

FLOOD RISK ASSESSMENT & SUDS REPORT FOR 400 THAMES VALLEY PARK, READING, RG6 1PT.

DOCUMENT NUMBER: C3277-R2-REV-A

PREPARED BY



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1. SITE DETAILS

Site Name	400 Thames Valley Park
Site Address	400 Thames Valley Park, Reading, RG6 1PT
Purpose of Development	Offices
Existing Land Use	Brownfield
County	Wokingham
Country	England
Local Planning Authority	Wokingham Borough Council

1.1. Site Location

The location of the project site is shown on the location plan, provided in Appendix A.

1.2. Existing Site Description and Topography

The existing site is shown on the 'Pre-development Impermeable Area Exceedance Flow Route Plan', drawing number C3277-01, provided in Appendix A.

1.3. Geology of The Area

According to the British geological survey, The superficial deposits at the area are unknown. However, the bedrock at the area is part of the Seaford Chalk Formation And Newhaven Chalk Formation, as shown in Figure 1 below.



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

1.4. Proposed Development

The proposals involve the redevelopment of the site, for a prior approval application, for the a change of use of the ground, 1st, 2nd and 3rd floors of this existing building to 63 residential dwellings.

2. PLANNING POLICIES

2.1. National Planning Policy

- NPPF's technical guidance states:

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

- Non-Statutory Technical Standards for Sustainable Drainage: Practice Guidance
- CIRIA SUDS manual (C753)

2.2. Local Planning Policy

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

- SFRA Level 1 and 2 for Wokingham Borough Council;

3. FLOOD RISK

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

3.1. Flood Zones

The Environment Agency has developed a flood risk map which shows the relative risk of flooding for different return periods. Flood zones assume that no defences are present and so where these do exist, they are only indicative of the potential for flooding.

The development lies within flood zone 1 of the Environment Agency's Flood risk map, as shown in Figure 2 overleaf. Land located within flood zone 1 is at low risk of flooding, having an associated annual probability of less 1 in 1000.

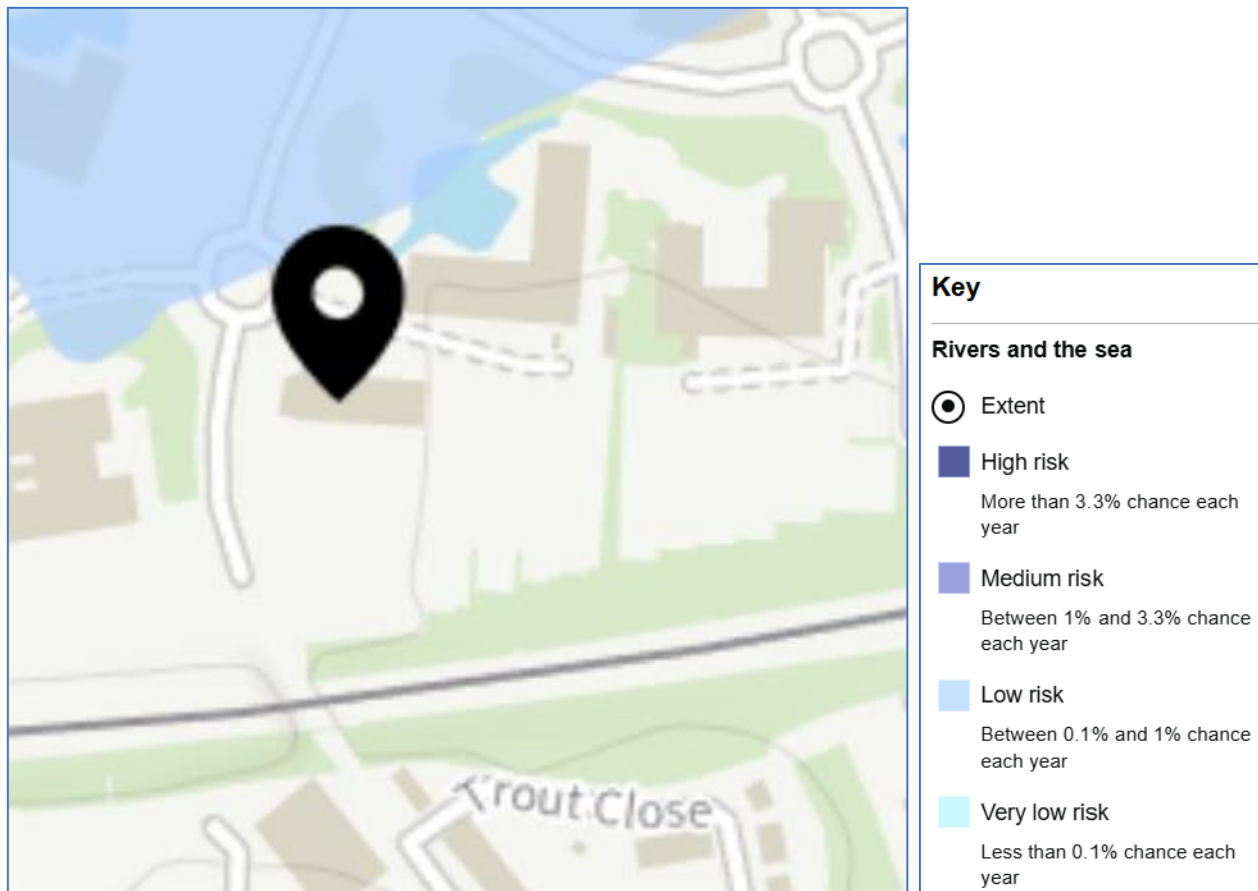


Figure 2 – Environment Agency Flood Map for flooding extent from rivers and sea for the proposed development.

As seen, the site is located within Flood zone 1, and in accordance with Table 1 from the NPPF's technical guidance, land within Flood zone 1 is suitable for any use.

Assessment of this site has been based upon the Environment Agency's flood map, the topographical site survey, and the architect's proposed development layout.

Table 1: NPPF Flood Zone Guidance

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
Zone 1 Low Probability	This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (0.1%<).	All uses of land are appropriate in this zone.	For development proposals on sites compromising one hectare or above the vulnerability to flooding from other sources as well as from river and sea flooding, and the potential to increase flood risk elsewhere through addition of hard surfaces and the effect of new development on surface water run-off should be incorporated in a FRA. This need only be brief unless the factors above or other considerations require particular attention. See Annex E for minimum requirements.	In this zone, developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of development, and the appropriate application sustainable drainage techniques.
Zone 2 Medium Probability	This zone comprises land assessed as having between a 1 in 1000 annual probability of river flooding (1% -	The water-compatible less vulnerable and more vulnerable uses of land and essential infrastructure in	All development proposals should be accompanied by a FRA. See Annex E for minimum requirements.	In this zone developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area through the layout of form

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
	0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5%-0.1%) in any year	Table D 2 are appropriate in this zone. Infrastructure in Table D.2 are appropriate in this zone. Subject to the sequential Test being applied the highly vulnerable uses in Table D.2 are only appropriate in this zone if the exception Test (see para. D.9) is passed.		and development, and the appropriate application of sustainable drainage techniques.
Zone 3a High Probability	This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 greater annual probability of flooding from sea (>0.5%) in any year.	The water compatible and less vulnerable uses of land in Table D.2 are appropriate in this Zone. The highly vulnerable uses in Table D.2 should not be permitted in this zone. The more vulnerable and essential infrastructure uses in D.2 should only be permitted in this zone if the Exception Test (see para. D.9) is passed	All development proposals in this zone should be accompanied by a FRA. See Annex E for minimum requirements.	In this zone, developers and local authorities should seek opportunities to: i. reduce the overall level of flood risk in the area through the layout and form of the development and appropriate application of sustainable drainage techniques. ii. relocate existing development to land in zones with a lower probability of flooding; and iii. create space for flooding to occur by restoring functional floodplain and flood pathways

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
		Infrastructure permitted in this zone should be designed and constructed to remain operational and safe for users in times of flood.		and by identifying, allocating and safeguarding open space for flood storage.
Zone 3b The Functional Flood Plan	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their SFRAs areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. But land which would flood with an annual probability of 1 in 20 (5%) or greater in any	Only the water-compatible uses and the essential infrastructure listed in Table D.2 that has to be there should be permitted on this zone. It should be designed and constructed to: • remain operational and safe for users in times of flood; • result in no net loss of floodplain storage; • not impede water flows; and • not increase flood risk elsewhere • Essential infrastructure in this zone should pass the Exception Test.	All development proposals in this zone should be accompanied by an FRA. See Annex E for minimum requirements.	In this zone, developers and local authorities should seek opportunities to: - reduce the overall level of flood risk area through the layout and form of the development and appropriate application of sustainable drainage techniques; and - relocate existing development to land with a lower probability of flooding.

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
	year, or is designed to flood in an extreme (0.1%) flood should provide a starting point for consideration and discussions to identify the functional floodplain.			

3.2. Flood Vulnerability

Table 2 below, which has been extracted from NPPF's technical guidance, highlights the flood risk vulnerability of various developments. This information is based partly on DEFRA/Environment Agency research and 'Flood Risks to People' (FD2321/Tr2) and also on the need of some uses to keep functioning during flooding.

Buildings that combine a mixture of uses should be placed into the higher end of the relevant classes of flood risk sensitivity. Developments that allow uses to be distributed over the site may fall within several classes of flood risk sensitivity.

The impact of a flood on a particular use identified within this flood risk vulnerability classification will vary within each vulnerability class. Therefore, the flood risk management infrastructure and risk mitigation measures needed ensure the development may differ between uses within a particular vulnerability classification.

Table 2: NPPF's Flood Risk Vulnerability Classification

Essential Infrastructure	Essential transport infrastructure and strategic utility infrastructure, including electricity generating stations and grinds and primary substations.
Highly Vulnerable	- Police, Ambulance and Fire stations and command centres, and telecommunications installations and emergency disposal points. - Basement Dwellings, caravans, mobile homes and park homes intended for permanent residential use. - Installations requiring hazardous substance consent.
More Vulnerable	- Hospitals, residential institutions such as care homes, children's homes, social services homes, prisons and hostels. - Buildings used for dwelling house, student halls of residence, drinking establishments, nightclubs, hotels and sites used for holiday or short-let caravans and camping.

	• Non-residential uses for health service, nurseries and educations. • Landfill and waste management facilities for hazardous waste.
Less Vulnerable	• Buildings used for shops, financial, professional and other services, restaurants and cafes, offices, industry, storage and distribution and assembly and leisure. • Land and buildings used for agriculture and forestry. • Waste treatment (except landfill and hazardous waste facilities), mineral workings and processing (except for sand and gravel). • Water treatment plants and sewerage treatment plans (if adequate pollution control measures are in place.)
Water-compatible Development	• Flood control infrastructure, water transmission infrastructure and pumping stations. • Sewerage transmission infrastructure and pumping stations. • Sand and Gravel workings. • Docks, marinas and wharves, navigational facilities. • MOD defence installations • Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location. • Water-based recreation (excluding sleeping accommodation) • Lifeguard and coastguard stations • Amenity open space, nature conservation and sports recreation. • Essential sleeping or residential accommodation for staff required by users in this category, subject to a warning and evacuation plan.

From the flood risk vulnerability classification table above, taken from the NPPF's Technical Guidance, buildings used for 'office use' come within the 'less vulnerable' classification. However, based on the Environmental Agencies flood map, the development site is located within Flood Zone 1 and in accordance with table 3, overleaf, is therefore suitable for any development. Furthermore, neither a sequential nor exception test is required as a part of this Flood Risk Assessment.

Table 3: NPPF's Flood Risk Vulnerability and Flood Zone Compatibility

Vulnerability Classification	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone 1	✓	✓	✓	✓	✓
Flood Zone 2	✓	✓	Exception Test	✓	✓
Flood Zone 3a	Exception Test	✓	X	Exception Test	✓
Flood Zone 3b	Exception Test	✓	X	X	X

Key: ✓ Development is appropriate
X Development should not be permitted.

4. FLOOD RISK ASSESMENT

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

4.1. Fluvial or Tidal Flooding

The River Thames is located 800 metres to the east of the proposed development site, however there is no risk of flooding from this to the site. Therefore, there is no risk of flooding to the proposed development site from fluvial sources.

The site is also not at risk of tidal flooding, this can also be confirmed by the Environment Agency's Flood map in Figure 2, see Section 3.1.

4.2. Flooding from Land (Overland Flow)

The majority of the proposed development site is at a very low risk of surface water flooding, however there are very small areas at the site that show a low risk of flooding of depths less than 300mm, caused by surface water ponding in naturally low lying areas of the site.

There are also very small areas, adjacent to this flooding of depths of less than 300mm, during an extreme storm event, showing flooding depths of between 300mm and 900mm. With a very small part of the site showing flooding depths of just above 900mm, during an extreme storm event. However, consultation of these area with the 'Pre-development Impermeable Area and Exceedance Flow Route plan', provided in Appendix A, confirms that this is again just ponding in naturally low lying areas of the site, with the area just north of the building that shows depths of flooding over between 300mm and 900mm and just above 900mm, being an existing pond, rather than actual flooding.



Figure 3– Environment Agency Surface Water Flood Map for the proposed development.

Residents of these proposed dwellings will be made aware of the surface water flooding risk of depths just below of just above 300mm at the site, during an extreme storm event and care must be taken to access and egress their dwellings during an extreme storm event.

In order to ensure that no flood water enters the ground floor dwellings, which could be just above 300mm in depth, the client will proposed flood proof doors at the areas where there is a risk of fluvial flooding during extreme events shown.

Air vents and electricity sockets etc will be raised 500mm above the external ground level also, as well as damp proofing membrane used up to the 500mm above ground level. These measures will ensure that during and cleaning of the ground floor will be quick and simple, in the event that any flood water enters the building.

The surface water runoff that will be produced as a result of this development will be dealt with through the use of Sustainable urban Drainage Systems (SuDS), and therefore reduce the peak rate of flow leaving the site. This SuDS solution will be discussed in greater detail further on in this report.

4.3. Flooding from Groundwater

The Environment Agency's website has confirmed that flooding from groundwater is unlikely in this area. As the proposals are for upwards extensions only, there will be no excavations below ground level.

4.4. Flooding from Sewers

There have been 48 recorded incidents of sewer flooding in the RG6 1 postcode areas between the years 2000 and 2022, as confirmed by the Wokingham Borough Council, Strategic Flood Risk Assessment report.

However, there will be a substantial reduction in the surface water run off leaving this site, which will reduce the surface water sewer flooding risk at the site and elsewhere.

4.5. Flooding from Reservoirs, Canals or Other Artificial Sources

There is no risk of flooding to this site from reservoirs, this can be confirmed by the Environment Agency's website.

5. SUSTAINABLE URBAN DRAINAGE SYSTEMS

The total site area is 9178m², and the impermeable areas of the site prior to development are 5800m². Following the development proposals at this site, the impermeable areas will have remained the same.

Surface water arising from a developed site should, as far as 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 the 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 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 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 the 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 water course.
- A sympathetic approach to the environmental setting by providing the 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:

400 Thames Valley Park, Reading, RG6 1PT – R2

Nimbus Engineering Consultants Ltd
Flood Risk Assessment & SuDS Report
July 2024

Permeable paving	
Soakaways;	
Swales and basins;	
Bioretention/ rain gardens;	
Green roofs and rainwater re-use;	
Infiltration trenches and filter drains	
Ponds and wetlands	

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 together at the planning stage 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.

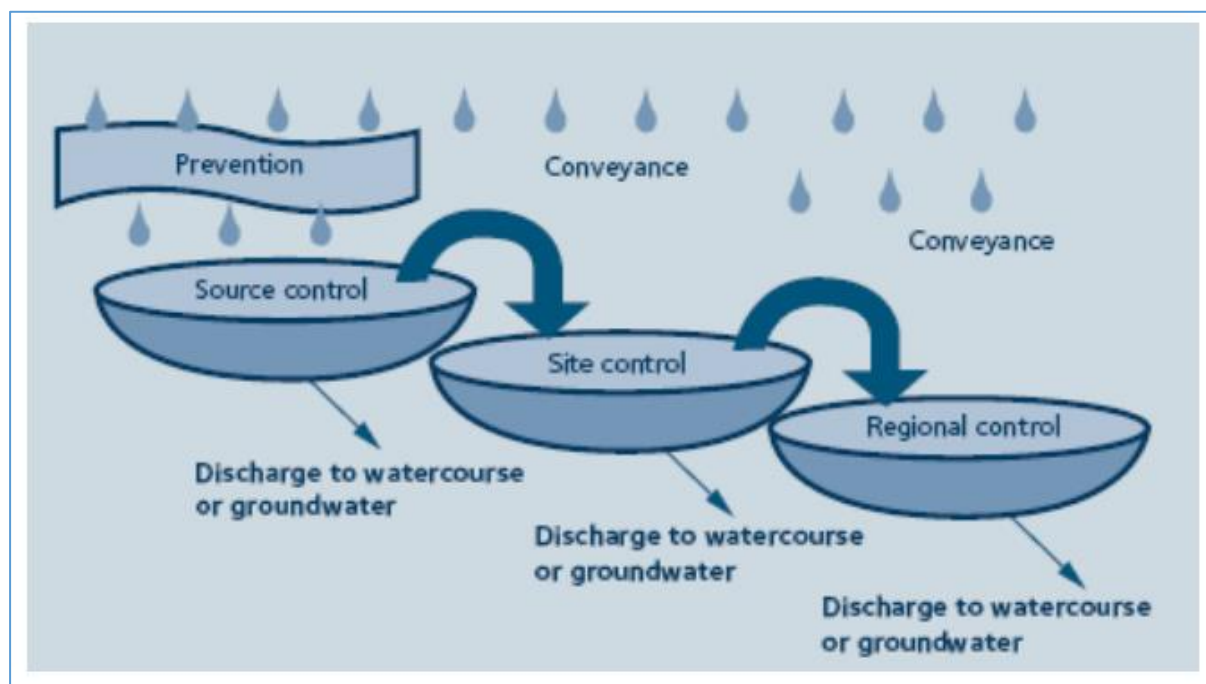


Figure 4 – SuDS Management Train

6. SuDS PROPOSALS FOR DEVELOPMENT

In accordance with the CIRIA SuDS Manual C753 and Policy SI 13 of the London Plan, the SuDS hierarchy has been considered in relation to the site-specific constraints and its surroundings. Table 4 below outlines the hierarchical approach considered for the development at 400 Thames Valley Park, Reading, RG6 1PT.

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 wall mounted rainwater harvesting tanks have been provided	Yes
Rainwater Full Infiltration to Ground (Source Control)	Infiltration devices and/or soakaways. Surface water runoff stored on site and gradually percolating into receiving ground	The underlying geology is unsuitable for infiltration	No
Rainwater Partial Infiltration to Ground (Source Control)	Installation of permeable/porous surfacing	Permeable Paving is proposed on all new hardstanding areas	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	There is no scope to provide any areas of green or sedum roof or any available space for any other forms of above ground SuDS	Yes

Rainwater discharge direct to a watercourse	All surface water runoff on site discharged at a restricted rate to a nearby watercourse	Consultation of EA Maps and survey information shows no nearby watercourses to site	No
Controlled rainwater discharge to a surface water sewer or drain	All surface water runoff on site is 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	All surface water runoff will discharge into a below ground attenuation tank, as seen in Appendix A, sized for a 1 in 100 year +45% CC storm event. This will then discharge into an existing surface water sewer.	Yes
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 4: SuDS Hierarchy

7. PROPOSED SuDS SOLUTION

In order to ensure that the SuDS management train has been considered, two wall mounted rainwater harvesting tanks have been proposed in order to promote rainwater re-use.

Due to the underlying geology consisting of clay, infiltration forms of SuDS were deemed unsuitable. Therefore, all surface water run off had to be attenuated and discharge at a rate of 27.2 l/s, which is the 3x $Q_{bar(urban)}$ for this site to provide a betterment of 90% from the pre-development flow rate of 260.1 l/s.

A detailed hydraulic model was built, using Infodrainage, to simulate rainfall events for a 1 in 100 year storm event, with a 45% allowance for climate change using FSR Rainfall data with a restricted flow discharging at a rate of 27.2 l/s, which is the 3 x $Q_{bar(urban)}$ for this site. The results of the hydraulic model can be found in Appendix C.

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. The proposed SuDS layout plan is shown on drawing number C3277-03 in Appendix A.

The reduction in surface water run off for a 1 in 100 year storm event following the inclusion of the SuDS proposed will be 90%.

8. TIMESCALE AND MAINTENANCE OF DRAINAGE 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 communal drains.

The following outline maintenance strategy sets out recommended timescales for maintenance of the proposed drainage works, in line with CIRIA SuDS Design Guide:

- Regular inspection will comprise the inspection and cleaning of catchment, gutters, filters and tanks to reduce the likelihood of contamination, this is recommended to be carried out every 3 to 6 months.
- Any flow control device should be checked every 3 months for the accumulation of debris/ silt, in order to ensure that there are no blockages.
- The catchpit chamber and flow control to the attenuation tank should be checked and cleaned every 3 months for the accumulation of debris/ silt, in order to ensure that there are no blockages.

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 5: Operation and maintenance requirement for RWH systems.

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 6: Operation and maintenance requirements for pervious pavements.

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

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance).	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for 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 attenuation storage tanks

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 8: 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.

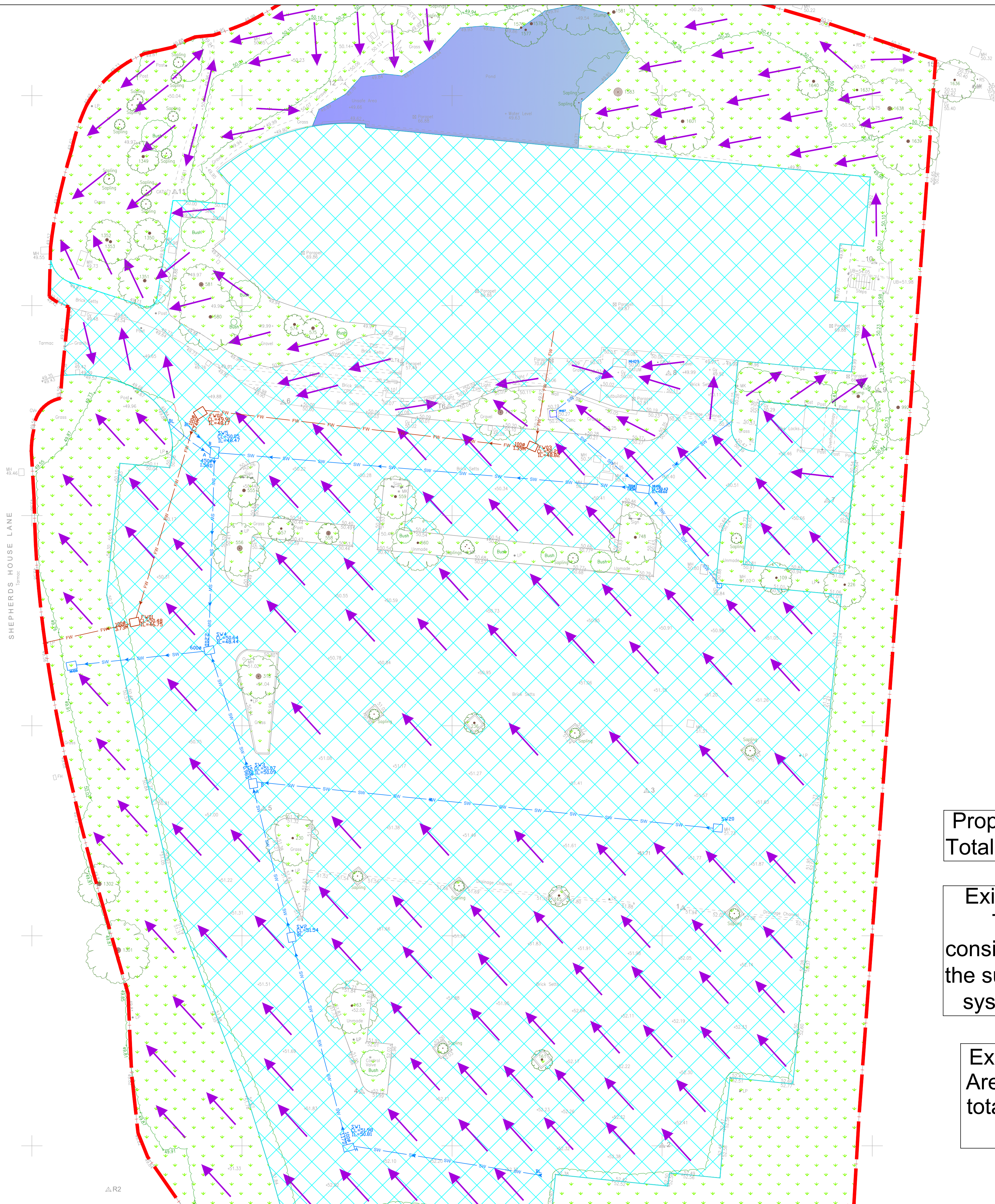
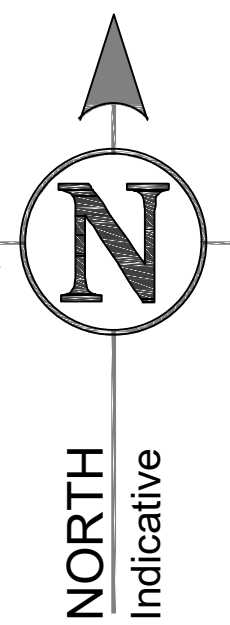
9. CONCLUSIONS

The purpose of this report is to satisfy the local planning authority that the proposed building is not a risk of flooding and will not increase flood risk at the site or elsewhere.

The flood risk from all sources has been assessed and the proposed development will incorporate a suitable SuDS solution to ensure that the proposals do not increase flood risk.

The reduction in surface water run off for a 1 in 100 year storm event following the inclusion of the SuDS proposed will be 90%.

APPENDIX A - DRAWINGS



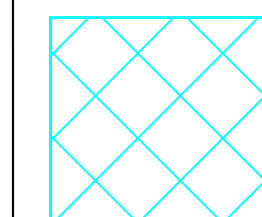
Proposed Red Boundary
Total Area is App. 9178m²

Existing and Proposed
Total Area that is
considered to contribute to
the surface water drainage
system is App. 5800m²

Existing Impermeable
Area is App. 63% from
total proposed red site
boundary.

DRAWING TO BE PRINTED IN COLOUR.

KEY:



Existing Impermeable Area from roofs and pavements of existing structures. Shape of structures as per topographical survey. The area hatched is the one considered it will contribute to the SW drainage network.



Existing Soft Areas as per Topographical survey. Soft areas include grass, shrubs and trees but for ease of reference is shown as same hatch. This hatch is also used for small gravel footpath that is not considered to contribute to the existing drainage system.



Existing Pond within the site boundary. Currently there is no information about any outlets or overflows. Details TBC in subsequent design stages.



Proposed Site Boundary.



Existing spot levels as per topographical survey provided that are not to AOD.



Existing SW drainage system from site.



Existing FW drainage system from site



Existing exceedance flow route for surface water in case of extreme storm events. Routes are based on the topographical survey.

NOTES:

1. DRAWING WILL NEED TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS FROM ARCHITECT, LANDSCAPE ARCHITECT, STRUCTURAL ENGINEER AND M&E.
2. EXISTING LEVELS ARE BASED ON INFORMATION FROM THE TOPOGRAPHICAL SURVEY.
3. CURRENTLY THE EXISTING EXTERNAL LEVELS ARE ASSUMED TO BE KEPT THEREFORE THIS DRAWING WILL BE FOR BOTH EXISTING AND PROPOSED IMPERMEABLE AREAS AND EXCEEDANCE FLOW ROUTES.

NOT FOR CONSTRUCTION

IMPORTANT

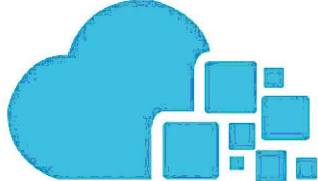
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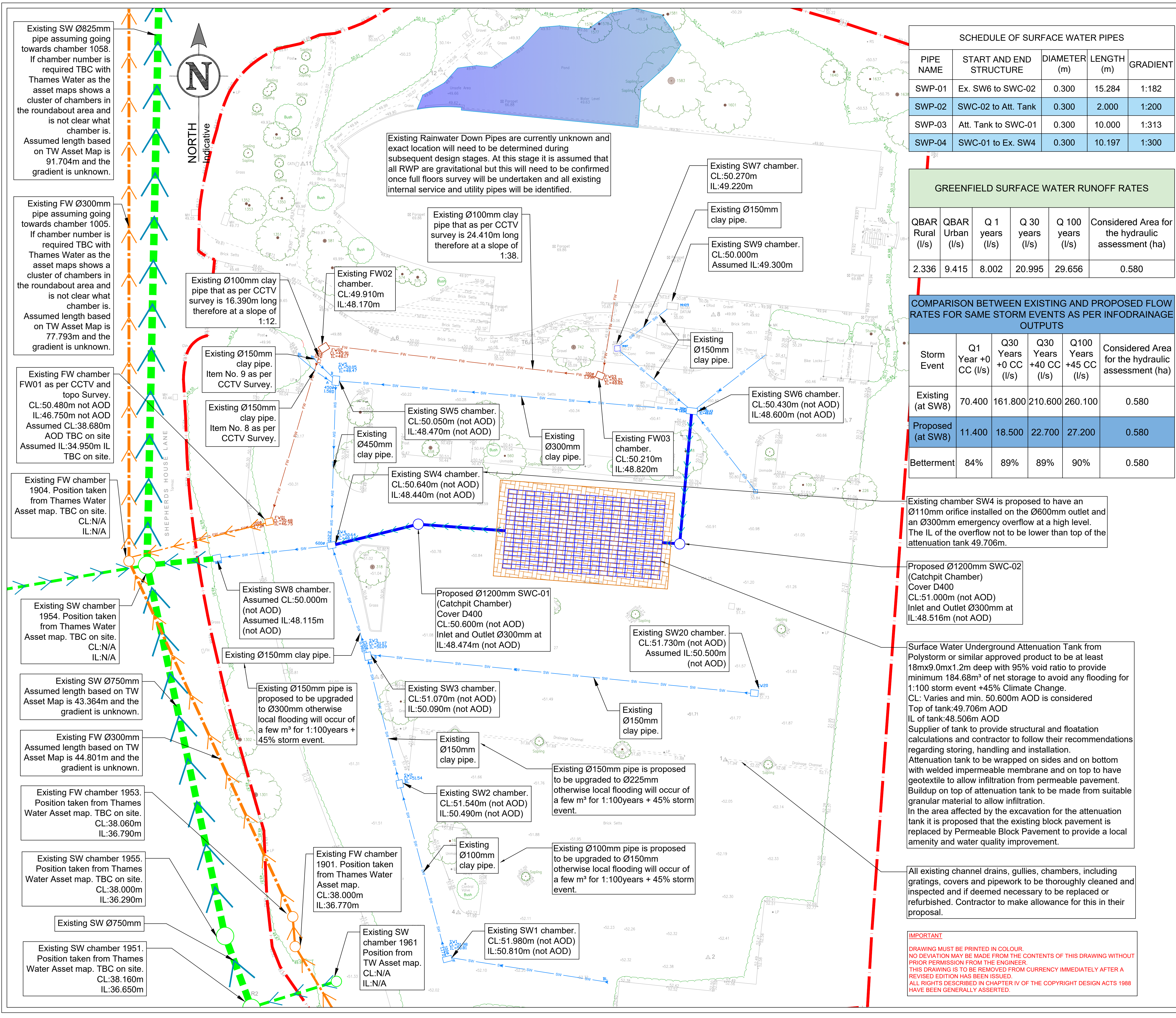
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C3277 - 400 Thames Valley Park, Reading, RG6 1PT

TITLE:
Pre and Post-Development Impermeable Areas and Exceedance Flow Routes.

CLIENT:
TVP Investments Limited

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CHECKED BY: S.L	DATE: 16-07-24	APPROVED BY: S.L	DATE: 16-07-24
DRN BY: M.H	SCALE: 1:200	DRAWING NUMBER: C3277-01	REV: A
DATE: 16-07-24	SIZE: A1		



SCHEDULE OF SURFACE WATER PIPES				
PIPE NAME	START AND END STRUCTURE	DIAMETER (m)	LENGTH (m)	GRADIENT
SWP-01	Ex. SW6 to SWC-02	0.300	15.284	1:182
SWP-02	SWC-02 to Att. Tank	0.300	2.000	1:200
SWP-03	Att. Tank to SWC-01	0.300	10.000	1:313
SWP-04	SWC-01 to Ex. SW4	0.300	10.197	1:300

GREENFIELD SURFACE WATER RUNOFF RATES					
QBAR Rural (l/s)	QBAR Urban (l/s)	Q 1 years (l/s)	Q 30 years (l/s)	Q 100 years (l/s)	Considered Area for the hydraulic assessment (ha)
2.336	9.415	8.002	20.995	29.656	0.580

COMPARISON BETWEEN EXISTING AND PROPOSED FLOW RATES FOR SAME STORM EVENTS AS PER INFODRAINAGE OUTPUTS					
Storm Event	Q1 Year +0 CC (l/s)	Q30 Years +0 CC (l/s)	Q30 Years +40 CC (l/s)	Q100 Years +45 CC (l/s)	Considered Area for the hydraulic assessment (ha)
Existing (at SW8)	70.400	161.800	210.600	260.100	0.580
Proposed (at SW8)	11.400	18.500	22.700	27.200	0.580
Betterment	84%	89%	89%	90%	0.580

DRAWING TO BE PRINTED IN COLOUR.

- KEY:
- Existing SW drainage system from site.
 - Existing FW drainage system from site.
 - Existing SW sewer owned by TW.
 - Existing FW sewer owned by TW.
 - Proposed Surface Water Pipes.
 - Proposed Site Boundary.
 - Proposed SW Manhole Catchpit Chamber.
 - Existing SW Chambers owned by TW.
 - Existing FW Chambers owned by TW.
 - Existing Levels as per topographical survey not to AOD.
 - Proposed Permeable pavement as per Landscape Architect Specification. TBC. Permeable pavement not considered for hydraulic storage.
 - Proposed geocellular underground attenuation tank to be Polystorm or similar approved product. Supplier to provide structural calculation and guidance for installation.
 - Existing Pond within the site boundary. Currently there is no information about any outlets or overflows. Details TBC in subsequent design stages.

- NOTES:
- DRAWING WILL NEED TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS FROM ARCHITECT, LANDSCAPE ARCHITECT, STRUCTURAL ENGINEER AND M&E.
 - EXISTING AND PROPOSED LEVELS ARE BASED ON INFORMATION THE TOPOGRAPHICAL SURVEY. CL TBC ON SITE PRIOR CONSTRUCTION.
 - ATTENUATION RATE OF 27.2l/s IS BASED ON THE 3 x URBAN Qbar Value.
 - EXISTING ROUTES FOR UNDERGROUND UTILITIES ARE CURRENTLY UNKNOWN.
 - ROOT PROTECTION AREAS ARE CURRENTLY UNKNOWN AND DESIGN WILL NEED TO BE REVIEWED ONCE THAT INFORMATION IS MADE AVAILABLE.
 - ALL MATERIALS AND WORKS TO BE DONE AS PER GUIDANCE FROM BUILDING REGULATIONS PART H.
 - CONTRACTOR IS RESPONSIBLE TO COORDINATE THIS DRAINAGE DESIGN WITH EXISTING AND PROPOSED UNDERGROUND UTILITIES. ANY UNAVOIDABLE CLASH TO BE REPORTED TO THE DRAINAGE DESIGN ENGINEER AS SOON AS POSSIBLE.
 - THAMES WATER TO BE CONSULTED REGARDING NEW FLOW RATES.
 - CONTRACTOR TO MAKE ALLOWANCE FOR INSPECTION OF THE ENTIRE EXISTING DRAINAGE SYSTEM AND REFURBISHMENTS ARE DEEMED REQUIRED ON SITE BASED ON CONDITION.

NOT FOR CONSTRUCTION

REV	DATE	DRAWN	DESCRIPTION	CHECK	APPR.
A	16-07-24	M.H	For Information.	SL	SL

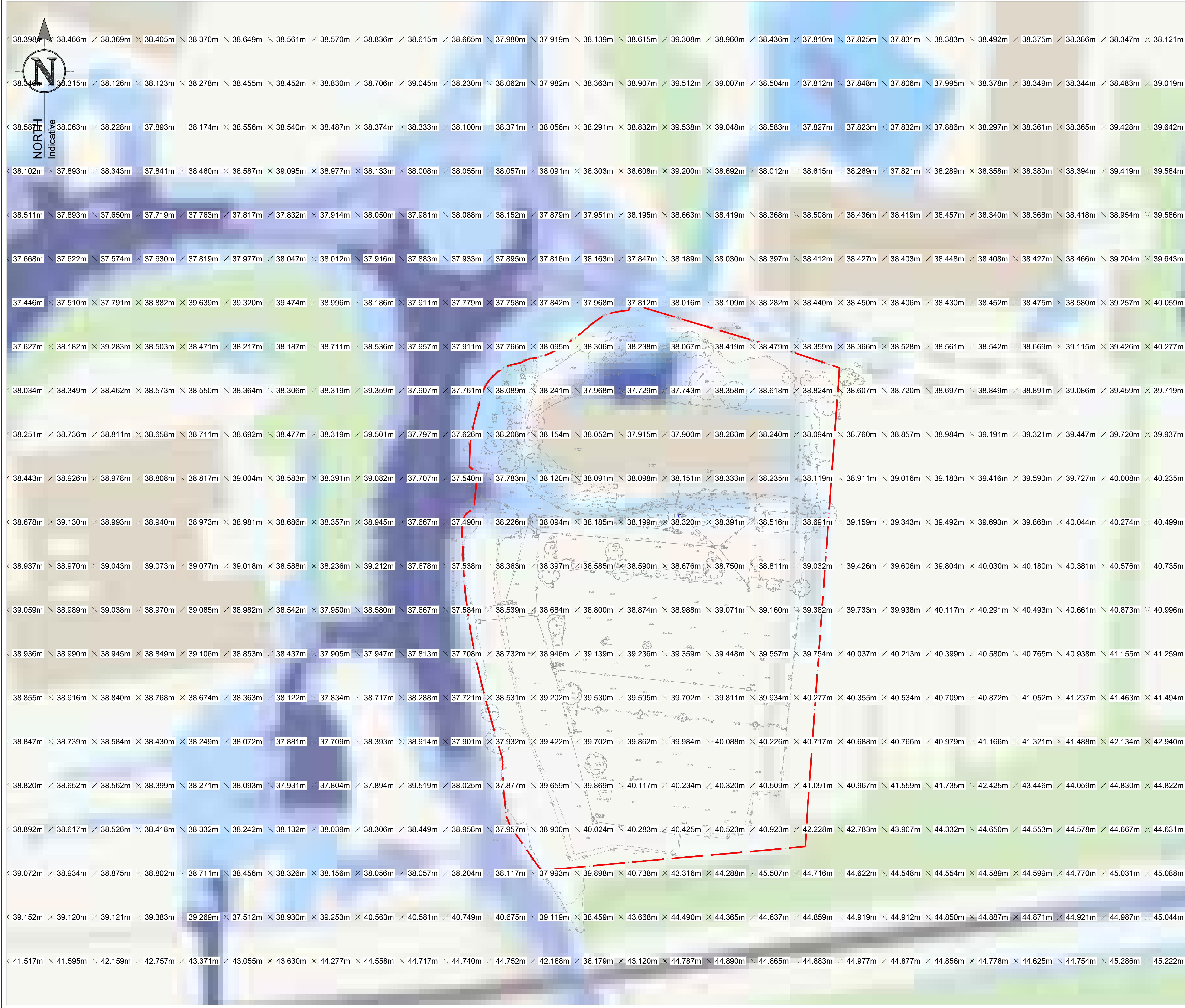
PROJECT:
C3277 - 400 Thames Valley Park, Reading, RG6 1PT

TITLE:
Proposed Surface Water Strategy Layout.

CLIENT:
TVP Investments Limited

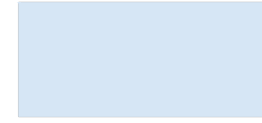
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CHECKED BY: S.L	DATE: 16-07-24	APPROVED BY: S.L	DATE: 16-07-24
DRN BY: M.H	SCALE: 1:200	DRAWING NUMBER: C3277-02	REV: A
DATE: 16-07-24	SIZE: A1		



DRAWING TO BE PRINTED IN COLOUR.

KEY:

-  High risk of flooding extent from surface water as per the online maps from the Environmental Agency. More than 3.3% chance each year.
-  Medium risk of flooding extent from surface water as per the online maps from the Environmental Agency. Between 1% and 3.3% chance each year.
-  Low risk of flooding extent from surface water as per the online maps from the Environmental Agency. Between 0.1% and 1% chance each year.
-  Very Low risk of flooding extent from surface water as per the online maps from the Environmental Agency.
-  Proposed Site Boundary.
-  39.590m Existing Levels as per LIDAR data.

FOR INFORMATION

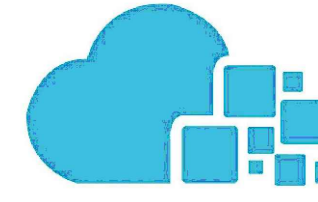
IMPORTANT
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A	16-07-24	M.H	For Information.	SL	SL

PROJECT:
C3277 - 400 Thames Valley Park, Reading, RG6 1PT

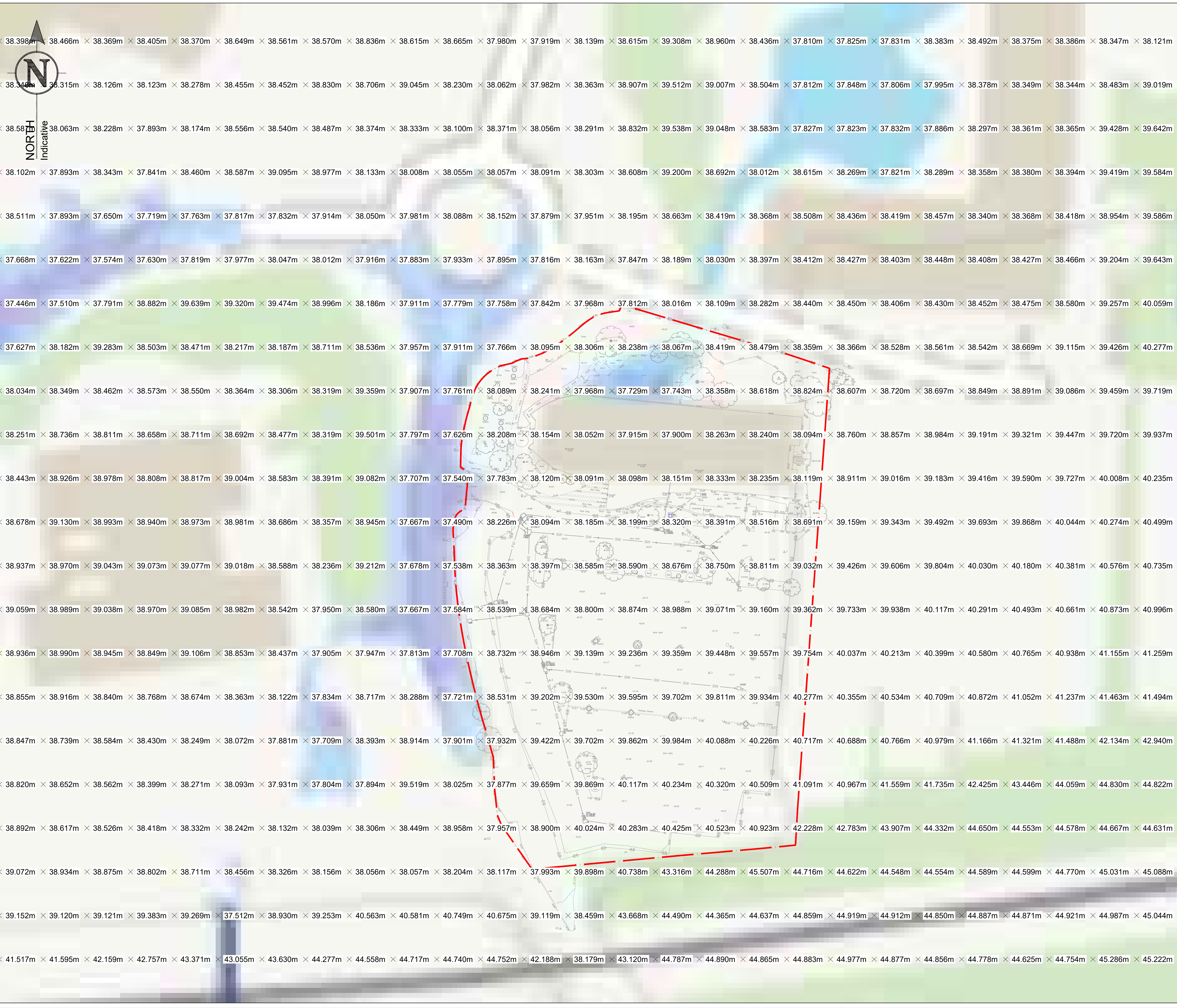
TITLE:
Surface Water Flood Extent as per Environmental Agency data.

CLIENT:
TVP Investments Limited



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CHECKED BY: S.L	DATE: 16-07-24	APPROVED BY: S.L	DATE: 16-07-24
DRN BY: M.H	SCALE: 1:400	DRAWING NUMBER: C3277-04	REV: A
DATE: 16-07-24	SIZE: A1		



DRAWING TO BE PRINTED IN COLOUR.

KEY:

- Above 90cm of surface water flood water as per the online maps from the Environmental Agency.
- Between 30cm and 90cm of surface water flood water as per the online maps from the Environmental Agency.
- Below 30cm of surface water flood water as per the online maps from the Environmental Agency.
- Proposed Site Boundary.
- × 39.590m

 Existing Levels as per LIDAR data.

FOR INFORMATION

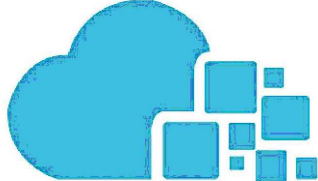
IMPORTANT
DRAWING MUST BE PRINTED IN COLOUR.
NO DEVIATION MAY BE MADE FROM THE CONTENTS OF THIS DRAWING WITHOUT PRIOR PERMISSION FROM THE ENGINEER.
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REV	DATE	DRAWN	DESCRIPTION	CHECK	APPR.
A	16-07-24	M.H	For Information.	SL	SL

PROJECT:
C3277 - 400 Thames Valley Park, Reading, RG6 1PT

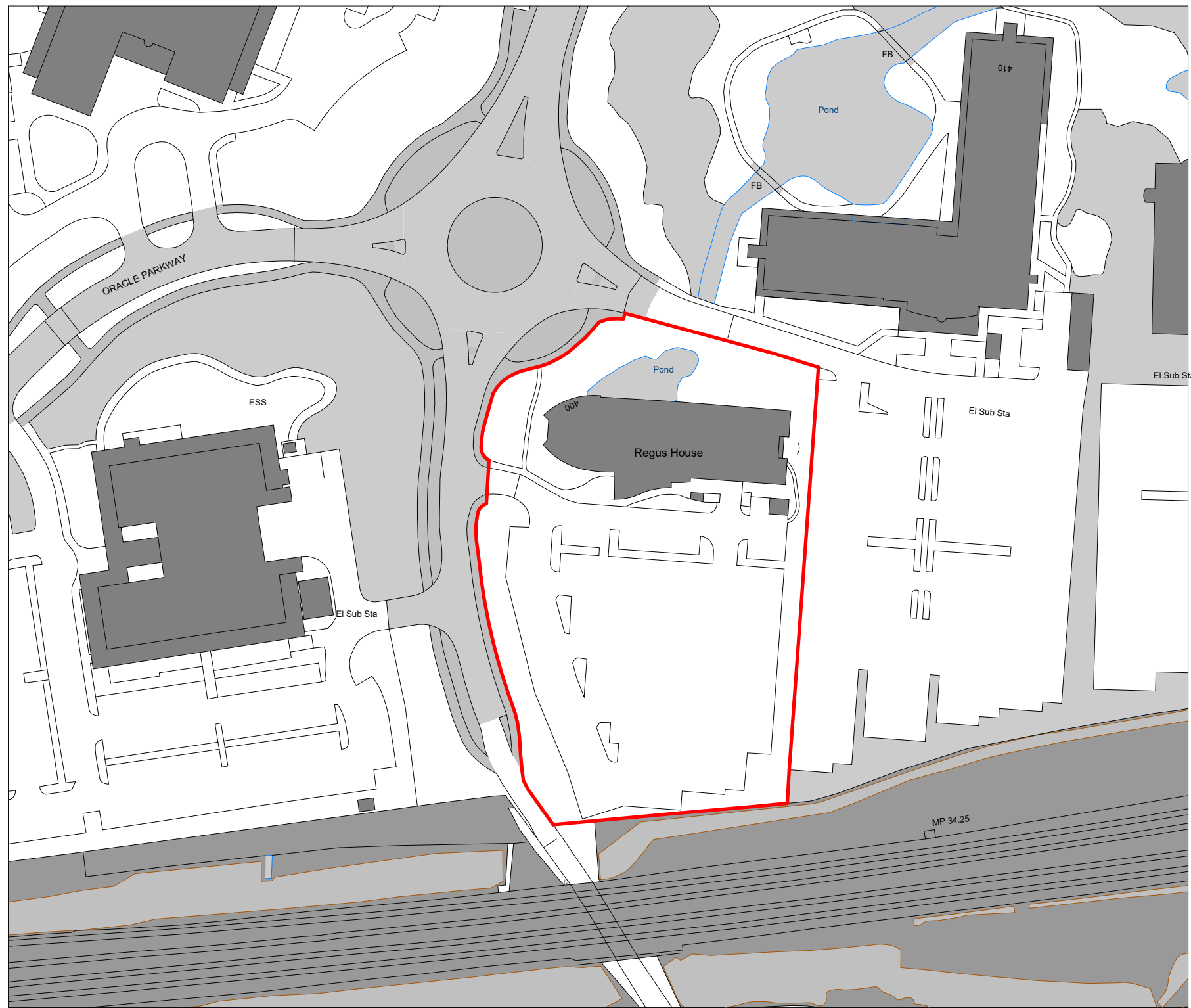
TITLE:
Surface Water Flood Depth as per Environmental Agency data.

CLIENT:
TVP Investments Limited

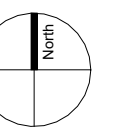
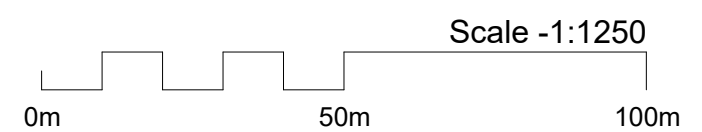


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CHECKED BY: S.L	DATE: 16-07-24	APPROVED BY: S.L	DATE: 16-07-24
DRN BY: M.H	SCALE: 1:400	DRAWING NUMBER: C3277-05	REV: A
DATE: 16-07-24	SIZE: A1		



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APPENDIX B – SURFACE WATER RUN OFF CALCULATIONS & INFODRAINAGE HYDRAULIC MODELLING REPORT

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
	Report Details: Type: Junctions Storm Phase: Phase		
Kemp House:: 124 City Road London EC1V 2NX			

Outlets			
Junction	Outlet Name	Outgoing Connection	Outlet Type
SW1	Outlet	Pipe	Free Discharge
SW2	Outlet	Pipe (1)	Free Discharge
SW3	Outlet	Pipe (3)	Free Discharge
SW4	Outlet	Pipe (8)	Orifice
	Diameter (m)	0.110	
	Coefficient of Discharge	0.600	
	Invert Level (m)	48.440	
SW5	Outlet	Pipe (7)	Free Discharge
	Outlet (1)	Pipe (11)	Free Discharge
SW6	Outlet	Pipe (6)	Free Discharge
SW7	Outlet	Pipe (5)	Free Discharge
SW9	Outlet	Pipe (4)	Free Discharge
SW20	Outlet	Pipe (2)	Free Discharge
SWC-01	Outlet	Pipe (10)	Free Discharge
SWC-02	Outlet	Pipe (12)	Free Discharge

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Stormwater Controls Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House: 124 City Road London EC1V 2NX		



Attenuation Tank

Type : Cellular Storage

Dimensions

Exceedance Level (m)	50.600
Depth (m)	1.200
Base Level (m)	48.506
Number of Crates Long	18
Number of Crates Wide	18
Number of Crates High	3
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	185.574

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Inflow Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		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	SW1		Time of Concentration	0.059	100	0	100	0.059
Catchment Area (1)	SW2		Time of Concentration	0.090	100	0	100	0.090
Catchment Area (2)	SW20		Time of Concentration	0.042	100	0	100	0.042
Catchment Area (3)	SW3		Time of Concentration	0.043	100	0	100	0.043
Catchment Area (4)	SWC-02		Time of Concentration	0.104	100	0	100	0.104
Catchment Area (5)	SW6		Time of Concentration	0.064	100	0	100	0.064
Catchment Area (6)	SW9		Time of Concentration	0.060	100	0	100	0.060
Catchment Area (7)	SW7		Time of Concentration	0.024	100	0	100	0.024
Catchment Area (8)	SW5		Time of Concentration	0.094	100	0	100	0.094
TOTAL		0.0		0.580				0.580

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
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 (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England And Wales
M5-60 (mm)	18.6
Ratio R	0.450
Summer	☒
Winter	☒

Return Period

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

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024			
Report Details: Type: Inflows Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L		
		Approved By: S.L			
		Kemp House: 124 City Road London EC1V 2NX			



Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 100 years: +45 %: 15 mins: Winter	0.06	36.7	17.099
Catchment Area (1)	FSR: 100 years: +45 %: 15 mins: Winter	0.09	56.3	26.222
Catchment Area (2)	FSR: 100 years: +45 %: 15 mins: Winter	0.04	26.0	12.098
Catchment Area (3)	FSR: 100 years: +45 %: 15 mins: Winter	0.04	26.9	12.531
Catchment Area (4)	FSR: 100 years: +45 %: 15 mins: Winter	0.10	64.7	30.125
Catchment Area (5)	FSR: 100 years: +45 %: 15 mins: Winter	0.06	40.0	18.596
Catchment Area (6)	FSR: 100 years: +45 %: 15 mins: Winter	0.06	37.2	17.321
Catchment Area (7)	FSR: 100 years: +45 %: 15 mins: Winter	0.02	14.8	6.892
Catchment Area (8)	FSR: 100 years: +45 %: 15 mins: Winter	0.09	58.4	27.187

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House: 124 City Road London EC1V 2NX		



Critical Storm Per Item: Rank By: Max. Outflow

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
SW1	FSR: 100 years: +45 %: 15 mins: Winter	51.98 0	50.81 0	51.454	0.644	36.7	0.729	0.000	31.4	17.099	Surcharged
SW2	FSR: 100 years: +45 %: 15 mins: Winter	51.54 0	50.49 0	50.758	0.268	87.8	0.303	0.000	85.0	43.304	Surcharged
SW3	FSR: 100 years: +45 %: 15 mins: Winter	51.07 0	50.09 0	50.208	0.118	133.1	0.134	0.000	132.1	67.824	OK
SW4	FSR: 100 years: +45 %: 120 mins: Winter	50.64 0	48.44 0	49.666	1.226	56.7	3.119	0.000	27.2	341.678	Surcharged
SW5	FSR: 100 years: +45 %: 15 mins: Winter	50.05 0	48.47 0	49.348	0.878	58.4	1.551	0.000	51.3	29.978	Surcharged
SW6	FSR: 100 years: +45 %: 15 mins: Winter	50.43 0	48.60 0	49.352	0.752	105.0	1.328	0.000	99.4	55.974	Surcharged
SW7	FSR: 100 years: +45 %: 15 mins: Winter	50.27 0	49.22 0	49.704	0.484	42.7	0.856	0.000	34.7	24.080	Surcharged
SW8 - Outfall	FSR: 100 years: +45 %: 120 mins: Winter	50.00 0	48.11 5	48.181	0.066	27.2	0.000	0.000	27.2	267.796	OK
SW9	FSR: 100 years: +45 %: 15 mins: Winter	50.00 0	49.30 0	49.951	0.651	37.2	1.150	0.000	27.9	17.310	Flood Risk
SW20	FSR: 100 years: +45 %: 15 mins: Winter	51.73 0	50.50 0	50.906	0.406	26.0	0.459	0.000	21.2	12.111	Surcharged
SWC-01	FSR: 100 years: +45 %: 60 mins: Winter	50.60 0	48.47 4	49.664	1.190	59.7	1.346	0.000	15.5	125.952	Surcharged
SWC-02	FSR: 100 years: +45 %: 15 mins: Winter	51.00 0	48.51 6	49.354	0.838	164.1	0.948	0.000	161.2	81.594	Surcharged

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House:: 124 City Road London EC1V 2NX		



Critical Storm Per Item: Rank By: Max. Avg. Depth

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. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Attenuation Tank	FSR: 100 years: +45 %: 120 mins: Winter	49.668	49.668	1.162	1.162	82.2	178.772	0.000	0.000	14.7	144.810	3.666	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
	Report Details: Type: Junctions Storm Phase: Phase		
Kemp House:: 124 City Road London EC1V 2NX			

Outlets			
Junction	Outlet Name	Outgoing Connection	Outlet Type
SW1	Outlet	Pipe	Free Discharge
SW2	Outlet	Pipe (1)	Free Discharge
SW3	Outlet	Pipe (3)	Free Discharge
SW4	Outlet	Pipe (8)	Orifice
	Diameter (m)	0.110	
	Coefficient of Discharge	0.600	
	Invert Level (m)	48.440	
SW5	Outlet	Pipe (7)	Free Discharge
	Outlet (1)	Pipe (11)	Free Discharge
SW6	Outlet	Pipe (6)	Free Discharge
SW7	Outlet	Pipe (5)	Free Discharge
SW9	Outlet	Pipe (4)	Free Discharge
SW20	Outlet	Pipe (2)	Free Discharge
SWC-01	Outlet	Pipe (10)	Free Discharge
SWC-02	Outlet	Pipe (12)	Free Discharge

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
Report Details: Type: Stormwater Controls Storm Phase: Phase		Kemp House:: 124 City Road London EC1V 2NX		



Attenuation Tank

Type : Cellular Storage

Dimensions

Exceedance Level (m)	50.600
Depth (m)	1.200
Base Level (m)	48.506
Number of Crates Long	18
Number of Crates Wide	18
Number of Crates High	3
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	185.574

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Inflow Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		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	SW1		Time of Concentration	0.059	100	0	100	0.059
Catchment Area (1)	SW2		Time of Concentration	0.090	100	0	100	0.090
Catchment Area (2)	SW20		Time of Concentration	0.042	100	0	100	0.042
Catchment Area (3)	SW3		Time of Concentration	0.043	100	0	100	0.043
Catchment Area (4)	SWC-02		Time of Concentration	0.104	100	0	100	0.104
Catchment Area (5)	SW6		Time of Concentration	0.064	100	0	100	0.064
Catchment Area (6)	SW9		Time of Concentration	0.060	100	0	100	0.060
Catchment Area (7)	SW7		Time of Concentration	0.024	100	0	100	0.024
Catchment Area (8)	SW5		Time of Concentration	0.094	100	0	100	0.094
TOTAL		0.0		0.580				0.580

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
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 (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England And Wales
M5-60 (mm)	18.6
Ratio R	0.450
Summer	☒
Winter	☒

Return Period

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

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024			
Report Details: Type: Inflows Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L		
		Approved By: S.L			
		Kemp House: 124 City Road London EC1V 2NX			



Summary Results for Catchment Area: Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.06	34.9	15.273
FSR: 100 years: +45 %: 15 mins: Winter	0.06	36.7	17.099
FSR: 100 years: +45 %: 30 mins: Summer	0.06	22.7	19.667
FSR: 100 years: +45 %: 30 mins: Winter	0.06	23.8	22.019
FSR: 100 years: +45 %: 60 mins: Summer	0.06	19.3	24.134
FSR: 100 years: +45 %: 60 mins: Winter	0.06	17.4	27.011
FSR: 100 years: +45 %: 120 mins: Summer	0.06	13.6	28.691
FSR: 100 years: +45 %: 120 mins: Winter	0.06	11.0	32.138
FSR: 100 years: +45 %: 180 mins: Summer	0.06	10.5	31.404
FSR: 100 years: +45 %: 180 mins: Winter	0.06	8.1	35.170
FSR: 100 years: +45 %: 240 mins: Summer	0.06	8.6	33.346
FSR: 100 years: +45 %: 240 mins: Winter	0.06	6.5	37.328
FSR: 100 years: +45 %: 360 mins: Summer	0.06	6.4	36.014
FSR: 100 years: +45 %: 360 mins: Winter	0.06	4.7	40.361

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by:	Checked by:	Approved By:
	M.H	S.L	S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Kemp House:: 124 City Road London EC1V 2NX		



FSR: 100 years: +45 %: 480 mins: Summer	0.06	5.1	37.920
FSR: 100 years: +45 %: 480 mins: Winter	0.06	3.7	42.514
FSR: 100 years: +45 %: 600 mins: Summer	0.06	4.3	39.557
FSR: 100 years: +45 %: 600 mins: Winter	0.06	3.1	44.314
FSR: 100 years: +45 %: 720 mins: Summer	0.06	3.7	40.882
FSR: 100 years: +45 %: 720 mins: Winter	0.06	2.7	45.807
FSR: 100 years: +45 %: 960 mins: Summer	0.06	2.9	43.052
FSR: 100 years: +45 %: 960 mins: Winter	0.06	2.1	48.230
FSR: 100 years: +45 %: 1440 mins: Summer	0.06	2.1	46.297
FSR: 100 years: +45 %: 1440 mins: Winter	0.06	1.5	51.936

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024			
	Designed by: M.H	Checked by: S.L	Approved By: S.L	
	Report Details: Type: Inflows Summary Storm Phase: Phase			
Kemp House:: 124 City Road London EC1V 2NX				



Summary Results for Catchment Area (1): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.09	53.5	23.423
FSR: 100 years: +45 %: 15 mins: Winter	0.09	56.3	26.222
FSR: 100 years: +45 %: 30 mins: Summer	0.09	34.7	30.149
FSR: 100 years: +45 %: 30 mins: Winter	0.09	36.5	33.767
FSR: 100 years: +45 %: 60 mins: Summer	0.09	29.6	37.007
FSR: 100 years: +45 %: 60 mins: Winter	0.09	26.6	41.429
FSR: 100 years: +45 %: 120 mins: Summer	0.09	20.9	43.987
FSR: 100 years: +45 %: 120 mins: Winter	0.09	16.8	49.264
FSR: 100 years: +45 %: 180 mins: Summer	0.09	16.1	48.145
FSR: 100 years: +45 %: 180 mins: Winter	0.09	12.4	53.919
FSR: 100 years: +45 %: 240 mins: Summer	0.09	13.2	51.111
FSR: 100 years: +45 %: 240 mins: Winter	0.09	10.0	57.234
FSR: 100 years: +45 %: 360 mins: Summer	0.09	9.8	55.278
FSR: 100 years: +45 %: 360 mins: Winter	0.09	7.2	61.898

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by:	Checked by:	Approved By:
	M.H	S.L	S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Kemp House:: 124 City Road London EC1V 2NX		



FSR: 100 years: +45 %: 480 mins: Summer	0.09	7.9	58.179
FSR: 100 years: +45 %: 480 mins: Winter	0.09	5.7	65.160
FSR: 100 years: +45 %: 600 mins: Summer	0.09	6.6	60.637
FSR: 100 years: +45 %: 600 mins: Winter	0.09	4.8	67.914
FSR: 100 years: +45 %: 720 mins: Summer	0.09	5.7	62.703
FSR: 100 years: +45 %: 720 mins: Winter	0.09	4.1	70.198
FSR: 100 years: +45 %: 960 mins: Summer	0.09	4.5	66.021
FSR: 100 years: +45 %: 960 mins: Winter	0.09	3.3	73.953
FSR: 100 years: +45 %: 1440 mins: Summer	0.09	3.2	70.958
FSR: 100 years: +45 %: 1440 mins: Winter	0.09	2.3	79.488

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
	Report Details: Type: Inflows Summary Storm Phase: Phase		
	Kemp House:: 124 City Road London EC1V 2NX		





Summary Results for Catchment Area (2): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.04	24.7	10.806
FSR: 100 years: +45 %: 15 mins: Winter	0.04	26.0	12.098
FSR: 100 years: +45 %: 30 mins: Summer	0.04	16.0	13.914
FSR: 100 years: +45 %: 30 mins: Winter	0.04	16.9	15.577
FSR: 100 years: +45 %: 60 mins: Summer	0.04	13.6	17.071
FSR: 100 years: +45 %: 60 mins: Winter	0.04	12.3	19.114
FSR: 100 years: +45 %: 120 mins: Summer	0.04	9.6	20.298
FSR: 100 years: +45 %: 120 mins: Winter	0.04	7.8	22.744
FSR: 100 years: +45 %: 180 mins: Summer	0.04	7.4	22.215
FSR: 100 years: +45 %: 180 mins: Winter	0.04	5.7	24.883
FSR: 100 years: +45 %: 240 mins: Summer	0.04	6.1	23.587
FSR: 100 years: +45 %: 240 mins: Winter	0.04	4.6	26.412
FSR: 100 years: +45 %: 360 mins: Summer	0.04	4.5	25.493
FSR: 100 years: +45 %: 360 mins: Winter	0.04	3.3	28.576

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
	Report Details: Type: Inflows Summary Storm Phase: Phase		
Kemp House:: 124 City Road London EC1V 2NX			 Nimbus ENGINEERING CONSULTANTS

FSR: 100 years: +45 %: 480 mins: Summer	0.04	3.6	26.842
FSR: 100 years: +45 %: 480 mins: Winter	0.04	2.6	30.063
FSR: 100 years: +45 %: 600 mins: Summer	0.04	3.0	27.975
FSR: 100 years: +45 %: 600 mins: Winter	0.04	2.2	31.359
FSR: 100 years: +45 %: 720 mins: Summer	0.04	2.6	28.911
FSR: 100 years: +45 %: 720 mins: Winter	0.04	1.9	32.390
FSR: 100 years: +45 %: 960 mins: Summer	0.04	2.1	30.481
FSR: 100 years: +45 %: 960 mins: Winter	0.04	1.5	34.099
FSR: 100 years: +45 %: 1440 mins: Summer	0.04	1.5	32.779
FSR: 100 years: +45 %: 1440 mins: Winter	0.04	1.1	36.720

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024			
Report Details: Type: Inflows Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L		
		Approved By: S.L		Kemp House: 124 City Road London EC1V 2NX	



Summary Results for Catchment Area (3): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.04	25.6	11.194
FSR: 100 years: +45 %: 15 mins: Winter	0.04	26.9	12.531
FSR: 100 years: +45 %: 30 mins: Summer	0.04	16.6	14.407
FSR: 100 years: +45 %: 30 mins: Winter	0.04	17.4	16.130
FSR: 100 years: +45 %: 60 mins: Summer	0.04	14.1	17.677
FSR: 100 years: +45 %: 60 mins: Winter	0.04	12.7	19.793
FSR: 100 years: +45 %: 120 mins: Summer	0.04	10.0	21.018
FSR: 100 years: +45 %: 120 mins: Winter	0.04	8.0	23.542
FSR: 100 years: +45 %: 180 mins: Summer	0.04	7.7	23.031
FSR: 100 years: +45 %: 180 mins: Winter	0.04	6.0	25.759
FSR: 100 years: +45 %: 240 mins: Summer	0.04	6.3	24.427
FSR: 100 years: +45 %: 240 mins: Winter	0.04	4.8	27.372
FSR: 100 years: +45 %: 360 mins: Summer	0.04	4.7	26.394
FSR: 100 years: +45 %: 360 mins: Winter	0.04	3.5	29.578

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
	Report Details: Type: Inflows Summary Storm Phase: Phase		
Kemp House:: 124 City Road London EC1V 2NX			 Nimbus ENGINEERING CONSULTANTS

FSR: 100 years: +45 %: 480 mins: Summer	0.04	3.8	27.784
FSR: 100 years: +45 %: 480 mins: Winter	0.04	2.7	31.125
FSR: 100 years: +45 %: 600 mins: Summer	0.04	3.2	28.995
FSR: 100 years: +45 %: 600 mins: Winter	0.04	2.3	32.451
FSR: 100 years: +45 %: 720 mins: Summer	0.04	2.7	29.967
FSR: 100 years: +45 %: 720 mins: Winter	0.04	2.0	33.560
FSR: 100 years: +45 %: 960 mins: Summer	0.04	2.2	31.567
FSR: 100 years: +45 %: 960 mins: Winter	0.04	1.6	35.323
FSR: 100 years: +45 %: 1440 mins: Summer	0.04	1.5	33.955
FSR: 100 years: +45 %: 1440 mins: Winter	0.04	1.1	38.070

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024			
Report Details: Type: Inflows Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L		
		Approved By: S.L			
		Kemp House: 124 City Road London EC1V 2NX			



Summary Results for Catchment Area (4): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.10	61.5	26.909
FSR: 100 years: +45 %: 15 mins: Winter	0.10	64.7	30.125
FSR: 100 years: +45 %: 30 mins: Summer	0.10	39.9	34.645
FSR: 100 years: +45 %: 30 mins: Winter	0.10	42.0	38.791
FSR: 100 years: +45 %: 60 mins: Summer	0.10	34.0	42.515
FSR: 100 years: +45 %: 60 mins: Winter	0.10	30.6	47.597
FSR: 100 years: +45 %: 120 mins: Summer	0.10	24.0	50.543
FSR: 100 years: +45 %: 120 mins: Winter	0.10	19.3	56.593
FSR: 100 years: +45 %: 180 mins: Summer	0.10	18.5	55.317
FSR: 100 years: +45 %: 180 mins: Winter	0.10	14.3	61.956
FSR: 100 years: +45 %: 240 mins: Summer	0.10	15.2	58.739
FSR: 100 years: +45 %: 240 mins: Winter	0.10	11.5	65.768
FSR: 100 years: +45 %: 360 mins: Summer	0.10	11.2	63.518
FSR: 100 years: +45 %: 360 mins: Winter	0.10	8.3	71.133

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by:	Checked by:	Approved By:
	M.H	S.L	S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Kemp House:: 124 City Road London EC1V 2NX		



FSR: 100 years: +45 %: 480 mins: Summer	0.10	9.1	66.826
FSR: 100 years: +45 %: 480 mins: Winter	0.10	6.6	74.857
FSR: 100 years: +45 %: 600 mins: Summer	0.10	7.6	69.692
FSR: 100 years: +45 %: 600 mins: Winter	0.10	5.5	78.031
FSR: 100 years: +45 %: 720 mins: Summer	0.10	6.5	72.037
FSR: 100 years: +45 %: 720 mins: Winter	0.10	4.7	80.675
FSR: 100 years: +45 %: 960 mins: Summer	0.10	5.2	75.843
FSR: 100 years: +45 %: 960 mins: Winter	0.10	3.7	85.005
FSR: 100 years: +45 %: 1440 mins: Summer	0.10	3.7	81.536
FSR: 100 years: +45 %: 1440 mins: Winter	0.10	2.7	91.374

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024			
	Designed by: M.H	Checked by: S.L	Approved By: S.L	
	Report Details: Type: Inflows Summary Storm Phase: Phase			
Kemp House:: 124 City Road London EC1V 2NX				



Summary Results for Catchment Area (5): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.06	38.0	16.612
FSR: 100 years: +45 %: 15 mins: Winter	0.06	40.0	18.596
FSR: 100 years: +45 %: 30 mins: Summer	0.06	24.6	21.380
FSR: 100 years: +45 %: 30 mins: Winter	0.06	25.9	23.948
FSR: 100 years: +45 %: 60 mins: Summer	0.06	21.0	26.231
FSR: 100 years: +45 %: 60 mins: Winter	0.06	18.9	29.383
FSR: 100 years: +45 %: 120 mins: Summer	0.06	14.8	31.200
FSR: 100 years: +45 %: 120 mins: Winter	0.06	11.9	34.947
FSR: 100 years: +45 %: 180 mins: Summer	0.06	11.4	34.153
FSR: 100 years: +45 %: 180 mins: Winter	0.06	8.8	38.249
FSR: 100 years: +45 %: 240 mins: Summer	0.06	9.4	36.250
FSR: 100 years: +45 %: 240 mins: Winter	0.06	7.1	40.599
FSR: 100 years: +45 %: 360 mins: Summer	0.06	6.9	39.194
FSR: 100 years: +45 %: 360 mins: Winter	0.06	5.1	43.914

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by:	Checked by:	Approved By:
	M.H	S.L	S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Kemp House:: 124 City Road London EC1V 2NX		



FSR: 100 years: +45 %: 480 mins: Summer	0.06	5.6	41.250
FSR: 100 years: +45 %: 480 mins: Winter	0.06	4.1	46.163
FSR: 100 years: +45 %: 600 mins: Summer	0.06	4.7	43.001
FSR: 100 years: +45 %: 600 mins: Winter	0.06	3.4	48.193
FSR: 100 years: +45 %: 720 mins: Summer	0.06	4.0	44.482
FSR: 100 years: +45 %: 720 mins: Winter	0.06	2.9	49.797
FSR: 100 years: +45 %: 960 mins: Summer	0.06	3.2	46.832
FSR: 100 years: +45 %: 960 mins: Winter	0.06	2.3	52.460
FSR: 100 years: +45 %: 1440 mins: Summer	0.06	2.3	50.353
FSR: 100 years: +45 %: 1440 mins: Winter	0.06	1.6	56.388

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024			
Report Details: Type: Inflows Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L		
		Approved By: S.L			
		Kemp House: 124 City Road London EC1V 2NX			



Summary Results for Catchment Area (6): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.06	35.4	15.469
FSR: 100 years: +45 %: 15 mins: Winter	0.06	37.2	17.321
FSR: 100 years: +45 %: 30 mins: Summer	0.06	22.9	19.919
FSR: 100 years: +45 %: 30 mins: Winter	0.06	24.1	22.301
FSR: 100 years: +45 %: 60 mins: Summer	0.06	19.5	24.447
FSR: 100 years: +45 %: 60 mins: Winter	0.06	17.6	27.371
FSR: 100 years: +45 %: 120 mins: Summer	0.06	13.8	29.057
FSR: 100 years: +45 %: 120 mins: Winter	0.06	11.1	32.528
FSR: 100 years: +45 %: 180 mins: Summer	0.06	10.6	31.800
FSR: 100 years: +45 %: 180 mins: Winter	0.06	8.2	35.620
FSR: 100 years: +45 %: 240 mins: Summer	0.06	8.8	33.760
FSR: 100 years: +45 %: 240 mins: Winter	0.06	6.6	37.805
FSR: 100 years: +45 %: 360 mins: Summer	0.06	6.5	36.518
FSR: 100 years: +45 %: 360 mins: Winter	0.06	4.8	40.877

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by:	Checked by:	Approved By:
	M.H	S.L	S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Kemp House:: 124 City Road London EC1V 2NX		



FSR: 100 years: +45 %: 480 mins: Summer	0.06	5.2	38.418
FSR: 100 years: +45 %: 480 mins: Winter	0.06	3.8	43.030
FSR: 100 years: +45 %: 600 mins: Summer	0.06	4.4	40.061
FSR: 100 years: +45 %: 600 mins: Winter	0.06	3.2	44.872
FSR: 100 years: +45 %: 720 mins: Summer	0.06	3.8	41.428
FSR: 100 years: +45 %: 720 mins: Winter	0.06	2.7	46.389
FSR: 100 years: +45 %: 960 mins: Summer	0.06	3.0	43.628
FSR: 100 years: +45 %: 960 mins: Winter	0.06	2.2	48.884
FSR: 100 years: +45 %: 1440 mins: Summer	0.06	2.1	46.891
FSR: 100 years: +45 %: 1440 mins: Winter	0.06	1.5	52.524

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Kemp House: 124 City Road London EC1V 2NX		



Summary Results for Catchment Area (7): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.02	14.1	6.158
FSR: 100 years: +45 %: 15 mins: Winter	0.02	14.8	6.892
FSR: 100 years: +45 %: 30 mins: Summer	0.02	9.1	7.928
FSR: 100 years: +45 %: 30 mins: Winter	0.02	9.6	8.876
FSR: 100 years: +45 %: 60 mins: Summer	0.02	7.8	9.725
FSR: 100 years: +45 %: 60 mins: Winter	0.02	7.0	10.899
FSR: 100 years: +45 %: 120 mins: Summer	0.02	5.5	11.551
FSR: 100 years: +45 %: 120 mins: Winter	0.02	4.4	12.948
FSR: 100 years: +45 %: 180 mins: Summer	0.02	4.2	12.659
FSR: 100 years: +45 %: 180 mins: Winter	0.02	3.3	14.164
FSR: 100 years: +45 %: 240 mins: Summer	0.02	3.5	13.420
FSR: 100 years: +45 %: 240 mins: Winter	0.02	2.6	15.057
FSR: 100 years: +45 %: 360 mins: Summer	0.02	2.6	14.541
FSR: 100 years: +45 %: 360 mins: Winter	0.02	1.9	16.274

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by:	Checked by:	Approved By:
	M.H	S.L	S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Kemp House:: 124 City Road London EC1V 2NX		



FSR: 100 years: +45 %: 480 mins: Summer	0.02	2.1	15.296
FSR: 100 years: +45 %: 480 mins: Winter	0.02	1.5	17.120
FSR: 100 years: +45 %: 600 mins: Summer	0.02	1.7	15.962
FSR: 100 years: +45 %: 600 mins: Winter	0.02	1.3	17.840
FSR: 100 years: +45 %: 720 mins: Summer	0.02	1.5	16.478
FSR: 100 years: +45 %: 720 mins: Winter	0.02	1.1	18.445
FSR: 100 years: +45 %: 960 mins: Summer	0.02	1.2	17.359
FSR: 100 years: +45 %: 960 mins: Winter	0.02	0.9	19.429
FSR: 100 years: +45 %: 1440 mins: Summer	0.02	0.9	18.702
FSR: 100 years: +45 %: 1440 mins: Winter	0.02	0.6	20.934

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
	Report Details: Type: Inflows Summary Storm Phase: Phase		
	Kemp House:: 124 City Road London EC1V 2NX		





Summary Results for Catchment Area (8): Rank By: Max. Inflow

Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
FSR: 100 years: +45 %: 15 mins: Summer	0.09	55.5	24.286
FSR: 100 years: +45 %: 15 mins: Winter	0.09	58.4	27.187
FSR: 100 years: +45 %: 30 mins: Summer	0.09	36.0	31.255
FSR: 100 years: +45 %: 30 mins: Winter	0.09	37.9	35.011
FSR: 100 years: +45 %: 60 mins: Summer	0.09	30.7	38.358
FSR: 100 years: +45 %: 60 mins: Winter	0.09	27.6	42.961
FSR: 100 years: +45 %: 120 mins: Summer	0.09	21.6	45.608
FSR: 100 years: +45 %: 120 mins: Winter	0.09	17.4	51.082
FSR: 100 years: +45 %: 180 mins: Summer	0.09	16.7	49.921
FSR: 100 years: +45 %: 180 mins: Winter	0.09	12.9	55.918
FSR: 100 years: +45 %: 240 mins: Summer	0.09	13.7	52.989
FSR: 100 years: +45 %: 240 mins: Winter	0.09	10.3	59.353
FSR: 100 years: +45 %: 360 mins: Summer	0.09	10.2	57.300
FSR: 100 years: +45 %: 360 mins: Winter	0.09	7.5	64.185

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by:	Checked by:	Approved By:
	M.H	S.L	S.L
Report Details: Type: Inflows Summary Storm Phase: Phase	Kemp House:: 124 City Road London EC1V 2NX		



FSR: 100 years: +45 %: 480 mins: Summer	0.09	8.2	60.291
FSR: 100 years: +45 %: 480 mins: Winter	0.09	5.9	67.531
FSR: 100 years: +45 %: 600 mins: Summer	0.09	6.8	62.863
FSR: 100 years: +45 %: 600 mins: Winter	0.09	4.9	70.392
FSR: 100 years: +45 %: 720 mins: Summer	0.09	5.9	65.022
FSR: 100 years: +45 %: 720 mins: Winter	0.09	4.3	72.808
FSR: 100 years: +45 %: 960 mins: Summer	0.09	4.7	68.505
FSR: 100 years: +45 %: 960 mins: Winter	0.09	3.4	76.659
FSR: 100 years: +45 %: 1440 mins: Summer	0.09	3.3	73.598
FSR: 100 years: +45 %: 1440 mins: Winter	0.09	2.4	82.416

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s				Date: 16/07/2024				
Report Details: Type: Junctions Summary Storm Phase: Phase				Designed by: M.H	Checked by: S.L	Approved By: S.L		
				Kemp House: 124 City Road London EC1V 2NX				



Summary Results for SW1: Rank By: Max. Outflow

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: +45 %: 15 mins: Summer	51.98 0	50.81 0	51.367	0.557	34.9	0.630	0.000	30.2	15.275	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	51.98 0	50.81 0	51.454	0.644	36.7	0.729	0.000	31.4	17.099	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	51.98 0	50.81 0	51.004	0.194	22.7	0.219	0.000	22.7	19.663	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	51.98 0	50.81 0	51.044	0.234	23.8	0.264	0.000	23.8	22.017	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	51.98 0	50.81 0	50.926	0.116	19.3	0.131	0.000	19.3	24.127	OK
FSR: 100 years: +45 %: 60 mins: Winter	51.98 0	50.81 0	50.915	0.105	17.4	0.119	0.000	17.4	27.004	OK
FSR: 100 years: +45 %: 120 mins: Summer	51.98 0	50.81 0	50.898	0.088	13.6	0.099	0.000	13.6	28.685	OK
FSR: 100 years: +45 %: 120 mins: Winter	51.98 0	50.81 0	50.886	0.076	11.0	0.086	0.000	11.0	32.133	OK
FSR: 100 years: +45 %: 180 mins: Summer	51.98 0	50.81 0	50.884	0.074	10.5	0.083	0.000	10.5	31.399	OK
FSR: 100 years: +45 %: 180 mins: Winter	51.98 0	50.81 0	50.873	0.063	8.1	0.071	0.000	8.1	35.166	OK
FSR: 100 years: +45 %: 240 mins: Summer	51.98 0	50.81 0	50.875	0.065	8.6	0.074	0.000	8.6	33.341	OK
FSR: 100 years: +45 %: 240 mins: Winter	51.98 0	50.81 0	50.866	0.056	6.5	0.063	0.000	6.5	37.325	OK
FSR: 100 years: +45 %: 360 mins: Summer	51.98 0	50.81 0	50.865	0.055	6.4	0.062	0.000	6.4	36.011	OK
FSR: 100 years: +45 %: 360 mins: Winter	51.98 0	50.81 0	50.857	0.047	4.7	0.053	0.000	4.7	40.359	OK
FSR: 100 years: +45 %: 480 mins: Summer	51.98 0	50.81 0	50.859	0.049	5.1	0.056	0.000	5.1	37.917	OK
FSR: 100 years: +45 %: 480 mins: Winter	51.98 0	50.81 0	50.852	0.042	3.7	0.047	0.000	3.7	42.512	OK
FSR: 100 years: +45 %: 600 mins: Summer	51.98 0	50.81 0	50.855	0.045	4.3	0.051	0.000	4.3	39.554	OK
FSR: 100 years: +45 %: 600 mins: Winter	51.98 0	50.81 0	50.848	0.038	3.1	0.043	0.000	3.1	44.312	OK
FSR: 100 years: +45 %: 720 mins: Summer	51.98 0	50.81 0	50.852	0.042	3.7	0.047	0.000	3.7	40.880	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House:: 124 City Road London EC1V 2NX		

FSR: 100 years: +45 %: 720 mins: Winter	51.98 0	50.81 0	50.845	0.035	2.7	0.040	0.000	2.7	45.805	OK
FSR: 100 years: +45 %: 960 mins: Summer	51.98 0	50.81 0	50.847	0.037	2.9	0.042	0.000	2.9	43.050	OK
FSR: 100 years: +45 %: 960 mins: Winter	51.98 0	50.81 0	50.841	0.031	2.1	0.036	0.000	2.1	48.228	OK
FSR: 100 years: +45 %: 1440 mins: Summer	51.98 0	50.81 0	50.841	0.031	2.1	0.035	0.000	2.1	46.296	OK
FSR: 100 years: +45 %: 1440 mins: Winter	51.98 0	50.81 0	50.837	0.027	1.5	0.030	0.000	1.5	51.935	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House: 124 City Road London EC1V 2NX		



Summary Results for SW2: Rank By: Max. Outflow

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: +45 %: 15 mins: Summer	51.54 0	50.49 0	50.715	0.225	83.8	0.254	0.000	79.4	38.681	OK
FSR: 100 years: +45 %: 15 mins: Winter	51.54 0	50.49 0	50.758	0.268	87.8	0.303	0.000	85.0	43.304	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	51.54 0	50.49 0	50.644	0.154	57.4	0.174	0.000	57.4	49.802	OK
FSR: 100 years: +45 %: 30 mins: Winter	51.54 0	50.49 0	50.650	0.160	60.3	0.181	0.000	60.3	55.773	OK
FSR: 100 years: +45 %: 60 mins: Summer	51.54 0	50.49 0	50.628	0.138	48.9	0.156	0.000	48.9	61.128	OK
FSR: 100 years: +45 %: 60 mins: Winter	51.54 0	50.49 0	50.619	0.129	44.0	0.146	0.000	44.0	68.428	OK
FSR: 100 years: +45 %: 120 mins: Summer	51.54 0	50.49 0	50.601	0.111	34.5	0.125	0.000	34.5	72.668	OK
FSR: 100 years: +45 %: 120 mins: Winter	51.54 0	50.49 0	50.587	0.097	27.8	0.110	0.000	27.8	81.393	OK
FSR: 100 years: +45 %: 180 mins: Summer	51.54 0	50.49 0	50.585	0.095	26.6	0.108	0.000	26.6	79.540	OK
FSR: 100 years: +45 %: 180 mins: Winter	51.54 0	50.49 0	50.572	0.082	20.6	0.093	0.000	20.6	89.083	OK
FSR: 100 years: +45 %: 240 mins: Summer	51.54 0	50.49 0	50.575	0.085	21.9	0.096	0.000	21.9	84.449	OK
FSR: 100 years: +45 %: 240 mins: Winter	51.54 0	50.49 0	50.563	0.073	16.5	0.082	0.000	16.5	94.557	OK
FSR: 100 years: +45 %: 360 mins: Summer	51.54 0	50.49 0	50.562	0.072	16.2	0.082	0.000	16.2	91.286	OK
FSR: 100 years: +45 %: 360 mins: Winter	51.54 0	50.49 0	50.551	0.061	11.9	0.070	0.000	11.9	102.255	OK
FSR: 100 years: +45 %: 480 mins: Summer	51.54 0	50.49 0	50.554	0.064	13.0	0.073	0.000	13.0	96.094	OK
FSR: 100 years: +45 %: 480 mins: Winter	51.54 0	50.49 0	50.544	0.054	9.4	0.062	0.000	9.5	107.671	OK
FSR: 100 years: +45 %: 600 mins: Summer	51.54 0	50.49 0	50.549	0.059	10.9	0.066	0.000	10.9	100.190	OK
FSR: 100 years: +45 %: 600 mins: Winter	51.54 0	50.49 0	50.540	0.050	7.9	0.056	0.000	7.9	112.225	OK
FSR: 100 years: +45 %: 720 mins: Summer	51.54 0	50.49 0	50.544	0.054	9.4	0.062	0.000	9.4	103.581	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House:: 124 City Road London EC1V 2NX		

FSR: 100 years: +45 %: 720 mins: Winter	51.54 0	50.49 0	50.536	0.046	6.8	0.052	0.000	6.8	116.002	OK
FSR: 100 years: +45 %: 960 mins: Summer	51.54 0	50.49 0	50.538	0.048	7.4	0.055	0.000	7.4	109.070	OK
FSR: 100 years: +45 %: 960 mins: Winter	51.54 0	50.49 0	50.531	0.041	5.4	0.046	0.000	5.4	122.180	OK
FSR: 100 years: +45 %: 1440 mins: Summer	51.54 0	50.49 0	50.531	0.041	5.3	0.046	0.000	5.3	117.253	OK
FSR: 100 years: +45 %: 1440 mins: Winter	51.54 0	50.49 0	50.525	0.035	3.8	0.039	0.000	3.8	131.422	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Kemp House:: 124 City Road London EC1V 2NX			



Summary Results for SW3: Rank By: Max. Outflow

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: +45 %: 15 mins: Summer	51.07 0	50.09 0	50.205	0.115	125.2	0.130	0.000	125.5	60.575	OK
FSR: 100 years: +45 %: 15 mins: Winter	51.07 0	50.09 0	50.208	0.118	133.1	0.134	0.000	132.1	67.824	OK
FSR: 100 years: +45 %: 30 mins: Summer	51.07 0	50.09 0	50.185	0.095	90.0	0.108	0.000	90.0	78.022	OK
FSR: 100 years: +45 %: 30 mins: Winter	51.07 0	50.09 0	50.188	0.098	94.6	0.111	0.000	94.6	87.379	OK
FSR: 100 years: +45 %: 60 mins: Summer	51.07 0	50.09 0	50.177	0.087	76.6	0.099	0.000	76.7	95.793	OK
FSR: 100 years: +45 %: 60 mins: Winter	51.07 0	50.09 0	50.172	0.082	69.0	0.093	0.000	69.0	107.260	OK
FSR: 100 years: +45 %: 120 mins: Summer	51.07 0	50.09 0	50.162	0.072	54.1	0.082	0.000	54.1	113.923	OK
FSR: 100 years: +45 %: 120 mins: Winter	51.07 0	50.09 0	50.154	0.064	43.6	0.073	0.000	43.6	127.626	OK
FSR: 100 years: +45 %: 180 mins: Summer	51.07 0	50.09 0	50.153	0.063	41.8	0.071	0.000	41.8	124.736	OK
FSR: 100 years: +45 %: 180 mins: Winter	51.07 0	50.09 0	50.145	0.055	32.3	0.062	0.000	32.3	139.682	OK
FSR: 100 years: +45 %: 240 mins: Summer	51.07 0	50.09 0	50.147	0.057	34.3	0.064	0.000	34.3	132.422	OK
FSR: 100 years: +45 %: 240 mins: Winter	51.07 0	50.09 0	50.139	0.049	25.8	0.056	0.000	25.8	148.304	OK
FSR: 100 years: +45 %: 360 mins: Summer	51.07 0	50.09 0	50.139	0.049	25.4	0.055	0.000	25.4	143.151	OK
FSR: 100 years: +45 %: 360 mins: Winter	51.07 0	50.09 0	50.132	0.042	18.7	0.047	0.000	18.7	160.390	OK
FSR: 100 years: +45 %: 480 mins: Summer	51.07 0	50.09 0	50.134	0.044	20.4	0.049	0.000	20.4	150.703	OK
FSR: 100 years: +45 %: 480 mins: Winter	51.07 0	50.09 0	50.127	0.037	14.8	0.042	0.000	14.8	168.848	OK
FSR: 100 years: +45 %: 600 mins: Summer	51.07 0	50.09 0	50.130	0.040	17.1	0.045	0.000	17.1	157.145	OK
FSR: 100 years: +45 %: 600 mins: Winter	51.07 0	50.09 0	50.124	0.034	12.4	0.038	0.000	12.4	176.026	OK
FSR: 100 years: +45 %: 720 mins: Summer	51.07 0	50.09 0	50.127	0.037	14.7	0.041	0.000	14.7	162.446	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House: 124 City Road London EC1V 2NX		

FSR: 100 years: +45 %: 720 mins: Winter	51.07 0	50.09 0	50.121	0.031	10.7	0.035	0.000	10.6	181.946	OK
FSR: 100 years: +45 %: 960 mins: Summer	51.07 0	50.09 0	50.122	0.032	11.6	0.037	0.000	11.6	171.115	OK
FSR: 100 years: +45 %: 960 mins: Winter	51.07 0	50.09 0	50.118	0.028	8.4	0.031	0.000	8.4	191.603	OK
FSR: 100 years: +45 %: 1440 mins: Summer	51.07 0	50.09 0	50.117	0.027	8.3	0.031	0.000	8.4	183.988	OK
FSR: 100 years: +45 %: 1440 mins: Winter	51.07 0	50.09 0	50.114	0.024	6.0	0.027	0.000	6.0	206.213	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Kemp House:: 124 City Road London EC1V 2NX			



Summary Results for SW4: Rank By: Max. Outflow

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: +45 %: 15 mins: Summer	50.640	48.440	49.249	0.809	146.3	2.058	0.000	21.9	80.768	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	50.640	48.440	49.348	0.908	153.2	2.311	0.000	23.2	89.619	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	50.640	48.440	49.421	0.981	106.2	2.498	0.000	24.2	129.331	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	50.640	48.440	49.546	1.106	111.6	2.814	0.000	25.8	142.283	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	50.640	48.440	49.515	1.075	91.9	2.737	0.000	25.4	205.179	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	50.640	48.440	49.664	1.224	84.0	3.115	0.000	27.2	224.531	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	50.640	48.440	49.525	1.085	67.5	2.762	0.000	25.5	311.306	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	50.640	48.440	49.666	1.226	56.7	3.119	0.000	27.2	341.678	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	50.640	48.440	49.491	1.051	54.9	2.674	0.000	25.1	362.692	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	50.640	48.440	49.609	1.169	44.8	2.974	0.000	26.5	403.921	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	50.640	48.440	49.441	1.001	46.6	2.547	0.000	24.4	377.601	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	50.640	48.440	49.534	1.094	37.8	2.783	0.000	25.6	420.888	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	50.640	48.440	49.336	0.896	36.4	2.280	0.000	23.1	394.641	Surcharged
FSR: 100 years: +45 %: 360 mins: Winter	50.640	48.440	49.384	0.944	29.1	2.402	0.000	23.7	435.191	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	50.640	48.440	49.241	0.801	30.4	2.039	0.000	21.7	405.094	Surcharged
FSR: 100 years: +45 %: 480 mins: Winter	50.640	48.440	49.252	0.812	24.0	2.068	0.000	21.9	442.954	Surcharged
FSR: 100 years: +45 %: 600 mins: Summer	50.640	48.440	49.163	0.723	26.3	1.839	0.000	20.6	414.334	Surcharged
FSR: 100 years: +45 %: 600 mins: Winter	50.640	48.440	49.146	0.706	20.5	1.797	0.000	20.3	450.634	Surcharged
FSR: 100 years: +45 %: 720 mins: Summer	50.640	48.440	49.095	0.655	23.2	1.668	0.000	19.5	421.513	Surcharged

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House:: 124 City Road London EC1V 2NX		

FSR: 100 years: +45 %: 720 mins: Winter	50.64 0	48.44 0	49.058	0.618	18.9	1.573	0.000	18.9	457.481	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	50.64 0	48.44 0	48.987	0.547	19.0	1.392	0.000	17.7	433.438	OK
FSR: 100 years: +45 %: 960 mins: Winter	50.64 0	48.44 0	48.925	0.485	16.6	1.235	0.000	16.6	473.726	OK
FSR: 100 years: +45 %: 1440 mins: Summer	50.64 0	48.44 0	48.844	0.404	14.9	1.027	0.000	14.9	455.323	OK
FSR: 100 years: +45 %: 1440 mins: Winter	50.64 0	48.44 0	48.767	0.327	13.2	0.833	0.000	13.2	509.582	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House: 124 City Road London EC1V 2NX		



Summary Results for SW5: Rank By: Max. Outflow

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: +45 %: 15 mins: Summer	50.05 0	48.47 0	49.249	0.779	55.5	1.376	0.000	50.9	26.845	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	50.05 0	48.47 0	49.348	0.878	58.4	1.551	0.000	51.3	29.978	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	50.05 0	48.47 0	49.422	0.952	36.0	1.682	0.000	33.8	43.951	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	50.05 0	48.47 0	49.546	1.076	37.9	1.902	0.000	35.6	47.976	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	50.05 0	48.47 0	49.516	1.046	30.7	1.848	0.000	28.8	72.160	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	50.05 0	48.47 0	49.664	1.194	27.6	2.111	0.000	26.0	78.244	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	50.05 0	48.47 0	49.525	1.055	21.6	1.865	0.000	20.4	111.700	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	50.05 0	48.47 0	49.666	1.196	17.4	2.113	0.000	16.5	121.839	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	50.05 0	48.47 0	49.491	1.021	16.7	1.804	0.000	15.8	124.522	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	50.05 0	48.47 0	49.609	1.139	13.4	2.013	0.000	12.2	139.555	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	50.05 0	48.47 0	49.441	0.971	13.7	1.716	0.000	13.0	129.624	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	50.05 0	48.47 0	49.534	1.064	12.4	1.880	0.000	9.8	147.267	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	50.05 0	48.47 0	49.336	0.866	11.6	1.530	0.000	9.6	137.025	Surcharged
FSR: 100 years: +45 %: 360 mins: Winter	50.05 0	48.47 0	49.384	0.914	11.0	1.615	0.000	7.2	155.483	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	50.05 0	48.47 0	49.241	0.771	10.5	1.363	0.000	7.7	141.079	Surcharged
FSR: 100 years: +45 %: 480 mins: Winter	50.05 0	48.47 0	49.253	0.783	9.5	1.383	0.000	5.7	159.006	Surcharged
FSR: 100 years: +45 %: 600 mins: Summer	50.05 0	48.47 0	49.163	0.693	9.6	1.224	0.000	6.5	143.131	Surcharged
FSR: 100 years: +45 %: 600 mins: Winter	50.05 0	48.47 0	49.146	0.676	8.4	1.195	0.000	4.8	160.570	Surcharged
FSR: 100 years: +45 %: 720 mins: Summer	50.05 0	48.47 0	49.096	0.626	8.8	1.105	0.000	5.6	144.408	Surcharged

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024	
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L
		Approved By: S.L	
		Kemp House:: 124 City Road London EC1V 2NX	



FSR: 100 years: +45 %: 720 mins: Winter	50.05 0	48.47 0	49.058	0.588	7.4	1.039	0.000	4.1	160.510	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	50.05 0	48.47 0	48.987	0.517	7.7	0.914	0.000	4.3	145.598	Surcharged
FSR: 100 years: +45 %: 960 mins: Winter	50.05 0	48.47 0	48.925	0.455	6.0	0.804	0.000	3.2	159.716	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	50.05 0	48.47 0	48.844	0.374	5.8	0.660	0.000	3.0	145.791	Surcharged
FSR: 100 years: +45 %: 1440 mins: Winter	50.05 0	48.47 0	48.768	0.298	4.6	0.526	0.000	2.3	158.069	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Kemp House:: 124 City Road London EC1V 2NX			



Summary Results for SW6: Rank By: Max. Outflow

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: +45 %: 15 mins: Summer	50.43 0	48.60 0	49.252	0.652	101.8	1.152	0.000	96.7	49.960	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	50.43 0	48.60 0	49.352	0.752	105.0	1.328	0.000	99.4	55.974	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	50.43 0	48.60 0	49.423	0.823	70.4	1.454	0.000	68.2	68.166	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	50.43 0	48.60 0	49.548	0.948	74.0	1.675	0.000	71.7	75.872	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	50.43 0	48.60 0	49.517	0.917	59.6	1.620	0.000	56.5	92.145	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	50.43 0	48.60 0	49.665	1.065	53.5	1.883	0.000	51.3	102.028	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	50.43 0	48.60 0	49.526	0.926	40.3	1.637	0.000	38.7	121.361	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	50.43 0	48.60 0	49.667	1.067	30.7	1.886	0.000	29.7	133.302	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	50.43 0	48.60 0	49.492	0.892	29.5	1.576	0.000	28.4	126.153	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	50.43 0	48.60 0	49.610	1.010	20.4	1.785	0.000	19.7	140.368	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	50.43 0	48.60 0	49.442	0.842	22.9	1.488	0.000	22.0	126.034	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	50.43 0	48.60 0	49.535	0.935	16.3	1.652	0.000	14.1	140.865	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	50.43 0	48.60 0	49.337	0.737	16.0	1.302	0.000	14.4	125.544	Surcharged
FSR: 100 years: +45 %: 360 mins: Winter	50.43 0	48.60 0	49.385	0.785	11.8	1.387	0.000	8.5	139.107	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	50.43 0	48.60 0	49.242	0.642	12.9	1.135	0.000	10.4	123.837	Surcharged
FSR: 100 years: +45 %: 480 mins: Winter	50.43 0	48.60 0	49.253	0.653	9.3	1.155	0.000	5.8	135.962	Surcharged
FSR: 100 years: +45 %: 600 mins: Summer	50.43 0	48.60 0	49.164	0.564	10.8	0.996	0.000	7.8	122.995	Surcharged
FSR: 100 years: +45 %: 600 mins: Winter	50.43 0	48.60 0	49.147	0.547	7.8	0.967	0.000	4.3	132.933	Surcharged
FSR: 100 years: +45 %: 720 mins: Summer	50.43 0	48.60 0	49.096	0.496	9.3	0.877	0.000	6.1	122.324	Surcharged

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House:: 124 City Road London EC1V 2NX		

FSR: 100 years: +45 %: 720 mins: Winter	50.43 0	48.60 0	49.059	0.459	6.7	0.811	0.000	3.5	131.381	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	50.43 0	48.60 0	48.988	0.388	7.3	0.685	0.000	4.0	121.135	Surcharged
FSR: 100 years: +45 %: 960 mins: Winter	50.43 0	48.60 0	48.926	0.326	5.3	0.576	0.000	2.5	129.275	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	50.43 0	48.60 0	48.844	0.244	5.3	0.431	0.000	2.4	120.282	OK
FSR: 100 years: +45 %: 1440 mins: Winter	50.43 0	48.60 0	48.768	0.168	3.8	0.297	0.000	1.7	129.851	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House: 124 City Road London EC1V 2NX		



Summary Results for SW7: Rank By: Max. Outflow

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: +45 %: 15 mins: Summer	50.27 0	49.22 0	49.613	0.393	40.8	0.694	0.000	33.7	21.609	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	50.27 0	49.22 0	49.704	0.484	42.7	0.856	0.000	34.7	24.080	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	50.27 0	49.22 0	49.607	0.387	30.4	0.685	0.000	30.0	27.805	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	50.27 0	49.22 0	49.721	0.501	31.6	0.885	0.000	30.8	30.823	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	50.27 0	49.22 0	49.532	0.312	26.6	0.551	0.000	26.3	34.144	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	50.27 0	49.22 0	49.674	0.454	24.3	0.803	0.000	24.1	38.243	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	50.27 0	49.22 0	49.533	0.313	19.0	0.554	0.000	18.9	40.590	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	50.27 0	49.22 0	49.674	0.454	15.5	0.802	0.000	15.4	45.460	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	50.27 0	49.22 0	49.498	0.278	14.9	0.492	0.000	14.9	44.445	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	50.27 0	49.22 0	49.617	0.397	11.5	0.701	0.000	11.4	49.771	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	50.27 0	49.22 0	49.448	0.228	12.2	0.403	0.000	12.2	47.165	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	50.27 0	49.22 0	49.541	0.321	9.2	0.568	0.000	9.2	52.851	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	50.27 0	49.22 0	49.342	0.122	9.0	0.216	0.000	9.0	51.050	OK
FSR: 100 years: +45 %: 360 mins: Winter	50.27 0	49.22 0	49.390	0.170	6.7	0.300	0.000	6.7	57.142	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	50.27 0	49.22 0	49.261	0.041	7.3	0.073	0.000	7.3	53.704	OK
FSR: 100 years: +45 %: 480 mins: Winter	50.27 0	49.22 0	49.261	0.041	5.3	0.073	0.000	5.3	60.145	OK
FSR: 100 years: +45 %: 600 mins: Summer	50.27 0	49.22 0	49.258	0.038	6.1	0.066	0.000	6.1	56.012	OK
FSR: 100 years: +45 %: 600 mins: Winter	50.27 0	49.22 0	49.252	0.032	4.4	0.056	0.000	4.4	62.703	OK
FSR: 100 years: +45 %: 720 mins: Summer	50.27 0	49.22 0	49.255	0.035	5.3	0.061	0.000	5.3	57.896	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024	
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L
		Approved By: S.L	
		Kemp House:: 124 City Road London EC1V 2NX	



FSR: 100 years: +45 %: 720 mins: Winter	50.27 0	49.22 0	49.249	0.029	3.8	0.052	0.000	3.8	64.827	OK
FSR: 100 years: +45 %: 960 mins: Summer	50.27 0	49.22 0	49.251	0.031	4.2	0.054	0.000	4.1	60.980	OK
FSR: 100 years: +45 %: 960 mins: Winter	50.27 0	49.22 0	49.246	0.026	3.0	0.046	0.000	3.0	68.309	OK
FSR: 100 years: +45 %: 1440 mins: Summer	50.27 0	49.22 0	49.245	0.025	3.0	0.045	0.000	3.0	65.591	OK
FSR: 100 years: +45 %: 1440 mins: Winter	50.27 0	49.22 0	49.242	0.022	2.1	0.038	0.000	2.2	73.457	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House: 124 City Road London EC1V 2NX		



Summary Results for SW8 - Outfall: Rank By: Max. Outflow

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: +45 %: 15 mins: Summer	50.00 0	48.11 5	48.174	0.059	21.9	0.000	0.000	21.9	31.573	OK
FSR: 100 years: +45 %: 15 mins: Winter	50.00 0	48.11 5	48.175	0.060	23.2	0.000	0.000	23.2	33.682	OK
FSR: 100 years: +45 %: 30 mins: Summer	50.00 0	48.11 5	48.177	0.062	24.2	0.000	0.000	24.2	68.791	OK
FSR: 100 years: +45 %: 30 mins: Winter	50.00 0	48.11 5	48.179	0.064	25.8	0.000	0.000	25.8	73.364	OK
FSR: 100 years: +45 %: 60 mins: Summer	50.00 0	48.11 5	48.178	0.063	25.4	0.000	0.000	25.4	138.743	OK
FSR: 100 years: +45 %: 60 mins: Winter	50.00 0	48.11 5	48.181	0.066	27.2	0.000	0.000	27.2	148.797	OK
FSR: 100 years: +45 %: 120 mins: Summer	50.00 0	48.11 5	48.178	0.063	25.5	0.000	0.000	25.5	246.067	OK
FSR: 100 years: +45 %: 120 mins: Winter	50.00 0	48.11 5	48.181	0.066	27.2	0.000	0.000	27.2	267.796	OK
FSR: 100 years: +45 %: 180 mins: Summer	50.00 0	48.11 5	48.178	0.063	25.1	0.000	0.000	25.1	303.658	OK
FSR: 100 years: +45 %: 180 mins: Winter	50.00 0	48.11 5	48.180	0.065	26.5	0.000	0.000	26.5	338.383	OK
FSR: 100 years: +45 %: 240 mins: Summer	50.00 0	48.11 5	48.177	0.062	24.4	0.000	0.000	24.4	325.635	OK
FSR: 100 years: +45 %: 240 mins: Winter	50.00 0	48.11 5	48.178	0.063	25.6	0.000	0.000	25.6	364.709	OK
FSR: 100 years: +45 %: 360 mins: Summer	50.00 0	48.11 5	48.175	0.060	23.1	0.000	0.000	23.1	353.355	OK
FSR: 100 years: +45 %: 360 mins: Winter	50.00 0	48.11 5	48.176	0.061	23.7	0.000	0.000	23.7	395.843	OK
FSR: 100 years: +45 %: 480 mins: Summer	50.00 0	48.11 5	48.173	0.058	21.7	0.000	0.000	21.7	372.235	OK
FSR: 100 years: +45 %: 480 mins: Winter	50.00 0	48.11 5	48.174	0.059	21.9	0.000	0.000	21.9	416.938	OK
FSR: 100 years: +45 %: 600 mins: Summer	50.00 0	48.11 5	48.172	0.057	20.6	0.000	0.000	20.6	388.331	OK
FSR: 100 years: +45 %: 600 mins: Winter	50.00 0	48.11 5	48.172	0.057	20.3	0.000	0.000	20.3	434.917	OK
FSR: 100 years: +45 %: 720 mins: Summer	50.00 0	48.11 5	48.171	0.056	19.5	0.000	0.000	19.5	401.553	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House:: 124 City Road London EC1V 2NX		

FSR: 100 years: +45 %: 720 mins: Winter	50.00 0	48.11 5	48.170	0.055	18.9	0.000	0.000	18.9	449.660	OK
FSR: 100 years: +45 %: 960 mins: Summer	50.00 0	48.11 5	48.168	0.053	17.7	0.000	0.000	17.7	422.953	OK
FSR: 100 years: +45 %: 960 mins: Winter	50.00 0	48.11 5	48.167	0.052	16.6	0.000	0.000	16.6	473.712	OK
FSR: 100 years: +45 %: 1440 mins: Summer	50.00 0	48.11 5	48.164	0.049	14.9	0.000	0.000	14.9	454.817	OK
FSR: 100 years: +45 %: 1440 mins: Winter	50.00 0	48.11 5	48.162	0.047	13.2	0.000	0.000	13.2	509.582	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Kemp House:: 124 City Road London EC1V 2NX			



Summary Results for SW9: Rank By: Max. Outflow

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: +45 %: 15 mins: Summer	50.00 0	49.30 0	49.844	0.544	35.4	0.961	0.000	26.8	15.460	Flood Risk
FSR: 100 years: +45 %: 15 mins: Winter	50.00 0	49.30 0	49.951	0.651	37.2	1.150	0.000	27.9	17.310	Flood Risk
FSR: 100 years: +45 %: 30 mins: Summer	50.00 0	49.30 0	49.750	0.450	22.9	0.794	0.000	21.3	19.895	Flood Risk
FSR: 100 years: +45 %: 30 mins: Winter	50.00 0	49.30 0	49.875	0.575	24.1	1.015	0.000	22.0	22.227	Flood Risk
FSR: 100 years: +45 %: 60 mins: Summer	50.00 0	49.30 0	49.636	0.336	19.5	0.593	0.000	18.9	24.431	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	50.00 0	49.30 0	49.678	0.378	17.6	0.668	0.000	17.3	27.359	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	50.00 0	49.30 0	49.536	0.236	13.8	0.418	0.000	13.6	29.054	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	50.00 0	49.30 0	49.678	0.378	11.1	0.668	0.000	11.0	32.528	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	50.00 0	49.30 0	49.501	0.201	10.6	0.355	0.000	10.6	31.801	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	50.00 0	49.30 0	49.620	0.320	8.2	0.565	0.000	8.2	35.624	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	50.00 0	49.30 0	49.450	0.150	8.8	0.265	0.000	8.7	33.763	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	50.00 0	49.30 0	49.544	0.244	6.6	0.431	0.000	6.6	37.806	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	50.00 0	49.30 0	49.366	0.066	6.5	0.117	0.000	6.5	36.518	OK
FSR: 100 years: +45 %: 360 mins: Winter	50.00 0	49.30 0	49.393	0.093	4.8	0.164	0.000	4.8	40.879	OK
FSR: 100 years: +45 %: 480 mins: Summer	50.00 0	49.30 0	49.359	0.059	5.2	0.104	0.000	5.2	38.416	OK
FSR: 100 years: +45 %: 480 mins: Winter	50.00 0	49.30 0	49.350	0.050	3.8	0.088	0.000	3.8	43.028	OK
FSR: 100 years: +45 %: 600 mins: Summer	50.00 0	49.30 0	49.354	0.054	4.4	0.095	0.000	4.4	40.058	OK
FSR: 100 years: +45 %: 600 mins: Winter	50.00 0	49.30 0	49.345	0.045	3.2	0.080	0.000	3.1	44.870	OK
FSR: 100 years: +45 %: 720 mins: Summer	50.00 0	49.30 0	49.350	0.050	3.8	0.088	0.000	3.8	41.426	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
Report Details: Type: Junctions Summary Storm Phase: Phase		Kemp House:: 124 City Road London EC1V 2NX		

FSR: 100 years: +45 %: 720 mins: Winter	50.00 0	49.30 0	49.342	0.042	2.7	0.074	0.000	2.7	46.387	OK
FSR: 100 years: +45 %: 960 mins: Summer	50.00 0	49.30 0	49.344	0.044	3.0	0.078	0.000	3.0	43.627	OK
FSR: 100 years: +45 %: 960 mins: Winter	50.00 0	49.30 0	49.337	0.037	2.2	0.066	0.000	2.2	48.883	OK
FSR: 100 years: +45 %: 1440 mins: Summer	50.00 0	49.30 0	49.337	0.037	2.1	0.066	0.000	2.1	46.891	OK
FSR: 100 years: +45 %: 1440 mins: Winter	50.00 0	49.30 0	49.332	0.032	1.5	0.056	0.000	1.5	52.523	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House: 124 City Road London EC1V 2NX		



Summary Results for SW20: Rank By: Max. Outflow

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: +45 %: 15 mins: Summer	51.73 0	50.50 0	50.826	0.326	24.7	0.368	0.000	20.2	10.820	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	51.73 0	50.50 0	50.906	0.406	26.0	0.459	0.000	21.2	12.111	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	51.73 0	50.50 0	50.623	0.123	16.0	0.139	0.000	16.0	13.907	OK
FSR: 100 years: +45 %: 30 mins: Winter	51.73 0	50.50 0	50.631	0.131	16.9	0.148	0.000	16.8	15.570	OK
FSR: 100 years: +45 %: 60 mins: Summer	51.73 0	50.50 0	50.607	0.107	13.6	0.121	0.000	13.6	17.066	OK
FSR: 100 years: +45 %: 60 mins: Winter	51.73 0	50.50 0	50.599	0.099	12.3	0.112	0.000	12.3	19.109	OK
FSR: 100 years: +45 %: 120 mins: Summer	51.73 0	50.50 0	50.584	0.084	9.6	0.095	0.000	9.6	20.294	OK
FSR: 100 years: +45 %: 120 mins: Winter	51.73 0	50.50 0	50.573	0.073	7.8	0.083	0.000	7.8	22.740	OK
FSR: 100 years: +45 %: 180 mins: Summer	51.73 0	50.50 0	50.572	0.072	7.4	0.081	0.000	7.4	22.211	OK
FSR: 100 years: +45 %: 180 mins: Winter	51.73 0	50.50 0	50.562	0.062	5.7	0.070	0.000	5.7	24.880	OK
FSR: 100 years: +45 %: 240 mins: Summer	51.73 0	50.50 0	50.564	0.064	6.1	0.072	0.000	6.1	23.584	OK
FSR: 100 years: +45 %: 240 mins: Winter	51.73 0	50.50 0	50.555	0.055	4.6	0.062	0.000	4.6	26.409	OK
FSR: 100 years: +45 %: 360 mins: Summer	51.73 0	50.50 0	50.554	0.054	4.5	0.061	0.000	4.5	25.491	OK
FSR: 100 years: +45 %: 360 mins: Winter	51.73 0	50.50 0	50.546	0.046	3.3	0.052	0.000	3.3	28.574	OK
FSR: 100 years: +45 %: 480 mins: Summer	51.73 0	50.50 0	50.548	0.048	3.6	0.055	0.000	3.6	26.840	OK
FSR: 100 years: +45 %: 480 mins: Winter	51.73 0	50.50 0	50.541	0.041	2.6	0.046	0.000	2.6	30.061	OK
FSR: 100 years: +45 %: 600 mins: Summer	51.73 0	50.50 0	50.544	0.044	3.0	0.050	0.000	3.1	27.973	OK
FSR: 100 years: +45 %: 600 mins: Winter	51.73 0	50.50 0	50.537	0.037	2.2	0.042	0.000	2.2	31.357	OK
FSR: 100 years: +45 %: 720 mins: Summer	51.73 0	50.50 0	50.541	0.041	2.6	0.046	0.000	2.6	28.908	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House:: 124 City Road London EC1V 2NX		

FSR: 100 years: +45 %: 720 mins: Winter	51.73 0	50.50 0	50.535	0.035	1.9	0.039	0.000	1.9	32.388	OK
FSR: 100 years: +45 %: 960 mins: Summer	51.73 0	50.50 0	50.536	0.036	2.1	0.041	0.000	2.1	30.479	OK
FSR: 100 years: +45 %: 960 mins: Winter	51.73 0	50.50 0	50.531	0.031	1.5	0.035	0.000	1.5	34.097	OK
FSR: 100 years: +45 %: 1440 mins: Summer	51.73 0	50.50 0	50.531	0.031	1.5	0.035	0.000	1.5	32.777	OK
FSR: 100 years: +45 %: 1440 mins: Winter	51.73 0	50.50 0	50.526	0.026	1.1	0.029	0.000	1.1	36.718	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s				Date: 16/07/2024				
Report Details: Type: Junctions Summary Storm Phase: Phase				Designed by: M.H	Checked by: S.L	Approved By: S.L		
				Kemp House: 124 City Road London EC1V 2NX				



Summary Results for SWC-01: Rank By: Max. Outflow

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: +45 %: 15 mins: Summer	50.60 0	48.47 4	49.252	0.778	119.2	0.880	0.000	12.7	55.424	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	50.60 0	48.47 4	49.352	0.878	121.8	0.992	0.000	13.4	62.377	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	50.60 0	48.47 4	49.422	0.948	80.6	1.072	0.000	13.9	80.439	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	50.60 0	48.47 4	49.546	1.072	84.7	1.213	0.000	14.9	90.086	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	50.60 0	48.47 4	49.516	1.042	66.7	1.179	0.000	14.5	113.997	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	50.60 0	48.47 4	49.664	1.190	59.7	1.346	0.000	15.5	125.952	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	50.60 0	48.47 4	49.526	1.052	44.8	1.190	0.000	13.8	155.883	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	50.60 0	48.47 4	49.667	1.193	34.5	1.349	0.000	14.9	170.083	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	50.60 0	48.47 4	49.491	1.017	32.8	1.150	0.000	12.6	173.079	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	50.60 0	48.47 4	49.609	1.135	23.0	1.284	0.000	13.9	188.706	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	50.60 0	48.47 4	49.441	0.967	25.4	1.094	0.000	11.1	166.406	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	50.60 0	48.47 4	49.534	1.060	16.5	1.199	0.000	12.5	179.559	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	50.60 0	48.47 4	49.336	0.862	16.7	0.975	0.000	9.2	154.256	Surcharged
FSR: 100 years: +45 %: 360 mins: Winter	50.60 0	48.47 4	49.384	0.910	9.5	1.030	0.000	9.6	157.059	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	50.60 0	48.47 4	49.242	0.768	11.9	0.868	0.000	8.5	144.856	Surcharged
FSR: 100 years: +45 %: 480 mins: Winter	50.60 0	48.47 4	49.253	0.779	8.4	0.881	0.000	8.5	139.779	Surcharged
FSR: 100 years: +45 %: 600 mins: Summer	50.60 0	48.47 4	49.163	0.689	8.6	0.779	0.000	7.9	138.855	Surcharged
FSR: 100 years: +45 %: 600 mins: Winter	50.60 0	48.47 4	49.146	0.672	7.4	0.761	0.000	7.5	128.666	Surcharged
FSR: 100 years: +45 %: 720 mins: Summer	50.60 0	48.47 4	49.096	0.622	7.2	0.703	0.000	7.2	133.534	Surcharged

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House:: 124 City Road London EC1V 2NX		

FSR: 100 years: +45 %: 720 mins: Winter	50.60 0	48.47 4	49.058	0.584	6.6	0.661	0.000	6.6	121.996	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	50.60 0	48.47 4	48.987	0.513	6.1	0.580	0.000	6.2	126.356	Surcharged
FSR: 100 years: +45 %: 960 mins: Winter	50.60 0	48.47 4	48.925	0.451	5.2	0.511	0.000	5.3	122.414	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	50.60 0	48.47 4	48.844	0.370	5.0	0.418	0.000	5.1	125.859	Surcharged
FSR: 100 years: +45 %: 1440 mins: Winter	50.60 0	48.47 4	48.768	0.294	4.5	0.332	0.000	4.6	145.307	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s				Date: 16/07/2024				
Report Details: Type: Junctions Summary Storm Phase: Phase				Designed by: M.H	Checked by: S.L	Approved By: S.L		
				Kemp House: 124 City Road London EC1V 2NX				



Summary Results for SWC-02: Rank By: Max. Outflow

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: +45 %: 15 mins: Summer	51.00 0	48.51 6	49.254	0.738	158.2	0.835	0.000	155.1	72.753	Surcharged
FSR: 100 years: +45 %: 15 mins: Winter	51.00 0	48.51 6	49.354	0.838	164.1	0.948	0.000	161.2	81.594	Surcharged
FSR: 100 years: +45 %: 30 mins: Summer	51.00 0	48.51 6	49.423	0.907	108.1	1.026	0.000	106.7	95.741	Surcharged
FSR: 100 years: +45 %: 30 mins: Winter	51.00 0	48.51 6	49.548	1.032	113.6	1.167	0.000	112.2	107.747	Surcharged
FSR: 100 years: +45 %: 60 mins: Summer	51.00 0	48.51 6	49.519	1.003	90.5	1.134	0.000	89.3	120.785	Surcharged
FSR: 100 years: +45 %: 60 mins: Winter	51.00 0	48.51 6	49.665	1.149	81.8	1.300	0.000	80.6	135.872	Surcharged
FSR: 100 years: +45 %: 120 mins: Summer	51.00 0	48.51 6	49.527	1.011	62.6	1.144	0.000	61.7	143.529	Surcharged
FSR: 100 years: +45 %: 120 mins: Winter	51.00 0	48.51 6	49.668	1.152	49.0	1.303	0.000	48.3	162.730	Surcharged
FSR: 100 years: +45 %: 180 mins: Summer	51.00 0	48.51 6	49.492	0.976	46.8	1.104	0.000	46.2	143.837	Surcharged
FSR: 100 years: +45 %: 180 mins: Winter	51.00 0	48.51 6	49.610	1.094	34.0	1.237	0.000	33.6	163.023	Surcharged
FSR: 100 years: +45 %: 240 mins: Summer	51.00 0	48.51 6	49.444	0.928	37.2	1.049	0.000	36.7	140.236	Surcharged
FSR: 100 years: +45 %: 240 mins: Winter	51.00 0	48.51 6	49.536	1.020	25.6	1.153	0.000	25.3	157.207	Surcharged
FSR: 100 years: +45 %: 360 mins: Summer	51.00 0	48.51 6	49.338	0.822	25.6	0.930	0.000	25.3	132.435	Surcharged
FSR: 100 years: +45 %: 360 mins: Winter	51.00 0	48.51 6	49.385	0.869	16.7	0.982	0.000	16.6	145.841	Surcharged
FSR: 100 years: +45 %: 480 mins: Summer	51.00 0	48.51 6	49.243	0.727	19.4	0.823	0.000	19.2	124.814	Surcharged
FSR: 100 years: +45 %: 480 mins: Winter	51.00 0	48.51 6	49.254	0.738	12.3	0.835	0.000	12.6	135.849	Surcharged
FSR: 100 years: +45 %: 600 mins: Summer	51.00 0	48.51 6	49.163	0.647	15.4	0.732	0.000	15.2	123.434	Surcharged
FSR: 100 years: +45 %: 600 mins: Winter	51.00 0	48.51 6	49.147	0.631	9.8	0.714	0.000	9.8	129.203	Surcharged
FSR: 100 years: +45 %: 720 mins: Summer	51.00 0	48.51 6	49.096	0.580	12.7	0.656	0.000	12.5	122.866	Surcharged

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House:: 124 City Road London EC1V 2NX		

FSR: 100 years: +45 %: 720 mins: Winter	51.00 0	48.51 6	49.059	0.543	8.2	0.614	0.000	9.6	129.123	Surcharged
FSR: 100 years: +45 %: 960 mins: Summer	51.00 0	48.51 6	48.988	0.472	9.2	0.533	0.000	9.0	122.692	Surcharged
FSR: 100 years: +45 %: 960 mins: Winter	51.00 0	48.51 6	48.926	0.410	6.3	0.463	0.000	6.2	131.217	Surcharged
FSR: 100 years: +45 %: 1440 mins: Summer	51.00 0	48.51 6	48.844	0.328	6.1	0.371	0.000	6.0	129.622	Surcharged
FSR: 100 years: +45 %: 1440 mins: Winter	51.00 0	48.51 6	48.768	0.252	4.3	0.285	0.000	4.2	145.568	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Kemp House: 124 City Road London EC1V 2NX		



Summary Results for Attenuation Tank: Rank By: Max. Avg. Depth

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
FSR: 100 years: +45 %: 15 mins: Summer	49.255	49.255	0.749	0.749	271.7	115.271	0.000	0.000	12.6	12.442	37.884	OK
FSR: 100 years: +45 %: 15 mins: Winter	49.355	49.355	0.849	0.849	279.6	130.697	0.000	0.000	13.3	12.915	29.571	OK
FSR: 100 years: +45 %: 30 mins: Summer	49.422	49.422	0.916	0.916	186.0	140.920	0.000	0.000	13.8	33.475	24.063	OK
FSR: 100 years: +45 %: 30 mins: Winter	49.547	49.547	1.041	1.041	195.5	160.121	0.000	0.000	14.7	35.572	13.716	OK
FSR: 100 years: +45 %: 60 mins: Summer	49.517	49.517	1.011	1.011	154.8	155.541	0.000	0.000	14.3	74.699	16.184	OK
FSR: 100 years: +45 %: 60 mins: Winter	49.665	49.665	1.159	1.159	139.1	178.357	0.000	0.000	15.3	79.516	3.889	OK
FSR: 100 years: +45 %: 120 mins: Summer	49.527	49.527	1.021	1.021	105.6	157.070	0.000	0.000	13.7	132.158	15.360	OK
FSR: 100 years: +45 %: 120 mins: Winter	49.668	49.668	1.162	1.162	82.2	178.772	0.000	0.000	14.7	144.810	3.666	OK
FSR: 100 years: +45 %: 180 mins: Summer	49.492	49.492	0.986	0.986	78.4	151.680	0.000	0.000	12.5	151.218	18.264	OK
FSR: 100 years: +45 %: 180 mins: Winter	49.610	49.610	1.104	1.104	56.1	169.889	0.000	0.000	13.7	167.973	8.452	OK
FSR: 100 years: +45 %: 240 mins: Summer	49.442	49.442	0.936	0.936	61.6	144.047	0.000	0.000	11.0	146.384	22.378	OK
FSR: 100 years: +45 %: 240 mins: Winter	49.535	49.535	1.029	1.029	41.4	158.366	0.000	0.000	12.4	161.602	14.662	OK
FSR: 100 years: +45 %: 360 mins: Summer	49.337	49.337	0.831	0.831	41.6	127.891	0.000	0.000	9.2	135.992	31.083	OK
FSR: 100 years: +45 %: 360 mins: Winter	49.385	49.385	0.879	0.879	25.6	135.251	0.000	0.000	9.5	144.506	27.117	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:100 Years Storm Event + 45% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Kemp House: 124 City Road London EC1V 2NX		

FSR: 100 years: +45 %: 480 mins: Summer	49.242	49.242	0.736	0.736	30.8	113.28 0	0.000	0.000	8.5	126.989	38.957	OK
FSR: 100 years: +45 %: 480 mins: Winter	49.253	49.253	0.747	0.747	17.4	115.00 9	0.000	0.000	8.4	130.381	38.025	OK
FSR: 100 years: +45 %: 600 mins: Summer	49.164	49.164	0.658	0.658	23.7	101.20 4	0.000	0.000	7.8	123.844	45.465	OK
FSR: 100 years: +45 %: 600 mins: Winter	49.147	49.147	0.641	0.641	12.5	98.625	0.000	0.000	7.4	121.389	46.854	OK
FSR: 100 years: +45 %: 720 mins: Summer	49.096	49.096	0.590	0.590	18.7	90.815	0.000	0.000	7.2	121.449	51.063	OK
FSR: 100 years: +45 %: 720 mins: Winter	49.059	49.059	0.553	0.553	9.6	85.067	0.000	0.000	6.6	118.973	54.160	OK
FSR: 100 years: +45 %: 960 mins: Summer	48.988	48.988	0.482	0.482	12.1	74.110	0.000	0.000	6.1	118.695	60.065	OK
FSR: 100 years: +45 %: 960 mins: Winter	48.926	48.926	0.420	0.420	6.2	64.583	0.000	0.000	5.2	122.407	65.198	OK
FSR: 100 years: +45 %: 1440 mins: Summer	48.844	48.844	0.338	0.338	6.4	52.028	0.000	0.000	5.0	125.362	71.964	OK
FSR: 100 years: +45 %: 1440 mins: Winter	48.768	48.768	0.262	0.262	4.2	40.286	0.000	0.000	4.5	145.313	78.291	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:30 Years Storm Event + 40% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
	Report Details: Type: Junctions Storm Phase: Phase		
Kemp House:: 124 City Road London EC1V 2NX			

Outlets			
Junction	Outlet Name	Outgoing Connection	Outlet Type
SW1	Outlet	Pipe	Free Discharge
SW2	Outlet	Pipe (1)	Free Discharge
SW3	Outlet	Pipe (3)	Free Discharge
SW4	Outlet	Pipe (8)	Orifice
	Diameter (m)	0.110	
	Coefficient of Discharge	0.600	
	Invert Level (m)	48.440	
SW5	Outlet	Pipe (7)	Free Discharge
	Outlet (1)	Pipe (11)	Free Discharge
SW6	Outlet	Pipe (6)	Free Discharge
SW7	Outlet	Pipe (5)	Free Discharge
SW9	Outlet	Pipe (4)	Free Discharge
SW20	Outlet	Pipe (2)	Free Discharge
SWC-01	Outlet	Pipe (10)	Free Discharge
SWC-02	Outlet	Pipe (12)	Free Discharge

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:30 Years Storm Event + 40% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Stormwater Controls Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House: 124 City Road London EC1V 2NX		



Attenuation Tank

Type : Cellular Storage

Dimensions

Exceedance Level (m)	50.600
Depth (m)	1.200
Base Level (m)	48.506
Number of Crates Long	18
Number of Crates Wide	18
Number of Crates High	3
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	185.574

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:30 Years Storm Event + 40% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Inflow Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		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	SW1		Time of Concentration	0.059	100	0	100	0.059
Catchment Area (1)	SW2		Time of Concentration	0.090	100	0	100	0.090
Catchment Area (2)	SW20		Time of Concentration	0.042	100	0	100	0.042
Catchment Area (3)	SW3		Time of Concentration	0.043	100	0	100	0.043
Catchment Area (4)	SWC-02		Time of Concentration	0.104	100	0	100	0.104
Catchment Area (5)	SW6		Time of Concentration	0.064	100	0	100	0.064
Catchment Area (6)	SW9		Time of Concentration	0.060	100	0	100	0.060
Catchment Area (7)	SW7		Time of Concentration	0.024	100	0	100	0.024
Catchment Area (8)	SW5		Time of Concentration	0.094	100	0	100	0.094
TOTAL		0.0		0.580				0.580

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:30 Years Storm Event + 40% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
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 (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England And Wales
M5-60 (mm)	18.6
Ratio R	0.450
Summer	☒
Winter	☒

Return Period

Return Period (years)	Increase Rainfall (%)
30.0	40.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:30 Years Storm Event + 40% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024			
Report Details: Type: Inflows Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L		
		Approved By: S.L		Kemp House:: 124 City Road London EC1V 2NX	



Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 30 years: +40 %: 15 mins: Winter	0.06	27.3	12.743
Catchment Area (1)	FSR: 30 years: +40 %: 15 mins: Winter	0.09	41.9	19.542
Catchment Area (2)	FSR: 30 years: +40 %: 15 mins: Winter	0.04	19.3	9.013
Catchment Area (3)	FSR: 30 years: +40 %: 15 mins: Winter	0.04	20.0	9.338
Catchment Area (4)	FSR: 30 years: +40 %: 15 mins: Winter	0.10	48.1	22.451
Catchment Area (5)	FSR: 30 years: +40 %: 15 mins: Winter	0.06	29.7	13.856
Catchment Area (6)	FSR: 30 years: +40 %: 15 mins: Winter	0.06	27.7	12.909
Catchment Area (7)	FSR: 30 years: +40 %: 15 mins: Winter	0.02	11.0	5.138
Catchment Area (8)	FSR: 30 years: +40 %: 15 mins: Winter	0.09	43.5	20.264

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:30 Years Storm Event + 40% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House: 124 City Road London EC1V 2NX		



Critical Storm Per Item: Rank By: Max. Outflow

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
SW1	FSR: 30 years: +40 %: 15 mins: Winter	51.980	50.810	51.088	0.278	27.3	0.314	0.000	24.4	12.743	Surcharged
SW2	FSR: 30 years: +40 %: 15 mins: Winter	51.540	50.490	50.661	0.171	66.3	0.194	0.000	65.4	32.271	OK
SW3	FSR: 30 years: +40 %: 15 mins: Winter	51.070	50.090	50.192	0.102	102.9	0.116	0.000	102.2	50.526	OK
SW4	FSR: 30 years: +40 %: 60 mins: Winter	50.640	48.440	49.311	0.871	63.6	2.217	0.000	22.7	175.134	Surcharged
SW5	FSR: 30 years: +40 %: 15 mins: Winter	50.050	48.470	49.108	0.638	43.5	1.127	0.000	37.5	22.055	Surcharged
SW6	FSR: 30 years: +40 %: 15 mins: Summer	50.430	48.600	49.036	0.436	85.4	0.770	0.000	79.3	36.486	Surcharged
SW7	FSR: 30 years: +40 %: 15 mins: Summer	50.270	49.220	49.324	0.104	34.3	0.184	0.000	32.6	16.069	OK
SW8 - Outfall	FSR: 30 years: +40 %: 60 mins: Winter	50.000	48.115	48.175	0.060	22.7	0.000	0.000	22.7	122.482	OK
SW9	FSR: 30 years: +40 %: 15 mins: Winter	50.000	49.300	49.581	0.281	27.7	0.496	0.000	25.5	12.893	Surcharged
SW20	FSR: 30 years: +40 %: 15 mins: Winter	51.730	50.500	50.645	0.145	19.3	0.163	0.000	17.4	9.007	OK
SWC-01	FSR: 30 years: +40 %: 60 mins: Winter	50.600	48.474	49.312	0.838	42.5	0.947	0.000	12.8	94.413	Surcharged
SWC-02	FSR: 30 years: +40 %: 15 mins: Winter	51.000	48.516	49.113	0.597	125.2	0.675	0.000	124.1	59.854	Surcharged

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:30 Years Storm Event + 40% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House:: 124 City Road London EC1V 2NX		



Critical Storm Per Item: Rank By: Max. Avg. Depth

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. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Attenuation Tank	FSR: 30 years: +40 %: 60 mins: Winter	49.312	49.312	0.806	0.806	100.3	124.023	0.000	0.000	12.7	66.049	33.168	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:30 Years Storm Event + 0% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
	Report Details: Type: Junctions Storm Phase: Phase		
		Kemp House:: 124 City Road London EC1V 2NX	



Outlets			
Junction	Outlet Name	Outgoing Connection	Outlet Type
SW1	Outlet	Pipe	Free Discharge
SW2	Outlet	Pipe (1)	Free Discharge
SW3	Outlet	Pipe (3)	Free Discharge
SW4	Outlet	Pipe (8)	Orifice
	Diameter (m)	0.110	
	Coefficient of Discharge	0.600	
	Invert Level (m)	48.440	
SW5	Outlet	Pipe (7)	Free Discharge
	Outlet (1)	Pipe (11)	Free Discharge
SW6	Outlet	Pipe (6)	Free Discharge
SW7	Outlet	Pipe (5)	Free Discharge
SW9	Outlet	Pipe (4)	Free Discharge
SW20	Outlet	Pipe (2)	Free Discharge
SWC-01	Outlet	Pipe (10)	Free Discharge
SWC-02	Outlet	Pipe (12)	Free Discharge

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:30 Years Storm Event + 0% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Storm Phase: Phase	Kemp House: 124 City Road London EC1V 2NX		



Attenuation Tank

Type : Cellular Storage

Dimensions

Exceedance Level (m)	50.600
Depth (m)	1.200
Base Level (m)	48.506
Number of Crates Long	18
Number of Crates Wide	18
Number of Crates High	3
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	185.574

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:30 Years Storm Event + 0% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024			
Report Details: Type: Inflow Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L		
		Approved By: S.L			
		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	SW1		Time of Concentration	0.059	100	0	100	0.059
Catchment Area (1)	SW2		Time of Concentration	0.090	100	0	100	0.090
Catchment Area (2)	SW20		Time of Concentration	0.042	100	0	100	0.042
Catchment Area (3)	SW3		Time of Concentration	0.043	100	0	100	0.043
Catchment Area (4)	SWC-02		Time of Concentration	0.104	100	0	100	0.104
Catchment Area (5)	SW6		Time of Concentration	0.064	100	0	100	0.064
Catchment Area (6)	SW9		Time of Concentration	0.060	100	0	100	0.060
Catchment Area (7)	SW7		Time of Concentration	0.024	100	0	100	0.024
Catchment Area (8)	SW5		Time of Concentration	0.094	100	0	100	0.094
TOTAL		0.0		0.580				0.580

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:30 Years Storm Event + 0% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
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 (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England And Wales
M5-60 (mm)	18.6
Ratio R	0.450
Summer	☒
Winter	☒

Return Period

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

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:30 Years Storm Event + 0% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024			
Report Details: Type: Inflows Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L		
		Approved By: S.L		Kemp House:: 124 City Road London EC1V 2NX	



Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 30 years: +0 %: 15 mins: Winter	0.06	19.6	9.095
Catchment Area (1)	FSR: 30 years: +0 %: 15 mins: Winter	0.09	30.1	13.941
Catchment Area (2)	FSR: 30 years: +0 %: 15 mins: Winter	0.04	13.9	6.436
Catchment Area (3)	FSR: 30 years: +0 %: 15 mins: Winter	0.04	14.4	6.661
Catchment Area (4)	FSR: 30 years: +0 %: 15 mins: Winter	0.10	34.6	16.018
Catchment Area (5)	FSR: 30 years: +0 %: 15 mins: Winter	0.06	21.4	9.888
Catchment Area (6)	FSR: 30 years: +0 %: 15 mins: Winter	0.06	19.9	9.206
Catchment Area (7)	FSR: 30 years: +0 %: 15 mins: Winter	0.02	7.9	3.663
Catchment Area (8)	FSR: 30 years: +0 %: 15 mins: Winter	0.09	31.2	14.455

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:30 Years Storm Event + 0% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House:: 124 City Road London EC1V 2NX		



Critical Storm Per Item: Rank By: Max. Outflow

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
SW1	FSR: 30 years: +0 %: 15 mins: Winter	51.98 0	50.81 0	50.926	0.116	19.6	0.131	0.000	19.0	9.087	OK
SW2	FSR: 30 years: +0 %: 15 mins: Winter	51.54 0	50.49 0	50.627	0.137	49.1	0.155	0.000	48.3	23.021	OK
SW3	FSR: 30 years: +0 %: 15 mins: Winter	51.07 0	50.09 0	50.176	0.086	75.7	0.098	0.000	74.9	36.090	OK
SW4	FSR: 30 years: +0 %: 60 mins: Winter	50.64 0	48.44 0	49.033	0.593	45.7	1.510	0.000	18.5	133.016	OK
SW5	FSR: 30 years: +0 %: 15 mins: Winter	50.05 0	48.47 0	48.909	0.439	31.2	0.776	0.000	26.7	15.947	Surcharged
SW6	FSR: 30 years: +0 %: 15 mins: Winter	50.43 0	48.60 0	48.911	0.311	63.7	0.549	0.000	59.2	28.430	Surcharged
SW7	FSR: 30 years: +0 %: 15 mins: Winter	50.27 0	49.22 0	49.308	0.088	27.0	0.155	0.000	26.6	12.827	OK
SW8 - Outfall	FSR: 30 years: +0 %: 60 mins: Winter	50.00 0	48.11 5	48.169	0.054	18.5	0.000	0.000	18.5	98.110	OK
SW9	FSR: 30 years: +0 %: 15 mins: Winter	50.00 0	49.30 0	49.438	0.138	19.9	0.245	0.000	19.1	9.198	OK
SW20	FSR: 30 years: +0 %: 15 mins: Winter	51.73 0	50.50 0	50.604	0.104	13.9	0.118	0.000	13.1	6.426	OK
SWC-01	FSR: 30 years: +0 %: 60 mins: Winter	50.60 0	48.47 4	49.034	0.560	28.8	0.633	0.000	10.2	67.689	Surcharged
SWC-02	FSR: 30 years: +0 %: 15 mins: Winter	51.00 0	48.51 6	48.912	0.396	93.8	0.448	0.000	98.0	41.211	Surcharged

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:30 Years Storm Event + 0% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House:: 124 City Road London EC1V 2NX		



Critical Storm Per Item: Rank By: Max. Avg. Depth

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. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Attenuation Tank	FSR: 30 years: +0 %: 60 mins: Winter	49.034	49.034	0.528	0.528	66.1	81.274	0.000	0.000	10.1	49.812	56.204	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:1 Years Storm Event + 0% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
Report Details: Type: Junctions Storm Phase: Phase	Kemp House:: 124 City Road London EC1V 2NX		



Outlets			
Junction	Outlet Name	Outgoing Connection	Outlet Type
SW1	Outlet	Pipe	Free Discharge
SW2	Outlet	Pipe (1)	Free Discharge
SW3	Outlet	Pipe (3)	Free Discharge
SW4	Outlet	Pipe (8)	Orifice
	Diameter (m)	0.110	
	Coefficient of Discharge	0.600	
	Invert Level (m)	48.440	
SW5	Outlet	Pipe (7)	Free Discharge
	Outlet (1)	Pipe (11)	Free Discharge
SW6	Outlet	Pipe (6)	Free Discharge
SW7	Outlet	Pipe (5)	Free Discharge
SW9	Outlet	Pipe (4)	Free Discharge
SW20	Outlet	Pipe (2)	Free Discharge
SWC-01	Outlet	Pipe (10)	Free Discharge
SWC-02	Outlet	Pipe (12)	Free Discharge

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:1 Years Storm Event + 0% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
Report Details: Type: Stormwater Controls Storm Phase: Phase	Kemp House: 124 City Road London EC1V 2NX		



Attenuation Tank

Type : Cellular Storage

Dimensions

Exceedance Level (m)	50.600
Depth (m)	1.200
Base Level (m)	48.506
Number of Crates Long	18
Number of Crates Wide	18
Number of Crates High	3
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	185.574

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:1 Years Storm Event + 0% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Inflow Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		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	SW1		Time of Concentration	0.059	100	0	100	0.059
Catchment Area (1)	SW2		Time of Concentration	0.090	100	0	100	0.090
Catchment Area (2)	SW20		Time of Concentration	0.042	100	0	100	0.042
Catchment Area (3)	SW3		Time of Concentration	0.043	100	0	100	0.043
Catchment Area (4)	SWC-02		Time of Concentration	0.104	100	0	100	0.104
Catchment Area (5)	SW6		Time of Concentration	0.064	100	0	100	0.064
Catchment Area (6)	SW9		Time of Concentration	0.060	100	0	100	0.060
Catchment Area (7)	SW7		Time of Concentration	0.024	100	0	100	0.024
Catchment Area (8)	SW5		Time of Concentration	0.094	100	0	100	0.094
TOTAL		0.0		0.580				0.580

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:1 Years Storm Event + 0% Climate Change Restricted Flow rate 27.2l/s	Date: 16/07/2024		
	Designed by: M.H	Checked by: S.L	Approved By: S.L
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 (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England And Wales
M5-60 (mm)	18.6
Ratio R	0.450
Summer	☒
Winter	☒

Return Period

Return Period (years)	Increase Rainfall (%)
1.0	0.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:1 Years Storm Event + 0% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024	
Report Details: Type: Inflows Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L
		Approved By: S.L	
		Kemp House:: 124 City Road London EC1V 2NX	



Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 1 years: +0 %: 15 mins: Winter	0.06	8.0	3.702
Catchment Area (1)	FSR: 1 years: +0 %: 15 mins: Winter	0.09	12.3	5.675
Catchment Area (2)	FSR: 1 years: +0 %: 15 mins: Winter	0.04	5.7	2.622
Catchment Area (3)	FSR: 1 years: +0 %: 15 mins: Winter	0.04	5.9	2.712
Catchment Area (4)	FSR: 1 years: +0 %: 15 mins: Winter	0.10	14.1	6.518
Catchment Area (5)	FSR: 1 years: +0 %: 15 mins: Winter	0.06	8.7	4.025
Catchment Area (6)	FSR: 1 years: +0 %: 15 mins: Winter	0.06	8.1	3.750
Catchment Area (7)	FSR: 1 years: +0 %: 15 mins: Winter	0.02	3.2	1.491
Catchment Area (8)	FSR: 1 years: +0 %: 15 mins: Winter	0.09	12.7	5.882

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:1 Years Storm Event + 0% Climate Change Restricted Flow rate 27.2l/s		Date: 16/07/2024		
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: M.H	Checked by: S.L	
		Approved By: S.L		
		Kemp House:: 124 City Road London EC1V 2NX		



Critical Storm Per Item: Rank By: Max. Outflow

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
SW1	FSR: 1 years: +0 %: 15 mins: Winter	51.98 0	50.81 0	50.872	0.062	8.0	0.070	0.000	7.8	3.699	OK
SW2	FSR: 1 years: +0 %: 15 mins: Winter	51.54 0	50.49 0	50.570	0.080	20.0	0.091	0.000	19.6	9.371	OK
SW3	FSR: 1 years: +0 %: 15 mins: Winter	51.07 0	50.09 0	50.144	0.054	30.7	0.061	0.000	30.2	14.709	OK
SW4	FSR: 1 years: +0 %: 15 mins: Winter	50.64 0	48.44 0	48.701	0.261	38.0	0.663	0.000	11.5	25.001	OK
SW5	FSR: 1 years: +0 %: 15 mins: Winter	50.05 0	48.47 0	48.701	0.231	12.7	0.409	0.000	8.6	7.608	OK
SW6	FSR: 1 years: +0 %: 15 mins: Winter	50.43 0	48.60 0	48.693	0.093	20.3	0.164	0.000	15.0	10.111	OK
SW7	FSR: 1 years: +0 %: 15 mins: Winter	50.27 0	49.22 0	49.272	0.052	11.1	0.092	0.000	10.9	5.234	OK
SW8 - Outfall	FSR: 1 years: +0 %: 15 mins: Winter	50.00 0	48.11 5	48.158	0.043	11.4	0.000	0.000	11.4	14.602	OK
SW9	FSR: 1 years: +0 %: 15 mins: Winter	50.00 0	49.30 0	49.375	0.075	8.1	0.132	0.000	7.9	3.745	OK
SW20	FSR: 1 years: +0 %: 15 mins: Winter	51.73 0	50.50 0	50.559	0.059	5.7	0.067	0.000	5.3	2.615	OK
SWC-01	FSR: 1 years: +0 %: 60 mins: Winter	50.60 0	48.47 4	48.678	0.204	13.5	0.231	0.000	7.0	33.761	OK
SWC-02	FSR: 1 years: +0 %: 15 mins: Winter	51.00 0	48.51 6	48.650	0.134	29.1	0.152	0.000	27.7	13.830	OK

C3277 - 400 Thames Valley Park, Reading, RG6 1PT: Change of use from commercial to residential 1:1 Years Storm Event + 0% Climate Change Restricted Flow rate 27.2l/s				Date: 16/07/2024		
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase				Designed by: M.H	Checked by: S.L	Approved By: S.L
				Kemp House:: 124 City Road London EC1V 2NX		



Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Attenuation Tank	FSR: 1 years: +0 %: 60 mins: Winter	48.679	48.679	0.173	0.173	25.4	26.588	0.000	0.000	6.8	22.593	85.673	OK

APPENDIX C – WATER AUTHORITY ASSET PLANS

SearchFlow Limited
42
Kings Hill Avenue
Kings Hill
West Malling
ME19 4AJKent

Search address supplied	Thames Valley Five, Thames Valley Park Drive, Wokingham
Your reference	OJS/25575.49
Our reference	CDWS/CDWS Standard/2023_4822496
Received date	4 May 2023
Search date	4 May 2023

Keeping you up-to-date

Notification of Price Changes

From 1st April 2023 Thames Water property Searches will be increasing the price of it CON29DW, CommercialDW Drainage & Water Enquiries and Asset Location Searches.

Historically cost would rise in line with RPI but as this currently sits at 14.2%, we are capping it at 10%. Customer will be emailed with the new price by January 1st 2023. Any orders received with higher payments prior to 1st April 2023 will be non-refundable. For further details on the price increase please visit our website at www.thameswater-propertysearches.co.uk



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0800 009 4540

Question

Summary Answer

Maps

1.1	Where relevant, please include a copy of an extract from the public sewer map.	Map Provided
1.2	Where relevant, please include a copy of an extract from the map of waterworks.	Map Provided

Drainage

2.1	Does foul water from the property drain to a public sewer?	See Details
2.2	Does surface water from the property drain to a public sewer?	See Details
2.3	Is a surface water drainage charge payable?	See Details
2.4	Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundaries of the property?	No
2.4.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?	No
2.5	Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?	Yes
2.5.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the 50metres of any buildings within the property?	No
2.6	Are any sewers or lateral drains serving, or which are proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?	No
2.7	Has a sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?	No
2.8	Is the building, which is or forms part of the property, at risk of internal flooding due to overloaded public sewers?	Not At Risk
2.9	Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.	4.634 Kilometres

Water

3.1	Is the property connected to mains water supply?	See Details
3.2	Are there any water mains, resource mains or discharge pipes within the boundaries of the property?	Yes
3.3	Is any water main or service pipe serving, or which is proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?	No
3.4	Is the property at risk of receiving low water pressure or flow?	No
3.5	What is the classification of the water supply for the property?	See Details
3.6	Is there a meter installed at this property?	See Details
3.7	Please include details of the location of any water meter serving the property.	See Details

Question

Summary Answer

Charging

4.1.1 Who is responsible for providing the sewerage services for the property? Thames Water

4.1.2 Who is responsible for providing the water services for the property? Thames Water

4.2 Who bills the property for sewerage services? See Details

4.3 Who bills the property for water services? See Details

Trade Effluent

5.1 Is there a consent, on this property, to discharge Trade Effluent under S118 of the Water Industry Act(1991) into the public sewerage system? No

Wayleaves, Easements, Manhole Cover and Invert levels

6.1 Is there a wayleave/easement agreement giving Thames Water the right to lay or maintain assets or right of access to pass through private land in order to reach the Company's assets? No

6.2 On the copy extract from the public sewer map, please show manhole cover, depth and invert levels where the information is available. See Details

Search address supplied: Thames Valley Five, Thames Valley Park Drive, Wokingham

Any new owner or occupier will need to contact Thames Water on 0800 316 9800 or log onto our website www.thameswater.co.uk and complete our online form to change the water and drainage services bills to their name.

The following records were searched in compiling this report: - the map of public sewers, the map of waterworks, water and sewer billing records, adoption of public sewer records, building over public sewer records, the register of properties subject to internal foul flooding, the register of properties subject to poor water pressure and the drinking water register.

Thames Water Utilities Ltd (TWUL) holds all of these.

TWUL, trading as Property Searches, are responsible in respect of the following:-

- (i) any negligent or incorrect entry in the records searched
- (ii) any negligent or incorrect interpretation of the records searched
- (iii) any negligent or incorrect recording of that interpretation in the search report
- (iv) and compensation payments

Maps

1.1 Where relevant, please include a copy of an extract from the public sewer map.

A copy of an extract of the public sewer map is included, showing the public sewers, disposal mains and lateral drains in the vicinity of the property.

1.2 Where relevant, please include a copy of an extract from the map of waterworks.

A copy of an extract of the map of waterworks is included, showing water mains, resource mains or discharge pipes in the vicinity of the property.

Drainage

2.1 Does foul water from the property drain to a public sewer?

We are unable to confirm the connection to the particular part of the property which you have identified without further details, such as either a copy of the water bill or water meter serial numbers which should enable us to locate the required connection details. However, we can confirm that foul water from this building drains to a public sewer.

2.2 Does surface water from the property drain to a public sewer?

We are unable to confirm the connection to the particular part of the property which you have identified without further details, such as either a copy of the water bill or water meter serial numbers which should enable us to locate the required connection details. However, we can confirm that surface water from this building drains to a public sewer.

2.3 Is a surface water drainage charge payable?

We are unable to confirm if a surface water charge is applicable to the particular part of the property which you have identified without further details, such as either a copy of the water bill or water meter serial numbers which should enable us to locate the required details.

2.4 Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundary of the property?

The public sewer map indicates that there are no public sewers, disposal mains or lateral drains within the boundaries of the property. However, from the 1st October 2011 there may be lateral drains and/or public sewers which are not recorded on the public sewer map but which may prevent or restrict development of the property.

2.4.1 Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?

The public sewer map included indicates that there is no public pumping station within the boundaries of the property.

2.5 Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?

The public sewer map included indicates that there is a public sewer within 30.48 metres (100 feet) of a building within the property.

2.5.1 Does the public sewer map indicate any public pumping station or any other ancillary apparatus within 50 metres of any buildings within the property?

The public sewer map included indicates that there is no public pumping station within 50 metres of any buildings within the property.

2.6 Are any sewers or lateral drains serving, or which are proposed to serve, the property the subject of an existing adoption agreement or an application for such an agreement?

Records confirm that Foul sewers serving the development, of which the property forms part are not the subject of an existing adoption agreement or an application for such an agreement.

The Surface Water sewer(s) and/or Surface Water lateral drain(s) are not the subject of an adoption agreement.

2.7 Has a sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?

There are no records in relation to any approval or consultation about plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain. However, the sewerage undertaker might not be aware of a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain.

2.8 Is the building which is or forms part of the property, at risk of internal flooding due to overloaded public sewers?

The property is not recorded as being at risk of internal flooding due to overloaded public sewers.

From the 1st October 2011 most private sewers, disposal mains and lateral drains were transferred into public ownership. It is therefore possible that a property may be at risk of internal flooding due to an overloaded public sewer which the sewerage undertaker is not aware of. For further information it is recommended that enquiries are made of the vendor.

2.9 Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.

The nearest sewage treatment works is Reading STW which is 4.634 kilometres to the south west of the property.

Water

3.1 Is the property connected to mains water supply?

We are unable to confirm the connection to the particular part of the property which you have identified without further details, such as either a copy of the water bill or water meter serial numbers which should enable us to locate the required connection details. However, we can confirm this building is connected to mains water supply.

3.2 Are there any water mains, resource mains or discharge pipes within the boundary of the property?

The map of waterworks indicates that there are water mains, resource mains or discharge pipes within the boundaries of the property.

3.3 Is any water main or service pipe serving, or which is proposed to serve, the property the subject of an existing adoption agreement or an application for such an agreement?

Records confirm that water mains or service pipes serving the property are not the subject of an existing adoption agreement or an application for such an agreement.

3.4 Is the property at risk of receiving low water pressure or flow?

Records confirm that the property is not recorded on a register kept by the water undertaker as being at risk of receiving low water pressure or flow.

3.5 What is the classification of the water supply for the property?

The water supplied to the property has an average water hardness of 108.6mg/l calcium which is defined as HARD by ThamesWater.

3.6 Is there a meter installed at this property?

We are unable to confirm the presence/location of a water meter for the particular part of the property which you have identified without further details, such as either a copy of the water bill or water meter serial numbers which should enable us to locate the required details.

3.7 Please include details of the location of any water meter serving the property.

We are unable to confirm the presence/location of a water meter for the particular part of the property which you have identified without further details, such as either a copy of the water bill or water meter serial numbers which should enable us to locate the required details.

Charging

4.1.1 – Who is responsible for providing the sewerage services for the property?

Thames Water Utilities Limited, Clearwater Court, Reading, RG1 8DB is the sewerage undertaker for the area.

4.1.2 – Who is responsible for providing the water services for the property?

Thames Water Utilities Limited, Clearwater Court, Reading, RG1 8DB is the water undertaker for the area.

4.2 Who bills the property for sewerage services?

If you wish to know who bills the sewerage services for this property then you will need to contact the current owner. For a list of all potential retailers of sewerage services for the property please visit www.open-water.org.uk

4.3 Who bills the property for water services?

If you wish to know who bills the water services for this property then you will need to contact the current owner. For a list of all potential retailers of water services for the property please visit www.open-water.org.uk

Trade Effluent

5.1 Is there a consent, on this property, to discharge Trade Effluent under S118 of the water Industry act (1991) into the public sewerage systems?

No.

Wayleaves, Easements, Manhole Cover and Invert levels

6.1 Is there a wayleave/easement agreement giving Thames water the right to lay or maintain assets or right of access to pass through private land in order to reach the Company's assets?

No.

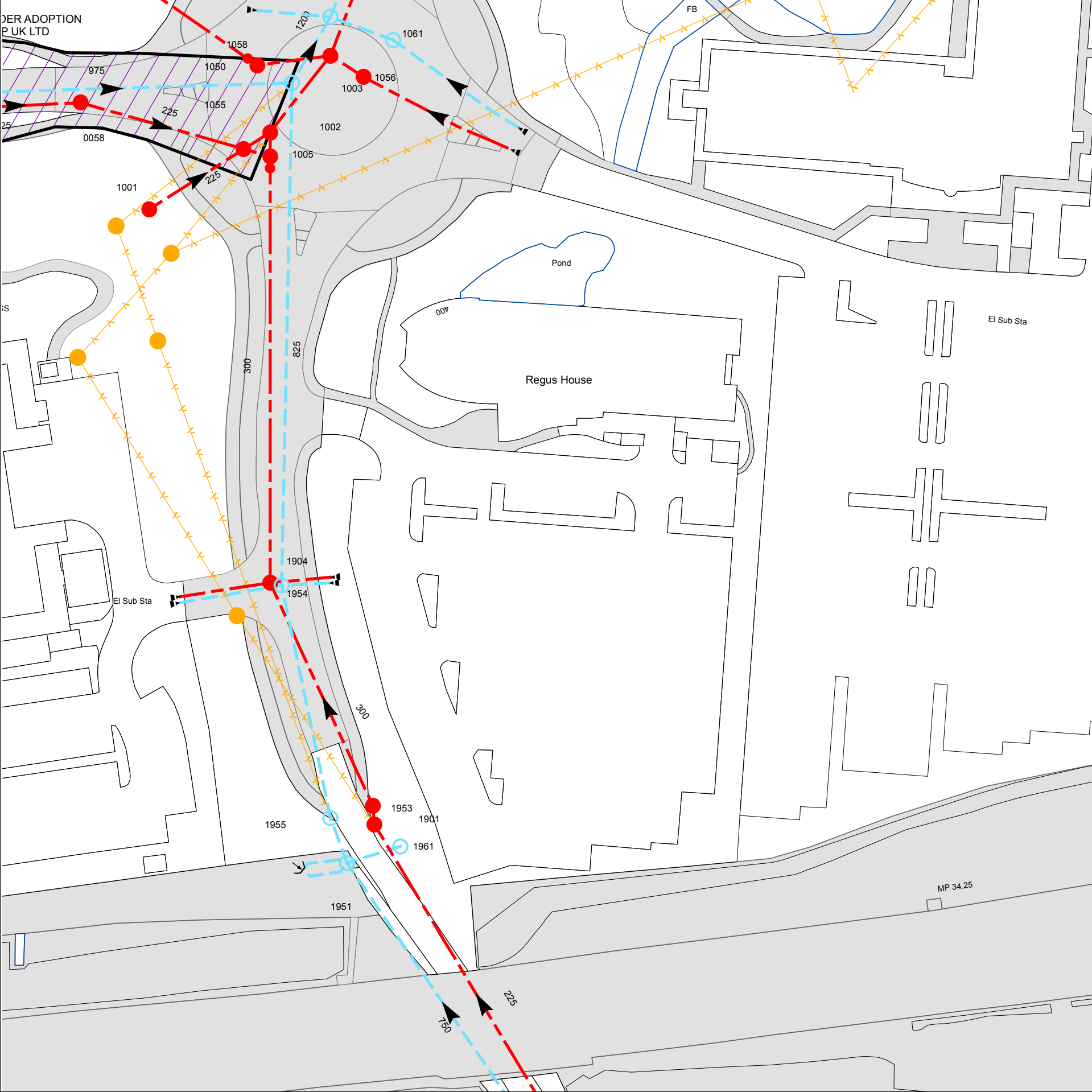
6.2 On the copy extract from the public sewer map, please show manhole cover, depth, and invert levels where the information is available.

Details of any manhole cover and invert levels applicable to this site are enclosed.

Payment for this Search

The charge will be added to the NLIS Account. This search was ordered through National Land Information Services, Russell Square House, 10-12 Russell Square, London WC1B 5LF.

CommercialDW Drainage and Water Enquiry Sewer Map- CDWS/CDWS Standard/2023 4822496



The width of the displayed area is 200m

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map (2020) with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no survey information is available.

Manhole Reference	Manhole Cover Level	Manhole Invert Level
1961	n/a	n/a
0058	n/a	n/a
1001	37.29	31.49
1055	n/a	n/a
1058	n/a	n/a
1005	n/a	n/a
1002	37.35	36.02
1904	n/a	n/a
1954	n/a	n/a
1050	37.64	34.93
1051	37.78	34.89
1955	38	36.29
1003	37.82	31
1951	38.16	36.65
1056	n/a	n/a
1953	38.06	36.79
1901	38	36.77
1061	n/a	n/a
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.		



Con29DW Commercial Drainage and Water Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

	Foul Sewer: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.
	Surface Water Sewer: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.
	Combined Sewer: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
	Storm Sewer
	Sludge Sewer
	Foul Trunk Sewer
	Surface Trunk Sewer
	Combined Trunk Sewer
	Foul Rising Main
	Surface Water Rising Main
	Combined Rising Main
	Vacuum
	Thames Water Proposed
	Vent Pipe
	Gallery

Other Sewer Types (Not operated and maintained by Thames Water)

	Sewer		Culverted Watercourse
	Proposed		Decommissioned Sewer
	Content of this drainage network is currently unknown		Ownership of this drainage network is currently unknown

Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plan are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate the direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

	Air Valve		Meter
	Dam Chase		Vent
	Fitting		

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

	Ancillary		Drop Pipe
	Control Valve		Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol. Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

	Inlet		Outfall
	Undefined End		

Other Symbols

Symbols used on maps which do not fall under other general categories.

	Change of Characteristic Indicator		Public / Private Pumping Station
	Invert Level		Summit

Areas

Lines denoting areas of underground surveys, etc.

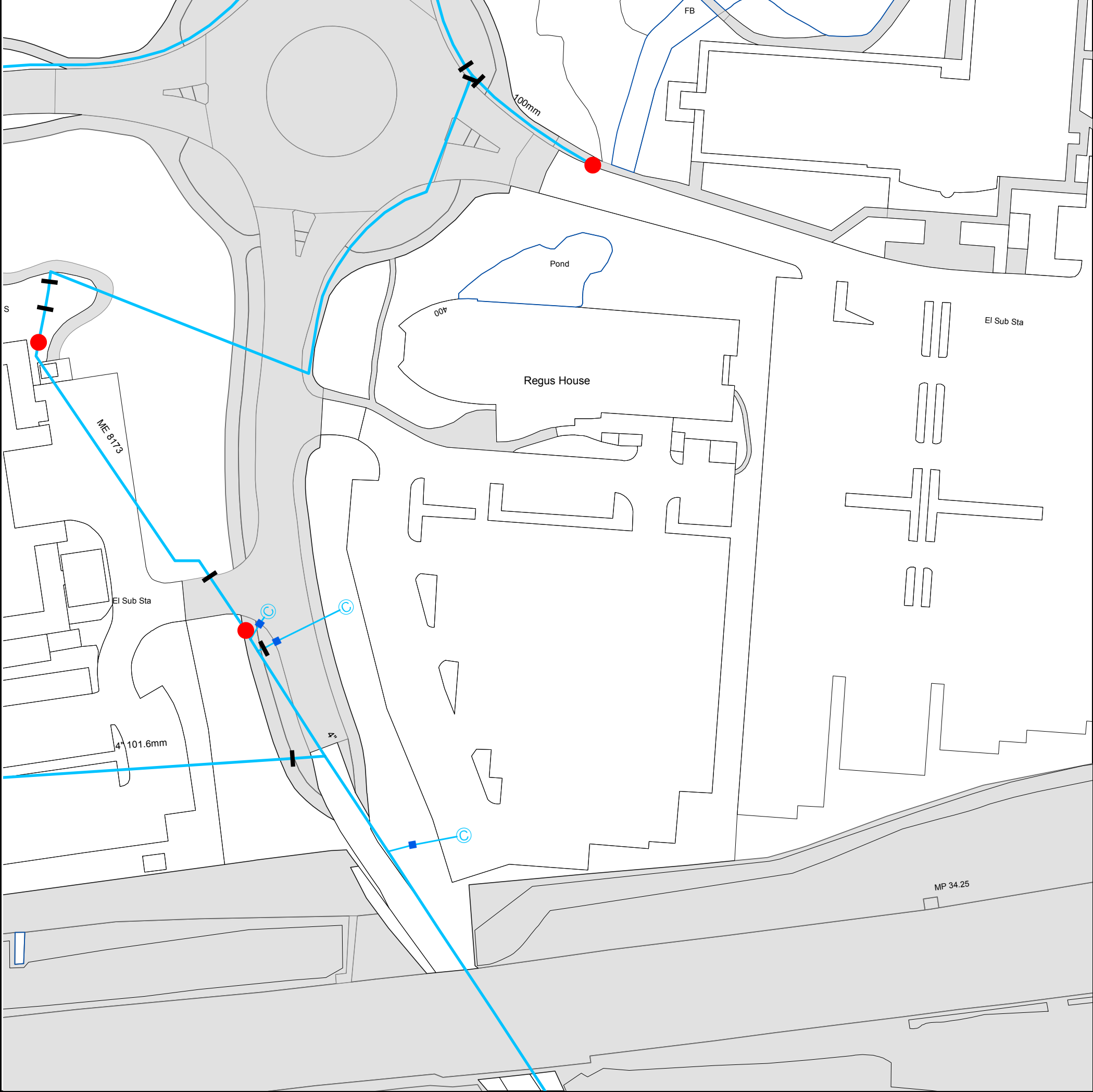
	Agreement
	Chamber
	Operational Site

Ducts or Crossings

	Casement	Ducts may contain high voltage cables. Please check with Thames Water.
	Conduit Bridge	
	Subway	
	Tunnel	

5) 'na' or '0' on a manhole indicates that data is unavailable.

6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimeters. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology, please contact Property Searches on 0800 009 4540.



The width of the displayed area is 200m

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

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Con29DW Commercial Drainage and Water Search - Water Key

Water Pipes (Operated & Maintained by Thames Water)

- 6"** **Distribution Main:** The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.
- 16"** **Trunk Main:** A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.
- 2" SUPPLY** **Supply Main:** A supply main indicates that the water main is used as a supply for a single property or group of properties.
- 2" FIRE** **Fire Main:** Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.
- 2" METERED** **Metered Pipe:** A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.
- Transmission Tunnel:** A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.
- Proposed Main:** A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

PIPE DIAMETER	DEPTH BELOW GROUND
Up to 300mm (12")	900mm (3')
300mm - 600mm (12" - 24")	1100mm (3' 8")
600mm and bigger (24" plus)	1200mm (4')

Valves

- General Purpose Valve
- Air Valve
- Pressure Control Valve
- Customer Valve

Hydrants

- Single Hydrant

Meters

- Meter

End Items

- Symbol indicating what happens at the end of a water main.
- Blank Flange
 - Capped End
 - Emptying Pit
 - Undefined End
 - Manifold
 - Customer Supply
 - Fire Supply

Operational Sites

- Booster Station
- Other
- Other (Proposed)
- Pumping Station
- Service Reservoir
- Shaft Inspection
- Treatment Works
- Unknown
- Water Tower

Other Symbols

- Data Logger
- Casement:** Ducts may contain high voltage cables. Please check with Thames Water.

Other Water Pipes (Not Operated or Maintained by Thames Water)

- Other Water Company Main:** Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are denoted in purple and in most cases have the owner of the pipe displayed along them.
- Private Main:** Indicates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.

For your guidance:

- Thames Water Property Searches Complaints Procedure:
 - Thames Water Property Searches offers a robust complaints procedure. Complaints can be made by telephone, in writing, by email (searches@thameswater.co.uk) or through our website (www.thameswater-propertysearches.co.uk)

As a minimum standard Thames Water Property Searches will:

- endeavour to resolve any contact or complaint at the time of receipt. If this isn't possible, we will advise of timescales;
- investigate and research the matter in detail to identify the issue raised (in some cases third party consultation will be required);
- provide a response to the customer within 10 working days of receipt of the complaint;
- provide compensation, if no response or acknowledgment that we are investigating the case is given within 10 working days of receipt of the complaint;
- keep you informed of the progress and, depending on the scale of investigation required, update with new timescales as necessary;
- provide an amended search, free of charge, if required;
- provide a refund if we find your complaint to be justified; take the necessary action within our power to put things right.

If you want us to liaise with a third party on your behalf, just let us know.

If you are still not satisfied with the outcome provided, we will refer the matter to a Senior Manager, for resolution, who will respond again within 5 working days.

If you remain dissatisfied with our final response you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). Further information can be obtained by visiting www.tpos.co.uk or by sending an email to admin@tpos.co.uk

Question 1.1

For your guidance:

- The Water Industry Act 1991 defines Public Sewers as those which Thames Water have responsibility for. Other assets and rivers, watercourses, ponds, culverts or highway drains may be shown for information purposes only.
- The company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.
- Assets other than public sewers may be shown on the copy extract, for information.

Question 1.2

For your guidance:

- The "water mains" in this context are those, which are vested in and maintainable by the water company under statute.
- Assets other than public water mains may be shown on the plan, for information only.
- Water companies are not responsible for private supply pipes connecting the property to the public water main and do not hold details of these. These may pass through land outside of the control of the seller, or may be shared with adjacent properties. The buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Question 2.1

For your guidance:

- Water companies are not responsible for any private drains that connect the property to the public sewerage system and do not hold details of these. The property owner will normally have sole responsibility for private drains serving the property. These may pass through land outside the control of the seller and the buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.
- If foul water does not drain to the public sewerage system, the property may have private facilities in the form of a cesspit, septic tank or other type of treatment plant.
- An extract from the public sewer map is enclosed. This will show known public sewers in the vicinity of the property and it should be possible to estimate the likely length and route of any private drains and/or sewers connecting the property to the public sewerage system.

Question 2.2

For your guidance:

- Sewerage Undertakers are not responsible for any private drains that connect the property to the public sewerage system, and do not hold details of these.
- The property owner will normally have sole responsibility for private drains serving the property. These private drains may pass through land outside of the control of the seller and the buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.
- In some cases, 'Sewerage Undertakers' records do not distinguish between foul and surface water connections to the public sewerage system.
- At the time of privatisation in 1989, Sewerage Undertakers were sold with poorly-kept records of sewerage infrastructure. The records did not always show which properties were connected for surface water drainage purposes. Accordingly, billing records have been used to provide an answer for this element of the drainage and water search.
- Due to the potential inadequacy of 'Sewerage Undertakers' infrastructure records with respect to surface water drainage, it is the customer's responsibility to inform the Sewerage Undertaker that they do not receive the surface water drainage service. If on inspection, the buyer finds that surface water from the property does not drain to a public sewer, then the property may be eligible for a rebate of the surface water drainage charge. If you wish to know who bills the sewerage services for this property then you will need to contact the current owner. For a list of all potential retailers of sewerage services for the property please visit www.open-water.org.uk.
- If surface water from the property does not drain to the public sewerage system, the property may have private facilities in the form of a soakaway or private connection to a watercourse.
- An extract from the public sewer map is enclosed. This will show known public sewers in the vicinity of the property and it should be possible to estimate the likely length and route of any private drains and/or sewers connecting the property to the public sewerage system.

Question 2.3

For your guidance:

- If surface water from the property drains to a public sewer, then a surface water drainage charge is payable.
- Where a surface water drainage charge is currently included in the property's water and sewerage bill but, on inspection, the buyer finds that surface water from the property does not drain to a public sewer, then the property may be eligible for a rebate of the surface water drainage charge. If you wish to know who bills the sewerage services for this property then you will need to contact the current owner. For a list of all potential retailers of sewerage services for the property please visit www.open-water.org.uk.

Question 2.4

For your guidance:

- Thames Water has a statutory right of access to carry out work on its assets. Employees of Thames Water or its contractors may, therefore, need to enter the property to carry out work.
- Please note if the property was constructed after 1st July 2011 any sewers and/or lateral drain within the boundary of the property are the responsibility of the householder.
- The approximate boundary of the property has been determined by reference to the Ordnance Survey Record or the map supplied.
- The presence of a public sewer running within the boundary of the property may restrict further development. The Company has a statutory right of access to carry out work on its assets, subject to notice. This may result in employees of the Company, or its contractors, needing to enter the property to carry out work.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Question 2.4.1

For your guidance:

- Private pumping stations installed before 1st July 2011 will be transferred into the ownership of the sewerage undertaker.
- From the 1st October 2016 private pumping stations which serve more than one property have been transferred into public ownership but may not be recorded on the public sewer map.
- The approximate boundary of the property has been determined by reference to the Ordnance Survey Record or the map supplied.
- The presence of a public pumping station within the boundary of the property may restrict further development. The company has a statutory right of access to carry out work on its assets, subject to notice. This may result in employees of the company, or its contractors, needing to enter the property to carry out work.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Question 2.5

For your guidance:

- From the 1st October 2011 there may be additional lateral drains and/or public sewers which are not recorded on the public sewer map but are also within 30.48 metres (100 feet) of a building within the property.
- The presence of a public sewer within 30.48 metres (100 feet) of the building(s) within the property can result in the local authority requiring a property to be connected to the public sewer.
- The measurement is estimated from the Ordnance Survey record, between the building(s) within the boundary of the property and the nearest public sewer.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Question 2.5.1

For your guidance:

- Private pumping stations installed before 1st July 2011 will be transferred into the ownership of the sewerage undertaker.
- From the 1st October 2016 private pumping stations which serve more than one property have been transferred into public ownership but may not be recorded on the public sewer map.
- The presence of a public pumping station within 50 metres of the building(s) within the property can result in the local authority requiring a property to be connected to the public sewer.
- The measurement is estimated from the Ordnance Survey record, between the building(s) within the boundary of the property and the nearest public sewer.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Question 2.6

For your guidance:

- Any sewers and/or lateral drains within the boundary of the property are not the subject of an adoption agreement and remain the responsibility of the householder. Adoptable sewers are normally those situated in the public highway.
- This enquiry is of interest to purchasers who will want to know whether or not the property will be linked to a public sewer.
- Where the property is part of a very recent or ongoing development and the sewers are not the subject of an adoption application, buyers should consult with the developer to ascertain the extent of private drains and sewers for which they will hold maintenance and renewal liabilities.
- Final adoption is subject to the developer complying with the terms of the adoption agreement under Section 104 of the Water Industry Act 1991 and meeting the requirements of 'Sewers for Adoption' 6th Edition.

Question 2.7

For your guidance:

- From the 1st October 2011 most private sewers, disposal mains and lateral drains were transferred into public ownership and the sewerage undertaker may not have been approved or consulted about any plans to erect a building or extension on the property over or in the vicinity of these.
- Buildings or extensions erected over a sewer in contravention of building controls may have to be removed or altered.

Question 2.8

For your guidance:

- For reporting purposes buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- A sewer is “overloaded” when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- “Internal flooding” from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- “At Risk” properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company’s reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water Utilities Ltd on Tel: 0800 316 9800 or website www.thameswater.co.uk

Question 2.9

For your guidance:

- The nearest sewage treatment works will not always be the sewage treatment works serving the catchment within which the property is situated.
- The sewerage undertaker’s records were inspected to determine the nearest sewage treatment works.
- It should be noted that there may be a private sewage treatment works closer than the one detailed above that has not been identified.
- As a responsible utility operator, Thames Water Utilities Ltd seeks to manage the impact of odour from operational sewage works on the surrounding area. This is done in accordance with the Code of Practice on Odour Nuisance from Sewage Treatment Works issued via the Department of Environment, Food and Rural Affairs (DEFRA). This Code recognises that odour from sewage treatment works can have a detrimental impact on the quality of the local environment for those living close to works. However DEFRA also recognises that sewage treatment works provide important services to communities and are essential for maintaining standards in water quality and protecting aquatic based environments. For more information visit www.thameswater.co.uk

Question 3.1

For your guidance:

- The Company does not keep details of private supplies. The situation should be checked with the current owner of the property.

Question 3.2

For your guidance:

- The boundary of the property has been determined by reference to the plan supplied. Where a plan was not supplied, the Ordnance Survey Record was used. If the Water undertaker mentioned in Question 4.1.2 is not Thames Water Utilities Ltd the boundary of the property has been determined by the Ordnance Survey.
- The presence of a public water main within the boundary of the property may restrict further development within it. Water companies have a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of the Company, or its contractors, needing to enter the property to carry out work.

Question 3.3

For your guidance:

- This enquiry is of interest to purchasers who will want to know whether or not the property will be linked to the mains water supply.

Question 3.4

For your guidance:

- “Low water pressure” means water pressure below the regulatory reference level, which is the minimum pressure when demand on the system is not abnormal.
- Water Companies are required to include in the Regulatory Register that is presented annually to the Director General of Water Services, properties receiving pressure below the reference level, provided that allowable exclusions do not apply (i.e. events which can cause pressure to temporarily fall below the reference level)
- The reference level of service is a flow of 9 litres/minute at a pressure of 10metres / head on the customer's side of the outside stop valve (osv). The reference level of service must be applied on the customer's side of a meter or any other company fittings that are on the customer's side of the main stop tap. The reference level applies to a single property. Where more than one property is served by a common service pipe, the flow assumed in the reference level must be appropriately increased to take account of the total number of properties served. For two properties, a flow of 18 litres/minute at a pressure of 10metres/head on the customers' side of the osv is appropriate. For three or more properties the appropriate flow should be calculated from the standard loadings provided in BS806-3 or the Institute of Plumbing handbook.
- **Allowable exclusions** The Company is required to include in the Regulatory Register properties receiving pressure below the reference level, provided that allowable exclusions listed below do not apply.
- **Abnormal demand:** This exclusion is intended to cover abnormal peaks in demand and not the daily, weekly or monthly peaks in demand, which are normally expected. Companies should exclude from the reported figures properties which are affected by low pressure only on those days with the highest peak demands. During the report year companies may exclude, for each property, up to five days of low pressure caused by peak demand.
- **Planned maintenance:** Companies should not report low pressures caused by planned maintenance. It is not intended that companies identify the number of properties affected in each instance. However, companies must maintain sufficiently accurate records to verify that low-pressure incidents that are excluded because of planned maintenance are actually caused by maintenance.
- **One-off incidents:** This exclusion covers a number of causes of low pressure; mains bursts; failures of company equipment (such as pressure reducing valves or booster pumps); firefighting; and action by a third party. However, if problems of this type affect a property frequently, they cannot be classed as one-off events and further investigation will be required before they can be excluded.
- **Low-pressure incidents of short duration:** Properties affected by low pressure, which only occur for a short period, and for which there is evidence that incidents of a longer duration would not occur during the course of the year, may be excluded from the reported figures.
- Please contact your water undertaker mentioned in Question 4.1.2 if you require further information on water pressure.

Question 3.5

For your guidance:

- Water hardness can be expressed in various indices for example the hardness settings for dishwashers are commonly expressed in Clark's degrees, but check with the manufacturer as there are also other units. The following table shows the normal ranges of hardness.

Thames Water Hardness Category	Calcium (mg/l)	Calcium Carbonate (mg/l)	English Clarke degrees	French degrees	General/ German degrees
Soft	0 to 40	0 to 100	0 to 7	0 to 10	0 to 5.6
Medium	41 to 80	101 to 200	8 to 14	11 to 20	5.7 to 11.2
Hard	Over 80	Over 200	Over 14	Over 20	over 11.2

- Please contact your water undertaker mentioned in Question 4.1.2 if you require further information on water hardness.

Question 3.6

For your guidance:

- The Water Industry Act 1991 Section 150, The Water Resale Order 2001 provides protection for people who buy their water or sewerage services from a person or company instead of directly from a water or sewerage company. Details are available from the Office of Water Services (OFWAT) website is www.ofwat.gov.uk.
- The Company may install a meter at the premises where a buyer makes a change of use of the property or where the buyer uses water for:
 - Watering the garden other than by hand (this includes the use of sprinklers).
 - Automatically replenishing a pond or swimming pool with a capacity greater than 10,000 litres.
 - A bath with a capacity in excess of 230 litres.
 - A reverse osmosis unit Where a meter does not serve the property and the customer wishes to consider this method of charging, they should contact the current owner if they wish to know who bills the sewerage and water services for this property. For a list of all potential retailers of sewerage and water services for the property please visit www.open-water.org.uk.

Question 3.7

For your guidance:

- Where a meter does not serve the property and the customer wishes to consider this method of charging, they should contact the current owner if they wish to know who bills the water services for this property. For a list of all potential retailers of water services for the property please visit www.open-water.org.uk.

Question 5.1

For your guidance:

- If a Trade effluent consent applies to the premises which are the subject of this search, it is for the applicant to satisfy itself as to the suitability of the consent for its client's requirements. The occupier of any trade premises in the area of a sewerage undertaker may discharge any trade effluent proceeding from those premises into the undertaker's public sewers if he does so with the undertaker's consent. If, in the case of any trade premises, any trade effluent is discharged without such consent or other authorisation, the occupier of the premises shall be guilty of an offence.
- Please note any existing consent is dependent on the business being carried out at the property and will not transfer automatically upon change of ownership.
- For further information regarding Trade Effluent consents please contact: Trade Effluent Control, Crossness STW, Belvedere Road, Abbey Wood London SE2 9AQ.

Question 6.1

For your guidance:

- This question relates only to private agreements between the water company acting in a private capacity and a landowner. Such contracts may often be part of a conveyance or land transfer, or a deed of grant of easement.
- If there is no formal easement, then a sewer or water main may have been constructed following the service of notice under the provisions of the Public Health Act 1936, Water Act 1945, Water Act 1989 or Water Industry Act 1991 as applicable. The company does not hold copies of these notices. However, in the absence of evidence to the contrary there is a legal presumption that all matters were properly dealt with. All rights and obligations relating to sewers and water mains are now covered by the Water Industry Act 1991. Where rights exist at the boundary of the property, but we are not sure of the exact correlation, we will answer "Yes" to this question. A documentary right can exist even if the physical asset itself has not yet been laid, or has been moved, or removed. Likewise the position of the right and of the asset may differ.
- You may also find that an asset is protected both with contractual rights and statutory rights. Please consult your solicitor as to why this may happen, and its effects.
- We refer to "defined" assets for the following reasons: Often a contract may give the water company an expressed right to install and maintain assets within an area but without stating the exact position or route of such assets. Also, the law may imply rights where none have been mentioned specifically in a related contract, such as a conveyance. Finally, rights may come into being through long use. In any of these cases the rights are undefined, and although the water company may need to rely on them from time to time, as we cannot map the rights accurately, we will answer "no" to this question.
- Information obtainable from physical inspection (including Trial Bore Holes) overrides information contained in the report.
- Any error in answering this question is not to be regarded as a waiver of the water company's rights or title, or an agreement or representation that the water company is prepared to vary or discharge any of its rights or title.

CommercialDW Drainage and Water Enquiry Terms and Conditions

Customer and Clients are asked to note these terms, which govern the basis on which this CommercialDW Drainage & Water Enquiry is supplied

Definitions

'Client' means the person, company or body who is the intended recipient of the Report with an actual or potential interest in the Property.

'Company' means a water service company or their data service provider producing the Report.

'Customer' means the person, company, firm or other legal body placing the Order, either on their own behalf as Client, or, as an agent for a Client.

'Order' means any request completed by the Customer requesting the Report.

'Property' means the address or location supplied by the Customer in the Order.

'Report' means the drainage and/or water report prepared by The Company in respect of the Property.

'Thames Water' means Thames Water Utilities Limited registered in England and Wales under number 2366661 whose registered office is at Clearwater Court, Vastern Road, Reading, Berks, RG1 8DB;

Agreement

1 Thames Water agrees to supply the Report to the Customer and the Client subject to these terms. The scope and limitations of the Report are described in paragraph 2 of these terms. Where the Customer is acting as an agent for the Client then the Customer shall be responsible for bringing these terms to the attention of the Client. The Customer and Client agree that the placing of an Order for a Report indicates their acceptance of these terms.

The Report

2. Whilst Thames Water will use reasonable care and skill in producing the Report, it is provided to the Customer and the Client on the basis that they acknowledge and agree to the following:-

2.1 The information contained in the Report can change on a regular basis so Thames Water cannot be responsible to the Customer and the Client for any change in the information contained in the Report after the date on which the Report was produced and sent to the Client.

2.2 The Report does not give details about the actual state or condition of the Property nor should it be used or taken to indicate or exclude actual suitability or unsuitability of the Property for any particular purpose, or relied upon for determining saleability or value, or used as substitute for any physical investigation or inspection. Further advice and information from appropriate experts and professionals should always be obtained.

2.3 The information contained in the Report is based upon the accuracy, completeness and legibility of the address and other information supplied by the Customer or Client.

2.4 The Report provides information as to the location and connection of existing services and should not be relied on for any other purpose. The Report may contain opinions or general advice to the Customer and the Client and Thames Water cannot ensure that any such opinion or general advice is accurate, complete or valid and accepts no liability therefore.

2.5 The position and depth of apparatus shown on any maps attached to the Report are approximate, and are furnished as a general guide only, and no warranty as to its correctness is given or implied. The exact positions and depths should be obtained by excavation trial holes and the maps must not be relied on in the event of excavation or other works made in the vicinity of apparatus shown on any maps.

Liability

3 Thames Water shall not be liable to the Client for any failure, defect or non-performance of its obligations arising from any failure of, or defect in any machine, processing system or transmission link or anything beyond Thames Water's reasonable control or the acts or omissions of any party for whom Thames Water are not responsible.

3.1 Where the Customer sells this report to a Client (other than in the case of a bona fide legal adviser recharging the cost of the Report as a disbursement) Thames Water shall not in any circumstances (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) be liable for any loss or damage whatsoever and the Customer shall indemnify Thames Water in respect of any claim by the Client.

3.2 Where a report is requested for an address falling within a geographical area where Thames Water and another Company separately provide Water and Sewerage Services, then it shall be deemed that liability for the information given by Thames Water or the Company as the case may be will remain with Thames Water or the Company as the case may be in respect of the accuracy of the information supplied. Where Thames Water is supplying information which has been provided to it by another Company for the purposes outlined in this agreement Thames Water will therefore not be liable in any way for the accuracy of that information and will supply that information as agent for the Company from which the information was obtained.

3.3 Except in respect of death or personal injury caused by negligence, or as expressly provided in these Terms:

3.3.1 The entire liability of Thames Water or the Company as the case may be in respect of all causes of action arising under or in connection with the Report (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) shall not exceed £2,000,000 (two million pounds); and

3.3.2 Thames Water shall not in any circumstances (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) be liable for any loss of profit, loss of goodwill, loss of

reputation, loss of business or any indirect, special or consequential loss, damage or other claims, costs or expenses;

Copyright and Confidentiality

4. The Customer and the Client acknowledge that the Report is confidential and is intended for the personal use of the Client. The copyright and any other intellectual property rights in the Report shall remain the property of Thames Water or the Company as the case may be. No intellectual or other property rights are transferred or licensed to the Customer or the Client except to the extent expressly provided

4.1 The Customer or Client is entitled to make copies of the Report but is not permitted to copy any maps contained in, or attached to the Report

4.2 The maps contained in the Report are protected by Crown Copyright and must not be used for any purpose outside the context of the Report.

4.3 The Customer and Client agree (in respect of both the original and any copies made) to respect and not to alter any trademark, copyright notice or other property marking which appears on the Report.

Payment

5. Unless otherwise stated all prices are inclusive of VAT. The Customer shall pay for the price of the Report specified by Thames Water, without any set off, deduction or counterclaim.

5.1 Unless payment has been received in advance, Customers shall be invoiced for the agreed fee once their request has been processed. Any such invoice must be paid within 14 days. Where the Customer has an account with Thames Water, payment terms will be as agreed with Thames Water.

5.2 No payment shall be deemed to have been received until Thames Water has received cleared funds.

5.3 If the Customer fails to pay Thames Water any sum due Thames Water shall be entitled but not obliged to charge the Customer interest on the sum from the due date for payment at the annual rate of 2% above the base lending rate from time to time of Natwest Bank, accruing on a daily basis until payment is made. Thames Water reserves the right to claim interest under the Late Payment of Commercial Debts (Interest) Act 1998.

5.4 Thames Water reserves the right to increase fees on reasonable prior written notice at any time.

Cancellations or Alterations

6. Once an Order is placed, Thames Water shall not be under any obligation to accept any request to cancel that Order and payment for the Order shall still be due upon completion of the Report. In cases where an error has been made in the original Order (e.g. the Customer has supplied an incorrect address), the Customer will need to place a second Order, detailing the correct information, and shall be liable to pay a second charge in accordance with clause 5 above.

Delivery

7. On receiving your order the reports will be posted to you within 10 working days from receipt.

7.1 Delivery is subject to local post conditions and regulations. All items should arrive within 12 working days, but Thames Water cannot be held responsible should delays be caused by local post conditions, postal strikes or other causes beyond the control of Thames Water.

General

8. If any provision of these terms is or becomes invalid or unenforceable, it will be taken to be removed from the rest of these terms to the extent that it is invalid or unenforceable. No other provision of these terms shall be affected.

8.1 These terms shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts.

8.2 Nothing in this notice shall in any way restrict the Customer or Clients statutory or any other rights of access to the information contained in the Report.

These Terms & Conditions are available in larger print for those with impaired vision.

Payment Terms and Conditions

All sales are made in accordance with Thames Water Utilities Limited (TWUL) standard terms and conditions unless previously agreed in writing.

1. All goods remain in the property of Thames Water Utilities Ltd until full payment is received.
2. Provision of service will be in accordance with all legal requirements and published TWUL policies.
3. All invoices are strictly due for payment within 14 days of the date of the invoice. Any other terms must be accepted/agreed in writing prior to provision of goods or service or will be held to be invalid.
4. Penalty interest may be invoked by TWUL in the event of unjustifiable payment delay. Interest charges will be in line with UK Statute Law 'The Late Payment of Commercial Debts (Interest) Act 1998'.
5. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
6. A charge may be made at the discretion of the company for increased administration costs.

A copy of Thames Water's standard terms and conditions are available from the Commercial Billing Team (cashoperations@thameswater.co.uk).

We publish several Codes of Practice including a guaranteed standards scheme. You can obtain copies of these leaflets by calling us on 0800 316 9800.

If you are unhappy with our service, you can speak to your original goods or customer service provider. If you are still not satisfied with the outcome provided, we will refer the matter to a Senior Manager for resolution who will provide you with a response.

If you are still dissatisfied with our final response, and in certain circumstances such as you are buying a residential property or commercial property within certain parameters, The Property Ombudsman will investigate your case and give an independent view. The Ombudsman can award compensation of up to £25,000 to you if he finds that you have suffered actual financial loss and/or aggravation, distress, or inconvenience because of your search not keeping to the Code. Further information can be obtained by visiting www.tpos.co.uk or by sending an email to admin@tpos.co.uk.

If the Goods or Services covered by this invoice falls under the regulation of the 1991 Water Industry Act, and you remain dissatisfied you can refer your complaint to Consumer Council for Water on 0300 034 2222 or write to them at Consumer Council for Water, 1st Floor, Victoria Square House, Victoria Square, Birmingham, B2 4AJ.

Ways to pay your bill

Credit Card	BACS Payment	Telephone Banking
Please call 0800 009 4540 quoting your invoice number starting CBA or ADS	Account Number 90478703 Sort code 60-00-01 A remittance advice must be sent to Thames Water Utilities Ltd. PO Box 3189 Slough SL14WW or email ps.billing@thameswater.co.uk	By calling your bank and quoting Account number 90478703 Sort code 60-00-01 and your invoice number

Thames Water Utilities Ltd Registered in England & Wales No. 2366661 Registered Office Clearwater Court, Vastern Rd, Reading, Berks, RG1 8DB.