100 years: +40 %: 360 mins: Winter	36.991	36.991	0.391	0.391	6.1	36.803	0.000	0.000	1.1	34.504	340	2	OK
FSR: 100 years: +40 %: 480 mins: Winter	36.986	36.986	0.386	0.386	4.8	36.304	0.000	0.000	1.1	43.447	335	3	OK
FSR: 100 years: +40 %: 600 mins: Winter	36.978	36.978	0.378	0.378	4.1	35.550	0.000	0.000	1.1	50.823	328	6	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Inflow Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	S13-CATCHPIT		Time of Concentration	0.008	100	10	110	0.009
Catchment Area (1)	S14-CATCHPIT		Time of Concentration	0.018	100	10	110	0.020
Catchment Area (2)	S12-CATCHPIT		Time of Concentration	0.024	100	10	110	0.027
Catchment Area (3)	S21		Time of Concentration	0.018	100	10	110	0.019
Catchment Area (4)	S22		Time of Concentration	0.007	100	10	110	0.008
Catchment Area (5)	S22		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (6)	S21		Time of Concentration	0.007	100	10	110	0.007
Catchment Area (7)	S23		Time of Concentration	0.010	100	10	110	0.011
Catchment Area (8)	S21		Time of Concentration	0.009	100	10	110	0.009
Catchment Area (9)	S23		Time of Concentration	0.012	100	10	110	0.013
Catchment Area (10)	S15		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (11)	S17		Time of Concentration	0.008	100	10	110	0.009
Catchment Area (12)	S15		Time of Concentration	0.004	100	10	110	0.004
Catchment Area (13)	S17		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (14)	RAINGARDEN PLANTER 1		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (15)	RAINGARDEN PLANTER 3		Time of Concentration	0.009	100	10	110	0.010
Catchment Area (16)	S9		Time of Concentration	0.004	100	10	110	0.004
Catchment Area (17)	S7		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (18)	S7		Time of Concentration	0.004	100	10	110	0.005
Catchment Area (19)	S10		Time of Concentration	0.004	100	10	110	0.004
Catchment Area (20)	S11		Time of Concentration	0.006	100	10	110	0.007
Catchment Area (21)	S1		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (22)	S11		Time of Concentration	0.009	100	10	110	0.010
Catchment Area (23)	S1		Time of Concentration	0.006	100	10	110	0.007
Catchment Area (24)	S14-CATCHPIT		Time of Concentration	0.010	100	10	110	0.011
Catchment Area (25)	S2		Time of Concentration	0.006	100	10	110	0.007
Catchment Area (26)	S14-CATCHPIT		Time of Concentration	0.011	100	10	110	0.013
Catchment Area (27)	S2		Time of Concentration	0.005	100	10	110	0.006
Catchment Area (28)	S4		Time of Concentration	0.009	100	10	110	0.010
Catchment Area (31)	S6-CATCHPIT		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (32)	S7		Time of Concentration	0.011	100	10	110	0.012
Catchment Area (33)	S2		Time of Concentration	0.007	100	10	110	0.008
Catchment Area (34)	S3		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (35)	S3		Time of Concentration	0.006	100	10	110	0.007
Catchment Area (36)	S5		Time of Concentration	0.001	100	10	110	0.001
Catchment Area (37)	S5		Time of Concentration	0.001	100	10	110	0.001

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by:	Checked by:	Approved By:
	FG	SL	SL
Report Details: Type: Inflow Summary Storm Phase: Phase	Kemp House: 124 City Road London EC1V 2NX		



Catchment Area (38)	S6-CATCHPIT		Time of Concentration	0.007	100	10	110	0.008
Catchment Area (39)	S17		Time of Concentration	0.004	100	10	110	0.005
Catchment Area (40)	S18 CATCHPIT		Time of Concentration	0.004	100	10	110	0.004
Catchment Area (41)	S16-Catchpit		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (42)	S15		Time of Concentration	0.002	100	10	110	0.003
Catchment Area (43)	S16-Catchpit		Time of Concentration	0.001	100	10	110	0.001
Catchment Area (44)	S18 CATCHPIT		Time of Concentration	0.002	100	10	110	0.002
Catchment Area (45)	S18 CATCHPIT		Time of Concentration	0.002	100	10	110	0.002
Catchment Area (46)	Bioretention		Time of Concentration	0.007	100	10	110	0.008
Catchment Area (47)	Bioretention (1)		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (48)	Bioretention (3)		Time of Concentration	0.004	100	10	110	0.005
Catchment Area (49)	Bioretention (2)		Time of Concentration	0.003	100	10	110	0.004
Catchment Area (50)	RAINGARDEN PLANTER 2		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (51)	S6-CATCHPIT		Time of Concentration	0.010	100	10	110	0.011
Catchment Area (52)	S16-Catchpit		Time of Concentration	0.005	100	10	110	0.006
Catchment Area (53)	S15		Time of Concentration	0.007	100	10	110	0.007
Green Roof	S5		Green Roof	0.016		10		0.018
TOTAL		0.0		0.354				0.389

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Title: Rainfall Analysis Criteria		
Kemp House: 124 City Road London EC1V 2NX			



Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	10
Junction Flood Risk Margin (mm)	200
Perform No Discharge Analysis	☐

Rainfall	
FSR	Type: FSR

Region	England and Wales
M5-60 (mm)	18.9
Ratio R	0.400
Summer	☐
Winter	☒

Return Period	
Return Period (years)	Increase Rainfall (%)
100.0	40

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

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



Critical Storm

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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
S7	FSR: 100 years: +40 %: 15 mins: Winter	45.500	45.150	45.207	0.057	13.4	0.009	0.000	13.3	6.175	OK
S8	FSR: 100 years: +40 %: 15 mins: Winter	44.925	44.575	44.624	0.049	13.3	0.008	0.000	13.2	6.174	OK
S9	FSR: 100 years: +40 %: 15 mins: Winter	43.400	43.050	43.115	0.065	15.7	0.010	0.000	15.5	7.325	OK
S10	FSR: 100 years: +40 %: 15 mins: Winter	42.925	42.575	42.628	0.053	17.9	0.008	0.000	17.8	8.455	OK
S12-CATCHPIT	FSR: 100 years: +40 %: 15 mins: Winter	43.000	41.150	41.238	0.088	43.7	0.025	0.000	43.5	20.442	OK
S1	FSR: 100 years: +40 %: 15 mins: Winter	46.100	45.700	45.749	0.049	7.7	0.008	0.000	7.7	3.574	OK
S2	FSR: 100 years: +40 %: 15 mins: Winter	45.550	45.200	45.306	0.106	19.8	0.017	0.000	19.3	9.156	OK
S3	FSR: 100 years: +40 %: 15 mins: Winter	45.200	44.850	45.001	0.151	25.3	0.024	0.000	23.9	11.929	Flood Risk
S4	FSR: 100 years: +40 %: 15 mins: Winter	45.100	44.770	44.836	0.066	29.7	0.010	0.000	29.8	14.629	OK
S5	FSR: 100 years: +40 %: 15 mins: Winter	41.200	40.650	40.964	0.314	31.1	0.050	0.000	29.1	15.237	Surcharged
S6-CATCHPIT	FSR: 100 years: +40 %: 15 mins: Winter	41.700	40.470	40.882	0.412	41.9	0.117	0.000	40.1	21.119	Surcharged
S14-CATCHPIT	FSR: 100 years: +40 %: 15 mins: Winter	42.600	41.000	41.270	0.270	25.6	0.043	0.000	20.8	11.835	Surcharged
S17	FSR: 100 years: +40 %: 15 mins: Winter	38.900	38.550	38.604	0.054	13.5	0.009	0.000	13.3	6.170	OK
S18 CATCHPIT	FSR: 100 years: +40 %: 15 mins: Winter	38.900	36.870	37.042	0.172	19.8	0.027	0.000	18.9	9.093	Surcharged
S16-Catchpit	FSR: 100 years: +40 %: 15 mins: Winter	38.900	37.000	37.070	0.070	23.7	0.011	0.000	23.5	10.898	OK
S15	FSR: 100 years: +40 %: 15 mins: Winter	38.900	38.500	38.542	0.042	11.8	0.007	0.000	11.8	5.458	OK
S26-Catchpit	FSR: 100 years: +40 %: 240 mins: Winter	38.900	37.370	38.540	1.170	7.9	0.186	0.000	7.9	43.943	Surcharged
S22	FSR: 100 years: +40 %: 240 mins: Winter	38.800	37.800	38.540	0.740	5.2	0.118	0.000	5.2	29.598	Surcharged

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Junctions Summary Storm Phase: Phase		



S21	FSR: 100 years: +40 %: 240 mins: Winter	38.900	38.150	38.540	0.390	4.0	0.062	0.000	4.0	23.075	Surcharged
S28	FSR: 100 years: +40 %: 240 mins: Winter	36.500	36.100	36.125	0.025	2.0	0.007	0.000	2.0	44.745	OK
S19-FLOW CONTROL CHAMBER	FSR: 100 years: +40 %: 240 mins: Winter	37.300	36.590	36.995	0.405	1.1	0.064	0.000	1.1	23.659	Surcharged
S27-FLOW CONTROL CHAMBER	FSR: 100 years: +40 %: 240 mins: Winter	38.900	36.930	38.540	1.610	1.1	0.256	0.000	1.0	21.261	Surcharged
S13-CATCHPIT	FSR: 100 years: +40 %: 120 mins: Winter	40.800	40.050	40.548	0.498	1.6	0.079	0.000	1.6	4.698	Surcharged
S11	FSR: 100 years: +40 %: 15 mins: Winter	43.200	42.750	42.791	0.041	10.1	0.007	0.000	10.1	4.681	OK
S23	FSR: 100 years: +40 %: 240 mins: Winter	38.900	38.150	38.540	0.390	2.6	0.062	0.000	2.7	15.209	Surcharged
S24	FSR: 100 years: +40 %: 240 mins: Winter	38.900	38.100	38.540	0.440	2.7	0.070	0.000	2.7	15.207	Surcharged
S25	FSR: 100 years: +40 %: 240 mins: Winter	38.900	38.020	38.540	0.520	2.7	0.083	0.000	2.6	15.156	Surcharged
S20	FSR: 100 years: +40 %: 240 mins: Winter	36.800	36.500	36.527	0.027	1.1	0.008	0.000	1.1	23.573	OK
Ditch	FSR: 100 years: +40 %: 240 mins: Winter	36.000	35.335	35.360	0.025	2.0	0.000	0.000	2.0	44.745	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 100 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by:	Checked by:	Approved By:
	FG	SL	SL
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Kemp House: 124 City Road London EC1V 2NX		



Critical Storm

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Soakaway	FSR: 100 years: +40 %: 120 mins: Winter	40.548	40.548	1.148	1.148	38.1	82.862	0.000	55.921	0.0	0.000	198	4	OK
Bioretention	FSR: 100 years: +40 %: 600 mins: Winter	36.489	36.489	0.567	0.639	0.4	5.961	0.000	0.852	0.0	0.000	3769	12	OK
Bioretention (1)	FSR: 100 years: +40 %: 600 mins: Winter	36.301	36.301	0.451	0.451	0.3	4.472	0.000	1.136	0.0	0.000	2119	51	OK
Bioretention (2)	FSR: 100 years: +40 %: 600 mins: Winter	36.071	36.071	0.421	0.421	0.2	2.391	0.000	0.893	0.0	0.000	1496	58	OK
Bioretention (3)	FSR: 100 years: +40 %: 600 mins: Winter	36.498	36.498	0.648	0.648	0.3	3.341	0.000	0.409	0.0	0.000	4482	0	OK
PROPOSED ATTENUATION TANK 2	FSR: 100 years: +40 %: 240 mins: Winter	38.540	38.540	1.600	1.600	7.9	30.398	0.000	0.000	1.1	22.585	230	0	OK
RAINGARDEN PLANTER 1	FSR: 100 years: +40 %: 15 mins: Winter	38.928	38.927	0.348	0.347	1.8	0.076	0.000	0.000	1.8	0.766	1	76	OK
RAINGARDEN PLANTER 2	FSR: 100 years: +40 %: 15 mins: Winter	38.918	38.913	0.338	0.333	2.0	0.070	0.000	0.000	2.0	0.868	1	77	OK
RAINGARDEN PLANTER 3	FSR: 100 years: +40 %: 15 mins: Winter	38.856	38.853	0.356	0.353	5.7	0.080	0.000	0.000	5.6	2.553	0	80	OK
Tank 1	FSR: 100 years: +40 %: 240 mins: Winter	36.995	36.995	0.395	0.395	8.3	37.133	0.000	0.000	1.1	23.961	346	1	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 30 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Inflow Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	S13-CATCHPIT		Time of Concentration	0.008	100	10	110	0.009
Catchment Area (1)	S14-CATCHPIT		Time of Concentration	0.018	100	10	110	0.020
Catchment Area (2)	S12-CATCHPIT		Time of Concentration	0.024	100	10	110	0.027
Catchment Area (3)	S21		Time of Concentration	0.018	100	10	110	0.019
Catchment Area (4)	S22		Time of Concentration	0.007	100	10	110	0.008
Catchment Area (5)	S22		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (6)	S21		Time of Concentration	0.007	100	10	110	0.007
Catchment Area (7)	S23		Time of Concentration	0.010	100	10	110	0.011
Catchment Area (8)	S21		Time of Concentration	0.009	100	10	110	0.009
Catchment Area (9)	S23		Time of Concentration	0.012	100	10	110	0.013
Catchment Area (10)	S15		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (11)	S17		Time of Concentration	0.008	100	10	110	0.009
Catchment Area (12)	S15		Time of Concentration	0.004	100	10	110	0.004
Catchment Area (13)	S17		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (14)	RAINGARDEN PLANTER 1		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (15)	RAINGARDEN PLANTER 3		Time of Concentration	0.009	100	10	110	0.010
Catchment Area (16)	S9		Time of Concentration	0.004	100	10	110	0.004
Catchment Area (17)	S7		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (18)	S7		Time of Concentration	0.004	100	10	110	0.005
Catchment Area (19)	S10		Time of Concentration	0.004	100	10	110	0.004
Catchment Area (20)	S11		Time of Concentration	0.006	100	10	110	0.007
Catchment Area (21)	S1		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (22)	S11		Time of Concentration	0.009	100	10	110	0.010
Catchment Area (23)	S1		Time of Concentration	0.006	100	10	110	0.007
Catchment Area (24)	S14-CATCHPIT		Time of Concentration	0.010	100	10	110	0.011
Catchment Area (25)	S2		Time of Concentration	0.006	100	10	110	0.007
Catchment Area (26)	S14-CATCHPIT		Time of Concentration	0.011	100	10	110	0.013
Catchment Area (27)	S2		Time of Concentration	0.005	100	10	110	0.006
Catchment Area (28)	S4		Time of Concentration	0.009	100	10	110	0.010
Catchment Area (31)	S6-CATCHPIT		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (32)	S7		Time of Concentration	0.011	100	10	110	0.012
Catchment Area (33)	S2		Time of Concentration	0.007	100	10	110	0.008
Catchment Area (34)	S3		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (35)	S3		Time of Concentration	0.006	100	10	110	0.007
Catchment Area (36)	S5		Time of Concentration	0.001	100	10	110	0.001
Catchment Area (37)	S5		Time of Concentration	0.001	100	10	110	0.001

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 30 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate		Date: 22/08/2022	
		Designed by: FG	Checked by: SL
		Approved By: SL	
Report Details: Type: Inflow Summary Storm Phase: Phase		Kemp House: 124 City Road London EC1V 2NX	



Catchment Area (38)	S6-CATCHPIT		Time of Concentration	0.007	100	10	110	0.008
Catchment Area (39)	S17		Time of Concentration	0.004	100	10	110	0.005
Catchment Area (40)	S18 CATCHPIT		Time of Concentration	0.004	100	10	110	0.004
Catchment Area (41)	S16-Catchpit		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (42)	S15		Time of Concentration	0.002	100	10	110	0.003
Catchment Area (43)	S16-Catchpit		Time of Concentration	0.001	100	10	110	0.001
Catchment Area (44)	S18 CATCHPIT		Time of Concentration	0.002	100	10	110	0.002
Catchment Area (45)	S18 CATCHPIT		Time of Concentration	0.002	100	10	110	0.002
Catchment Area (46)	Bioretention		Time of Concentration	0.007	100	10	110	0.008
Catchment Area (47)	Bioretention (1)		Time of Concentration	0.006	100	10	110	0.006
Catchment Area (48)	Bioretention (3)		Time of Concentration	0.004	100	10	110	0.005
Catchment Area (49)	Bioretention (2)		Time of Concentration	0.003	100	10	110	0.004
Catchment Area (50)	RAINGARDEN PLANTER 2		Time of Concentration	0.003	100	10	110	0.003
Catchment Area (51)	S6-CATCHPIT		Time of Concentration	0.010	100	10	110	0.011
Catchment Area (52)	S16-Catchpit		Time of Concentration	0.005	100	10	110	0.006
Catchment Area (53)	S15		Time of Concentration	0.007	100	10	110	0.007
Green Roof	S5		Green Roof	0.016		10		0.018
TOTAL		0.0		0.354				0.389

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 30 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Title: Rainfall Analysis Criteria		
Kemp House: 124 City Road London EC1V 2NX			



Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	10
Junction Flood Risk Margin (mm)	200
Perform No Discharge Analysis	☐

Rainfall

FSR	Type: FSR
-----	-----------

Region	England and Wales
M5-60 (mm)	18.9
Ratio R	0.400
Summer	☐
Winter	☒

Return Period

Return Period (years)	Increase Rainfall (%)
30.0	40

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

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 30 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate Report Details: Type: Junctions Summary Storm Phase: Phase	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Kemp House: 124 City Road London EC1V 2NX		



Critical Storm

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (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
S7	FSR: 30 years: +40 %: 15 mins: Winter	45.500	45.150	45.199	0.049	10.3	0.008	0.000	10.2	4.762	OK
S8	FSR: 30 years: +40 %: 15 mins: Winter	44.925	44.575	44.618	0.043	10.2	0.007	0.000	10.1	4.762	OK
S9	FSR: 30 years: +40 %: 15 mins: Winter	43.400	43.050	43.106	0.056	12.1	0.009	0.000	11.9	5.651	OK
S10	FSR: 30 years: +40 %: 15 mins: Winter	42.925	42.575	42.621	0.046	13.8	0.007	0.000	13.7	6.523	OK
S12-CATCHPIT	FSR: 30 years: +40 %: 15 mins: Winter	43.000	41.150	41.223	0.073	33.7	0.021	0.000	33.5	15.778	OK
S1	FSR: 30 years: +40 %: 15 mins: Winter	46.100	45.700	45.742	0.042	6.0	0.007	0.000	5.9	2.758	OK
S2	FSR: 30 years: +40 %: 15 mins: Winter	45.550	45.200	45.286	0.086	15.2	0.014	0.000	14.9	7.070	OK
S3	FSR: 30 years: +40 %: 15 mins: Winter	45.200	44.850	44.966	0.116	19.5	0.018	0.000	19.1	9.209	OK
S4	FSR: 30 years: +40 %: 15 mins: Winter	45.100	44.770	44.828	0.058	23.7	0.009	0.000	23.5	11.299	OK
S5	FSR: 30 years: +40 %: 15 mins: Winter	41.200	40.650	40.789	0.139	24.5	0.022	0.000	21.2	11.767	OK
S6-CATCHPIT	FSR: 30 years: +40 %: 15 mins: Winter	41.700	40.470	40.759	0.289	31.1	0.082	0.000	30.3	16.308	Surcharged
S14-CATCHPIT	FSR: 30 years: +40 %: 15 mins: Winter	42.600	41.000	41.084	0.084	19.8	0.013	0.000	19.5	9.132	OK
S17	FSR: 30 years: +40 %: 15 mins: Winter	38.900	38.550	38.597	0.047	10.4	0.007	0.000	10.3	4.742	OK
S18 CATCHPIT	FSR: 30 years: +40 %: 15 mins: Winter	38.900	36.870	36.994	0.124	15.2	0.020	0.000	14.9	6.985	OK
S16-Catchpit	FSR: 30 years: +40 %: 15 mins: Winter	38.900	37.000	37.059	0.059	18.3	0.009	0.000	18.2	8.406	OK
S15	FSR: 30 years: +40 %: 15 mins: Winter	38.900	38.500	38.537	0.037	9.1	0.006	0.000	9.1	4.217	OK
S26-Catchpit	FSR: 30 years: +40 %: 240 mins: Winter	38.900	37.370	38.192	0.822	6.0	0.131	0.000	6.0	33.784	Surcharged
S22	FSR: 30 years: +40 %: 240 mins: Winter	38.800	37.800	38.192	0.392	4.0	0.062	0.000	4.0	22.770	Surcharged

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 30 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate						Date: 22/08/2022					
Report Details: Type: Junctions Summary Storm Phase: Phase						Designed by: FG	Checked by: SL	Approved By: SL			
						Kemp House: 124 City Road London EC1V 2NX					
S21	FSR: 30 years: +40 %: 15 mins: Winter	38.900	38.150	38.227	0.077	16.4	0.012	0.000	16.2	7.559	OK
S28	FSR: 30 years: +40 %: 240 mins: Winter	36.500	36.100	36.123	0.023	1.8	0.007	0.000	1.8	38.291	OK
S19-FLOW CONTROL CHAMBER	FSR: 30 years: +40 %: 240 mins: Winter	37.300	36.590	36.893	0.303	0.9	0.048	0.000	0.9	20.050	Surcharged
S27-FLOW CONTROL CHAMBER	FSR: 30 years: +40 %: 240 mins: Winter	38.900	36.930	38.192	1.262	1.0	0.201	0.000	0.8	18.396	Surcharged
S13-CATCHPIT	FSR: 30 years: +40 %: 120 mins: Winter	40.800	40.050	40.193	0.143	1.3	0.023	0.000	1.3	3.689	Surcharged
S11	FSR: 30 years: +40 %: 15 mins: Winter	43.200	42.750	42.786	0.036	7.8	0.006	0.000	7.8	3.614	OK
S23	FSR: 30 years: +40 %: 15 mins: Winter	38.900	38.150	38.245	0.095	10.8	0.015	0.000	10.6	4.977	OK
S24	FSR: 30 years: +40 %: 240 mins: Winter	38.900	38.100	38.192	0.092	2.0	0.015	0.000	2.0	11.633	OK
S25	FSR: 30 years: +40 %: 240 mins: Winter	38.900	38.020	38.192	0.172	2.0	0.027	0.000	2.0	11.633	Surcharged
S20	FSR: 30 years: +40 %: 240 mins: Winter	36.800	36.500	36.525	0.025	0.9	0.007	0.000	0.9	19.974	OK
Ditch	FSR: 30 years: +40 %: 240 mins: Winter	36.000	35.335	35.358	0.023	1.8	0.000	0.000	1.8	38.291	OK

205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ: 205-213 + Rear Gardens of 215,217&219 Henley Road, Caversham, RG4 6LJ 1 in 30 Year +40% CC Storm Event - 10% Urban Creep 2.0l/s Discharge Rate	Date: 22/08/2022		
	Designed by: FG	Checked by: SL	Approved By: SL
	Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		
Kemp House: 124 City Road London EC1V 2NX			



Critical Storm

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Soakaway	FSR: 30 years: +40 %: 120 mins: Winter	40.193	40.193	0.793	0.793	29.0	57.241	0.000	55.678	0.0	0.000	138	34	OK
Bioretention	FSR: 30 years: +40 %: 600 mins: Winter	36.406	36.405	0.483	0.555	0.3	4.531	0.000	0.835	0.0	0.000	2979	33	OK
Bioretention (1)	FSR: 30 years: +40 %: 60 mins: Winter	36.256	36.256	0.406	0.406	1.4	2.142	0.000	0.092	0.0	0.000	1388	76	OK
Bioretention (2)	FSR: 30 years: +40 %: 60 mins: Winter	36.047	36.047	0.397	0.397	0.8	1.197	0.000	0.066	0.0	0.000	1068	79	OK
Bioretention (3)	FSR: 30 years: +40 %: 600 mins: Winter	36.405	36.405	0.555	0.555	0.2	2.549	0.000	0.403	0.0	0.000	3427	24	OK
PROPOSED ATTENUATION TANK 2	FSR: 30 years: +40 %: 240 mins: Winter	38.192	38.192	1.252	1.252	6.0	23.787	0.000	0.000	1.0	19.298	222	22	OK
RAINGARDEN PLANTER 1	FSR: 30 years: +40 %: 15 mins: Winter	38.924	38.924	0.344	0.344	1.4	0.075	0.000	0.000	1.4	0.577	1	76	OK
RAINGARDEN PLANTER 2	FSR: 30 years: +40 %: 15 mins: Winter	38.917	38.912	0.337	0.332	1.5	0.070	0.000	0.000	1.5	0.661	1	78	OK
RAINGARDEN PLANTER 3	FSR: 30 years: +40 %: 15 mins: Winter	38.852	38.848	0.352	0.348	4.4	0.078	0.000	0.000	4.3	1.962	0	81	OK
Tank 1	FSR: 30 years: +40 %: 240 mins: Winter	36.893	36.893	0.293	0.293	6.3	27.601	0.000	0.000	0.9	20.259	297	27	OK