

To:	London Borough of Haringey	Job Number:	1832-01
From:	Civic Engineers	Job Name:	Ashley Road Depot
CC:	Formation Design & Build	Date:	28/06/2023

1832 – Ashley Road Depot – Planning Condition no. 27 – Surface Water Drainage

This document has been prepared in support of the discharge of planning condition no. 27, relating to the proposed surface water drainage, for the Ashley Road Depot development.

Condition no. 27 states that "no development above ground level shall take place until a detailed Surface Water Drainage scheme for site has been submitted and approved in writing by the Local Planning Authority". This document will show that a detailed surface water drainage scheme has been designed and analysed in accordance with Local Planning Authority guidelines and requirements.

Below is the full wording from the planning decision notice followed by the information requested.

No development above ground level shall take place until a detailed Surface Water Drainage scheme for site has been submitted and approved in writing by the Local Planning Authority. The detailed drainage scheme should also accompany a detailed drainage plan appropriately cross-referenced to supporting calculations for the development and they should clearly indicate the location of all proposed drainage elements demonstrating that the surface water generated by this development (For all the rainfall durations starting from 15 min to 10080 min and intensities up to and including the climate change adjusted critical 100 yr storm) can be accommodated and disposed of without discharging onto the highway and without increasing flood risk on or off-site.

On the following pages/section, the surface water drainage strategy for the development will be outlined, showing the process of deciding the point of discharge, the development's greenfield run-off rates and the proposed surface water attenuation and SuDS features for the development.

1. Surface Water Drainage Strategy

1.1 Point of Discharge

The NPPF PPG – Flood risk and coastal change, states that:

"Generally, the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable:

- 1. into the ground (infiltration);*
- 2. to a surface water body;*
- 3. to a surface water sewer, highway drain, or another drainage system;*
- 4. to a combined sewer."*

An appraisal of the discharge hierarchy has been conducted in the following paragraphs.

Infiltration Based Systems

The site is currently used as a waste management depot and the ground investigation preliminary findings, available in Appendix A, are showing elevated concentrations of several contaminants. Due to the historical land use, the presence of ground contaminants and the presence of clay across the entire site, infiltration is deemed unfeasible for the site.

Waterbody

The closest waterbody to the site is the Moselle Brook, located 300 metres away. Discharge to a water body is deemed unfeasible.

Surface Water Sewer

A connection to the public sewer is required to dispose of surface water emanating from the site. It is proposed to discharge to the Thames Water surface water sewers running along Park View Road via existing connections located in the northwest and southwest corners of the site, refer to Figure 1 for further details. Agreement in principle has been received from Thames Water; the letter is available in Appendix B, along with Thames Water Asset search of the site and surrounding area.

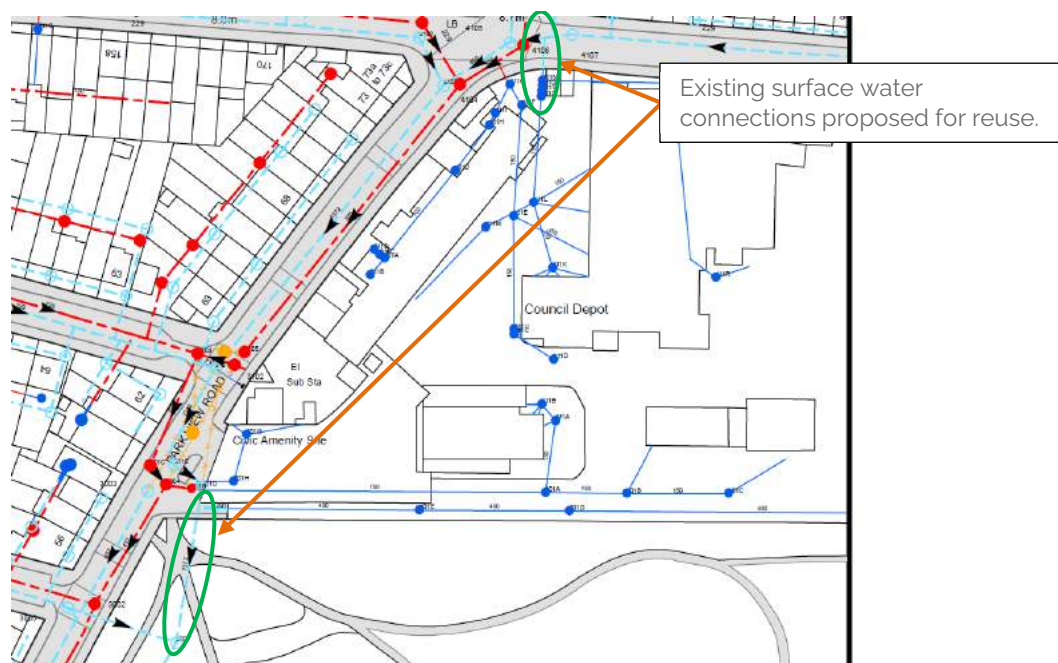


Figure 1: Location of existing surface water connection to Thames Water sewer

Summary

Table 1: Summary of point of discharge suitability

Point of discharge	Suitability
Ground	x
Waterbody	x
Surface water sewer	√
Combined sewer	x
√ suitable x unsuitable	

1.2 Greenfield Run-off Rates

Greenfield run-off rates for the site have been estimated with the HR Wallingford online tool using the IH124 method. The results are presented in Table 2 and the full outputs are available in Appendix C. It is proposed to limit the discharge rate to 4.0L/s for up to the 1-in-30-year event and to 8.16L/s for up to the 1-in-100-year event plus a 40% allowance for climate change. The 4.0L/s is chosen to avoid blockages within the flow controls (two 2.0L/s connection to the public sewer). A smaller discharge rate would mean a smaller orifice and could lead to increased flood risk. The agreement in principle from Thames Water is available in Appendix B.

Table 2: Greenfield run-off rates

Qbar	1-in-1-year event	1-in-30-year event	1-in-100-year event
2.56L/s	2.17L/s	5.88L/s	8.16L/s

1.3 Attenuation

Water Quantity

In line with Haringey Borough Council's Policy DM25 stating that: "All major development proposals will be required to reduce surface water flows to a Greenfield run-off rate for a 1 in 100-year critical storm event", it is proposed to restrict the discharge rate to 4.0l/s for up to the 1-in-30-year event and to 8.16l/s for up to the 1-in-100-year event plus a 40% allowance for climate change, see Table 3 for the betterment this represents for different storm events against the existing surface water discharge from site.

Table 3: Surface water discharge rate betterment

Storm event return period	1 in 1-year	1 in 30-year	1-in-100-year	1 in 100-year + 40% allowance for climate change
Existing discharge rate	222l/s	566l/s	742l/s	1,047l/s
Proposed discharge rate	4.0l/s	4.0l/s	8.16l/s	8.16l/s
Betterment	98.2%	99.3%	98.9%	99.2%

The first level of surface water management comes from the current landscaping proposals resulting in a 1,025% increase in permeable surfaces. Table 4 presents further details.

Table 4: Changes in surfacing across the site

Areas	Permeable	Impermeable
Existing areas	751m ²	15,464m ²
Proposed areas	8,446m ²	7,769m ²
Percentage change of areas	+1,025%	-50%

It is proposed to store rainwater on-site by the means of bioretention systems, pervious pavement, detention basins, and green/blue roofs. The total proposed hardstanding area draining to the proposed drainage system for the site is approximately 11,740m². Note, that this does not include the western footpath assumed to be given for adoption to the London Borough of Haringey. Refer to Table 5 for further details and to Appendix D for the Proposed Surface Water Drainage Strategy drawings (no. 1832-CIV-XX-XX-D-C-30011 to 30012) and Drainage Details drawings for SuDS and Green/Blue Roof features (no. 1832-CIV-XX-XX-D-C-31004 & 31011).

Table 5: Surface classification for surface water run-off calculations

Area draining to highway	Area draining to proposed drainage system		
Impermeable area (m ²)	Impermeable area (m ²)	Pervious pavement (m ²)	Total area to attenuate (m ²)
513	7,256	4,484	11,740

The Causeway software Flow has been used to estimate the volume of storage required to attenuate the 1-in-100-year storm event + 40% allowance for climate change without any flooding. The total volume required is estimated to be approximately 1,129m³; the full Flow outputs can be found in Appendix C.

It is proposed to have over 6,000m² of the site dedicated to surface water management in the forms of different SuDS features, Table 6 shows how these will provide the required storage for the site.

Table 6: Attenuation details

SuDS feature	Bio-retention area	Swale	Pervious pavement	Detention basin	Green/blue roofs
Area(m ²) x Depth(m) x Porosity	1,327 x 0.45 x 0.3 Freeboard: 1,327 x 0.05 x 1	233 x 0.151 x 1 Filter drain: 47 x 0.3 x 0.3	4,440 x 0.3 x 0.3	296 x 0.3 x 1	1,216 x 0.2 x 0.95 1,355 x 0.165 x 0.95
Volume provided (m ³)	245	39	400	89	444
Total volume provided (m ³)	1,217				

The Proposed Surface Water Drainage Strategy drawings are available in Appendix D and shows the location for all SuDS features.

Sustainability

Haringey Borough Council's Policy DM25 states that: "the Council will require Sustainable Drainage Systems (SuDS) to be sensitively incorporated into new development by way of site layout and design."

The 'SuDS Manual' CIRIA report C753 states that "surface water run-off should be managed for maximum benefit." The types of benefits that can be achieved by SuDS can be put into four categories, the four pillars of SuDS: water quantity, water quality, amenity and biodiversity. Table 7 presents what benefits are likely to be achieved by different SuDS features.

Table 7: SuDS Likely Benefits

	SuDS Feature	Water quantity	Water quality	Amenity	Biodiversity
	Most Benefits				
	Living roofs	√	√	√	√
	Infiltration systems	√	√	√	√
	Dry planted features – Swales, bio-retentions areas, trees, detention basins	√	√	√	√
	Ponds and wetlands	√	√	√	√
	Pervious & reservoir pavements	√	√		
	Filter strips	√	√		
	Filter drains	√	√		
	Proprietary treatment systems		√		
	Least Benefits				
	Attenuation storage tanks	√			

Table 8 shows what SuDS techniques are proposed to manage surface water on-site. These features are being designed in collaboration with the landscape architect to achieve a maximum of benefits to the project. It is also worth highlighting that no underground storage tank is proposed for this site,

Table 8: Summary of SuDS techniques proposed

SuDS Technique	Proposed?	Comment
Living roofs	Y	Green and blue roofs are proposed on this project. The green roofs will provide biodiversity and amenity for those who live above.
Infiltration systems	N	The historic land use as waste management depot and the presence of clay across the site make infiltration unfeasible.
Dry planted features	Y	Bio-retention areas, a swale and a detention basin are proposed for water attenuation. The bio-retention areas and swale will act as water treatment and will also create opportunities for biodiversity and amenity.
Open water features	N	Not considered appropriate for the site as space is an important constraint.
Pervious & reservoir pavements	Y	Pervious pavement is proposed on most hardstanding areas.
Attenuation storage tanks	N	Not necessary.

1.4 Appendices

Below is a list of Appendices that accompany the surface water drainage strategy.

- Ground Investigation Preliminary Findings
- Thames Water Documents
- Surface Water Calculations
- Proposed Surface Water Drainage Drawings

Appendix A – Ground Investigation Preliminary Findings

GROUND INVESTIGATION PRELIMINARY FINDINGS

Project Name:	<i>Ashley Road Depot, Tottenham</i>	Date of instruction:	23/09/2021
Client:	<i>London Borough of Haringey</i>	Date of fieldwork	27/10 - 22/12/2021
GEA ref:	<i>J21294</i>	Date of preliminary report:	17/01/2022
GEA Project Engineer and contact details:	<i>Jordan Wood Office : 01727 824666 Email : jordan@gea-ltd.co.uk</i>	Proposed date of final report:	w/c 07/02/2022
		Preliminary logs attached	Yes
		Site plan attached	Yes

Summary of desk study findings:

The earliest map studied, dated 1864, shows the site to comprise farmland. A gravel pit was located approximately 50 m to the east and had apparently been backfilled by the time of the 1895 map. The 1913 map shows a refuse destructor in the central southern portion of the site and also shows a small building in the far west of the site, likely to be the existing cottage, and shows that the railway line to the east had been expanded. Terraced housing had been constructed in the surrounding area along with associated road networks and Down Lane Recreation Ground had been established directly to the south of the site. The site had undergone significant changes by 1956 with several additional buildings present on site, mostly in the centre of the site but also along the northwestern and northern boundaries. A much smaller building in the west of the site was labelled as the refuse destructor, but this could be due to differences in mapping. A tank was present in the centre of the site, along with a conveyor and two ramps. It is likely that at some point between 1970 and 1974 the refuse destructor was removed from site. From 1988, the site is labelled as 'depot'. The map dated 1991 shows a large building to have been established in the south of the site.

Brief description of the site:

The site is irregular in shape, measuring approximately 190 m east to west by 100 m north to south at maximum extents. It is occupied by a former municipal services depot, which provided storage, refuelling, cleaning and maintenance for bin lorries up until mid-November 2021. The site is now largely vacant, although some services still operate from the site. A fuel filling station is present on site, apparently providing diesel for the bin lorries and other council vehicles. The London Fire Brigade holds no records of any tanks located on the site. The site is almost entirely devoid of vegetation apart from eight mature London Planes along the northern and western boundaries of the site ranging in height of between 14 m and 21 m tall as well as limited planters around the building in the south of the site. The site is sensibly level.

Summary of ground conditions:

Beneath a variable but generally moderate thickness of made ground, Enfield Silt was encountered over Kempton Park Gravel, underlain by London Clay. Below this, the Lambeth Group was present to the maximum depth investigated, of 30.00 m. The concrete surfacing was on average 0.23 m thick, but in excess of 1.00 m in Borehole No 15. The made ground extended to depths of between 0.50 m and 3.80 m, but generally to between 0.80 m and 1.50 m and comprised dark brown, orange-brown and yellowish brown slightly clayey gravelly sand with variable amounts of brick, concrete, gravel, plastic, metal, glass, suspected ash and clinker, ceramics, tile, suspected asbestos containing materials and roots and rootlets. A hydrocarbon odour was noted in Borehole No 17A, and staining was noted in Borehole No 12. The Enfield Silt extended to depths of between 1.30 m and 3.00 m, and comprised soft orange brown silty slightly sandy gravelly clay. The Kempton Park Gravel was present to depths of between 4.50 m and 6.00 m and comprised dense and very dense orange-brown slightly clayey gravelly sand and sandy gravel. The London Clay initially comprised firm becoming stiff dark brown fissured clay to depths of between 14.00 m and 16.00 m over very stiff dark grey slightly silty slightly sandy fissured clay to depths of between 23.40 m and 26.00 m. The Lambeth Group comprised very stiff dark grey and multicoloured silty sandy gravelly clay with rounded black pebbles and shells and dense light grey silty gravelly sand, also with rounded black pebbles, shells, siltstones and occasional fine chalk gravel. Gas expulsion was noted in Borehole No 1 once the Lambeth was reached at a depth of around 24.50 m and is likely to be a result of high levels of pressurised deoxygenated air venting from the borehole.

Summary of groundwater conditions:

Groundwater was encountered at depths of between 3.00 m and 4.00 m in the Kempton Park Gravel, and at depths of 22.50 m and 24.50 m in the Lambeth Group. Gas and groundwater monitoring standpipes have been installed in several boreholes and will be monitored in due course.

Details of the proposed development, upon which preliminary design recommendations are based:

It is understood that it is proposed to demolish the existing buildings and subsequently construct a new residential development providing a total of 298 homes, comprising a number of apartment blocks of between four and 12 storeys in addition to two-storey houses, with associated areas of public realm, communal and private soft landscaping and new roads and pavements.

Preliminary foundation recommendations:

Moderate width spread foundations, bearing within the dense Kempton Park Gravel may be designed to apply a net allowable bearing pressure of about 175 kN/m². All foundations will need to bypass the made ground and soft Enfield Silt, generally present to depths of around 3.00 m. Preliminary calculations indicate that a 600 mm diameter pile extending to a depth of 15 m would provide a safe working load in the region of 500 kN, using an overall factor of safety (FoS) of 2.6. Further pile capacities are provided in the covering email accompanying these findings.

Details of any other ground related issues (inc contamination) that may affect the site:

Elevated concentrations of lead, arsenic, nickel, benzo(b)fluoranthene, dibenz(a,h)anthracene, soluble sulphate, sulphide, and TPH have been measured. The lead contamination appears quite widespread, with elevated concentrations in 27 of the 33 samples tested, with concentrations as high as 4600 mg/kg. Subsequent leachate testing has been commissioned and the results will be reported in the final report. Asbestos was also detected in two soil samples tested and subsequent quantification testing has indicated concentrations of up to 0.018 %. Additionally, four bulk samples of suspected asbestos containing materials were found to contain chrysotile in the form of hard / cement type material.

In order to provide most comprehensive report possible for the above site GEA require the following information:

Drawings of the proposed development, with exact levels and loading would be useful, if available.

The information provided by this summary and any attached sheets is preliminary and is subject to change in the light of any laboratory testing which will be completed prior to the issue of the final report, and following a full review of all of the information from the investigation as part of our Quality Management procedures. Any design decisions made on the basis of this information are therefore made at the risk of the client and GEA accepts no liability in this respect.



Appendix B – Thames Water Documents



Emilie Leclerc
Civic Engineers
Reeds Wharf 33 Mill Street
London
SE1 2AX



09 November 2021

Pre-planning enquiry: Confirmation of sufficient capacity

Site: Ashley Road Depot, Accord House, Ashley Road, London N17 9AZ

Dear Miss Leclerc,

Thank you for providing information on your development.

Proposed site: Flats (275 units)

Proposed foul water discharge by gravity as follows;

92 properties into manhole TQ3490501C, 92 properties into sewer between TQ34904106 and TQ34904104 via private manhole TQ3490411G, 92 properties into manhole TQ34903004 via private manhole TQ3490401A

Proposed surface water discharge by gravity at 4l/s and 8.16l/s for storm events up to and including 1:30 and 1:100+40%CC respectively. Surface water discharge to be split equally between 2 points of connection via manholes TQ34904107 and TQ34903007

We have completed the assessment of the foul water flows and surface water run-off based on the information submitted in your application with the purpose of assessing sewerage capacity within the existing Thames Water sewer network.

Foul Water

If your proposals progress in line with the details you've provided, we're pleased to confirm that there will be sufficient sewerage capacity in the adjacent foul water sewer network to serve your development.

This confirmation is valid for 12 months or for the life of any planning approval that this information is used to support, to a maximum of three years.

You'll need to keep us informed of any changes to your design – for example, an increase in the number or density of homes. Such changes could mean there is no longer sufficient capacity.

Surface Water

When developing a site, policy 5.13 of the London Plan and Policy 3.4 of the Supplementary Planning Guidance (Sustainable Design And Construction) states that every attempt should be made to use flow attenuation and SuDS/Storage to reduce the surface water discharge from the site as much as possible.

In accordance with the Building Act 2000 Clause H3.3, positive connection of surface water to a public sewer will only be consented when it can be demonstrated that the hierarchy of disposal methods have been examined and proven to be impracticable. Before we can consider your surface water needs, you'll need written approval from the lead local flood authority that you



have followed the sequential approach to the disposal of surface water and considered all practical means.

The disposal hierarchy being:

1. store rainwater for later use.
2. use infiltration techniques where possible.
3. attenuate rainwater in ponds or open water features for gradual release.
4. attenuate rainwater by storing in tanks or sealed water features for gradual release.
5. discharge rainwater direct to a watercourse.
6. discharge rainwater to a surface water sewer/drain.
7. discharge rainwater to the combined sewer.
8. discharge rainwater to the foul sewer

Where connection to the public sewerage network is still required to manage surface water flows, we will accept these flows at a discharge rate in line with CIRIA's best practice guide on SuDS or that stated within the sites planning approval.

If the above surface water hierarchy has been followed and if the flows are restricted to a maximum of 8.16l/s for all storm events up to and including 1:100+40%CC, then Thames Water would not have any objections to the proposal.

Please see the attached 'Planning your wastewater' leaflet for additional information.

Diversion

There are existing public sewers crossing the site. New buildings will need to be kept between 3 and 6.5m away from existing sewer depending on the size and depth of the sewer. Alternatively, it may be possible for sewers to be diverted around the new development. If you wish us to review a diversion proposal, please submit this via a Section 185 Diversion application. On some occasions it may be possible to abandon existing public sewers. Please contact us for further information on this process.

What happens next?

Please make sure you submit your connection application, giving us at least 21 days' notice of the date you wish to make your new connection/s.

If you have any further questions, please contact me on 0800 009 3921.

Kind Regards,

A handwritten signature in black ink, appearing to read "Kojo Howard", with a long horizontal line extending from the start of the signature.

Kojo Howard

Developer Services – Adoptions Engineer, Sewer Adoptions Team

Tel: 0800 009 3921

Get advice on making your sewer connection correctly at connectright.org.uk

Clearwater Court, Vastern Road, Reading, RG1 8DB

Find us online at developers.thameswater.co.uk

Asset location search



Property Searches

Civic Engineers
LONDON
SE1 2AX

Search address supplied Haringey Accord Ltd
Accord House
Ashley Road
London
N17 9AZ

Your reference 1832 Ashley Road Depot

Our reference ALS/ALS Standard/2021_4527266

Search date 21 October 2021

Knowledge of features below the surface is essential for every development

The benefits of this knowledge not only include ensuring due diligence and avoiding risk, but also being able to ascertain the feasibility of any development.

Did you know that Thames Water Property Searches can also provide a variety of utility searches including a more comprehensive view of utility providers' assets (across up to 35-45 different providers), as well as more focused searches relating to specific major utility companies such as National Grid (gas and electric).

Contact us to find out more.



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13



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



0800 009 4540

Search address supplied: Haringey Accord Ltd, Accord House, Ashley Road, London, N17 9AZ

Dear Sir / Madam

An Asset Location Search is recommended when undertaking a site development. It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This search provides maps showing the position, size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0800 009 4540, or use the address below:

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

Email: searches@thameswater.co.uk

Web: www.thameswater-propertysearches.co.uk

Waste Water Services

Please provide a copy extract from the public sewer map.

The following quartiles have been printed as they fall within Thames' sewerage area:

TQ3490SE

TQ3490SW

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority.

Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners.

This report relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus.

The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further Information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Clean Water Services

Please provide a copy extract from the public water main map.

The following quartiles have been printed as they fall within Thames' water area:

TQ3490SE

TQ3490SW

Enclosed is a map showing the approximate positions of our water mains and associated apparatus. Please note that records are not kept of the positions of individual domestic supplies.

For your information, there will be a pressure of at least 10m head at the outside stop valve. If you would like to know the static pressure, please contact our Customer Centre on 0800 316 9800. The Customer Centre can also arrange for a full flow and pressure test to be carried out for a fee.

For your guidance:

- Assets other than vested water mains may be shown on the plan, for information only.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Payment for this Search

A charge will be added to your suppliers account.

Further contacts:

Waste Water queries

Should you require verification of the invert levels of public sewers, by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. For further information please contact our Customer Centre on Tel: 0845 920 0800. Alternatively, a survey can be arranged, for a fee, through our Customer Centre on the above number.

If you have any questions regarding sewer connections, budget estimates, diversions, building over issues or any other questions regarding operational issues please direct them to our service desk. Which can be contacted by writing to:

Developer Services (Waste Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

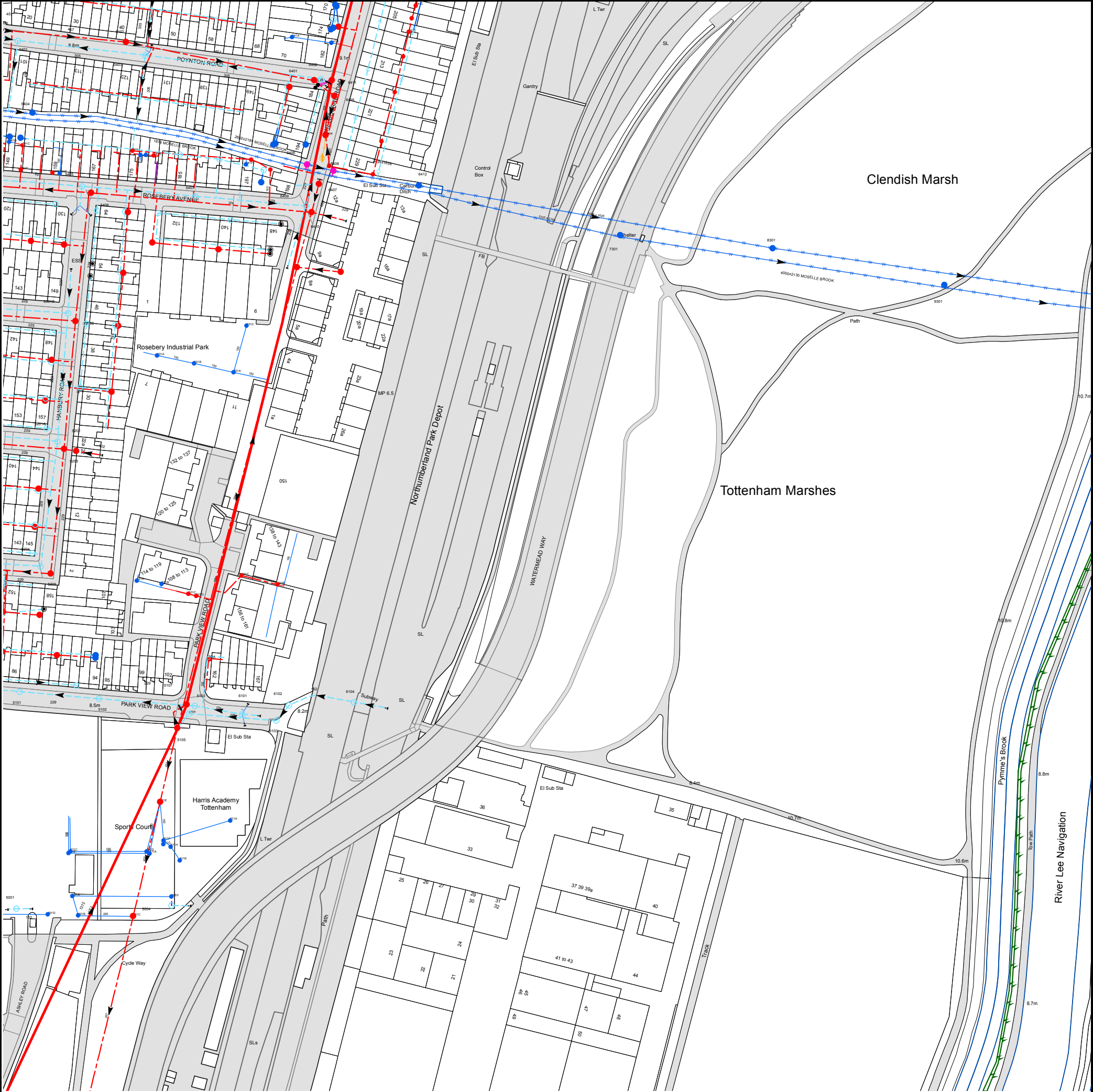
Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Clean Water queries

Should you require any advice concerning clean water operational issues or clean water connections, please contact:

Developer Services (Clean Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 534750,190250

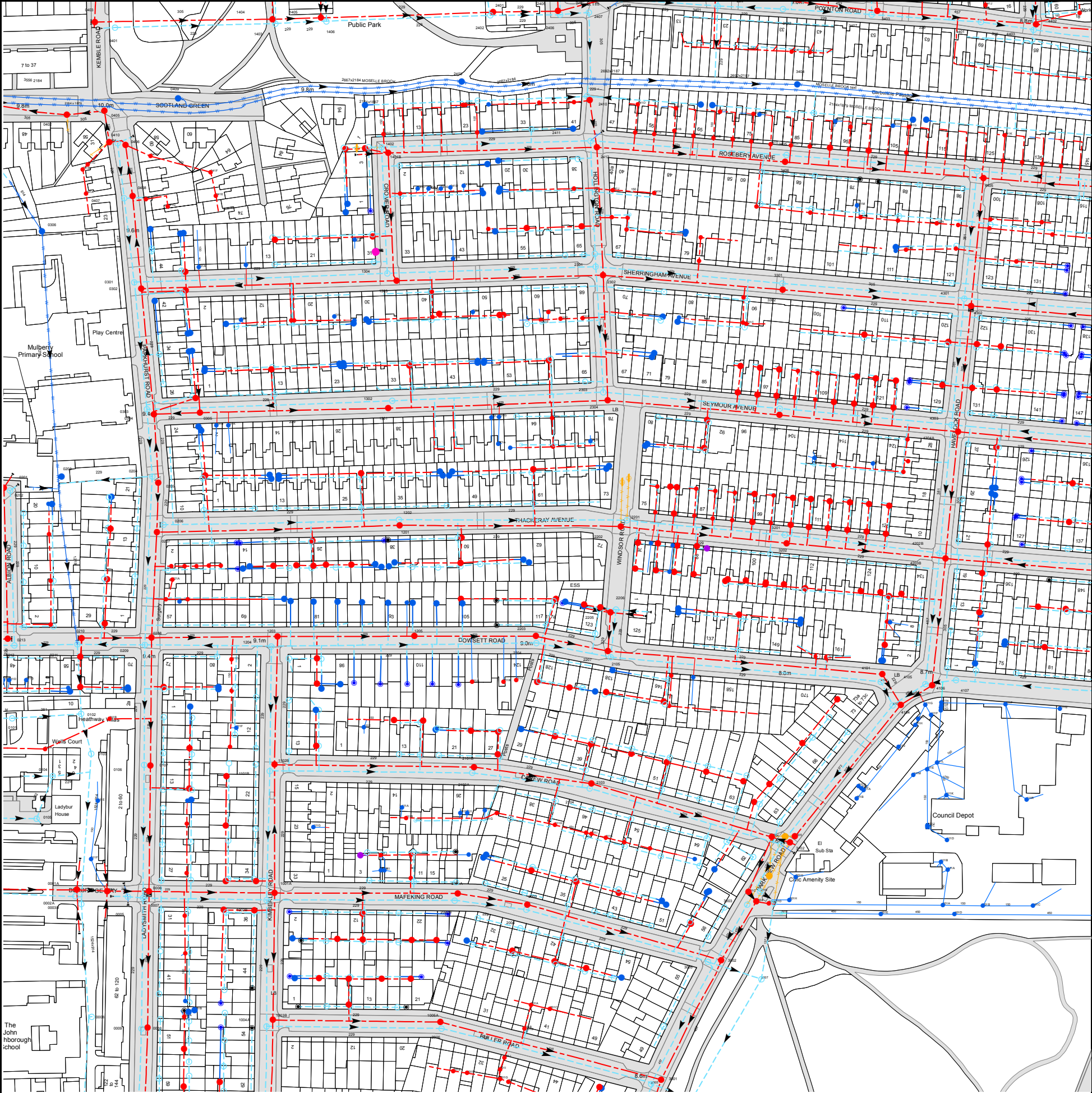
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual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

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

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

Manhole Reference	Manhole Cover Level	Manhole Invert Level
53ZP	n/a	n/a
8301	11.27	6.59
9301	11.12	6.32
641B	n/a	n/a
641A	n/a	n/a
641E	n/a	n/a
64QS	n/a	n/a
64RZ	n/a	n/a
64QR	n/a	n/a
64QW	n/a	n/a
64ST	n/a	n/a
64QY	n/a	n/a
64RR	n/a	n/a
64QQ	n/a	n/a
641C	n/a	n/a
64QT	n/a	n/a
5401	8.78	7.78
5404	9.46	6.83
5402	8.78	7.11
5403	8.77	7.66
6306	n/a	n/a
6305	n/a	n/a
7301	10.58	6.44
6410	8.91	6.99
6409	8.5	7.78
6412	9.25	6.62
6407	9.24	7.06
64RV	n/a	n/a
64RW	n/a	n/a
6408	9.47	6.7
64RT	n/a	n/a
6406	9.49	6.7
64WT	n/a	n/a
64QZ	n/a	n/a
6404	9.28	6
64RX	n/a	n/a
64SR	n/a	n/a
6405	9.21	7.04
64RP	n/a	n/a
64VW	n/a	n/a
64VR	n/a	n/a
6401	8.99	7
6411	9.11	-1.08
64RY	n/a	n/a
6402	9.03	8.26
64SS	n/a	n/a
64RQ	n/a	n/a
541G	n/a	n/a
44VW	n/a	n/a
44VT	n/a	n/a
541D	n/a	n/a
541C	n/a	n/a
53WR	n/a	n/a
53WT	n/a	n/a
53WW	n/a	n/a
541E	n/a	n/a
54NK	n/a	n/a
541F	n/a	n/a
53YZ	n/a	n/a
5301B	9.1	8.22
5302B	9.07	7.64
5405	8.88	8.04
53XZ	n/a	n/a
5406	8.92	7.57
54NE	n/a	n/a
53YS	n/a	n/a
53XP	n/a	n/a
53YW	n/a	n/a
53XS	n/a	n/a
54NC	n/a	n/a
54NA	n/a	n/a
541I	n/a	n/a
541A	n/a	n/a
541B	n/a	n/a
53WY	n/a	n/a
541H	n/a	n/a
531A	n/a	n/a
54N	n/a	n/a
54RV	n/a	n/a
631B	n/a	n/a
5407	8.83	7.93
63YZ	n/a	n/a
54RP	n/a	n/a
63ZS	n/a	n/a
641F	n/a	n/a
631C	n/a	n/a
64TW	n/a	n/a
64TR	n/a	n/a
64TX	n/a	n/a
64TT	n/a	n/a
64VT	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
64VY	n/a	n/a
52XP	n/a	n/a
52XW	n/a	n/a
52WZ	n/a	n/a
52XS	n/a	n/a
5101	8.57	7.57
52VZ	n/a	n/a
52VV	n/a	n/a
5102	8.49	7.59
51ZP	n/a	n/a
511I	n/a	n/a
51YZ	n/a	n/a
511J	n/a	n/a
51YX	n/a	n/a
51YW	n/a	n/a
52WX	n/a	n/a
521D	n/a	n/a
521C	n/a	n/a
621B	n/a	n/a
521B	n/a	n/a
521A	n/a	n/a
621C	n/a	n/a
5205	9.02	7.23
5204	9.07	8
52VX	n/a	n/a
52WQ	n/a	n/a
52WR	n/a	n/a
5203	9.1	8.04
5202	9.14	7.45
5201A	9.14	7.94
53WP	n/a	n/a
53VW	n/a	n/a
53VY	n/a	n/a
53XV	n/a	n/a
53YR	n/a	n/a
53YQ	n/a	n/a
631A	n/a	n/a
5001	8.41	8.07
501D	8.621	7.531
511B	n/a	.24
511C	n/a	n/a
501A	8.568	n/a
501B	8.689	6.859
501C	8.793	6.743
511D	8.64	n/a
511A	8.63	n/a
511E	9.279	7.129
511G	8.88	7.39
511F	8.932	7.322
511H	8.898	n/a
5003	8.797	n/a
5004	8.82	8.29
5105	9.54	5.18
511K	n/a	n/a
5107	8.38	-.79
5104	8.42	5.88
5103	8.49	7.7
611A	n/a	n/a
6101	8.5	7.41
6103	8.41	6.28
6102	8.38	6.27
6104	7.16	6.78
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The width of the displayed area is 500m and the centre of the map is located at OS coordinates 534250,190250

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

Manhole Reference	Manhole Cover Level	Manhole Invert Level
23PT	n/a	n/a
33PZ	n/a	n/a
33QP	n/a	n/a
33PY	n/a	n/a
33YQ	n/a	n/a
33YV	n/a	n/a
33XR	n/a	n/a
33XT	n/a	n/a
3334	n/a	n/a
331A	n/a	n/a
33YS	n/a	n/a
33XW	n/a	n/a
33XZ	n/a	n/a
331C	n/a	n/a
33XY	n/a	n/a
34PT	n/a	n/a
34PY	n/a	n/a
3301	8.91	n/a
3302	8.91	7.42
34PV	n/a	n/a
34PZ	n/a	n/a
341M	n/a	n/a
331B	n/a	n/a
34QP	n/a	n/a
33PT	n/a	n/a
33PV	n/a	n/a
43YW	n/a	n/a
43ZP	n/a	n/a
34VS	n/a	n/a
241O	n/a	n/a
24SR	n/a	n/a
24SQ	n/a	n/a
2410	9.58	7.97
2409	9.59	8.17
3404	9.62	6.96
341J	n/a	n/a
341K	n/a	n/a
2406	9.18	8.13
2407	9.2	8.12
2405	9.26	7.67
3402	8.94	8.21
3401	8.97	8.04
2408	9.14	8.32
24RX	n/a	n/a
24RV	n/a	n/a
24WS	n/a	n/a
2411	9.35	8.15
2412	9.31	7.77
241A	n/a	n/a
241B	n/a	n/a
341B	n/a	n/a
341P	n/a	n/a
341C	n/a	n/a
34TX	n/a	n/a
341D	n/a	n/a
341A	n/a	n/a
341E	n/a	n/a
341F	n/a	n/a
341O	n/a	n/a
341N	n/a	n/a
34PW	n/a	n/a
341G	n/a	n/a
3406	9.13	7.49
3405	9.11	8.07
341H	n/a	n/a
341I	n/a	n/a
34TV	n/a	n/a
34PR	n/a	n/a
3435	n/a	n/a
341L	n/a	n/a
23XV	n/a	n/a
23YR	n/a	n/a
23PQ	n/a	n/a
23VX	n/a	n/a
231E	n/a	n/a
23VV	n/a	n/a
231D	n/a	n/a
231F	n/a	n/a
231A	n/a	n/a
23VS	n/a	n/a
2302	9.13	7.58
2301	9.11	8.01
23SW	n/a	n/a
23TZ	n/a	n/a
23SV	n/a	n/a
23TY	n/a	n/a
23WX	n/a	n/a
23RX	n/a	n/a
23WS	n/a	n/a
23RW	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
23WW	n/a	n/a
23WV	n/a	n/a
24XS	n/a	n/a
241K	n/a	n/a
241J	n/a	n/a
24VZ	n/a	n/a
24VV	n/a	n/a
22MH	n/a	n/a
22N	n/a	n/a
22PZ	n/a	n/a
22PW	n/a	n/a
22QZ	n/a	n/a
22QT	n/a	n/a
22QY	n/a	n/a
22QV	n/a	n/a
22QX	n/a	n/a
2206	8.91	7.83
2202	9	7.31
2201	8.95	7.96
22TR	n/a	n/a
22TQ	n/a	n/a
221C	n/a	n/a
22TW	n/a	n/a
22TV	n/a	n/a
321A	n/a	n/a
311F	n/a	n/a
321B	n/a	n/a
32N	n/a	n/a
32N	n/a	n/a
22VV	n/a	n/a
22VT	n/a	n/a
311G	n/a	n/a
32N	n/a	n/a
32N	n/a	n/a
321F	n/a	n/a
32RP	n/a	n/a
22	n/a	n/a
22WW	n/a	n/a
22XR	n/a	n/a
22WV	n/a	n/a
231H	n/a	n/a
22VW	n/a	n/a
22VY	n/a	n/a
23RS	n/a	n/a
221B	n/a	n/a
2303	9.04	7.94
22WR	n/a	n/a
2304	9	7.46
22XP	n/a	n/a
22XZ	n/a	n/a
22XY	n/a	n/a
22VQ	n/a	n/a
22VR	n/a	n/a
23XQ	n/a	n/a
32QQ	n/a	n/a
32PZ	n/a	n/a
32QP	n/a	n/a
32QS	n/a	n/a
32QT	n/a	n/a
32ZT	n/a	n/a
32ZV	n/a	n/a
33YX	n/a	n/a
33YZ	n/a	n/a
14WP	n/a	n/a
14VV	n/a	n/a
14VZ	n/a	n/a
14VX	n/a	n/a
14VT	n/a	n/a
14WS	n/a	n/a
1402	9.44	8.36
141O	n/a	n/a
1401B	9.49	8.05
14YY	n/a	n/a
14YT	n/a	n/a
14YW	n/a	n/a
141C	n/a	n/a
141A	n/a	n/a
241E	n/a	n/a
241D	n/a	n/a
241C	n/a	n/a
241N	n/a	n/a
24RZ	n/a	n/a
24WX	n/a	n/a
24WZ	n/a	n/a
24XQ	n/a	n/a
23RZ	n/a	n/a
23SS	n/a	n/a
24WV	n/a	n/a
24WQ	n/a	n/a
24VX	n/a	n/a
12NK	n/a	n/a
22MN	n/a	n/a
22MK	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
12MM	n/a	n/a
12PY	n/a	n/a
12ND	n/a	n/a
22MJ	n/a	n/a
22N	n/a	n/a
1201	9.12	7.6
1202	9.11	8.16
12YS	n/a	n/a
22XW	n/a	n/a
12YT	n/a	n/a
22WY	n/a	n/a
22XV	n/a	n/a
12YY	n/a	n/a
22XT	n/a	n/a
12XX	n/a	n/a
22	n/a	n/a
221A	n/a	n/a
231J	n/a	n/a
231G	n/a	n/a
23PV	n/a	n/a
1301	9.28	7.75
1302	9.31	8.17
13ZQ	n/a	n/a
13XR	n/a	n/a
13WP	n/a	n/a
13YX	n/a	n/a
13XP	n/a	n/a
13VY	n/a	n/a
13YY	n/a	n/a
23XX	n/a	n/a
23XS	n/a	n/a
23YS	n/a	n/a
23XZ	n/a	n/a
13SQ	n/a	n/a
13VQ	n/a	n/a
13SS	n/a	n/a
13QR	n/a	n/a
13VT	n/a	n/a
13RV	n/a	n/a
13RX	n/a	n/a
13QP	n/a	n/a
13QW	n/a	n/a
23TW	n/a	n/a
13QT	n/a	n/a
131L	n/a	n/a
23SZ	n/a	n/a
23TT	n/a	n/a
1305	n/a	n/a
231I	n/a	n/a
13SP	n/a	n/a
1306	n/a	n/a
11TZ	n/a	n/a
11VQ	n/a	n/a
11VR	n/a	n/a
1205	9.15	7.5
22PP	n/a	n/a
12RV	n/a	n/a
12SR	n/a	n/a
12RY	n/a	n/a
121A	n/a	n/a
12SW	n/a	n/a
12TP	n/a	n/a
12TT	n/a	n/a
12TZ	n/a	n/a
12VT	n/a	n/a
22PX	n/a	n/a
12PQ	n/a	n/a
12PW	n/a	n/a
12PP	n/a	n/a
12N	n/a	n/a
12PS	n/a	n/a
12N	n/a	n/a
12N	n/a	n/a
22N	n/a	n/a
12NJ	n/a	n/a
12N	n/a	n/a
12NE	n/a	n/a
12NF	n/a	n/a
14XZ	n/a	n/a
241L	n/a	n/a
241P	n/a	n/a
24SS	n/a	n/a
24VR	n/a	n/a
2403	9.77	7.13
1403	9.44	8.6
1406	9.39	8.53
1404	9.5	8.06
1405	9.45	7.98
2402	9.21	8.38
2401	9.27	7.75
0205	9.34	7.88
0206	9.31	8.4
02TW	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
02VZ	n/a	n/a
02VS	n/a	n/a
021A	n/a	n/a
021C	n/a	n/a
02VT	n/a	n/a
021B	n/a	n/a
02VV	n/a	n/a
02WY	n/a	n/a
02WT	n/a	n/a
02XQ	n/a	n/a
02VW	n/a	n/a
02VR	n/a	n/a
01XR	n/a	n/a
02VY	n/a	n/a
111D	n/a	n/a
12PV	n/a	n/a
12N	n/a	n/a
12XV	n/a	n/a
12YP	n/a	n/a
1204	9.14	8.1
12NA	n/a	n/a
12YQ	n/a	n/a
1203	9.12	7.67
12YW	n/a	n/a
12ZP	n/a	n/a
12ZR	n/a	n/a
03TT	n/a	n/a
03TS	n/a	n/a
031B	n/a	n/a
131K	n/a	n/a
0304	9.37	7.99
0305	9.31	7.99
0303	9.35	8.02
03XR	n/a	n/a
03WZ	n/a	n/a
13YT	n/a	n/a
03WV	n/a	n/a
03VT	n/a	n/a
13XY	n/a	n/a
03VW	n/a	n/a
13XZ	n/a	n/a
03WT	n/a	n/a
03WY	n/a	n/a
03XT	n/a	n/a
03WX	n/a	n/a
03YP	n/a	n/a
13VR	n/a	n/a
13VW	n/a	n/a
131I	n/a	n/a
03WQ	n/a	n/a
03XP	n/a	n/a
0301	9.51	8.17
0302	9.53	7.8
03TQ	n/a	n/a
03SZ	n/a	n/a
03TZ	n/a	n/a
03SX	n/a	n/a
03VR	n/a	n/a
03SW	n/a	n/a
03XY	n/a	n/a
031A	n/a	n/a
131J	n/a	n/a
13TS	n/a	n/a
13TV	n/a	n/a
13SZ	n/a	n/a
131H	n/a	n/a
13SY	n/a	n/a
13TR	n/a	n/a
13TT	n/a	n/a
131A	n/a	n/a
131D	n/a	n/a
131G	n/a	n/a
131C	n/a	n/a
131F	n/a	n/a
131E	n/a	n/a
1304	9.25	8.1
1303	9.29	7.9
13QY	n/a	n/a
231K	n/a	n/a
0306	9.38	7.56
0402	9.75	7.41
041B	n/a	n/a
041A	n/a	n/a
041C	n/a	n/a
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ALS Sewer Map Key

Public Sewer Types (Operated & Maintained by Thames Water)

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

Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plans are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
- 5) 'na' or 'D' on a manhole level indicates that data is unavailable.

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
	Dam Chase
	Fitting
	Meter
	Vent Column

Operational Controls

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

	Control Valve
	Drop Pipe
	Ancillary
	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.

	Outfall
	Undefined End
	Inlet

Other Symbols

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

	Public/Private Pumping Station
	Change of characteristic indicator (C.O.C.I.)
	Invert Level
	Summit

Areas

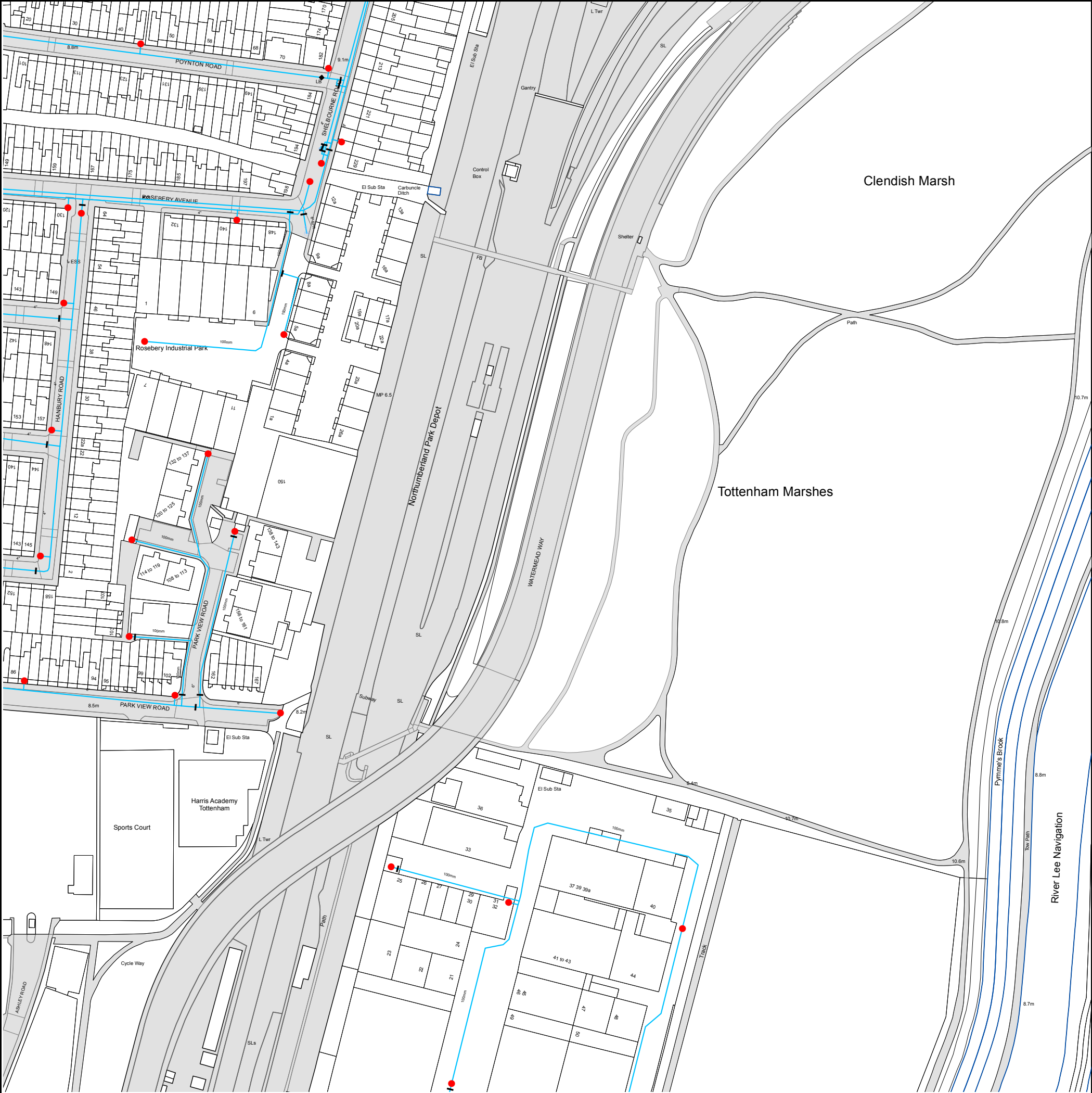
Lines denoting areas of underground surveys, etc.

	Agreement
	Operational Site
	Chamber
	Tunnel
	Conduit Bridge

Other Sewer Types (Not Operated or Maintained by Thames Water)

	Foul Sewer		Surface Water Sewer
	Combined Sewer		Gully
	Culverted Watercourse		Proposed
			Abandoned Sewer

- 6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimetres. 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 present on the plan, please contact a member of Property Searches on 0800 009 4540.



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 534750,190250

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The width of the displayed area is 500m and the centre of the map is located at OS coordinates 534250,190250

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ALS Water Map Key

Water Pipes (Operated & Maintained by Thames Water)

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

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

Valves

	General Purpose Valve
	Air Valve
	Pressure Control Valve
	Customer Valve

Hydrants

	Single Hydrant
--	----------------

Meters

	Meter
--	-------

End Items

Symbol indicating what happens at the end of a water main.

	Blank Flange
	Capped End
	Emptying Pit
	Undefined End
	Manifold
	Customer Supply
	Fire Supply

Operational Sites

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

Other Symbols

	Data Logger
--	-------------

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.

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 14 days from due 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. Thames Water does not accept post-dated cheques-any cheques received will be processed for payment on date of receipt.
5. In case of dispute TWUL's terms and conditions shall apply.
6. 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'.
7. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
8. 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 not satisfied with the response, your complaint will be reviewed by the Customer Services Director. You can write to her at: Thames Water Utilities Ltd. PO Box 492, Swindon, SN38 8TU.

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 0121 345 1000 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	Cheque
Call 0800 009 4540 quoting your invoice number starting CBA or ADS / OSS	Account number 90478703 Sort code 60-00-01 A remittance advice must be sent to: Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW. or email ps.billing@thameswater.co.uk	By calling your bank and quoting: Account number 90478703 Sort code 60-00-01 and your invoice number	Made payable to ' Thames Water Utilities Ltd ' Write your Thames Water account number on the back. Send to: Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW or by DX to 151280 Slough 13

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Appendix C – Surface Water Calculations

Calculated by:	Kieran Lyons
Site name:	Ashley Road Depot
Site location:	Ashley Road

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	51.59397° N
Longitude:	0.06014° W
Reference:	517196111
Date:	Sep 07 2021 14:49

Runoff estimation approach

Site characteristics

Total site area (ha):	1.62
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Methodology

Q _{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics

	Default	Edited
SOIL type:	2	2
HOST class:	N/A	N/A
SPR/SPRHOST:	0.3	0.3

Hydrological characteristics

	Default	Edited
SAAR (mm):	619	619
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 30 years:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Growth curve factor 200 years:	3.74	3.74

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

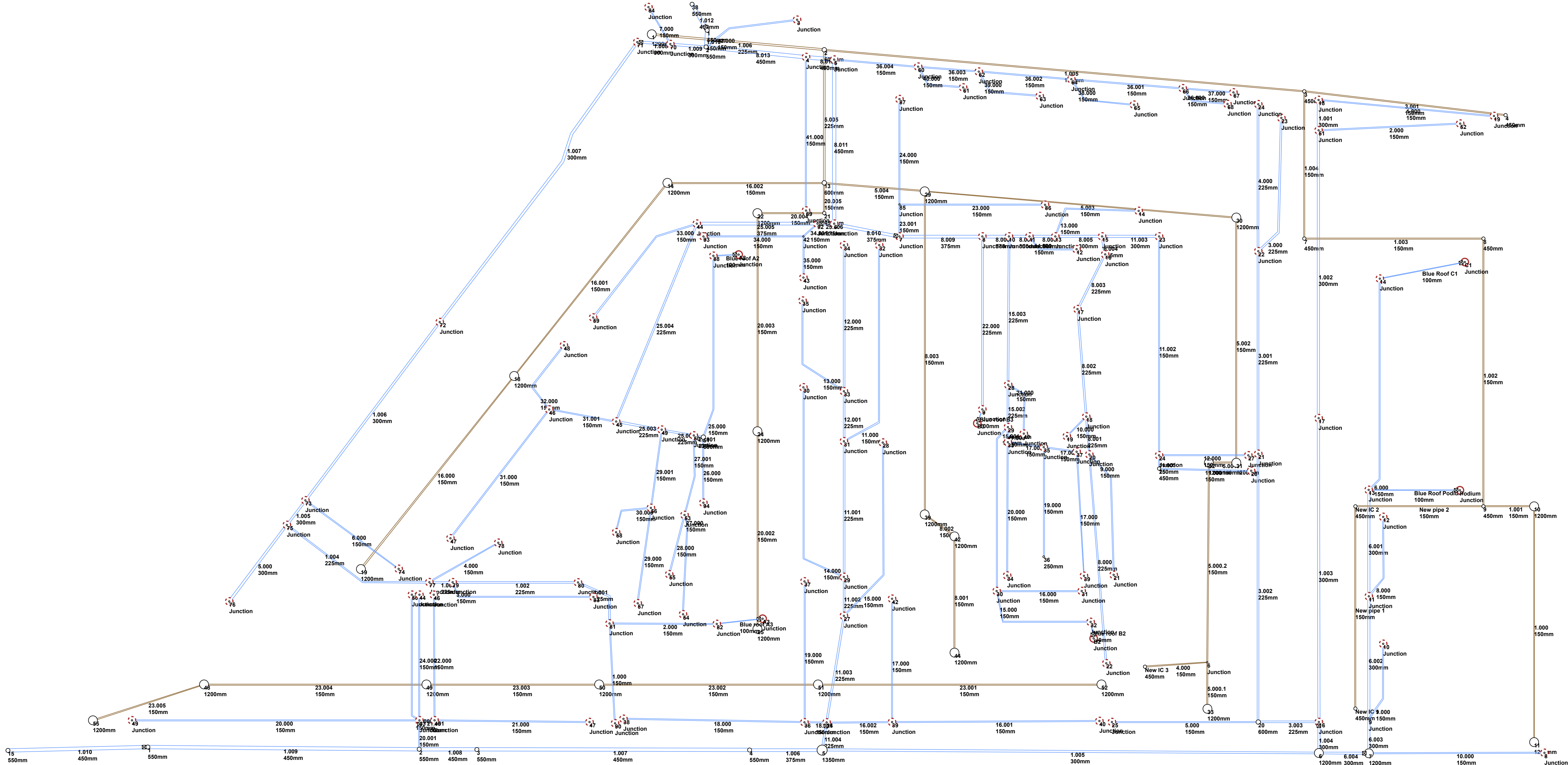
(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited
Q _{BAR} (l/s):	2.56	2.56
1 in 1 year (l/s):	2.17	2.17
1 in 30 years (l/s):	5.88	5.88
1 in 100 year (l/s):	8.16	8.16
1 in 200 years (l/s):	9.56	9.56

This report was produced using the greenfield runoff tool developed by HR Wallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at www.uksuds.com/terms-and-conditions.htm. The outputs from this tool are estimates of greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of this data in the design or operational characteristics of any drainage scheme.



Links (Results)

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.578	10.2	0.2	0.566	0.726	0.001	0.0	14	0.213
2.000	0.577	10.2	10.0	0.670	0.726	0.058	0.0	121	0.657
1.001	0.654	26.0	10.4	0.726	0.728	0.061	0.0	99	0.619
1.002	0.641	25.5	11.7	0.728	0.781	0.070	0.0	107	0.627
3.000	0.575	10.2	0.0	0.694	0.781	0.000	0.0	0	0.000
1.003	0.658	26.2	12.0	0.781	0.845	0.072	0.0	107	0.643
4.000	0.573	10.1	0.0	0.746	0.845	0.000	0.0	0	0.000
1.004	0.648	25.8	12.4	0.845	0.828	0.077	0.0	110	0.643
5.000	0.743	52.5	7.3	0.779	0.828	0.042	0.0	75	0.526
1.005	0.729	51.5	19.1	0.828	0.948	0.119	0.0	126	0.676
6.000	0.572	10.1	0.0	0.926	0.948	0.000	0.0	0	0.000
1.006	0.734	51.8	22.5	0.948	1.055	0.145	0.0	138	0.708
1.007	0.735	51.9	26.0	1.055	0.989	0.176	0.0	150	0.735
1.008	0.741	52.4	26.1	0.989	1.002	0.177	0.0	150	0.741
7.000	0.574	10.1	0.0	0.773	1.002	0.000	0.0	0	0.000
1.009	0.782	55.3	26.2	1.002	0.992	0.179	0.0	146	0.772
8.000	0.648	25.8	6.8	0.744	0.646	0.040	0.0	79	0.548
9.000	0.573	10.1	0.0	0.752	0.646	0.000	0.0	0	0.000
8.001	0.656	26.1	7.1	0.646	0.821	0.042	0.0	80	0.561
10.000	0.592	10.5	0.0	0.796	0.821	0.000	0.0	0	0.000
8.002	0.648	25.7	8.3	0.821	0.853	0.050	0.0	87	0.577
8.003	0.640	25.4	8.9	0.853	0.886	0.054	0.0	92	0.584
8.004	0.644	25.6	9.0	0.886	0.890	0.055	0.0	92	0.588
11.000	0.576	10.2	0.3	0.749	0.785	0.002	0.0	19	0.264
11.001	0.580	10.2	0.3	0.785	0.805	0.002	0.0	19	0.266
12.000	0.578	10.2	0.0	0.739	0.805	0.000	0.0	0	0.000
11.002	0.574	10.1	8.6	0.805	1.007	0.052	0.0	106	0.643
11.003	0.737	52.1	11.8	1.007	0.890	0.072	0.0	97	0.600
8.005	0.738	52.2	20.8	0.890	1.168	0.128	0.0	132	0.697
13.000	0.576	10.2	0.7	1.345	1.176	0.004	0.0	27	0.328
8.006	0.751	53.1	21.5	1.168	0.889	0.133	0.0	133	0.713
14.000	0.578	10.2	0.0	0.831	0.889	0.000	0.0	0	0.000
8.007	0.730	51.6	22.4	0.889	0.954	0.139	0.0	138	0.704
15.000	0.575	10.2	5.2	0.719	0.649	0.030	0.0	76	0.578
16.000	0.577	10.2	1.0	0.571	0.649	0.006	0.0	33	0.371
15.001	0.575	10.2	6.8	0.649	0.804	0.041	0.0	90	0.616
17.000	0.579	10.2	0.0	0.454	0.638	0.000	0.0	0	0.000
17.001	0.560	9.9	0.2	0.638	0.650	0.001	0.0	14	0.206
19.000	0.570	10.1	0.0	0.476	0.650	0.000	0.0	0	0.000
17.002	0.573	10.1	0.3	0.650	0.623	0.002	0.0	19	0.263
20.000	0.573	10.1	0.0	0.481	0.623	0.000	0.0	0	0.000
17.003	0.588	10.4	0.3	0.623	0.804	0.002	0.0	18	0.264
15.002	0.644	25.6	7.3	0.804	0.828	0.044	0.0	82	0.557
21.000	0.575	10.2	0.0	0.791	0.828	0.000	0.0	0	0.000
15.003	0.651	25.9	7.6	0.828	0.954	0.047	0.0	83	0.566
8.008	0.854	94.3	30.0	0.954	1.010	0.187	0.0	145	0.760
22.000	0.649	25.8	10.8	0.841	1.010	0.063	0.0	102	0.621
8.009	0.838	92.5	40.0	1.010	0.943	0.252	0.0	172	0.808
23.000	0.576	10.2	3.1	1.400	0.968	0.018	0.0	57	0.505
24.000	0.576	10.2	0.7	1.042	0.968	0.004	0.0	27	0.328
23.001	0.570	10.1	3.8	0.968	0.943	0.022	0.0	64	0.529
8.010	0.854	94.3	43.4	0.943	0.970	0.276	0.0	178	0.836

Links (Results)

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
25.000	0.573	10.1	9.7	0.737	0.807	0.057	0.0	117	0.651
26.000	0.573	10.1	0.0	0.781	0.807	0.000	0.0	0	0.000
25.001	0.721	28.7	9.7	0.807	0.815	0.057	0.0	90	0.652
27.000	0.578	10.2	0.0	0.728	0.777	0.000	0.0	0	0.000
28.000	0.583	10.3	1.2	0.756	0.777	0.007	0.0	35	0.391
27.001	0.575	10.2	1.7	0.777	0.815	0.010	0.0	42	0.429
25.002	0.652	25.9	11.5	0.815	0.830	0.068	0.0	105	0.633
29.000	0.569	10.1	0.0	0.758	0.800	0.000	0.0	0	0.000
30.000	0.574	10.1	0.0	0.777	0.800	0.000	0.0	0	0.000
29.001	0.582	10.3	0.0	0.800	0.830	0.000	0.0	0	0.000
25.003	0.639	25.4	11.5	0.830	0.845	0.069	0.0	107	0.625
31.000	0.574	10.1	5.7	0.857	0.919	0.033	0.0	80	0.589
32.000	0.574	10.1	1.7	0.914	0.919	0.010	0.0	42	0.428
31.001	0.573	10.1	7.3	0.919	0.845	0.043	0.0	94	0.622
25.004	0.646	25.7	19.8	0.845	0.980	0.123	0.0	148	0.711
33.000	0.572	10.1	2.9	0.988	0.980	0.017	0.0	55	0.496
25.005	0.851	93.9	25.7	0.980	0.963	0.162	0.0	134	0.728
34.000	0.579	10.2	0.0	0.911	0.950	0.000	0.0	0	0.000
35.000	0.586	10.4	0.2	0.931	0.950	0.001	0.0	14	0.216
34.001	0.559	9.9	0.2	0.950	0.963	0.001	0.0	14	0.206
25.006	0.852	94.1	25.8	0.963	0.970	0.163	0.0	134	0.730
8.011	0.862	137.0	70.7	0.970	0.933	0.459	0.0	229	0.868
36.000	0.565	10.0	0.2	1.570	1.555	0.001	0.0	14	0.209
37.000	0.567	10.0	0.4	1.563	1.555	0.002	0.0	20	0.265
36.001	0.577	10.2	1.5	1.555	1.465	0.009	0.0	40	0.417
38.000	0.576	10.2	0.3	1.557	1.465	0.002	0.0	19	0.264
36.002	0.573	10.1	3.4	1.465	1.480	0.020	0.0	59	0.515
39.000	0.572	10.1	0.3	1.449	1.480	0.002	0.0	19	0.262
36.003	0.575	10.2	4.0	1.480	1.502	0.024	0.0	65	0.540
40.000	0.567	10.0	0.9	1.243	1.502	0.005	0.0	30	0.348
36.004	0.579	10.2	5.4	1.502	0.933	0.033	0.0	77	0.586
8.012	0.869	138.3	76.0	0.933	0.948	0.495	0.0	238	0.889
41.000	0.578	10.2	2.1	0.963	0.948	0.012	0.0	46	0.454
8.013	0.853	135.7	77.1	0.948	0.992	0.509	0.0	243	0.879
42.000	0.578	10.2	0.0	0.790	0.992	0.000	0.0	0	0.000
1.010	0.854	135.8	100.7	0.992	0.897	0.688	0.0	290	0.932
1.012	0.778	123.8	100.2	0.897	0.984	0.688	0.0	308	0.862
Blue roof A2	2.318	18.2	9.0	0.900	0.787	0.051	0.0	50	2.310
Blue roof A3	3.197	25.1	9.7	0.025	0.720	0.055	0.0	43	3.001
Blue roof B2	3.250	25.5	5.3	0.025	0.769	0.030	0.0	31	2.565
Blue roof B3	3.447	27.1	10.1	0.025	0.966	0.057	0.0	43	3.208

Simulation Settings

Rainfall Methodology	FEH-13	Analysis Speed	Detailed	Additional Storage (m³/ha)	0.0
Summer CV	0.750	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	0.840	Drain Down Time (mins)	4000	Check Discharge Volume	x

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	40	0	0

Node A2 Online Orifice Control

Flap Valve	x	Design Depth (m)	0.125
Downstream Link	Blue roof A2	Design Flow (l/s)	0.4
Replaces Downstream Link	✓	Diameter (m)	0.023
Invert Level (m)	9.000	Discharge Coefficient	0.600

Node A3 Online Orifice Control

Flap Valve	x	Design Depth (m)	0.125
Downstream Link	Blue roof A3	Design Flow (l/s)	0.6
Replaces Downstream Link	✓	Diameter (m)	0.029
Invert Level (m)	9.875	Discharge Coefficient	0.600

Node B2 Online Orifice Control

Flap Valve	x	Design Depth (m)	0.125
Downstream Link	Blue roof B2	Design Flow (l/s)	0.4
Replaces Downstream Link	✓	Diameter (m)	0.023
Invert Level (m)	9.875	Discharge Coefficient	0.600

Node B3 Online Orifice Control

Flap Valve	x	Design Depth (m)	0.125
Downstream Link	Blue roof B3	Design Flow (l/s)	0.6
Replaces Downstream Link	✓	Diameter (m)	0.029
Invert Level (m)	9.875	Discharge Coefficient	0.600

Node 71 Online Orifice Control

Flap Valve	x	Replaces Downstream Link	✓	Diameter (m)	0.050
Downstream Link	1.008	Invert Level (m)	7.688	Discharge Coefficient	0.600

Node 1 Online Head/Flow Control

Flap Valve	x	Replaces Downstream Link	✓
Downstream Link	1.012	Invert Level (m)	7.512

Head (m)	Flow (l/s)	Head (m)	Flow (l/s)	Head (m)	Flow (l/s)	Head (m)	Flow (l/s)	Head (m)	Flow (l/s)	Head (m)	Flow (l/s)
1.000	2.000	1.100	2.000	1.110	2.000	1.250	3.400	1.300	3.400	1.340	3.400

Node 44 Online Orifice Control

Flap Valve	x	Replaces Downstream Link	✓	Diameter (m)	0.025
Downstream Link	25.005	Invert Level (m)	7.703	Discharge Coefficient	0.600

Node 7 Online Orifice Control

Flap Valve	x	Replaces Downstream Link	✓	Diameter (m)	0.105
Downstream Link	8.010	Invert Level (m)	7.682	Discharge Coefficient	0.600

Node 90 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.410	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	648	Depth (m)	
Safety Factor	2.0	Width (m)	6.360	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 81 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.615	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	312	Depth (m)	
Safety Factor	2.0	Width (m)	1.690	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 80 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.596	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	336	Depth (m)	
Safety Factor	2.0	Width (m)	8.640	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 79 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.608	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	320	Depth (m)	
Safety Factor	2.0	Width (m)	1.670	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 77 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.664	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	240	Depth (m)	
Safety Factor	2.0	Width (m)	5.480	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 75 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.593	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	344	Depth (m)	
Safety Factor	2.0	Width (m)	12.010	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 71 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.577	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	376	Depth (m)	
Safety Factor	2.0	Width (m)	1.160	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 70 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.580	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	272	Depth (m)	
Safety Factor	2.0	Width (m)	2.080	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 82 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.607	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	320	Depth (m)	
Safety Factor	2.0	Width (m)	2.840	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 83 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.163	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	848	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	3.140	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 78 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.175	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	816	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	1.970	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 76 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.573	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	384	Depth (m)	
Safety Factor	2.0	Width (m)	3.590	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 74 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.308	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	512	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	8.890	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 84 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	7.945	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	1336	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	3.390	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 22 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.606	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	196	Depth (m)	
Safety Factor	2.0	Width (m)	10.530	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 20 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.438	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	664	Depth (m)	
Safety Factor	2.0	Width (m)	2.030	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 18 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.600	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	212	Depth (m)	
Safety Factor	2.0	Width (m)	8.260	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 17 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.596	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	224	Depth (m)	
Safety Factor	2.0	Width (m)	4.110	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 16 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.609	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	188	Depth (m)	
Safety Factor	2.0	Width (m)	0.530	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 15 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.607	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	192	Depth (m)	
Safety Factor	2.0	Width (m)	0.890	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 13 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.871	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	0.630	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 11 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.584	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	264	Depth (m)	
Safety Factor	2.0	Width (m)	0.620	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 10 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.643	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	92	Depth (m)	
Safety Factor	2.0	Width (m)	0.680	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 8 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.691	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	2.500	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 7 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.600	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	212	Depth (m)	
Safety Factor	2.0	Width (m)	2.040	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 6 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.607	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	188	Depth (m)	
Safety Factor	2.0	Width (m)	20.360	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 5 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.530	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	436	Depth (m)	
Safety Factor	2.0	Width (m)	2.610	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 4 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.538	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	412	Depth (m)	
Safety Factor	2.0	Width (m)	2.270	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 21 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.176	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	788	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	2.310	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 19 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.163	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	816	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	0.980	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 26 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.627	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	140	Depth (m)	
Safety Factor	2.0	Width (m)	2.470	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 24 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.636	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	112	Depth (m)	
Safety Factor	2.0	Width (m)	5.860	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 23 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.741	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	2.600	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 27 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.185	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	768	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	1.820	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 14 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	9.086	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	3.940	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 12 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.125	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	904	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	1.650	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 32 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.175	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	788	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	1.000	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 30 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.477	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	576	Depth (m)	
Safety Factor	2.0	Width (m)	5.210	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 29 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.557	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	364	Depth (m)	
Safety Factor	2.0	Width (m)	0.730	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 28 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.567	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	324	Depth (m)	
Safety Factor	2.0	Width (m)	3.350	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 31 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.437	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	668	Depth (m)	
Safety Factor	2.0	Width (m)	5.620	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 39 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	7.875	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	1400	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	4.940	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 37 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.428	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	688	Depth (m)	
Safety Factor	2.0	Width (m)	1.330	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 35 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.426	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	692	Depth (m)	
Safety Factor	2.0	Width (m)	0.850	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 33 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.383	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	796	Depth (m)	
Safety Factor	2.0	Width (m)	0.270	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 34 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	7.875	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	1398	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	4.900	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 40 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.131	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	892	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	1.480	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 9 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.580	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	276	Depth (m)	
Safety Factor	2.0	Width (m)	6.290	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 86 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	9.136	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	6.090	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 87 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.335	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	400	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	4.890	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 88 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.597	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	584	Depth (m)	
Safety Factor	2.0	Width (m)	6.290	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 50 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.590	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	592	Depth (m)	
Safety Factor	2.0	Width (m)	0.890	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 49 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.594	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	592	Depth (m)	
Safety Factor	2.0	Width (m)	1.210	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 45 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.594	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	592	Depth (m)	
Safety Factor	2.0	Width (m)	11.300	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 44 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.658	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	480	Depth (m)	
Safety Factor	2.0	Width (m)	4.390	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 92 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.605	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	192	Depth (m)	
Safety Factor	2.0	Width (m)	0.430	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 94 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.164	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	928	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	2.320	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 54 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.159	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	936	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	2.520	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 53 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.588	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	600	Depth (m)	
Safety Factor	2.0	Width (m)	3.290	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 55 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.595	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	584	Depth (m)	
Safety Factor	2.0	Width (m)	7.360	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 57 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.175	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	912	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	5.860	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 56 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.175	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	912	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	7.490	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 58 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.175	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	912	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	0.720	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 47 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.283	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	752	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	3.050	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 46 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.698	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	392	Depth (m)	
Safety Factor	2.0	Width (m)	16.160	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 48 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.729	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	296	Depth (m)	
Safety Factor	2.0	Width (m)	2.090	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 59 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.730	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	296	Depth (m)	
Safety Factor	2.0	Width (m)	5.180	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 93 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.181	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	768	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	3.570	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 43 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.600	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	208	Depth (m)	
Safety Factor	2.0	Width (m)	0.530	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 68 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	9.345	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	1.170	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 66 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	9.308	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	2.690	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 67 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	9.338	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	1.560	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 64 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	9.168	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	2.220	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 62 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	9.142	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	2.310	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 60 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	9.137	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	3.690	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 65 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	9.293	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	1.740	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 63 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	9.143	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	1.800	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 61 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.902	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	1.140	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 3 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	7.975	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	1252	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	4.580	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node 69 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.197	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	728	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	4.900	Number Required	1
Porosity	0.30	Pit Length (m)	10.000		

Node A2 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	9.875	Depth (m)	
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	42.500	Number Required	1
Porosity	0.90	Pit Length (m)	10.000		

Node B2 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	9.875	Depth (m)	
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	23.800	Number Required	1
Porosity	0.90	Pit Length (m)	10.000		

Node B3 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	9.875	Depth (m)	
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	45.500	Number Required	1
Porosity	0.90	Pit Length (m)	10.000		

Node 72 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Safety Factor	2.0	Invert Level (m)	8.945
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	0.0	0.0	0.100	0.1	0.0	0.200	0.3	0.0

Node 73 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Safety Factor	2.0	Invert Level (m)	8.904
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	0.0	0.0	0.100	0.1	0.0	0.200	0.2	0.0

Node A3 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	9.875	Depth (m)	
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	43.800	Number Required	1
Porosity	0.90	Pit Length (m)	10.000		

Other (defaults)

Entry Loss (manhole)	0.250	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.250	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	90	176	8.229	0.045	0.1	0.0000	0.0000	OK
240 minute winter	82	176	8.229	0.042	0.2	0.0000	0.0000	OK
240 minute winter	81	176	8.229	0.165	0.3	0.0000	0.0000	OK
240 minute winter	80	176	8.229	0.186	0.6	0.0000	0.0000	OK
240 minute winter	83	176	8.229	0.085	0.8	0.6234	0.0000	OK
240 minute winter	79	176	8.229	0.227	1.0	0.0000	0.0000	SURCHARGED
240 minute winter	78	176	8.229	0.125	0.4	0.3201	0.0000	OK
240 minute winter	77	176	8.229	0.235	1.2	0.0000	0.0000	SURCHARGED
240 minute winter	76	176	8.229	0.335	1.4	0.0000	0.0000	SURCHARGED
240 minute winter	75	176	8.229	0.364	1.7	0.0000	0.0000	SURCHARGED
240 minute winter	74	176	8.229	0.172	0.3	0.0000	0.0000	SURCHARGED
240 minute winter	73	176	8.229	0.373	1.9	0.0000	0.0000	SURCHARGED
240 minute winter	72	176	8.229	0.439	2.2	0.0000	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	90	1.000	81	-0.1	-0.038	-0.010	0.1026	
15 minute summer	90	Infiltration		0.0				
15 minute winter	82	2.000	81	0.3	0.286	0.031	0.0159	
15 minute summer	82	Infiltration		0.0				
15 minute winter	81	1.001	80	0.6	0.200	0.023	0.0255	
15 minute summer	81	Infiltration		0.0				
15 minute winter	80	1.002	79	1.4	0.323	0.055	0.0726	
15 minute summer	80	Infiltration		0.0				
180 minute winter	83	3.000	79	-0.8	-0.102	-0.078	0.2394	
240 minute winter	83	Infiltration		0.1				
15 minute winter	79	1.003	77	1.6	0.319	0.061	0.0156	
15 minute summer	79	Infiltration		0.0				
240 minute winter	78	4.000	77	-0.4	-0.066	-0.042	0.1759	
240 minute winter	78	Infiltration		0.0				
15 minute winter	77	1.004	75	2.0	0.433	0.079	0.1631	
15 minute summer	77	Infiltration		0.0				
15 minute winter	76	5.000	75	3.9	0.381	0.074	0.4104	
15 minute summer	76	Infiltration		0.0				
15 minute winter	75	1.005	73	5.7	0.408	0.111	0.1549	
15 minute summer	75	Infiltration		0.0				
120 minute summer	74	6.000	73	-0.4	-0.111	-0.042	0.1997	
15 minute summer	74	Infiltration		0.0				
15 minute winter	73	1.006	72	8.0	0.485	0.154	1.4376	
15 minute summer	73	Infiltration		0.0				
15 minute winter	72	1.007	71	8.6	0.435	0.166	2.9510	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	71	176	8.229	0.541	1.4	0.0000	0.0000	SURCHARGED
600 minute winter	84	480	8.195	0.348	0.5	2.5506	0.0000	SURCHARGED
600 minute winter	70	480	8.195	0.517	1.1	0.0000	0.0000	SURCHARGED
600 minute winter	22	480	8.196	0.159	0.7	0.0000	0.0000	OK
600 minute winter	21	480	8.196	0.097	0.1	0.1404	0.0000	OK
600 minute winter	20	480	8.196	0.229	0.7	0.0000	0.0000	SURCHARGED
600 minute winter	19	480	8.196	0.154	0.1	0.0977	0.0000	SURCHARGED
600 minute winter	18	480	8.196	0.242	0.7	0.0000	0.0000	SURCHARGED
600 minute winter	17	480	8.196	0.278	0.7	0.0000	0.0000	SURCHARGED
600 minute winter	16	480	8.196	0.298	0.6	0.0000	0.0000	SURCHARGED
600 minute winter	26	480	8.196	0.068	0.0	0.0000	0.0000	OK
600 minute winter	25	480	8.196	0.109	0.1	0.0173	0.0000	OK
600 minute winter	27	480	8.196	0.075	0.1	0.0612	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	72	Infiltration		0.0				
15 minute winter	71	Orifice	70	2.2				
15 minute summer	71	Infiltration		0.0				
30 minute winter	84	7.000	70	-2.4	-0.253	-0.235	0.1008	
30 minute summer	84	Infiltration		0.1				
15 minute summer	70	1.009	2	2.1	0.428	0.039	0.3353	
15 minute summer	70	Infiltration		0.0				
15 minute winter	22	8.000	20	3.7	0.458	0.144	0.2290	
15 minute summer	22	Infiltration		0.0				
120 minute winter	21	9.000	20	-0.2	-0.052	-0.016	0.1064	
600 minute winter	21	Infiltration		0.0				
15 minute winter	20	8.001	18	3.9	0.441	0.149	0.0449	
15 minute summer	20	Infiltration		0.0				
120 minute winter	19	10.000	18	-0.2	-0.113	-0.015	0.0408	
600 minute winter	19	Infiltration		0.0				
15 minute winter	18	8.002	17	4.6	0.490	0.178	0.1352	
15 minute summer	18	Infiltration		0.0				
15 minute winter	17	8.003	16	5.0	0.546	0.196	0.1233	
15 minute summer	17	Infiltration		0.0				
15 minute winter	16	8.004	15	5.1	0.609	0.198	0.0438	
15 minute summer	16	Infiltration		0.0				
15 minute winter	26	11.000	25	0.3	0.073	0.027	0.0582	
15 minute summer	26	Infiltration		0.0				
15 minute winter	25	11.001	24	0.4	-0.197	0.042	0.0140	
15 minute winter	27	12.000	24	-0.3	-0.104	-0.030	0.0662	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	24	480	8.196	0.115	0.9	0.0000	0.0000	OK
600 minute winter	23	480	8.196	0.362	1.2	0.0000	0.0000	SURCHARGED
600 minute winter	15	480	8.196	0.379	1.6	0.0000	0.0000	SURCHARGED
600 minute winter	14	480	8.196	0.205	0.1	0.0000	0.0000	SURCHARGED
600 minute winter	13	480	8.196	0.393	1.7	0.0000	0.0000	SURCHARGED
600 minute winter	12	480	8.196	0.227	0.1	0.3526	0.0000	SURCHARGED
600 minute winter	11	480	8.196	0.401	1.8	0.0000	0.0000	SURCHARGED
600 minute winter	32	480	8.196	0.065	0.1	0.0639	0.0000	OK
600 minute winter	31	480	8.196	0.080	0.1	0.0000	0.0000	OK
600 minute winter	30	480	8.196	0.118	0.3	0.0000	0.0000	OK
600 minute winter	39	480	8.196	0.100	2.0	4.7533	0.0000	OK
600 minute winter	37	480	8.196	0.156	2.1	0.0000	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute winter	27	Infiltration		0.0				
15 minute winter	24	11.002	23	4.7	0.613	0.459	0.2224	
15 minute summer	24	Infiltration		0.0				
15 minute winter	23	11.003	15	6.0	0.375	0.116	0.3212	
15 minute summer	23	Infiltration		0.0				
15 minute winter	15	8.005	13	10.7	0.595	0.204	0.2924	
15 minute summer	15	Infiltration		0.0				
15 minute winter	14	13.000	13	0.4	0.306	0.039	0.0432	
15 minute summer	14	Infiltration		0.0				
15 minute winter	13	8.006	11	10.3	0.634	0.195	0.1722	
15 minute summer	13	Infiltration		0.0				
30 minute winter	12	14.000	11	-0.5	-0.148	-0.045	0.0542	
240 minute winter	12	Infiltration		0.0				
15 minute summer	11	8.007	10	10.3	0.704	0.199	0.1246	
15 minute summer	11	Infiltration		0.0				
600 minute winter	32	15.000	30	0.2	0.164	0.015	0.1759	
600 minute winter	32	Infiltration		0.0				
15 minute winter	31	16.000	30	0.6	0.283	0.058	0.0264	
15 minute summer	31	Infiltration		0.0				
15 minute winter	30	15.001	29	1.0	0.401	0.103	0.0586	
15 minute summer	30	Infiltration		0.0				
240 minute winter	39	17.000	37	-2.4	-0.252	-0.238	0.2347	
120 minute winter	39	Infiltration		0.1				
240 minute winter	37	17.001	35	-2.4	-0.156	-0.247	0.0775	
15 minute summer	37	Infiltration		0.0				

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	36	480	8.196	0.122	0.0	0.0060	0.0000	OK
600 minute winter	35	480	8.196	0.170	2.1	0.0000	0.0000	SURCHARGED
600 minute winter	34	480	8.196	0.127	2.3	4.7149	0.0000	OK
600 minute winter	33	480	8.196	0.186	3.2	0.0000	0.0000	SURCHARGED
600 minute winter	29	480	8.196	0.268	3.2	0.0000	0.0000	SURCHARGED
600 minute winter	40	480	8.196	0.181	0.1	0.2899	0.0000	SURCHARGED
600 minute winter	28	480	8.196	0.282	3.0	0.0000	0.0000	SURCHARGED
600 minute winter	10	480	8.196	0.482	3.0	0.0000	0.0000	SURCHARGED
600 minute winter	9	480	8.196	0.282	0.3	0.0000	0.0000	SURCHARGED
600 minute winter	8	480	8.196	0.490	1.3	0.0000	0.0000	SURCHARGED
600 minute winter	86	480	8.196	0.210	0.3	0.0000	0.0000	SURCHARGED
600 minute winter	87	495	8.196	0.228	0.1	0.0000	0.0000	SURCHARGED
600 minute winter	85	480	8.196	0.275	0.4	0.0000	0.0000	SURCHARGED
600 minute winter	7	480	8.196	0.514	1.1	0.0000	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute winter	36	19.000	35	-0.2	-0.041	-0.016	0.1871	
240 minute winter	35	17.002	33	-2.5	-0.144	-0.243	0.0849	
15 minute summer	35	Infiltration		0.0				
240 minute winter	34	20.000	33	-3.3	-0.292	-0.326	0.2866	
120 minute summer	34	Infiltration		0.1				
240 minute winter	33	17.003	29	-4.8	-0.286	-0.463	0.0354	
15 minute summer	33	Infiltration		0.0				
240 minute winter	29	15.002	28	-4.6	0.227	-0.178	0.2251	
15 minute summer	29	Infiltration		0.0				
120 minute summer	40	21.000	28	-0.3	-0.106	-0.027	0.1031	
240 minute winter	40	Infiltration		0.0				
240 minute winter	28	15.003	10	-4.5	0.240	-0.173	0.7874	
15 minute summer	28	Infiltration		0.0				
15 minute summer	10	8.008	8	10.2	0.461	0.109	0.2977	
15 minute summer	10	Infiltration		0.0				
30 minute summer	9	22.000	8	-1.3	0.278	-0.051	0.5011	
15 minute summer	9	Infiltration		0.0				
15 minute summer	8	8.009	7	8.7	0.327	0.094	0.9852	
15 minute summer	8	Infiltration		0.0				
15 minute winter	86	23.000	85	1.7	0.420	0.166	0.1088	
15 minute summer	86	Infiltration		0.0				
15 minute winter	87	24.000	85	0.4	0.144	0.039	0.0843	
15 minute summer	87	Infiltration		0.0				
15 minute winter	85	23.001	7	2.1	0.504	0.205	0.0443	
15 minute summer	7	Orifice	6	9.0				

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	88	288	8.355	0.245	1.2	0.0000	0.0000	SURCHARGED
360 minute winter	94	288	8.355	0.297	0.3	1.3298	0.0000	SURCHARGED
360 minute winter	51	288	8.355	0.401	1.1	0.1134	0.0000	SURCHARGED
360 minute winter	54	288	8.355	0.249	0.4	1.4823	0.0000	SURCHARGED
360 minute winter	55	288	8.355	0.266	0.2	0.0000	0.0000	SURCHARGED
360 minute winter	53	288	8.355	0.294	0.5	0.0000	0.0000	SURCHARGED
360 minute winter	50	288	8.355	0.405	0.9	0.0000	0.0000	SURCHARGED
360 minute winter	57	288	8.355	0.263	0.9	3.1650	0.0000	SURCHARGED
360 minute winter	58	288	8.355	0.282	0.1	0.3889	0.0000	SURCHARGED
360 minute winter	56	288	8.355	0.305	2.1	4.0454	0.0000	SURCHARGED
360 minute winter	49	288	8.355	0.416	2.1	0.0000	0.0000	SURCHARGED
360 minute winter	47	288	8.355	0.254	0.8	0.6598	0.0000	SURCHARGED
360 minute winter	48	288	8.355	0.290	0.3	0.0000	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	7	Infiltration		0.0				
15 minute winter	88	25.000	51	1.6	0.430	0.161	0.3281	
15 minute summer	88	Infiltration		0.0				
30 minute winter	94	26.000	51	-1.8	-0.185	-0.177	0.1541	
60 minute summer	94	Infiltration		0.1				
30 minute winter	51	25.001	50	-1.5	0.359	-0.052	0.0515	
30 minute winter	54	27.000	53	-1.8	-0.152	-0.178	0.2015	
60 minute summer	54	Infiltration		0.1				
15 minute winter	55	28.000	53	0.7	0.289	0.072	0.1154	
15 minute summer	55	Infiltration		0.0				
15 minute winter	53	27.001	50	-1.8	0.373	-0.178	0.1807	
15 minute summer	53	Infiltration		0.0				
30 minute winter	50	25.002	49	-3.0	0.330	-0.114	0.1728	
15 minute summer	50	Infiltration		0.0				
120 minute summer	57	29.000	56	-1.8	-0.122	-0.179	0.2264	
60 minute winter	57	Infiltration		0.1				
15 minute winter	58	30.000	56	-0.9	-0.251	-0.093	0.1087	
60 minute winter	58	Infiltration		0.0				
120 minute summer	56	29.001	49	-4.2	-0.237	-0.406	0.1856	
60 minute winter	56	Infiltration		0.2				
15 minute winter	49	25.003	45	-6.3	-0.176	-0.250	0.2452	
15 minute summer	49	Infiltration		0.0				
15 minute winter	47	31.000	46	3.0	0.471	0.296	0.3050	
180 minute winter	47	Infiltration		0.1				
15 minute summer	48	32.000	46	0.9	0.199	0.092	0.1726	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	46	288	8.355	0.326	1.0	0.0000	0.0000	SURCHARGED
360 minute winter	45	288	8.355	0.431	1.6	0.0000	0.0000	SURCHARGED
360 minute winter	59	288	8.355	0.363	0.4	0.0000	0.0000	SURCHARGED
360 minute winter	44	288	8.355	0.652	1.0	0.0000	0.0000	SURCHARGED
600 minute winter	93	480	8.195	0.250	0.1	0.1587	0.0000	SURCHARGED
600 minute winter	43	480	8.195	0.276	0.1	0.0000	0.0000	SURCHARGED
600 minute winter	42	480	8.195	0.295	0.2	0.0000	0.0000	SURCHARGED
600 minute winter	92	480	8.195	0.528	0.5	0.0000	0.0000	SURCHARGED
600 minute winter	6	480	8.195	0.608	1.6	0.0000	0.0000	SURCHARGED
600 minute winter	68	480	8.195	0.170	0.1	0.0000	0.0000	SURCHARGED
600 minute winter	67	480	8.195	0.170	0.1	0.0000	0.0000	SURCHARGED
600 minute winter	66	480	8.195	0.192	0.2	0.0000	0.0000	SURCHARGED
600 minute winter	65	495	8.195	0.209	0.1	0.0000	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	48	Infiltration		0.0				
15 minute winter	46	31.001	45	3.8	0.582	0.374	0.1596	
15 minute summer	46	Infiltration		0.0				
15 minute winter	45	25.004	44	-4.4	0.278	-0.170	1.1341	
15 minute summer	45	Infiltration		0.0				
15 minute winter	59	33.000	44	-2.4	0.354	-0.235	0.3408	
15 minute summer	59	Infiltration		0.0				
15 minute summer	44	Orifice	92	0.8				
15 minute summer	44	Infiltration		0.0				
30 minute winter	93	34.000	42	-0.5	-0.115	-0.051	0.1667	
600 minute winter	93	Infiltration		0.0				
30 minute winter	43	35.000	42	-0.6	0.278	-0.055	0.0788	
15 minute summer	43	Infiltration		0.0				
30 minute winter	42	34.001	92	-1.6	-0.273	-0.163	0.0405	
15 minute summer	92	25.006	6	2.5	0.324	0.027	0.2142	
15 minute summer	92	Infiltration		0.0				
15 minute winter	6	8.011	5	8.6	0.402	0.063	3.3661	
15 minute summer	6	Infiltration		0.0				
120 minute winter	68	36.000	66	-0.2	-0.116	-0.020	0.0958	
15 minute summer	68	Infiltration		0.0				
15 minute winter	67	37.000	66	0.2	0.132	0.020	0.0113	
15 minute summer	67	Infiltration		0.0				
15 minute winter	66	36.001	64	0.9	0.268	0.086	0.0491	
15 minute summer	66	Infiltration		0.0				
120 minute summer	65	38.000	64	-0.4	-0.093	-0.038	0.1628	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	64	480	8.195	0.242	0.3	0.0000	0.0000	SURCHARGED
600 minute winter	63	480	8.195	0.251	0.1	0.0000	0.0000	SURCHARGED
600 minute winter	62	480	8.195	0.283	0.3	0.0000	0.0000	SURCHARGED
600 minute winter	61	480	8.195	0.286	0.1	0.0000	0.0000	SURCHARGED
600 minute winter	60	480	8.195	0.310	0.4	0.0000	0.0000	SURCHARGED
600 minute winter	5	480	8.195	0.648	1.5	0.0000	0.0000	SURCHARGED
600 minute winter	69	480	8.195	0.286	0.2	0.0000	0.0000	SURCHARGED
600 minute winter	4	480	8.195	0.655	1.5	0.0000	0.0000	SURCHARGED
600 minute winter	3	480	8.195	0.335	0.6	3.0339	0.0000	SURCHARGED
600 minute winter	2	480	8.195	0.679	1.8	0.1617	0.0000	SURCHARGED
600 minute winter	1	480	8.195	0.683	1.4	0.1626	0.0000	SURCHARGED
15 minute summer	38	1	7.506	0.000	0.9	0.0000	0.0000	OK
120 minute winter	A2	88	9.880	0.880	2.5	1.9720	0.0000	FLOOD RISK
600 minute winter	A3	555	9.902	0.027	1.0	10.7085	0.0000	OK
600 minute winter	B2	450	9.901	0.026	0.5	5.6011	0.0000	OK
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	65	Infiltration		0.0				
15 minute winter	64	36.002	62	1.9	0.415	0.183	0.0771	
15 minute summer	64	Infiltration		0.0				
30 minute winter	63	39.000	62	-0.5	-0.091	-0.053	0.1149	
15 minute summer	63	Infiltration		0.0				
15 minute winter	62	36.003	60	2.2	0.421	0.220	0.0902	
15 minute summer	62	Infiltration		0.0				
15 minute winter	61	40.000	60	-0.6	0.197	-0.065	0.0840	
15 minute summer	61	Infiltration		0.0				
15 minute winter	60	36.004	5	3.1	0.555	0.298	0.1703	
15 minute summer	60	Infiltration		0.0				
15 minute summer	5	8.012	4	8.5	0.348	0.061	0.5851	
15 minute summer	5	Infiltration		0.0				
15 minute winter	69	41.000	4	1.1	0.408	0.108	0.2810	
15 minute summer	69	Infiltration		0.0				
15 minute winter	4	8.013	2	6.0	0.311	0.044	2.1205	
15 minute summer	4	Infiltration		0.0				
60 minute winter	3	42.000	2	-2.6	-0.161	-0.254	0.2302	
60 minute summer	3	Infiltration		0.1				
15 minute winter	2	1.010	1	1.9	0.365	0.014	0.3532	
600 minute winter	1	Head/Flow	38	1.4				113.7
120 minute winter	A2	Orifice	88	1.0				
600 minute winter	A3	Orifice	82	0.2				
600 minute winter	B2	Orifice	32	0.1				

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	B3	570	9.903	0.028	1.0	11.2747	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
600 minute winter	B3	Orifice	9	0.2				

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	90	200	8.613	0.429	2.3	3.7836	0.0000	FLOOD RISK
240 minute winter	82	200	8.613	0.426	0.6	0.0173	0.0000	SURCHARGED
240 minute winter	81	200	8.613	0.549	2.3	0.0000	0.0000	SURCHARGED
240 minute winter	80	200	8.613	0.570	1.9	0.3171	0.0000	SURCHARGED
240 minute winter	83	200	8.613	0.469	2.2	4.2454	0.0000	SURCHARGED
240 minute winter	79	200	8.613	0.611	3.3	0.0071	0.0000	SURCHARGED
240 minute winter	78	200	8.613	0.509	1.4	2.5924	0.0000	SURCHARGED
240 minute winter	77	200	8.613	0.619	4.4	0.0000	0.0000	SURCHARGED
240 minute winter	76	196	8.613	0.719	3.3	0.3797	0.0000	SURCHARGED
240 minute winter	75	196	8.613	0.748	4.3	0.5482	0.0000	SURCHARGED
240 minute winter	74	196	8.613	0.556	4.0	8.1545	0.0000	SURCHARGED
240 minute winter	73	196	8.613	0.757	4.2	0.0000	0.0000	SURCHARGED
240 minute winter	72	196	8.613	0.823	2.5	0.0000	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	90	1.000	81	-3.7	0.237	-0.361	0.2350	
30 minute winter	90	Infiltration		0.1				
30 minute summer	82	2.000	81	-1.8	0.367	-0.172	0.2516	
240 minute winter	82	Infiltration		0.0				
15 minute winter	81	1.001	80	-5.9	-0.273	-0.226	0.3271	
15 minute summer	81	Infiltration		0.0				
15 minute winter	80	1.002	79	-8.4	0.436	-0.331	0.6643	
240 minute winter	80	Infiltration		0.1				
30 minute winter	83	3.000	79	-11.0	-0.628	-1.082	0.3533	
15 minute summer	83	Infiltration		0.1				
15 minute winter	79	1.003	77	-13.9	0.423	-0.532	0.1234	
240 minute winter	79	Infiltration		0.0				
15 minute winter	78	4.000	77	-8.9	-0.512	-0.877	0.1863	
15 minute summer	78	Infiltration		0.0				
15 minute winter	77	1.004	75	-18.9	0.531	-0.734	0.8567	
15 minute summer	77	Infiltration		0.0				
30 minute winter	76	5.000	75	11.4	0.409	0.218	0.8996	
240 minute winter	76	Infiltration		0.1				
15 minute winter	75	1.005	73	13.8	0.499	0.267	0.2895	
240 minute winter	75	Infiltration		0.1				
30 minute winter	74	6.000	73	-9.3	-0.529	-0.921	0.2717	
15 minute winter	74	Infiltration		0.2				
15 minute summer	73	1.006	72	17.8	0.601	0.344	2.0972	
15 minute summer	73	Infiltration		0.0				
15 minute summer	72	1.007	71	15.5	0.465	0.299	3.2320	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	71	196	8.613	0.925	2.2	0.1088	0.0000	SURCHARGED
360 minute winter	84	352	8.580	0.733	1.1	6.4590	0.0000	FLOOD RISK
360 minute winter	70	352	8.580	0.902	2.0	0.0000	0.0000	SURCHARGED
360 minute winter	22	352	8.581	0.544	2.3	0.0000	0.0000	SURCHARGED
360 minute winter	21	352	8.581	0.482	0.8	2.8105	0.0000	SURCHARGED
360 minute winter	20	352	8.581	0.614	2.3	0.8412	0.0000	FLOOD RISK
360 minute winter	19	352	8.581	0.539	0.3	1.2305	0.0000	SURCHARGED
360 minute winter	18	352	8.581	0.627	1.9	0.0000	0.0000	SURCHARGED
360 minute winter	17	352	8.581	0.663	1.8	0.0000	0.0000	SURCHARGED
360 minute winter	16	352	8.581	0.683	1.8	0.0000	0.0000	SURCHARGED
360 minute winter	26	352	8.581	0.453	0.1	0.0000	0.0000	SURCHARGED
360 minute winter	25	352	8.581	0.494	0.2	0.0786	0.0000	SURCHARGED
360 minute winter	27	352	8.581	0.460	0.7	2.1655	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	72	Infiltration		0.0				
15 minute winter	71	Orifice	70	2.7				
240 minute winter	71	Infiltration		0.0				
15 minute summer	84	7.000	70	-9.3	-0.530	-0.915	0.1008	
15 minute summer	84	Infiltration		0.1				
30 minute summer	70	1.009	2	-7.1	0.413	-0.128	0.3364	
15 minute summer	70	Infiltration		0.0				
15 minute winter	22	8.000	20	11.1	0.609	0.430	1.1095	
15 minute summer	22	Infiltration		0.0				
15 minute winter	21	9.000	20	-4.3	-0.263	-0.424	0.3033	
15 minute winter	21	Infiltration		0.1				
15 minute winter	20	8.001	18	10.8	0.572	0.413	0.2018	
180 minute winter	20	Infiltration		0.0				
30 minute summer	19	10.000	18	-2.5	-0.249	-0.236	0.0648	
15 minute summer	19	Infiltration		0.0				
15 minute winter	18	8.002	17	12.2	0.637	0.473	0.5725	
15 minute summer	18	Infiltration		0.0				
15 minute winter	17	8.003	16	12.4	0.662	0.486	0.3256	
15 minute summer	17	Infiltration		0.0				
15 minute winter	16	8.004	15	11.0	0.711	0.429	0.0965	
15 minute summer	16	Infiltration		0.0				
30 minute winter	26	11.000	25	-0.7	-0.043	-0.068	0.2160	
15 minute summer	26	Infiltration		0.0				
15 minute summer	25	11.001	24	1.2	-0.231	0.113	0.0312	
15 minute winter	27	12.000	24	-3.3	-0.187	-0.323	0.2093	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	24	352	8.581	0.500	2.9	0.0000	0.0000	SURCHARGED
360 minute winter	23	352	8.581	0.747	3.3	0.0000	0.0000	SURCHARGED
360 minute winter	15	352	8.581	0.764	4.9	0.0000	0.0000	SURCHARGED
360 minute winter	14	352	8.581	0.590	0.2	0.0000	0.0000	SURCHARGED
360 minute winter	13	352	8.581	0.778	5.1	0.0000	0.0000	SURCHARGED
360 minute winter	12	352	8.581	0.612	0.6	2.2598	0.0000	SURCHARGED
360 minute winter	11	352	8.581	0.786	5.3	0.0000	0.0000	SURCHARGED
360 minute winter	32	352	8.581	0.450	0.5	1.2197	0.0000	SURCHARGED
360 minute winter	31	352	8.581	0.465	0.9	2.3443	0.0000	FLOOD RISK
360 minute winter	30	352	8.581	0.503	1.3	1.5484	0.0000	FLOOD RISK
360 minute winter	39	352	8.581	0.485	5.9	10.4638	0.0000	FLOOD RISK
360 minute winter	37	352	8.581	0.541	6.1	0.5913	0.0000	FLOOD RISK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	27	Infiltration		0.0				
15 minute winter	24	11.002	23	11.8	0.766	1.164	0.5144	
15 minute summer	24	Infiltration		0.0				
15 minute winter	23	11.003	15	16.1	0.454	0.309	0.5346	
15 minute summer	23	Infiltration		0.0				
15 minute winter	15	8.005	13	24.1	0.672	0.462	0.4393	
15 minute summer	15	Infiltration		0.0				
15 minute summer	14	13.000	13	-1.8	0.384	-0.172	0.2420	
15 minute summer	14	Infiltration		0.0				
15 minute summer	13	8.006	11	24.3	0.745	0.458	0.2425	
15 minute summer	13	Infiltration		0.0				
30 minute winter	12	14.000	11	-3.1	-0.238	-0.303	0.1253	
15 minute summer	12	Infiltration		0.0				
15 minute summer	11	8.007	10	22.1	0.774	0.429	0.1926	
15 minute summer	11	Infiltration		0.0				
15 minute winter	32	15.000	30	-2.1	-0.191	-0.211	0.2422	
15 minute winter	32	Infiltration		0.0				
15 minute winter	31	16.000	30	1.7	0.353	0.167	0.1839	
180 minute winter	31	Infiltration		0.1				
15 minute winter	30	15.001	29	3.1	0.524	0.303	0.3957	
180 minute winter	30	Infiltration		0.1				
60 minute winter	39	17.000	37	-9.4	-0.590	-0.920	0.2922	
15 minute summer	39	Infiltration		0.1				
60 minute winter	37	17.001	35	-9.5	-0.540	-0.962	0.0779	
120 minute winter	37	Infiltration		0.0				

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	36	352	8.581	0.507	0.2	0.0248	0.0000	FLOOD RISK
360 minute winter	35	352	8.581	0.555	6.2	0.3832	0.0000	FLOOD RISK
360 minute winter	34	352	8.581	0.512	4.3	10.3790	0.0000	FLOOD RISK
360 minute winter	33	352	8.581	0.571	7.1	0.1569	0.0000	FLOOD RISK
360 minute winter	29	352	8.581	0.653	7.3	0.0423	0.0000	SURCHARGED
360 minute winter	40	352	8.581	0.566	0.5	2.0004	0.0000	SURCHARGED
360 minute winter	28	352	8.581	0.667	7.6	0.0914	0.0000	SURCHARGED
360 minute winter	10	352	8.581	0.867	7.5	0.0000	0.0000	SURCHARGED
360 minute winter	9	352	8.581	0.667	0.6	0.0011	0.0000	SURCHARGED
360 minute winter	8	352	8.581	0.875	3.0	0.0000	0.0000	SURCHARGED
360 minute winter	86	352	8.581	0.595	1.0	0.0000	0.0000	SURCHARGED
360 minute winter	87	352	8.581	0.613	1.3	3.6168	0.0000	SURCHARGED
360 minute winter	85	352	8.581	0.660	1.2	0.0000	0.0000	SURCHARGED
360 minute winter	7	352	8.581	0.899	2.6	0.0000	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	36	19.000	35	-2.3	-0.256	-0.230	0.2515	
60 minute winter	35	17.002	33	-9.8	-0.555	-0.963	0.0849	
120 minute winter	35	Infiltration		0.0				
30 minute winter	34	20.000	33	-10.7	-0.659	-1.057	0.3134	
15 minute summer	34	Infiltration		0.1				
30 minute winter	33	17.003	29	-18.2	-1.035	-1.754	0.0354	
120 minute summer	33	Infiltration		0.0				
30 minute winter	29	15.002	28	-16.8	-0.422	-0.656	0.2251	
360 minute winter	29	Infiltration		0.0				
30 minute winter	40	21.000	28	-2.5	-0.232	-0.247	0.1375	
15 minute summer	40	Infiltration		0.0				
30 minute winter	28	15.003	10	-17.0	-0.427	-0.656	0.7874	
360 minute winter	28	Infiltration		0.0				
15 minute summer	10	8.008	8	16.6	0.470	0.176	0.3912	
15 minute summer	10	Infiltration		0.0				
15 minute summer	9	22.000	8	-3.6	0.291	-0.141	0.9183	
360 minute winter	9	Infiltration		0.0				
15 minute winter	8	8.009	7	11.1	0.334	0.120	1.2179	
15 minute summer	8	Infiltration		0.0				
15 minute winter	86	23.000	85	4.8	0.548	0.474	0.3415	
15 minute summer	86	Infiltration		0.0				
180 minute winter	87	24.000	85	-2.2	-0.123	-0.214	0.2477	
120 minute summer	87	Infiltration		0.1				
15 minute summer	85	23.001	7	4.8	0.644	0.479	0.0752	
15 minute winter	7	Orifice	6	10.6				

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	88	464	8.674	0.564	1.3	1.3513	0.0000	SURCHARGED
480 minute winter	94	464	8.673	0.615	0.5	3.5454	0.0000	SURCHARGED
480 minute winter	51	464	8.673	0.719	1.3	0.2034	0.0000	SURCHARGED
480 minute winter	54	464	8.673	0.567	0.6	3.8884	0.0000	SURCHARGED
480 minute winter	55	464	8.673	0.584	0.5	1.6084	0.0000	SURCHARGED
480 minute winter	53	464	8.673	0.612	0.8	0.7885	0.0000	SURCHARGED
480 minute winter	50	464	8.673	0.723	0.9	0.2085	0.0000	SURCHARGED
480 minute winter	57	464	8.673	0.581	1.3	8.7606	0.0000	SURCHARGED
480 minute winter	58	464	8.673	0.600	0.2	1.0764	0.0000	SURCHARGED
480 minute winter	56	464	8.673	0.623	3.1	11.1977	0.0000	SURCHARGED
480 minute winter	49	464	8.673	0.734	3.1	0.2687	0.0000	SURCHARGED
480 minute winter	47	464	8.673	0.572	1.5	3.5722	0.0000	SURCHARGED
480 minute winter	48	464	8.673	0.608	0.5	0.0000	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	7	Infiltration		0.0				
15 minute winter	88	25.000	51	2.5	0.454	0.246	0.4304	
240 minute winter	88	Infiltration		0.1				
15 minute winter	94	26.000	51	-4.9	-0.295	-0.484	0.1541	
15 minute summer	94	Infiltration		0.1				
15 minute winter	51	25.001	50	-6.4	0.341	-0.222	0.0515	
15 minute winter	54	27.000	53	-6.4	-0.391	-0.624	0.2348	
15 minute summer	54	Infiltration		0.1				
15 minute summer	55	28.000	53	1.6	0.384	0.159	0.1440	
180 minute winter	55	Infiltration		0.2				
15 minute winter	53	27.001	50	-5.3	0.422	-0.523	0.1900	
180 minute winter	53	Infiltration		0.1				
15 minute winter	50	25.002	49	-9.6	0.324	-0.371	0.1728	
180 minute winter	50	Infiltration		0.0				
15 minute winter	57	29.000	56	-6.0	-0.343	-0.600	0.2264	
15 minute summer	57	Infiltration		0.1				
15 minute winter	58	30.000	56	-2.7	-0.393	-0.264	0.1220	
15 minute summer	58	Infiltration		0.0				
15 minute winter	56	29.001	49	-14.7	-0.835	-1.429	0.1856	
15 minute summer	56	Infiltration		0.2				
15 minute winter	49	25.003	45	-19.8	-0.497	-0.779	0.2452	
180 minute winter	49	Infiltration		0.0				
15 minute winter	47	31.000	46	8.0	0.607	0.786	0.3813	
15 minute summer	47	Infiltration		0.1				
15 minute summer	48	32.000	46	2.6	0.251	0.261	0.1907	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	46	464	8.673	0.644	1.3	0.0000	0.0000	SURCHARGED
480 minute winter	45	464	8.673	0.749	2.9	2.5051	0.0000	SURCHARGED
480 minute winter	59	464	8.673	0.681	0.8	0.0000	0.0000	SURCHARGED
480 minute winter	44	464	8.673	0.970	1.7	0.1305	0.0000	SURCHARGED
360 minute winter	93	352	8.580	0.635	1.2	4.2744	0.0000	SURCHARGED
360 minute winter	43	352	8.580	0.661	0.1	0.0000	0.0000	SURCHARGED
360 minute winter	42	352	8.580	0.680	1.3	0.0000	0.0000	SURCHARGED
360 minute winter	92	352	8.580	0.913	1.3	0.0000	0.0000	SURCHARGED
360 minute winter	6	352	8.580	0.993	3.3	0.0000	0.0000	SURCHARGED
360 minute winter	68	352	8.579	0.554	0.1	0.0000	0.0000	SURCHARGED
360 minute winter	67	352	8.580	0.555	0.1	0.0000	0.0000	SURCHARGED
360 minute winter	66	352	8.580	0.577	0.4	0.0000	0.0000	SURCHARGED
360 minute winter	65	352	8.580	0.594	0.1	0.0000	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	48	Infiltration		0.0				
15 minute summer	46	31.001	45	8.8	0.615	0.871	0.1596	
15 minute summer	46	Infiltration		0.0				
15 minute winter	45	25.004	44	-9.8	0.284	-0.380	1.1341	
180 minute winter	45	Infiltration		0.3				
15 minute winter	59	33.000	44	5.2	0.389	0.516	0.3408	
15 minute summer	59	Infiltration		0.0				
15 minute summer	44	Orifice	92	0.8				
480 minute winter	44	Infiltration		0.0				
60 minute winter	93	34.000	42	-3.9	-0.220	-0.379	0.2346	
30 minute summer	93	Infiltration		0.1				
15 minute summer	43	35.000	42	-2.5	0.319	-0.241	0.0967	
15 minute summer	43	Infiltration		0.0				
15 minute summer	42	34.001	92	-5.3	-0.455	-0.533	0.0446	
15 minute winter	92	25.006	6	-7.5	0.328	-0.080	0.2454	
15 minute summer	92	Infiltration		0.0				
15 minute winter	6	8.011	5	13.6	0.446	0.099	3.4705	
15 minute summer	6	Infiltration		0.0				
30 minute winter	68	36.000	66	-1.1	-0.093	-0.111	0.1201	
15 minute summer	68	Infiltration		0.0				
15 minute summer	67	37.000	66	-0.8	-0.162	-0.082	0.1193	
15 minute summer	67	Infiltration		0.0				
30 minute winter	66	36.001	64	-2.8	0.335	-0.279	0.2621	
15 minute summer	66	Infiltration		0.0				
15 minute summer	65	38.000	64	-1.2	-0.138	-0.121	0.1738	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	64	352	8.580	0.627	0.9	0.0000	0.0000	SURCHARGED
360 minute winter	63	352	8.580	0.636	0.1	0.0000	0.0000	SURCHARGED
360 minute winter	62	352	8.580	0.668	0.9	0.0000	0.0000	SURCHARGED
360 minute winter	61	352	8.580	0.671	0.3	0.0000	0.0000	SURCHARGED
360 minute winter	60	352	8.580	0.695	1.3	0.0000	0.0000	SURCHARGED
360 minute winter	5	352	8.580	1.033	3.5	0.3498	0.0000	SURCHARGED
360 minute winter	69	352	8.580	0.671	1.6	5.6318	0.0000	SURCHARGED
360 minute winter	4	352	8.580	1.040	3.5	0.2498	0.0000	SURCHARGED
360 minute winter	3	352	8.580	0.720	1.5	8.3141	0.0000	FLOOD RISK
360 minute winter	2	352	8.580	1.064	3.3	0.2531	0.0000	SURCHARGED
360 minute winter	1	352	8.580	1.068	2.0	0.2541	0.0000	FLOOD RISK
15 minute summer	38	1	7.506	0.000	1.3	0.0000	0.0000	OK
120 minute winter	A2	116	9.905	0.905	6.6	11.8302	0.0000	FLOOD RISK
360 minute winter	A3	352	9.935	0.060	3.2	23.5745	0.0000	OK
360 minute winter	B2	352	9.932	0.057	1.7	12.2641	0.0000	OK
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	65	Infiltration		0.0				
15 minute winter	64	36.002	62	5.5	0.539	0.547	0.2179	
15 minute summer	64	Infiltration		0.0				
15 minute summer	63	39.000	62	-1.0	-0.089	-0.100	0.1710	
15 minute summer	63	Infiltration		0.0				
15 minute winter	62	36.003	60	6.3	0.534	0.624	0.1427	
15 minute summer	62	Infiltration		0.0				
15 minute winter	61	40.000	60	1.3	0.230	0.131	0.1304	
15 minute summer	61	Infiltration		0.0				
15 minute winter	60	36.004	5	8.0	0.738	0.783	0.1977	
15 minute summer	60	Infiltration		0.0				
15 minute winter	5	8.012	4	14.5	0.436	0.105	0.5965	
360 minute winter	5	Infiltration		0.1				
15 minute winter	69	41.000	4	3.3	0.551	0.324	0.3609	
30 minute winter	69	Infiltration		0.1				
15 minute winter	4	8.013	2	15.9	0.345	0.117	2.1214	
360 minute winter	4	Infiltration		0.0				
15 minute winter	3	42.000	2	-8.1	-0.459	-0.791	0.2302	
15 minute summer	3	Infiltration		0.1				
15 minute summer	2	1.010	1	3.3	0.262	0.024	0.3532	
180 minute winter	1	Head/Flow	38	2.0				170.1
120 minute winter	A2	Orifice	88	1.0				
360 minute winter	A3	Orifice	82	0.4				
360 minute winter	B2	Orifice	32	0.2				

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	B3	464	9.935	0.060	2.6	24.4917	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	B3	Orifice	9	0.4				

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	90	288	8.866	0.682	2.9	8.5973	0.0000	FLOOD RISK
360 minute winter	82	288	8.866	0.679	0.8	2.1624	0.0000	FLOOD RISK
360 minute winter	81	288	8.866	0.802	2.9	1.2455	0.0000	FLOOD RISK
360 minute winter	80	288	8.866	0.823	3.6	6.8578	0.0000	FLOOD RISK
360 minute winter	83	288	8.866	0.722	1.7	6.6226	0.0000	FLOOD RISK
360 minute winter	79	288	8.866	0.864	3.7	1.2657	0.0000	FLOOD RISK
360 minute winter	78	288	8.866	0.762	1.0	4.0840	0.0000	FLOOD RISK
360 minute winter	77	288	8.866	0.872	4.6	3.2314	0.0000	FLOOD RISK
360 minute winter	76	288	8.866	0.972	4.7	3.0970	0.0000	FLOOD RISK
360 minute winter	75	288	8.865	1.000	6.7	9.6386	0.0000	FLOOD RISK
360 minute winter	74	288	8.865	0.808	4.0	14.8814	0.0000	FLOOD RISK
360 minute winter	73	288	8.865	1.009	4.8	0.0000	0.0000	FLOOD RISK
360 minute winter	72	288	8.865	1.075	3.4	0.0000	0.0000	FLOOD RISK
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	90	1.000	81	-12.2	-0.692	-1.192	0.2350	
15 minute summer	90	Infiltration		0.1				
15 minute winter	82	2.000	81	-5.0	0.434	-0.495	0.2516	
30 minute winter	82	Infiltration		0.1				
15 minute winter	81	1.001	80	-13.8	-0.346	-0.529	0.3271	
30 minute winter	81	Infiltration		0.0				
15 minute summer	80	1.002	79	-15.3	0.472	-0.598	0.6643	
30 minute summer	80	Infiltration		0.2				
15 minute winter	83	3.000	79	-15.8	-0.949	-1.554	0.3533	
15 minute summer	83	Infiltration		0.1				
15 minute summer	79	1.003	77	-24.1	-0.606	-0.921	0.1234	
30 minute winter	79	Infiltration		0.0				
15 minute winter	78	4.000	77	-12.0	-0.682	-1.186	0.1863	
15 minute summer	78	Infiltration		0.0				
15 minute summer	77	1.004	75	-33.8	-0.849	-1.309	0.8567	
60 minute winter	77	Infiltration		0.1				
15 minute summer	76	5.000	75	23.7	0.507	0.452	0.8996	
15 minute winter	76	Infiltration		0.1				
15 minute summer	75	1.005	73	18.8	0.518	0.364	0.2895	
30 minute summer	75	Infiltration		0.3				
15 minute winter	74	6.000	73	-17.9	-1.018	-1.772	0.2717	
15 minute summer	74	Infiltration		0.2				
15 minute summer	73	1.006	72	22.1	0.638	0.426	2.0972	
15 minute summer	73	Infiltration		0.0				
15 minute summer	72	1.007	71	17.2	0.493	0.331	3.2320	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	71	288	8.865	1.177	2.1	0.9863	0.0000	FLOOD RISK
240 minute winter	84	176	8.743	0.896	2.2	7.6377	0.0000	FLOOD RISK
240 minute winter	70	176	8.743	1.065	2.4	0.9846	0.0000	FLOOD RISK
240 minute winter	22	172	8.740	0.703	6.1	4.0676	0.0000	FLOOD RISK
240 minute winter	21	172	8.739	0.640	1.6	3.9074	0.0000	FLOOD RISK
240 minute winter	20	172	8.739	0.772	6.3	1.8050	0.0000	FLOOD RISK
240 minute winter	19	172	8.739	0.697	0.7	1.6955	0.0000	FLOOD RISK
240 minute winter	18	172	8.739	0.785	6.3	3.3259	0.0000	FLOOD RISK
240 minute winter	17	172	8.739	0.821	6.1	1.7001	0.0000	FLOOD RISK
240 minute winter	16	172	8.739	0.841	5.6	0.1987	0.0000	FLOOD RISK
240 minute winter	26	168	8.749	0.621	0.8	0.8652	0.0000	FLOOD RISK
240 minute winter	25	168	8.749	0.662	0.6	0.1052	0.0000	FLOOD RISK
240 minute winter	27	168	8.749	0.628	1.3	3.0804	0.0000	FLOOD RISK
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	72	Infiltration		0.0				
15 minute winter	71	Orifice	70	3.4				
30 minute summer	71	Infiltration		0.0				
15 minute winter	84	7.000	70	-13.0	-0.736	-1.278	0.1008	
15 minute summer	84	Infiltration		0.1				
15 minute winter	70	1.009	2	-9.9	0.435	-0.179	0.3364	
60 minute winter	70	Infiltration		0.0				
15 minute winter	22	8.000	20	19.4	0.687	0.752	1.1124	
120 minute summer	22	Infiltration		0.2				
15 minute winter	21	9.000	20	-10.4	-0.589	-1.025	0.3033	
15 minute summer	21	Infiltration		0.1				
15 minute winter	20	8.001	18	16.5	0.641	0.635	0.2018	
15 minute winter	20	Infiltration		0.0				
15 minute winter	19	10.000	18	-6.2	-0.353	-0.594	0.0648	
15 minute summer	19	Infiltration		0.0				
15 minute summer	18	8.002	17	17.7	0.695	0.687	0.5725	
60 minute winter	18	Infiltration		0.2				
15 minute summer	17	8.003	16	17.4	0.683	0.682	0.3256	
60 minute winter	17	Infiltration		0.1				
15 minute summer	16	8.004	15	14.5	0.722	0.566	0.0965	
120 minute summer	16	Infiltration		0.0				
30 minute summer	26	11.000	25	3.5	0.198	0.343	0.2160	
15 minute winter	26	Infiltration		0.1				
30 minute summer	25	11.001	24	3.6	-0.233	0.353	0.0312	
15 minute winter	27	12.000	24	-8.4	-0.477	-0.823	0.2093	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	24	168	8.749	0.668	7.6	1.8940	0.0000	FLOOD RISK
240 minute winter	23	172	8.739	0.905	9.2	0.0000	0.0000	SURCHARGED
240 minute winter	15	172	8.739	0.922	14.8	0.3385	0.0000	FLOOD RISK
240 minute winter	14	172	8.738	0.747	0.6	0.0000	0.0000	SURCHARGED
240 minute winter	13	172	8.738	0.935	15.3	0.0000	0.0000	SURCHARGED
240 minute winter	12	172	8.738	0.769	1.1	3.0378	0.0000	FLOOD RISK
240 minute winter	11	172	8.738	0.943	16.1	0.2780	0.0000	FLOOD RISK
240 minute winter	32	172	8.726	0.595	0.7	1.6548	0.0000	FLOOD RISK
240 minute winter	31	172	8.726	0.610	3.0	4.7911	0.0000	FLOOD RISK
240 minute winter	30	172	8.726	0.648	5.2	3.8153	0.0000	FLOOD RISK
480 minute winter	39	272	8.700	0.604	5.1	11.1224	17.3886	FLOOD
240 minute winter	37	172	8.706	0.666	8.0	1.0906	0.0000	FLOOD RISK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	27	Infiltration		0.0				
15 minute winter	24	11.002	23	14.9	0.849	1.474	0.5144	
15 minute winter	24	Infiltration		0.1				
15 minute winter	23	11.003	15	24.4	0.473	0.468	0.5346	
15 minute summer	23	Infiltration		0.0				
15 minute winter	15	8.005	13	36.9	0.704	0.706	0.4393	
120 minute summer	15	Infiltration		0.0				
15 minute summer	14	13.000	13	-2.6	0.386	-0.257	0.2420	
15 minute summer	14	Infiltration		0.0				
15 minute winter	13	8.006	11	37.9	0.738	0.715	0.2425	
15 minute summer	13	Infiltration		0.0				
15 minute summer	12	14.000	11	-8.2	-0.468	-0.805	0.1253	
15 minute summer	12	Infiltration		0.0				
15 minute winter	11	8.007	10	36.0	0.811	0.698	0.1926	
60 minute winter	11	Infiltration		0.0				
15 minute winter	32	15.000	30	-5.6	-0.320	-0.555	0.2801	
15 minute summer	32	Infiltration		0.0				
60 minute summer	31	16.000	30	-3.4	0.322	-0.332	0.1996	
30 minute summer	31	Infiltration		0.1				
120 minute summer	30	15.001	29	-5.8	0.336	-0.568	0.3957	
30 minute winter	30	Infiltration		0.1				
30 minute winter	39	17.000	37	-15.5	-0.904	-1.514	0.2922	
15 minute summer	39	Infiltration		0.1				
30 minute winter	37	17.001	35	-15.5	-0.880	-1.567	0.0779	
30 minute summer	37	Infiltration		0.0				

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	36	272	8.700	0.626	3.5	0.0307	21.6112	FLOOD
240 minute winter	35	172	8.708	0.682	8.3	0.7063	0.0000	FLOOD RISK
480 minute winter	34	272	8.700	0.631	4.8	11.0324	27.9196	FLOOD
240 minute winter	33	172	8.716	0.706	12.0	0.2660	0.0000	FLOOD RISK
240 minute winter	29	172	8.726	0.798	12.1	0.3589	0.0000	FLOOD RISK
240 minute winter	40	172	8.728	0.713	1.0	2.6549	0.0000	FLOOD RISK
240 minute winter	28	172	8.728	0.814	12.4	1.5728	0.0000	FLOOD RISK
240 minute winter	10	172	8.738	1.024	15.3	0.1843	0.0000	SURCHARGED
240 minute winter	9	172	8.738	0.824	3.4	2.8900	0.0000	FLOOD RISK
240 minute winter	8	172	8.738	1.032	4.4	0.3160	0.0000	SURCHARGED
240 minute winter	86	172	8.739	0.753	2.7	0.0000	0.0000	SURCHARGED
240 minute winter	87	172	8.738	0.770	3.5	5.9232	0.0000	SURCHARGED
240 minute winter	85	172	8.738	0.817	3.2	0.0000	0.0000	SURCHARGED
240 minute winter	7	172	8.738	1.056	4.4	0.8151	0.0000	FLOOD RISK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	36	19.000	35	-3.9	-0.291	-0.389	0.2575	
30 minute winter	35	17.002	33	-15.7	-0.890	-1.545	0.0849	
30 minute summer	35	Infiltration		0.0				
15 minute winter	34	20.000	33	-17.5	-1.012	-1.732	0.3134	
15 minute summer	34	Infiltration		0.1				
30 minute winter	33	17.003	29	-31.2	-1.773	-3.005	0.0354	
15 minute winter	33	Infiltration		0.0				
30 minute winter	29	15.002	28	-29.2	-0.734	-1.140	0.2251	
60 minute summer	29	Infiltration		0.0				
15 minute winter	40	21.000	28	-5.2	-0.357	-0.515	0.1375	
15 minute summer	40	Infiltration		0.0				
30 minute winter	28	15.003	10	-29.3	-0.737	-1.133	0.7874	
60 minute winter	28	Infiltration		0.1				
15 minute winter	10	8.008	8	18.0	0.452	0.191	0.3912	
120 minute summer	10	Infiltration		0.0				
15 minute summer	9	22.000	8	5.3	0.307	0.205	0.9183	
60 minute winter	9	Infiltration		0.1				
15 minute summer	8	8.009	7	11.9	0.329	0.129	1.2179	
240 minute winter	8	Infiltration		0.1				
15 minute winter	86	23.000	85	8.4	0.601	0.829	0.3415	
15 minute summer	86	Infiltration		0.0				
30 minute winter	87	24.000	85	-8.8	-0.499	-0.864	0.2477	
15 minute summer	87	Infiltration		0.1				
15 minute winter	85	23.001	7	9.3	0.677	0.920	0.0752	
15 minute winter	7	Orifice	6	11.0				

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	88	464	8.872	0.762	1.6	5.1020	0.0000	FLOOD RISK
480 minute winter	94	464	8.871	0.813	0.8	4.9272	0.0000	FLOOD RISK
480 minute winter	51	464	8.871	0.917	1.4	0.2596	0.0000	FLOOD RISK
480 minute winter	54	464	8.871	0.765	0.8	5.3896	0.0000	FLOOD RISK
480 minute winter	55	464	8.871	0.782	1.4	5.9934	0.0000	FLOOD RISK
480 minute winter	53	464	8.871	0.810	1.9	2.7485	0.0000	FLOOD RISK
480 minute winter	50	464	8.871	0.921	1.8	0.7386	0.0000	FLOOD RISK
480 minute winter	57	464	8.871	0.779	2.0	12.2511	0.0000	FLOOD RISK
480 minute winter	58	464	8.871	0.798	0.2	1.5053	0.0000	FLOOD RISK
480 minute winter	56	464	8.871	0.821	4.6	15.6588	0.0000	FLOOD RISK
480 minute winter	49	464	8.871	0.932	4.7	0.9894	0.0000	FLOOD RISK
480 minute winter	47	464	8.871	0.770	2.9	5.3890	0.0000	FLOOD RISK
480 minute winter	48	464	8.871	0.806	0.9	0.8621	0.0000	FLOOD RISK
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	7	Infiltration		0.0				
15 minute winter	88	25.000	51	4.5	0.457	0.447	0.4304	
30 minute winter	88	Infiltration		0.1				
15 minute winter	94	26.000	51	-8.2	-0.464	-0.806	0.1541	
15 minute summer	94	Infiltration		0.1				
15 minute winter	51	25.001	50	-9.0	0.271	-0.312	0.0515	
15 minute winter	54	27.000	53	-9.2	-0.536	-0.896	0.2348	
15 minute summer	54	Infiltration		0.1				
30 minute winter	55	28.000	53	3.1	0.331	0.298	0.1440	
30 minute winter	55	Infiltration		0.2				
15 minute winter	53	27.001	50	-7.5	-0.424	-0.734	0.1900	
30 minute winter	53	Infiltration		0.1				
15 minute winter	50	25.002	49	-15.7	-0.395	-0.606	0.1728	
30 minute winter	50	Infiltration		0.0				
15 minute winter	57	29.000	56	-9.8	-0.556	-0.974	0.2264	
15 minute summer	57	Infiltration		0.1				
15 minute summer	58	30.000	56	-4.6	-0.462	-0.450	0.1220	
15 minute summer	58	Infiltration		0.0				
15 minute winter	56	29.001	49	-24.3	-1.378	-2.358	0.1856	
15 minute summer	56	Infiltration		0.2				
15 minute winter	49	25.003	45	-32.5	-0.817	-1.280	0.2452	
30 minute winter	49	Infiltration		0.0				
30 minute winter	47	31.000	46	10.2	0.579	1.005	0.3813	
15 minute summer	47	Infiltration		0.1				
30 minute winter	48	32.000	46	4.2	0.239	0.415	0.1907	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	46	464	8.871	0.842	3.4	8.1649	0.0000	FLOOD RISK
480 minute winter	45	464	8.871	0.947	6.6	9.2351	0.0000	FLOOD RISK
480 minute winter	59	464	8.871	0.879	1.5	2.1201	0.0000	FLOOD RISK
480 minute winter	44	464	8.871	1.168	3.5	2.7451	0.0000	FLOOD RISK
240 minute winter	93	176	8.743	0.798	2.3	6.0192	0.0000	FLOOD RISK
240 minute winter	43	176	8.743	0.824	0.2	0.2196	0.0000	FLOOD RISK
240 minute winter	42	176	8.743	0.843	2.6	0.0000	0.0000	FLOOD RISK
240 minute winter	92	176	8.742	1.075	2.8	0.1714	0.0000	FLOOD RISK
240 minute winter	6	176	8.742	1.155	6.2	7.9696	0.0000	FLOOD RISK
240 minute winter	68	176	8.745	0.720	0.2	0.0000	0.0000	SURCHARGED
240 minute winter	67	176	8.745	0.720	0.3	0.0000	0.0000	SURCHARGED
240 minute winter	66	176	8.745	0.742	1.1	0.0000	0.0000	SURCHARGED
240 minute winter	65	176	8.745	0.759	0.3	0.0000	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	48	Infiltration		0.0				
30 minute winter	46	31.001	45	13.4	0.760	1.321	0.1596	
120 minute summer	46	Infiltration		0.4				
15 minute winter	45	25.004	44	-17.3	-0.435	-0.673	1.1341	
30 minute winter	45	Infiltration		0.3				
30 minute winter	59	33.000	44	7.8	0.444	0.772	0.3408	
120 minute winter	59	Infiltration		0.1				
15 minute winter	44	Orifice	92	0.9				
60 minute winter	44	Infiltration		0.1				
30 minute winter	93	34.000	42	-7.0	-0.398	-0.685	0.2346	
15 minute summer	93	Infiltration		0.1				
15 minute winter	43	35.000	42	-3.1	-0.398	-0.297	0.0967	
120 minute summer	43	Infiltration		0.0				
15 minute winter	42	34.001	92	-8.4	-0.577	-0.847	0.0446	
15 minute winter	92	25.006	6	-9.6	0.333	-0.102	0.2454	
120 minute summer	92	Infiltration		0.0				
15 minute summer	6	8.011	5	16.9	0.433	0.124	3.4705	
120 minute summer	6	Infiltration		0.5				
30 minute winter	68	36.000	66	-1.9	-0.146	-0.193	0.1201	
15 minute summer	68	Infiltration		0.0				
30 minute winter	67	37.000	66	-1.5	0.155	-0.147	0.1194	
15 minute summer	67	Infiltration		0.0				
30 minute winter	66	36.001	64	-4.7	0.365	-0.461	0.2621	
15 minute summer	66	Infiltration		0.0				
30 minute summer	65	38.000	64	-1.7	-0.108	-0.167	0.1738	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	64	176	8.745	0.792	2.6	0.0000	0.0000	SURCHARGED
240 minute winter	63	176	8.744	0.800	0.3	0.0000	0.0000	SURCHARGED
240 minute winter	62	176	8.744	0.832	3.0	0.0000	0.0000	SURCHARGED
240 minute winter	61	176	8.744	0.835	0.8	0.0000	0.0000	SURCHARGED
240 minute winter	60	176	8.744	0.859	4.2	0.0000	0.0000	SURCHARGED
240 minute winter	5	176	8.743	1.196	7.9	1.6259	0.0000	FLOOD RISK
240 minute winter	69	176	8.743	0.834	3.2	8.0286	0.0000	FLOOD RISK
240 minute winter	4	176	8.743	1.203	7.0	1.3598	0.0000	FLOOD RISK
240 minute winter	3	172	8.743	0.883	3.0	10.3187	0.0000	FLOOD RISK
240 minute winter	2	176	8.743	1.227	5.5	0.2919	0.0000	FLOOD RISK
240 minute winter	1	176	8.743	1.231	3.2	0.2929	0.0000	FLOOD RISK
15 minute summer	38	1	7.506	0.000	1.8	0.0000	0.0000	OK
240 minute winter	A2	232	9.952	0.952	7.7	29.8151	0.0000	FLOOD RISK
480 minute winter	A3	472	9.994	0.119	4.9	47.0198	0.0000	FLOOD RISK
480 minute winter	B2	464	9.991	0.116	2.7	24.7978	0.0000	FLOOD RISK
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	65	Infiltration		0.0				
15 minute winter	64	36.002	62	8.6	0.591	0.850	0.2179	
15 minute summer	64	Infiltration		0.0				
30 minute summer	63	39.000	62	-1.5	-0.109	-0.148	0.1710	
15 minute summer	63	Infiltration		0.0				
15 minute summer	62	36.003	60	8.9	0.575	0.875	0.1427	
15 minute summer	62	Infiltration		0.0				
15 minute winter	61	40.000	60	2.0	0.205	0.196	0.1304	
15 minute summer	61	Infiltration		0.0				
15 minute summer	60	36.004	5	11.9	0.787	1.167	0.1977	
15 minute summer	60	Infiltration		0.0				
15 minute winter	5	8.012	4	21.9	0.462	0.158	0.5965	
60 minute summer	5	Infiltration		0.1				
15 minute winter	69	41.000	4	5.7	0.621	0.553	0.3609	
15 minute summer	69	Infiltration		0.1				
15 minute winter	4	8.013	2	24.8	0.366	0.183	2.1214	
60 minute summer	4	Infiltration		0.1				
15 minute winter	3	42.000	2	-13.1	-0.741	-1.278	0.2302	
15 minute summer	3	Infiltration		0.1				
15 minute summer	2	1.010	1	3.8	0.310	0.028	0.3532	
240 minute winter	1	Head/Flow	38	3.2				255.4
240 minute winter	A2	Orifice	88	1.1				
480 minute winter	A3	Orifice	82	0.6				
480 minute winter	B2	Orifice	32	0.4				

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	B3	472	9.994	0.119	5.1	48.7775	0.0000	FLOOD RISK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
480 minute winter	B3	Orifice	9	0.6				

Links (Results)

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.574	10.1	0.3	1.517	0.703	0.002	0.0	19	0.263
1.001	0.734	51.9	1.0	0.726	0.835	0.006	0.0	29	0.290
2.000	0.575	10.2	0.7	1.572	0.835	0.004	0.0	27	0.328
1.002	0.737	52.1	11.4	0.760	1.028	0.070	0.0	95	0.592
1.003	0.734	51.9	18.0	1.028	0.943	0.116	0.0	122	0.668
3.000	0.907	36.1	0.0	0.700	1.112	0.000	0.0	0	0.000
4.000	0.647	25.7	0.0	0.711	1.112	0.000	0.0	0	0.000
3.001	0.649	25.8	0.0	1.112	1.045	0.000	0.0	0	0.000
3.002	0.649	25.8	2.9	1.045	0.998	0.018	0.0	51	0.430
5.000	0.575	10.2	4.5	0.932	0.998	0.026	0.0	69	0.556
3.003	0.644	25.6	6.9	0.998	1.017	0.044	0.0	80	0.548
1.004	0.727	51.4	26.2	1.018	0.829	0.170	0.0	152	0.731
6.000	0.575	10.2	10.0	1.048	1.049	0.059	0.0	121	0.654
6.001	0.785	55.5	20.2	1.049	1.052	0.119	0.4	125	0.725
8.000	0.578	10.2	3.0	0.899	1.052	0.017	0.0	55	0.501
6.002	0.780	55.1	25.9	1.052	0.949	0.156	0.4	144	0.768
9.000	0.579	10.2	2.4	1.053	0.945	0.014	0.0	50	0.477
6.003	0.765	54.1	28.0	0.949	0.850	0.170	0.4	153	0.772
10.000	0.575	10.2	3.9	0.866	0.850	0.023	0.0	65	0.538
6.004	0.788	55.7	31.5	0.850	0.830	0.193	0.4	161	0.811
1.005	0.539	38.1	51.4	0.829	0.971	0.363	0.4	300	0.546
11.000	0.576	10.2	0.0	0.902	0.988	0.000	0.0	0	0.000
12.000	0.749	29.8	2.6	0.901	0.966	0.015	0.0	44	0.460
13.000	0.573	10.1	0.0	0.916	0.966	0.000	0.0	0	0.000
12.001	0.745	29.6	3.3	0.966	0.988	0.019	0.0	51	0.494
11.001	0.747	29.7	5.3	0.988	1.048	0.032	0.0	65	0.569
14.000	0.572	10.1	0.0	0.953	1.048	0.000	0.0	0	0.000
11.002	0.742	29.5	5.9	1.048	1.065	0.036	0.0	68	0.582
15.000	0.574	10.1	0.0	0.981	1.065	0.000	0.0	0	0.000
11.003	0.749	29.8	7.6	1.065	1.009	0.047	0.0	78	0.630
16.001	0.575	10.2	2.4	0.906	1.067	0.014	0.0	50	0.470
17.000	0.576	10.2	0.0	1.029	1.067	0.000	0.0	0	0.000
16.002	0.574	10.1	2.3	1.067	1.009	0.014	0.0	49	0.467
18.000	0.577	10.2	2.1	0.963	1.081	0.012	0.0	45	0.450
19.000	0.576	10.2	0.0	1.040	1.081	0.000	0.0	0	0.000
18.001	0.580	10.2	2.0	1.081	1.009	0.012	0.0	45	0.452
11.004	0.734	29.2	12.4	1.009	0.896	0.077	0.0	102	0.705
1.006	0.706	78.0	61.6	0.896	0.912	0.440	0.4	252	0.780
1.007	0.885	140.8	59.9	0.912	0.985	0.440	0.4	204	0.850
1.008	0.726	115.4	59.5	0.985	0.987	0.440	0.4	229	0.731
20.000	0.576	10.2	4.3	0.759	1.154	0.026	0.0	68	0.552
21.000	0.576	10.2	1.9	1.114	1.190	0.011	0.0	44	0.439
22.000	0.576	10.2	0.0	1.157	1.190	0.000	0.0	0	0.000
21.001	0.587	10.4	1.9	1.190	1.154	0.011	0.0	43	0.445
23.000	0.576	10.2	0.0	1.204	1.154	0.000	0.0	0	0.000
24.000	0.576	10.2	0.7	1.192	1.154	0.004	0.0	27	0.328
20.001	0.578	10.2	6.8	1.154	0.987	0.041	0.0	89	0.618
1.009	0.577	91.7	62.4	0.987	0.903	0.481	0.4	273	0.619
1.010	0.808	128.5	61.5	0.903	0.933	0.481	0.4	219	0.799
Blue Roof C1	3.273	25.7	10.4	0.025	1.194	0.059	0.0	44	3.098
Blue Roof Podium	3.149	24.7	9.4	0.025	1.049	0.053	0.0	43	2.931

Simulation Settings

Rainfall Methodology	FEH-13	Analysis Speed	Detailed	Additional Storage (m ³ /ha)	0.0
Summer CV	0.750	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	0.840	Drain Down Time (mins)	4000	Check Discharge Volume	x

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	40	0	0

Node 1 Online Head/Flow Control

Flap Valve	x	Replaces Downstream Link	✓
Downstream Link	1.010	Invert Level (m)	7.300

Head (m)	Flow (l/s)	Head (m)	Flow (l/s)	Head (m)	Flow (l/s)	Head (m)	Flow (l/s)
0.900	2.000	1.200	2.000	1.250	2.000	1.300	4.800
1.000	2.000	1.210	2.000	1.280	2.000	1.350	4.800

Node 26 Online Orifice Control

Flap Valve	x	Replaces Downstream Link	✓	Diameter (m)	0.020
Downstream Link	11.004	Invert Level (m)	7.662	Discharge Coefficient	0.600

Node C1 Online Orifice Control

Flap Valve	x	Design Depth (m)	0.125
Downstream Link	Blue Roof C1	Design Flow (l/s)	0.4
Replaces Downstream Link	✓	Diameter (m)	0.023
Invert Level (m)	9.875	Discharge Coefficient	0.600

Node Podium Online Orifice Control

Flap Valve	x	Design Depth (m)	0.125
Downstream Link	Blue Roof Podium	Design Flow (l/s)	0.5
Replaces Downstream Link	✓	Diameter (m)	0.026
Invert Level (m)	9.875	Discharge Coefficient	0.600

Node 43 Online Orifice Control

Flap Valve	x	Replaces Downstream Link	✓	Diameter (m)	0.020
Downstream Link	20.001	Invert Level (m)	7.643	Discharge Coefficient	0.600

Node 16 Online Orifice Control

Flap Valve	x	Replaces Downstream Link	✓	Diameter (m)	0.030
Downstream Link	1.004	Invert Level (m)	7.589	Discharge Coefficient	0.600

Node 7 Online Orifice Control

Flap Valve	x	Replaces Downstream Link	✓	Diameter (m)	0.090
Downstream Link	6.004	Invert Level (m)	7.596	Discharge Coefficient	0.600

Node 18 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.400	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	532	Depth (m)	
Safety Factor	2.0	Width (m)	4.420	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 51 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.500	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	396	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	60.210		

Node 17 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.682	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	92	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	46.060		

Node 13 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.633	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	64	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	7.340		

Node 11 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.600	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	80	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	6.570		

Node 22 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.355	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	304	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	2.340		

Node 21 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.645	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	168	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	7.750		

Node 19 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	9.292	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	2.310		

Node 52 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	9.300	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	3.960		

Node 16 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.507	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	400	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	9.800		

Node 23 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.035	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	668	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	2.900		

Node 24 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.003	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	756	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	1.620		

Node 25 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.507	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	400	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	7.070		

Node 14 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.303	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	156	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	2.500		

Node 12 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.060	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	640	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	1.540		

Node 10 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.175	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	432	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	1.200		

Node 8 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.440	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	304	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	9.110		

Node 32 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.186	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	384	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	6.780		

Node 31 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.600	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	12.960		

Node 29 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.600	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	3.860		

Node 27 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.600	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	10.850		

Node 26 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.496	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	160	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	4.140		

Node 34 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.600	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	14.520		

Node 33 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.600	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	3.640		

Node 35 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.175	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	408	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	0.900		

Node 30 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.175	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	408	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	2.780		

Node 28 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.175	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	408	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	4.690		

Node 40 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.089	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	584	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	2.570		

Node 39 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.583	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	2.680		

Node 42 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.175	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	408	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	8.120		

Node 38 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.116	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	536	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	3.190		

Node 36 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.578	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	2.010		

Node 37 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.175	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	408	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	4.770		

Node 49 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.280	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	592	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	10.970		

Node 43 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.122	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	496	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	4.220		

Node 47 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.158	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	416	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	2.040		

Node 45 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.590	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	2.480		

Node 46 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.188	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	352	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	3.880		

Node 50 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.230	Depth (m)	0.750
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	248	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	10.000	Number Required	1
Porosity	0.30	Pit Length (m)	4.190		

Node 44 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.01616	Invert Level (m)	8.641	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.30	Length (m)	4.310		

Node C1 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	9.875	Depth (m)	
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	50.500	Number Required	1
Porosity	0.90	Pit Length (m)	10.000		

Node Podium Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	9.875	Depth (m)	
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	42.700	Number Required	1
Porosity	0.90	Pit Length (m)	10.000		

Other (defaults)

Entry Loss (manhole)	0.250	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.250	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	19	288	8.316	0.291	0.2	0.0000	0.0000	SURCHARGED
360 minute winter	18	288	8.316	0.542	0.4	0.0000	0.0000	SURCHARGED
360 minute winter	52	288	8.316	0.338	0.2	0.0000	0.0000	SURCHARGED
360 minute winter	51	288	8.316	0.551	1.6	0.0000	0.0000	SURCHARGED
360 minute winter	17	288	8.316	0.562	2.1	0.0000	0.0000	SURCHARGED
360 minute winter	23	288	8.316	0.381	1.0	2.4460	0.0000	SURCHARGED
360 minute winter	24	288	8.316	0.424	0.6	1.5220	0.0000	SURCHARGED
360 minute winter	22	288	8.316	0.473	1.6	0.0000	0.0000	SURCHARGED
360 minute winter	21	288	8.316	0.541	1.7	0.0000	0.0000	SURCHARGED
360 minute winter	25	288	8.316	0.491	0.7	0.0000	0.0000	SURCHARGED
360 minute winter	20	288	8.316	0.631	1.3	0.1785	0.0000	SURCHARGED
360 minute winter	16	288	8.316	0.727	2.0	0.0000	0.0000	SURCHARGED
480 minute winter	14	424	8.149	0.315	0.2	0.0000	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	19	1.000	18	-0.4	0.205	-0.037	0.4132	
15 minute summer	19	Infiltration		0.0				
15 minute winter	18	1.001	51	0.6	-0.165	0.012	0.2022	
15 minute summer	18	Infiltration		0.0				
15 minute winter	52	2.000	51	0.4	0.303	0.039	0.0579	
15 minute summer	52	Infiltration		0.0				
15 minute winter	51	1.002	17	6.5	0.428	0.124	1.5973	
15 minute summer	51	Infiltration		0.0				
15 minute winter	17	1.003	16	8.5	0.365	0.164	2.5275	
15 minute summer	17	Infiltration		0.0				
120 minute winter	23	3.000	22	-1.5	-0.059	-0.043	0.7535	
120 minute summer	23	Infiltration		0.1				
15 minute winter	24	4.000	22	-1.6	-0.199	-0.063	0.3418	
120 minute summer	24	Infiltration		0.0				
15 minute winter	22	3.001	21	-4.0	-0.217	-0.156	0.7979	
15 minute summer	22	Infiltration		0.0				
15 minute winter	21	3.002	20	-5.1	0.224	-0.199	1.3662	
15 minute summer	21	Infiltration		0.0				
15 minute winter	25	5.000	20	2.4	0.479	0.236	0.3408	
15 minute summer	25	Infiltration		0.0				
15 minute winter	20	3.003	16	-4.7	0.282	-0.185	0.3211	
120 minute winter	16	Orifice	6	1.3				
15 minute summer	16	Infiltration		0.0				
240 minute winter	14	6.000	13	-0.3	0.200	-0.025	0.5075	
15 minute summer	14	Infiltration		0.0				

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	13	424	8.149	0.465	0.8	0.0000	0.0000	SURCHARGED
480 minute winter	12	424	8.149	0.313	0.4	0.4137	0.0000	SURCHARGED
480 minute winter	11	424	8.149	0.501	1.3	0.0000	0.0000	SURCHARGED
480 minute winter	10	424	8.149	0.352	0.3	0.0000	0.0000	SURCHARGED
480 minute winter	9	424	8.149	0.542	1.3	0.0000	0.0000	SURCHARGED
480 minute winter	8	424	8.149	0.325	0.5	0.0000	0.0000	SURCHARGED
480 minute winter	7	424	8.149	0.553	1.6	0.6255	0.0000	SURCHARGED
480 minute winter	6	424	8.145	0.566	2.4	0.6402	0.0000	SURCHARGED
360 minute winter	32	344	8.156	0.197	0.2	0.0000	0.0000	SURCHARGED
360 minute winter	34	344	8.155	0.281	0.4	0.0000	0.0000	SURCHARGED
360 minute winter	35	344	8.155	0.221	0.1	0.0000	0.0000	SURCHARGED
360 minute winter	33	344	8.155	0.346	0.4	0.0000	0.0000	SURCHARGED
360 minute winter	31	344	8.156	0.369	0.6	0.0000	0.0000	SURCHARGED
360 minute winter	30	344	8.156	0.259	0.1	0.0000	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	13	6.001	11	1.4	0.330	0.025	0.3580	
15 minute summer	13	Infiltration		0.0				
15 minute winter	12	8.000	11	1.6	0.459	0.157	0.0394	
360 minute winter	12	Infiltration		0.0				
15 minute summer	11	6.002	9	3.3	0.311	0.059	0.5226	
15 minute summer	11	Infiltration		0.0				
15 minute winter	10	9.000	9	1.3	0.433	0.127	0.0320	
15 minute summer	10	Infiltration		0.0				
15 minute winter	9	6.003	7	4.2	0.322	0.078	0.1998	
15 minute winter	8	10.000	7	2.1	0.485	0.207	0.1014	
15 minute summer	8	Infiltration		0.0				
15 minute winter	7	Orifice	6	5.7				
15 minute winter	6	1.005	5	6.6	0.432	0.174	2.7816	
240 minute winter	32	11.000	31	-0.2	-0.026	-0.018	0.5086	
15 minute summer	32	Infiltration		0.0				
15 minute winter	34	12.000	33	1.4	0.360	0.047	0.1631	
15 minute summer	34	Infiltration		0.0				
120 minute winter	35	13.000	33	-0.2	-0.050	-0.017	0.1603	
15 minute summer	35	Infiltration		0.0				
15 minute winter	33	12.001	31	1.8	0.345	0.060	0.1125	
15 minute summer	33	Infiltration		0.0				
15 minute winter	31	11.001	29	2.9	0.415	0.097	0.4641	
15 minute summer	31	Infiltration		0.0				
60 minute winter	30	14.000	29	-0.3	-0.049	-0.027	0.2874	
15 minute summer	30	Infiltration		0.0				

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	29	344	8.155	0.428	0.6	0.0000	0.0000	SURCHARGED
360 minute winter	28	344	8.155	0.286	0.1	0.0000	0.0000	SURCHARGED
360 minute winter	27	344	8.156	0.446	0.7	0.0000	0.0000	SURCHARGED
360 minute winter	40	344	8.156	0.298	0.4	0.5171	0.0000	SURCHARGED
360 minute winter	42	344	8.156	0.335	0.1	0.0000	0.0000	SURCHARGED
360 minute winter	39	344	8.156	0.390	0.3	0.0000	0.0000	SURCHARGED
360 minute winter	38	344	8.155	0.327	0.3	0.3825	0.0000	SURCHARGED
360 minute winter	37	344	8.155	0.345	0.1	0.0000	0.0000	SURCHARGED
360 minute winter	36	344	8.155	0.408	0.3	0.0000	0.0000	SURCHARGED
360 minute winter	26	344	8.156	0.494	0.5	0.0000	0.0000	SURCHARGED
480 minute winter	5	424	8.145	0.645	2.3	0.9228	0.0000	SURCHARGED
480 minute winter	4	424	8.145	0.735	1.8	0.1749	0.0000	SURCHARGED
480 minute winter	3	424	8.145	0.805	1.8	0.1916	0.0000	SURCHARGED
720 minute winter	49	540	8.150	0.379	0.4	0.0000	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	29	11.002	27	2.4	0.324	0.082	0.1742	
15 minute summer	29	Infiltration		0.0				
30 minute winter	28	15.000	27	-0.5	-0.075	-0.048	0.2666	
15 minute summer	28	Infiltration		0.0				
15 minute winter	27	11.003	26	2.1	0.241	0.070	0.5394	
15 minute summer	27	Infiltration		0.0				
15 minute winter	40	16.001	39	1.3	0.411	0.128	0.2779	
360 minute winter	40	Infiltration		0.1				
15 minute winter	42	17.000	39	-0.6	-0.126	-0.060	0.2069	
15 minute summer	42	Infiltration		0.0				
15 minute winter	39	16.002	26	0.8	0.275	0.083	0.1476	
15 minute summer	39	Infiltration		0.0				
15 minute winter	38	18.000	36	1.1	0.384	0.108	0.3075	
360 minute winter	38	Infiltration		0.1				
15 minute winter	37	19.000	36	-1.0	-0.140	-0.094	0.2633	
15 minute summer	37	Infiltration		0.0				
15 minute winter	36	18.001	26	-1.9	0.265	-0.183	0.0520	
15 minute summer	36	Infiltration		0.0				
120 minute winter	26	Orifice	5	0.4				
15 minute summer	26	Infiltration		0.0				
15 minute winter	5	1.006	4	7.0	0.533	0.089	0.6532	
15 minute winter	4	1.007	3	7.0	0.430	0.049	4.6252	
15 minute winter	3	1.008	2	5.8	0.338	0.050	1.0933	
15 minute winter	49	20.000	43	2.4	0.411	0.236	0.4125	
15 minute summer	49	Infiltration		0.0				

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	47	540	8.150	0.431	0.2	0.0000	0.0000	SURCHARGED
720 minute winter	46	540	8.150	0.444	0.1	0.0000	0.0000	SURCHARGED
720 minute winter	45	540	8.150	0.500	0.2	0.0000	0.0000	SURCHARGED
720 minute winter	50	540	8.150	0.449	0.1	0.0000	0.0000	SURCHARGED
720 minute winter	44	540	8.149	0.450	0.1	0.0000	0.0000	SURCHARGED
720 minute winter	43	540	8.150	0.507	0.4	0.3561	0.0000	SURCHARGED
480 minute winter	2	424	8.145	0.815	1.9	0.1939	0.0000	SURCHARGED
480 minute winter	1	424	8.145	0.845	1.9	0.2011	0.0000	SURCHARGED
15 minute summer	15	1	7.270	0.000	0.9	0.0000	0.0000	OK
720 minute winter	C1	675	9.903	0.028	0.9	12.7460	0.0000	OK
720 minute winter	Podium	585	9.902	0.027	0.8	10.5197	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	47	21.000	45	1.0	0.335	0.098	0.2955	
15 minute summer	47	Infiltration		0.0				
15 minute winter	46	22.000	45	-0.6	-0.119	-0.056	0.2525	
15 minute summer	46	Infiltration		0.0				
15 minute winter	45	21.001	43	-0.9	0.098	-0.082	0.0355	
15 minute summer	45	Infiltration		0.0				
15 minute summer	50	23.000	43	-0.6	-0.114	-0.060	0.2477	
15 minute summer	50	Infiltration		0.0				
15 minute summer	44	24.000	43	-0.3	0.088	-0.029	0.2412	
15 minute summer	44	Infiltration		0.0				
120 minute winter	43	Orifice	2	0.4				
720 minute winter	43	Infiltration		0.1				
15 minute summer	2	1.009	1	5.1	0.327	0.056	5.1722	
480 minute winter	1	Head/Flow	15	1.9				207.5
720 minute winter	C1	Orifice	14	0.1				
720 minute winter	Podium	Orifice	13	0.2				

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	19	200	8.618	0.593	0.7	0.0000	0.0000	SURCHARGED
240 minute winter	18	200	8.618	0.844	4.3	2.8288	0.0000	FLOOD RISK
240 minute winter	52	200	8.618	0.640	0.5	0.0000	0.0000	SURCHARGED
240 minute winter	51	200	8.618	0.853	8.4	15.8925	0.0000	FLOOD RISK
240 minute winter	17	204	8.618	0.864	6.7	0.0000	0.0000	SURCHARGED
240 minute winter	23	204	8.618	0.683	3.7	5.0789	0.0000	FLOOD RISK
240 minute winter	24	204	8.618	0.726	2.0	2.9930	0.0000	FLOOD RISK
240 minute winter	22	196	8.618	0.775	7.3	1.8518	0.0000	SURCHARGED
240 minute winter	21	196	8.618	0.843	7.7	0.0000	0.0000	SURCHARGED
240 minute winter	25	204	8.618	0.793	2.1	2.2670	0.0000	FLOOD RISK
240 minute winter	20	204	8.618	0.933	6.7	0.2641	0.0000	FLOOD RISK
240 minute winter	16	204	8.618	1.029	7.1	3.1238	0.0000	FLOOD RISK
360 minute winter	14	264	8.519	0.685	1.0	1.6209	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	19	1.000	18	-6.5	-0.388	-0.639	0.4132	
15 minute summer	19	Infiltration		0.0				
30 minute winter	18	1.001	51	-11.4	-0.205	-0.219	0.2854	
15 minute summer	18	Infiltration		0.1				
15 minute winter	52	2.000	51	-3.9	0.335	-0.384	0.3325	
15 minute summer	52	Infiltration		0.0				
15 minute summer	51	1.002	17	15.2	0.532	0.291	2.7063	
240 minute winter	51	Infiltration		1.3				
15 minute winter	17	1.003	16	22.2	0.427	0.427	2.8566	
15 minute summer	17	Infiltration		0.0				
15 minute winter	23	3.000	22	-17.1	-0.429	-0.473	0.7535	
15 minute summer	23	Infiltration		0.1				
15 minute summer	24	4.000	22	-9.4	-0.263	-0.367	0.7805	
15 minute summer	24	Infiltration		0.0				
15 minute winter	22	3.001	21	-27.9	-0.703	-1.082	1.0756	
15 minute summer	22	Infiltration		0.1				
15 minute winter	21	3.002	20	-24.5	-0.617	-0.950	1.4244	
15 minute summer	21	Infiltration		0.0				
15 minute winter	25	5.000	20	6.5	0.510	0.642	0.3433	
30 minute winter	25	Infiltration		0.2				
15 minute winter	20	3.003	16	-21.2	-0.534	-0.829	0.3211	
30 minute winter	16	Orifice	6	1.7				
30 minute winter	16	Infiltration		0.2				
15 minute winter	14	6.000	13	-5.3	-0.313	-0.523	0.5075	
120 minute winter	14	Infiltration		0.1				

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	13	264	8.519	0.835	1.2	0.0000	0.0000	SURCHARGED
360 minute winter	12	264	8.519	0.683	1.0	2.1206	0.0000	SURCHARGED
360 minute winter	11	264	8.518	0.870	2.3	0.0000	0.0000	SURCHARGED
360 minute winter	10	264	8.518	0.721	0.9	1.2384	0.0000	SURCHARGED
360 minute winter	9	264	8.518	0.911	2.6	0.0000	0.0000	SURCHARGED
360 minute winter	8	264	8.518	0.694	1.3	1.9992	0.0000	SURCHARGED
360 minute winter	7	264	8.518	0.922	2.9	1.0433	0.0000	FLOOD RISK
360 minute winter	6	272	8.503	0.924	3.7	1.0452	0.0000	FLOOD RISK
240 minute winter	32	240	8.333	0.374	1.1	3.0007	0.0000	SURCHARGED
240 minute winter	34	240	8.333	0.459	1.2	0.0000	0.0000	SURCHARGED
240 minute winter	35	240	8.333	0.399	0.4	0.4282	0.0000	SURCHARGED
240 minute winter	33	240	8.333	0.524	1.6	0.0000	0.0000	SURCHARGED
240 minute winter	31	240	8.333	0.546	2.6	0.0000	0.0000	SURCHARGED
240 minute winter	30	240	8.333	0.436	0.8	1.3223	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	13	6.001	11	4.8	0.329	0.087	1.0004	
15 minute summer	13	Infiltration		0.0				
15 minute winter	12	8.000	11	4.6	0.606	0.450	0.1990	
15 minute summer	12	Infiltration		0.0				
15 minute winter	11	6.002	9	7.2	0.360	0.130	1.1545	
15 minute summer	11	Infiltration		0.0				
15 minute winter	10	9.000	9	3.5	0.546	0.340	0.1875	
120 minute summer	10	Infiltration		0.0				
30 minute winter	9	6.003	7	9.2	0.316	0.170	0.3215	
15 minute winter	8	10.000	7	6.1	0.594	0.601	0.4120	
240 minute winter	8	Infiltration		0.2				
30 minute winter	7	Orifice	6	12.0				
30 minute winter	6	1.005	5	14.2	0.537	0.374	4.6618	
15 minute winter	32	11.000	31	-3.6	-0.225	-0.355	0.5104	
60 minute winter	32	Infiltration		0.2				
15 minute winter	34	12.000	33	4.0	0.456	0.135	0.7759	
15 minute summer	34	Infiltration		0.0				
15 minute winter	35	13.000	33	-2.1	-0.205	-0.207	0.2655	
60 minute winter	35	Infiltration		0.0				
15 minute summer	33	12.001	31	4.0	0.405	0.136	0.2655	
15 minute summer	33	Infiltration		0.0				
15 minute winter	31	11.001	29	6.0	0.423	0.202	0.7201	
15 minute summer	31	Infiltration		0.0				
15 minute summer	30	14.000	29	-2.4	-0.186	-0.241	0.5068	
60 minute winter	30	Infiltration		0.1				

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	29	240	8.333	0.606	2.7	0.0000	0.0000	SURCHARGED
240 minute winter	28	240	8.333	0.464	1.1	2.2311	0.0000	SURCHARGED
240 minute winter	27	240	8.333	0.623	2.8	0.0000	0.0000	SURCHARGED
240 minute winter	40	240	8.333	0.475	2.4	1.8853	0.0000	SURCHARGED
240 minute winter	42	240	8.333	0.512	1.6	3.8612	0.0000	SURCHARGED
240 minute winter	39	240	8.333	0.567	1.9	0.0000	0.0000	SURCHARGED
240 minute winter	38	240	8.333	0.505	1.4	2.0821	0.0000	SURCHARGED
240 minute winter	37	240	8.333	0.523	1.4	2.2692	0.0000	SURCHARGED
240 minute winter	36	240	8.333	0.586	1.4	0.0000	0.0000	SURCHARGED
240 minute winter	26	240	8.333	0.671	2.6	0.0000	0.0000	SURCHARGED
360 minute winter	5	272	8.503	1.003	3.4	1.4349	0.0000	FLOOD RISK
360 minute winter	4	272	8.503	1.093	2.9	0.2601	0.0000	FLOOD RISK
360 minute winter	3	272	8.503	1.163	2.7	0.2767	0.0000	FLOOD RISK
600 minute winter	49	480	8.355	0.584	1.0	2.2725	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	29	11.002	27	6.2	0.329	0.211	0.2067	
15 minute summer	29	Infiltration		0.0				
15 minute winter	28	15.000	27	-2.4	-0.186	-0.232	0.4451	
60 minute winter	28	Infiltration		0.1				
30 minute winter	27	11.003	26	8.9	0.231	0.298	0.5733	
15 minute summer	27	Infiltration		0.0				
30 minute winter	40	16.001	39	-3.4	0.386	-0.336	0.4864	
15 minute summer	40	Infiltration		0.1				
30 minute winter	42	17.000	39	-3.4	-0.196	-0.339	0.2898	
60 minute winter	42	Infiltration		0.2				
30 minute winter	39	16.002	26	-4.6	0.277	-0.451	0.1535	
15 minute summer	39	Infiltration		0.0				
30 minute winter	38	18.000	36	-3.3	0.346	-0.328	0.4247	
15 minute winter	38	Infiltration		0.1				
30 minute winter	37	19.000	36	-2.7	-0.161	-0.263	0.3313	
60 minute winter	37	Infiltration		0.1				
30 minute winter	36	18.001	26	-4.4	0.282	-0.426	0.0520	
15 minute summer	36	Infiltration		0.0				
30 minute winter	26	Orifice	5	0.6				
15 minute summer	26	Infiltration		0.0				
15 minute winter	5	1.006	4	14.0	0.650	0.179	1.0657	
15 minute winter	4	1.007	3	12.3	0.470	0.088	5.7586	
15 minute winter	3	1.008	2	8.9	0.381	0.077	1.2170	
15 minute winter	49	20.000	43	6.7	0.478	0.656	0.6744	
180 minute winter	49	Infiltration		0.2				

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	47	480	8.355	0.636	0.4	1.2059	0.0000	SURCHARGED
600 minute winter	46	480	8.355	0.649	0.7	1.9443	0.0000	SURCHARGED
600 minute winter	45	495	8.355	0.705	0.7	0.0000	0.0000	SURCHARGED
600 minute winter	50	480	8.355	0.654	0.5	1.5717	0.0000	SURCHARGED
600 minute winter	44	465	8.355	0.656	0.2	0.0000	0.0000	SURCHARGED
600 minute winter	43	495	8.355	0.712	1.4	2.9504	0.0000	SURCHARGED
360 minute winter	2	272	8.503	1.173	2.5	0.2791	0.0000	FLOOD RISK
360 minute winter	1	272	8.503	1.203	2.2	0.2862	0.0000	FLOOD RISK
15 minute summer	15	1	7.270	0.000	1.5	0.0000	0.0000	OK
480 minute winter	C1	472	9.936	0.061	2.7	27.5938	0.0000	OK
600 minute winter	Podium	555	9.936	0.061	2.0	23.3851	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	47	21.000	45	2.8	0.368	0.280	0.3635	
15 minute winter	47	Infiltration		0.0				
30 minute winter	46	22.000	45	-3.2	-0.181	-0.314	0.2951	
30 minute winter	46	Infiltration		0.1				
30 minute summer	45	21.001	43	2.8	0.161	0.273	0.0355	
15 minute summer	45	Infiltration		0.0				
30 minute winter	50	23.000	43	-1.6	-0.110	-0.161	0.3053	
120 minute summer	50	Infiltration		0.1				
15 minute summer	44	24.000	43	1.5	0.160	0.144	0.2952	
15 minute summer	44	Infiltration		0.0				
30 minute winter	43	Orifice	2	0.6				
15 minute summer	43	Infiltration		0.1				
15 minute winter	2	1.009	1	6.7	0.355	0.073	5.7296	
60 minute winter	1	Head/Flow	15	2.0				204.8
480 minute winter	C1	Orifice	14	0.2				
600 minute winter	Podium	Orifice	13	0.3				

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	19	228	8.787	0.762	0.7	0.0000	0.0000	SURCHARGED
240 minute winter	18	228	8.787	1.013	4.5	5.0607	0.0000	FLOOD RISK
240 minute winter	52	228	8.787	0.809	0.6	0.0000	0.0000	SURCHARGED
240 minute winter	51	228	8.787	1.022	17.1	46.2365	0.0000	FLOOD RISK
240 minute winter	17	228	8.787	1.033	7.6	11.2591	0.0000	FLOOD RISK
240 minute winter	23	232	8.787	0.852	3.8	6.5337	0.0000	FLOOD RISK
240 minute winter	24	232	8.787	0.895	2.1	3.6499	0.0000	FLOOD RISK
240 minute winter	22	232	8.787	0.944	8.1	3.0336	0.0000	SURCHARGED
240 minute winter	21	232	8.787	1.012	8.6	3.1995	0.0000	FLOOD RISK
240 minute winter	25	232	8.787	0.962	3.9	5.8211	0.0000	FLOOD RISK
240 minute winter	20	232	8.787	1.102	7.4	0.3117	0.0000	FLOOD RISK
240 minute winter	16	232	8.787	1.198	7.4	8.0723	0.0000	FLOOD RISK
240 minute winter	14	172	8.746	0.912	3.1	3.3274	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	19	1.000	18	-10.0	-0.568	-0.986	0.4132	
15 minute summer	19	Infiltration		0.0				
15 minute winter	18	1.001	51	-29.9	-0.425	-0.577	0.2854	
15 minute summer	18	Infiltration		0.1				
15 minute summer	52	2.000	51	-12.0	-0.680	-1.178	0.3325	
15 minute summer	52	Infiltration		0.0				
30 minute winter	51	1.002	17	-20.7	0.439	-0.398	2.7063	
240 minute winter	51	Infiltration		1.3				
15 minute summer	17	1.003	16	27.2	0.419	0.525	2.8566	
120 minute summer	17	Infiltration		1.0				
15 minute winter	23	3.000	22	-25.6	-0.643	-0.709	0.7535	
15 minute summer	23	Infiltration		0.1				
15 minute summer	24	4.000	22	-13.4	-0.466	-0.520	0.7805	
15 minute summer	24	Infiltration		0.0				
15 minute winter	22	3.001	21	-38.4	-0.966	-1.488	1.0756	
15 minute summer	22	Infiltration		0.1				
15 minute winter	21	3.002	20	-31.2	-0.784	-1.207	1.4244	
60 minute winter	21	Infiltration		0.2				
15 minute summer	25	5.000	20	11.0	0.623	1.079	0.3433	
15 minute summer	25	Infiltration		0.2				
15 minute summer	20	3.003	16	-27.2	-0.685	-1.062	0.3211	
30 minute winter	16	Orifice	6	1.8				
15 minute summer	16	Infiltration		0.2				
15 minute summer	14	6.000	13	-8.3	-0.489	-0.820	0.5075	
15 minute summer	14	Infiltration		0.1				

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	13	172	8.746	1.062	3.3	2.3154	0.0000	FLOOD RISK
240 minute winter	12	172	8.746	0.910	2.6	3.1731	0.0000	FLOOD RISK
240 minute winter	11	172	8.746	1.098	5.2	2.8089	0.0000	FLOOD RISK
240 minute winter	10	172	8.746	0.949	2.1	2.0575	0.0000	FLOOD RISK
240 minute winter	9	172	8.746	1.139	6.0	0.0000	0.0000	FLOOD RISK
240 minute winter	8	172	8.747	0.923	5.8	8.2020	0.0000	FLOOD RISK
240 minute winter	7	172	8.746	1.150	5.8	1.3004	0.0000	FLOOD RISK
240 minute winter	6	168	8.656	1.077	5.9	1.2177	0.0000	FLOOD RISK
480 minute winter	32	456	8.610	0.651	1.4	8.6375	0.0000	SURCHARGED
480 minute winter	34	456	8.610	0.736	1.3	0.1512	0.0000	SURCHARGED
480 minute winter	35	456	8.610	0.676	0.2	1.1763	0.0000	SURCHARGED
480 minute winter	33	456	8.610	0.801	1.6	0.0896	0.0000	SURCHARGED
480 minute winter	31	456	8.610	0.823	2.6	0.1556	0.0000	SURCHARGED
480 minute winter	30	456	8.610	0.713	0.6	3.6335	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	13	6.001	11	-8.7	0.328	-0.157	1.0004	
120 minute winter	13	Infiltration		0.2				
15 minute winter	12	8.000	11	6.7	0.639	0.661	0.1990	
15 minute summer	12	Infiltration		0.0				
30 minute winter	11	6.002	9	13.7	0.352	0.249	1.1545	
120 minute winter	11	Infiltration		0.1				
15 minute summer	10	9.000	9	5.7	0.584	0.561	0.1875	
15 minute summer	10	Infiltration		0.0				
15 minute winter	9	6.003	7	18.1	0.293	0.334	0.3215	
15 minute winter	8	10.000	7	9.9	0.625	0.976	0.4120	
15 minute summer	8	Infiltration		0.2				
30 minute winter	7	Orifice	6	15.6				
30 minute winter	6	1.005	5	17.6	0.573	0.462	4.6618	
30 minute summer	32	11.000	31	-7.0	-0.398	-0.683	0.5104	
15 minute summer	32	Infiltration		0.2				
15 minute winter	34	12.000	33	7.4	0.501	0.247	0.7759	
480 minute winter	34	Infiltration		0.1				
15 minute winter	35	13.000	33	-5.9	-0.361	-0.583	0.2655	
15 minute summer	35	Infiltration		0.0				
15 minute winter	33	12.001	31	9.0	0.437	0.305	0.2655	
480 minute winter	33	Infiltration		0.0				
15 minute winter	31	11.001	29	11.1	0.437	0.374	0.7201	
480 minute winter	31	Infiltration		0.1				
15 minute summer	30	14.000	29	-4.5	-0.270	-0.444	0.5068	
15 minute summer	30	Infiltration		0.1				

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	29	456	8.610	0.883	1.5	0.0949	0.0000	SURCHARGED
480 minute winter	28	456	8.610	0.741	1.0	6.1298	0.0000	SURCHARGED
480 minute winter	27	456	8.610	0.900	1.9	0.1538	0.0000	SURCHARGED
480 minute winter	40	456	8.610	0.752	1.2	4.0222	0.0000	SURCHARGED
480 minute winter	42	456	8.610	0.789	1.7	10.6124	0.0000	SURCHARGED
480 minute winter	39	456	8.610	0.844	1.7	0.2066	0.0000	SURCHARGED
480 minute winter	38	456	8.610	0.782	1.1	4.7341	0.0000	SURCHARGED
480 minute winter	37	456	8.610	0.800	1.0	6.2344	0.0000	SURCHARGED
480 minute winter	36	456	8.610	0.863	1.0	0.1872	0.0000	SURCHARGED
480 minute winter	26	456	8.610	0.948	1.7	1.3530	0.0000	FLOOD RISK
240 minute winter	5	168	8.654	1.154	5.7	1.6507	0.0000	FLOOD RISK
240 minute winter	4	168	8.653	1.243	5.5	0.2959	0.0000	FLOOD RISK
240 minute winter	3	168	8.653	1.313	5.5	0.3125	0.0000	FLOOD RISK
480 minute winter	49	464	8.586	0.815	2.3	9.9022	0.0000	FLOOD RISK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	29	11.002	27	9.8	0.375	0.331	0.2067	
480 minute winter	29	Infiltration		0.0				
15 minute winter	28	15.000	27	-5.2	-0.297	-0.515	0.4451	
15 minute summer	28	Infiltration		0.1				
15 minute winter	27	11.003	26	11.4	0.286	0.382	0.5733	
480 minute winter	27	Infiltration		0.0				
15 minute winter	40	16.001	39	5.8	0.502	0.573	0.4864	
15 minute summer	40	Infiltration		0.1				
15 minute winter	42	17.000	39	-8.0	-0.455	-0.787	0.2898	
15 minute summer	42	Infiltration		0.2				
30 minute summer	39	16.002	26	-5.7	-0.326	-0.566	0.1535	
480 minute winter	39	Infiltration		0.0				
15 minute winter	38	18.000	36	5.1	0.452	0.503	0.4247	
15 minute summer	38	Infiltration		0.1				
15 minute winter	37	19.000	36	-6.2	-0.352	-0.609	0.3313	
15 minute summer	37	Infiltration		0.1				
15 minute winter	36	18.001	26	-7.1	-0.402	-0.691	0.0520	
480 minute winter	36	Infiltration		0.0				
30 minute winter	26	Orifice	5	0.7				
180 minute winter	26	Infiltration		0.1				
15 minute winter	5	1.006	4	17.3	0.692	0.221	1.0657	
15 minute winter	4	1.007	3	14.8	0.513	0.105	5.7586	
15 minute winter	3	1.008	2	11.3	0.411	0.098	1.2170	
15 minute summer	49	20.000	43	10.2	0.581	1.005	0.6744	
15 minute winter	49	Infiltration		0.2				

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	47	464	8.586	0.867	1.0	2.6244	0.0000	SURCHARGED
480 minute winter	46	464	8.586	0.880	0.9	4.6427	0.0000	SURCHARGED
480 minute winter	45	464	8.586	0.936	1.0	0.0000	0.0000	SURCHARGED
480 minute winter	50	464	8.586	0.885	0.9	4.4857	0.0000	SURCHARGED
480 minute winter	44	464	8.586	0.887	0.4	0.0000	0.0000	SURCHARGED
480 minute winter	43	464	8.586	0.943	2.2	5.8850	0.0000	SURCHARGED
240 minute winter	2	168	8.653	1.323	5.4	0.3149	0.0000	FLOOD RISK
240 minute winter	1	168	8.653	1.353	5.1	0.3220	0.4084	FLOOD
15 minute summer	15	1	7.270	0.000	2.0	0.0000	0.0000	OK
720 minute winter	C1	705	9.997	0.122	3.7	55.3346	0.0000	FLOOD RISK
600 minute winter	Podium	585	9.996	0.121	3.9	46.5518	0.0000	FLOOD RISK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	47	21.000	45	4.2	0.347	0.418	0.3635	
15 minute summer	47	Infiltration		0.0				
15 minute winter	46	22.000	45	-5.4	-0.305	-0.527	0.2951	
15 minute summer	46	Infiltration		0.1				
30 minute winter	45	21.001	43	4.5	0.256	0.434	0.0355	
15 minute summer	45	Infiltration		0.0				
15 minute winter	50	23.000	43	-3.9	-0.219	-0.379	0.3053	
15 minute summer	50	Infiltration		0.1				
15 minute summer	44	24.000	43	2.5	0.150	0.245	0.2952	
15 minute summer	44	Infiltration		0.0				
15 minute winter	43	Orifice	2	0.7				
15 minute summer	43	Infiltration		0.1				
15 minute winter	2	1.009	1	8.0	0.374	0.088	5.7296	
120 minute winter	1	Head/Flow	15	4.8				287.8
720 minute winter	C1	Orifice	14	0.4				
600 minute winter	Podium	Orifice	13	0.5				

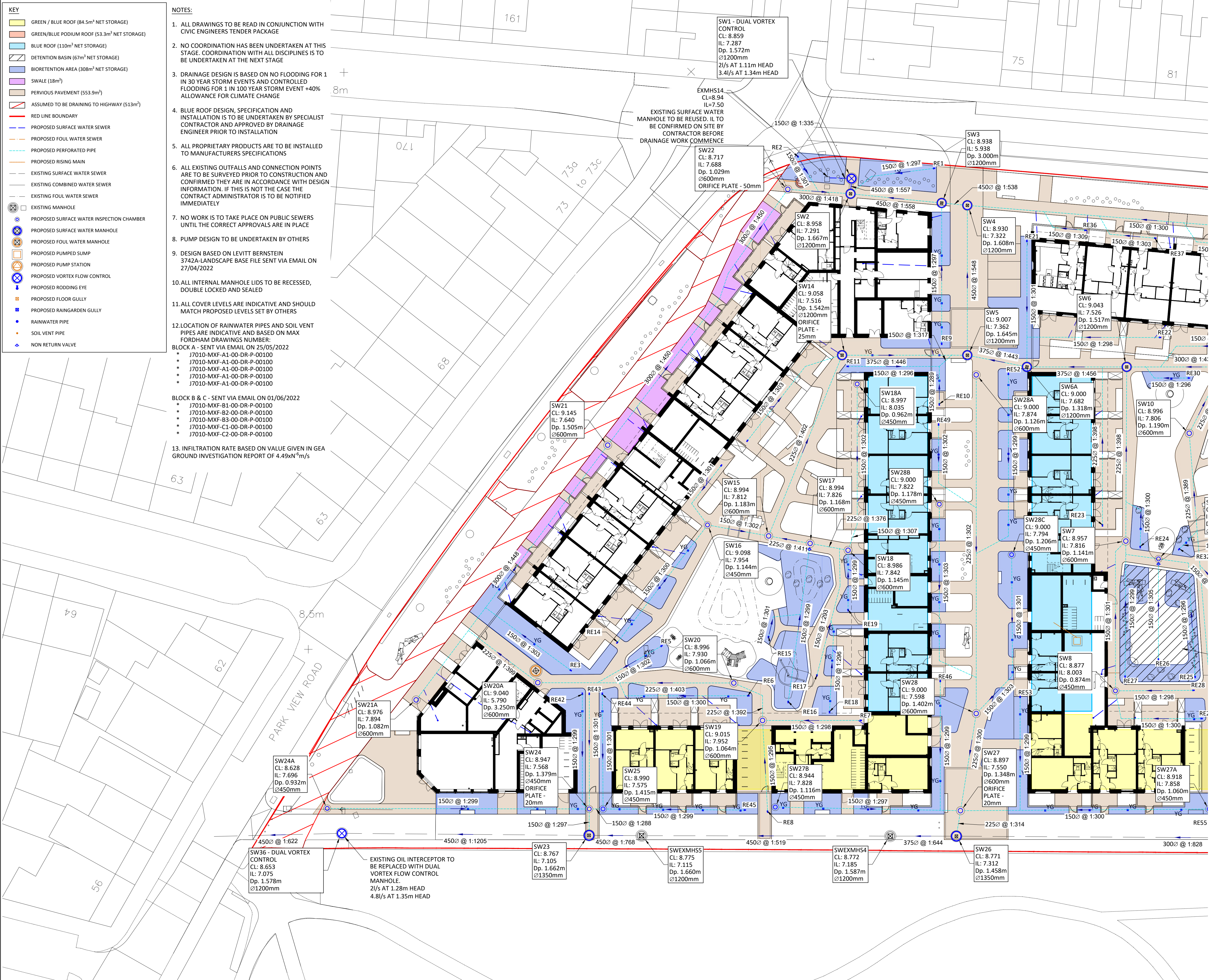
Appendix D – Proposed Surface Water Drainage Drawings

KEY

- GREEN / BLUE ROOF (84.5m³ NET STORAGE)
- GREEN/BLUE PODIUM ROOF (53.3m³ NET STORAGE)
- BLUE ROOF (110m³ NET STORAGE)
- DETENTION BASIN (67m³ NET STORAGE)
- BIORETENTION AREA (308m³ NET STORAGE)
- SWALE (18m³)
- PERVIOUS PAVEMENT (553.9m³)
- ASSUMED TO BE DRAINING TO HIGHWAY (513m³)
- RED LINE BOUNDARY
- PROPOSED SURFACE WATER SEWER
- PROPOSED FOUL WATER SEWER
- PROPOSED PERFORATED PIPE
- PROPOSED RISING MAIN
- EXISTING SURFACE WATER SEWER
- EXISTING COMBINED WATER SEWER
- EXISTING FOUL WATER SEWER
- EXISTING MANHOLE
- PROPOSED SURFACE WATER INSPECTION CHAMBER
- PROPOSED SURFACE WATER MANHOLE
- PROPOSED FOUL WATER MANHOLE
- PROPOSED PUMPED SUMP
- PROPOSED PUMP STATION
- PROPOSED VORTEX FLOW CONTROL
- PROPOSED RODDING EYE
- PROPOSED FLOOR GULLY
- PROPOSED RAINGARDEN GULLY
- RAINWATER PIPE
- SOIL VENT PIPE
- NON RETURN VALVE

NOTES:

1. ALL DRAWINGS TO BE READ IN CONJUNCTION WITH CIVIC ENGINEERS TENDER PACKAGE
2. NO COORDINATION HAS BEEN UNDERTAKEN AT THIS STAGE. COORDINATION WITH ALL DISCIPLINES IS TO BE UNDERTAKEN AT THE NEXT STAGE
3. DRAINAGE DESIGN IS BASED ON NO FLOODING FOR 1 IN 30 YEAR STORM EVENTS AND CONTROLLED FLOODING FOR 1 IN 100 YEAR STORM EVENT +40% ALLOWANCE FOR CLIMATE CHANGE
4. BLUE ROOF DESIGN, SPECIFICATION AND INSTALLATION IS TO BE UNDERTAKEN BY SPECIALIST CONTRACTOR AND APPROVED BY DRAINAGE ENGINEER PRIOR TO INSTALLATION
5. ALL PROPRIETARY PRODUCTS ARE TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS
6. ALL EXISTING OUTFALLS AND CONNECTION POINTS ARE TO BE SURVEYED PRIOR TO CONSTRUCTION AND CONFIRMED THEY ARE IN ACCORDANCE WITH DESIGN INFORMATION. IF THIS IS NOT THE CASE THE CONTRACT ADMINISTRATOR IS TO BE NOTIFIED IMMEDIATELY
7. NO WORK IS TO TAKE PLACE ON PUBLIC SEWERS UNTIL THE CORRECT APPROVALS ARE IN PLACE
8. PUMP DESIGN TO BE UNDERTAKEN BY OTHERS
9. DESIGN BASED ON LEVITT BERNSTEIN 3742A-LANDSCAPE BASE FILE SENT VIA EMAIL ON 27/04/2022
10. ALL INTERNAL MANHOLE LIDS TO BE RECESSED, DOUBLE LOCKED AND SEALED
11. ALL COVER LEVELS ARE INDICATIVE AND SHOULD MATCH PROPOSED LEVELS SET BY OTHERS
12. LOCATION OF RAINWATER PIPES AND SOIL VENT PIPES ARE INDICATIVE AND BASED ON MAX FORDHAM DRAWINGS NUMBER:
BLOCK A - SENT VIA EMAIL ON 25/05/2022
* J7010-MXF-A1-00-DR-P-00100
* J7010-MXF-A1-00-DR-P-00100
* J7010-MXF-A1-00-DR-P-00100
* J7010-MXF-A1-00-DR-P-00100
* J7010-MXF-A1-00-DR-P-00100
BLOCK B & C - SENT VIA EMAIL ON 01/06/2022
* J7010-MXF-B1-00-DR-P-00100
* J7010-MXF-B2-00-DR-P-00100
* J7010-MXF-B3-00-DR-P-00100
* J7010-MXF-C1-00-DR-P-00100
* J7010-MXF-C2-00-DR-P-00100
13. INFILTRATION RATE BASED ON VALUE GIVEN IN GE A GROUND INVESTIGATION REPORT OF 4.49xN⁻⁶m/s

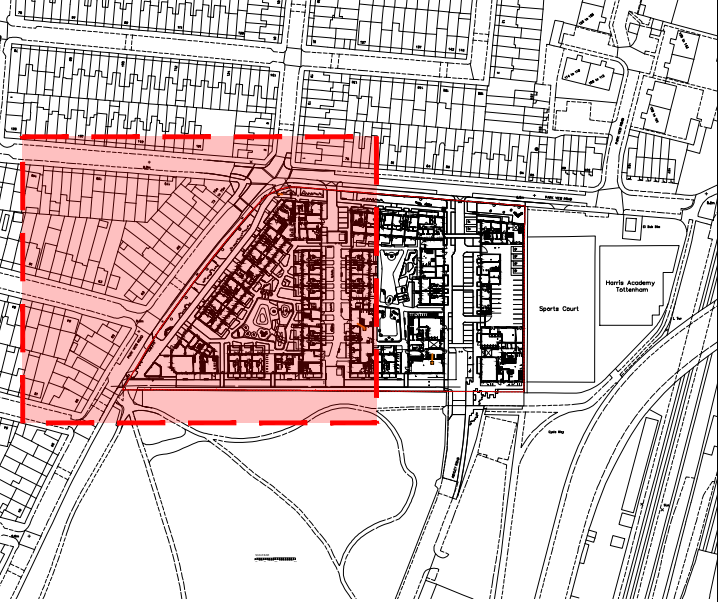


Standard Notes

1. This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and the specification.
2. This drawing should not be scaled.
3. All dimensions are to be verified by the contractor on site.
4. All discrepancies should be reported to the C.A. prior to the commencement of the works.

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Notes and Keys



FOR CONTINUATION REFER TO DRAWING 1832-CIV-XX-XX-D-C-30012

29.06.22	P01	ISSUED FOR TENDER	AF	EL
Date	Rev	Description	Drawn	Chkd



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Gardens Chambers, 45 Westgate, Glasgow, G2 2EP. Tel: 0141 570 5899

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Project

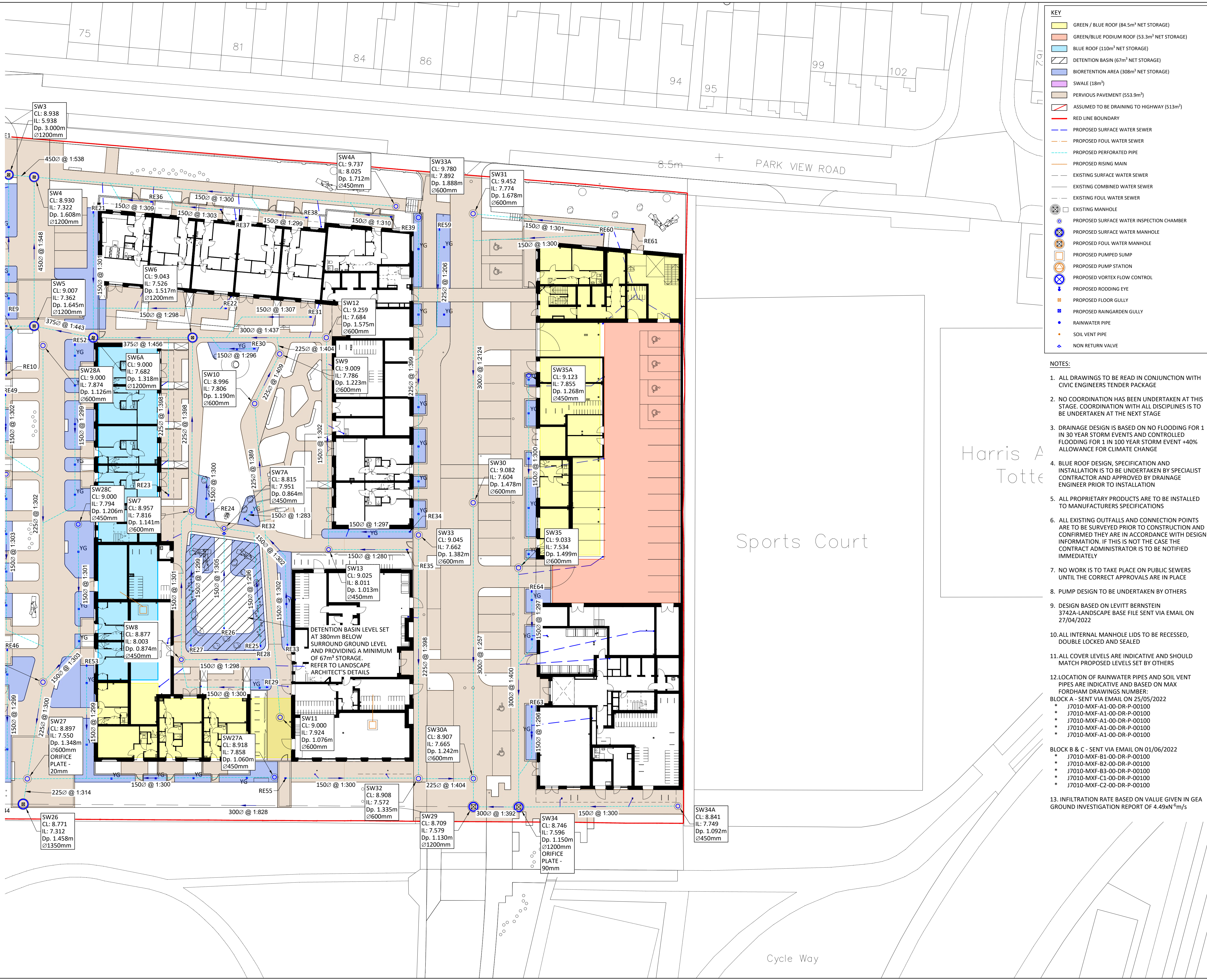
ASHLEY ROAD DEPOT
LONDON BOROUGH OF HARINGEY

Title

PROPOSED BELOW GROUND DRAINAGE
SURFACE WATER DRAINAGE NETWORK
SHEET 1

Status	PRELIMINARY				
Project Number	Scale @ A1	Date Created	Drawn	Checked	Suitability
1832	1:250	JUN 22	AF	EL	S4
Drawing Number					Revision
1832-CIV-XX-XX-D-C-30011					P01

FOR CONTINUATION REFER TO DRAWING 1832-CIV-XX-XX-D-C-30011



KEY

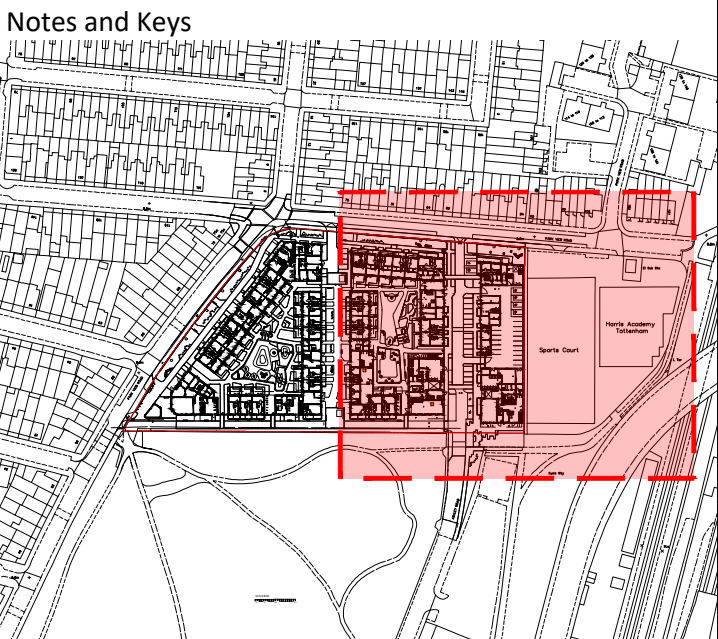
- GREEN / BLUE ROOF (84.5m³ NET STORAGE)
- GREEN/BLUE PODIUM ROOF (53.3m³ NET STORAGE)
- BLUE ROOF (110m³ NET STORAGE)
- DETENTION BASIN (67m³ NET STORAGE)
- BIORETENTION AREA (308m³ NET STORAGE)
- SWALE (18m³)
- PERVIOUS PAVEMENT (553.9m³)
- ASSUMED TO BE DRAINING TO HIGHWAY (513m³)
- RED LINE BOUNDARY
- PROPOSED SURFACE WATER SEWER
- PROPOSED FOUL WATER SEWER
- PROPOSED PERFORATED PIPE
- PROPOSED RISING MAIN
- EXISTING SURFACE WATER SEWER
- EXISTING COMBINED WATER SEWER
- EXISTING FOUL WATER SEWER
- EXISTING MANHOLE
- PROPOSED SURFACE WATER INSPECTION CHAMBER
- PROPOSED SURFACE WATER MANHOLE
- PROPOSED FOUL WATER MANHOLE
- PROPOSED PUMPED SUMP
- PROPOSED PUMP STATION
- PROPOSED VORTEX FLOW CONTROL
- PROPOSED RODDING EYE
- PROPOSED FLOOR GULLY
- PROPOSED RAINGARDEN GULLY
- RAINWATER PIPE
- SOIL VENT PIPE
- NON RETURN VALVE

- NOTES:**
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BLOCK A - SENT VIA EMAIL ON 25/05/2022
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* J7010-MXF-A1-00-DR-P-00100
* J7010-MXF-A1-00-DR-P-00100
* J7010-MXF-A1-00-DR-P-00100
BLOCK B & C - SENT VIA EMAIL ON 01/06/2022
* J7010-MXF-B1-00-DR-P-00100
* J7010-MXF-B2-00-DR-P-00100
* J7010-MXF-B3-00-DR-P-00100
* J7010-MXF-C1-00-DR-P-00100
* J7010-MXF-C2-00-DR-P-00100
 - INFILTRATION RATE BASED ON VALUE GIVEN IN GEA GROUND INVESTIGATION REPORT OF 4.49xN³m/s

Standard Notes

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- This drawing should not be scaled.
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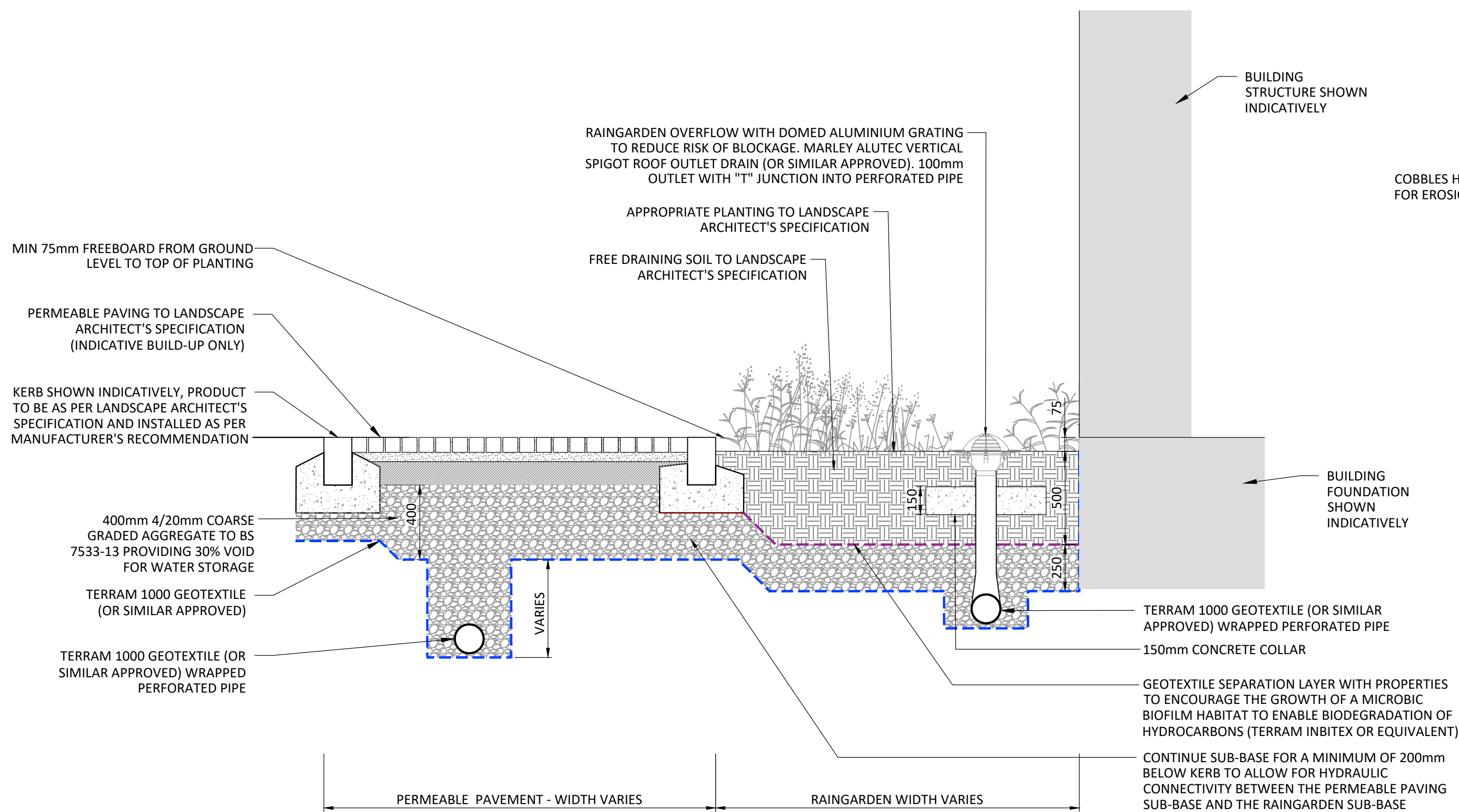


Notes and Keys

29.06.22	P01	ISSUED FOR TENDER	AF	EL
Date	Rev	Description	Drawn	Chkd

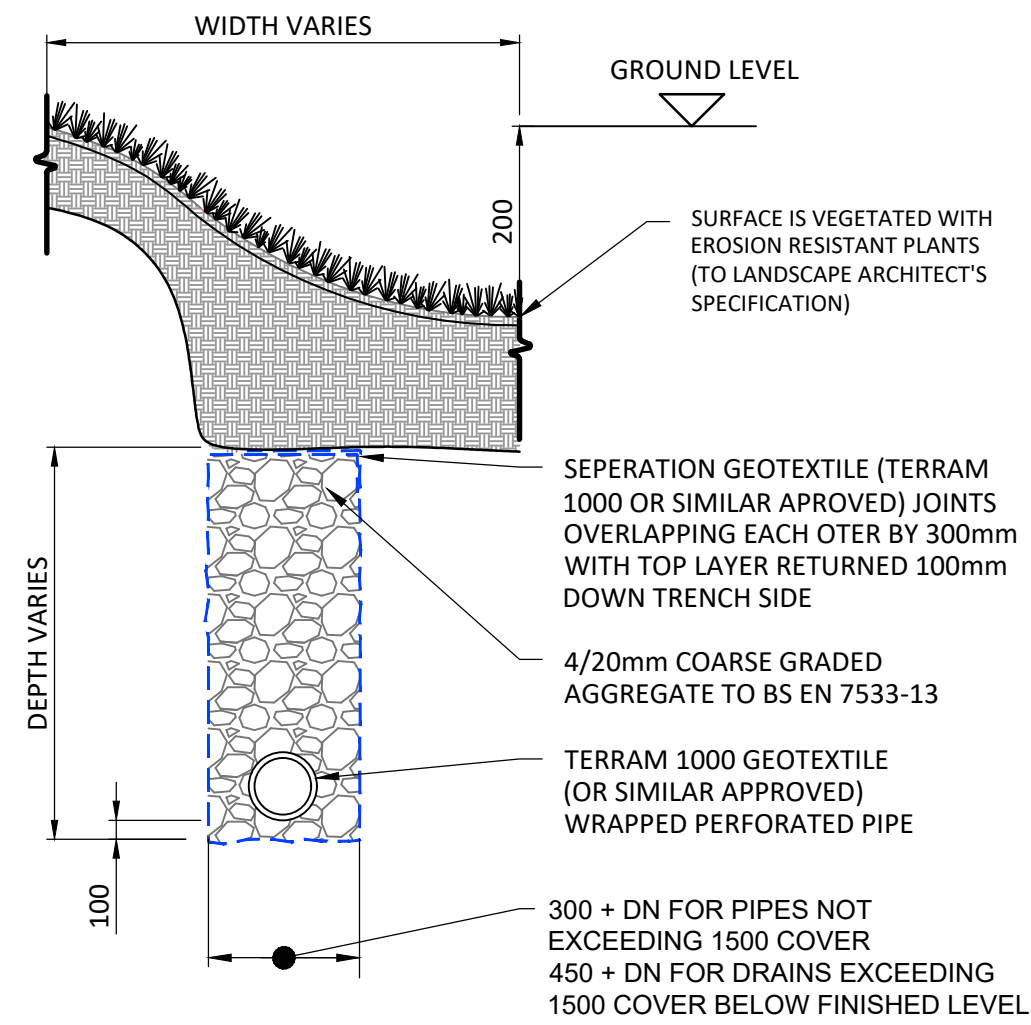


Project				
ASHLEY ROAD DEPOT LONDON BOROUGH OF HARINGEY				
Title				
PROPOSED BELOW GROUND DRAINAGE SURFACE WATER DRAINAGE NETWORK SHEET 2				
Status				
PRELIMINARY				
Project Number	Scale @ A1	Date Created	Drawn	Checked
1832	1:250	JUN 22	AF	EL
Drawing Number				Revision
1832-CIV-XX-XX-D-C-30012				P01



RAINGARDEN AND PERMEABLE PAVEMENT DETAIL

RAINWATER PIPE LOCATED ABOVE RAINGARDEN DETAIL



TYPICAL SWALE DETAIL

Standard Notes

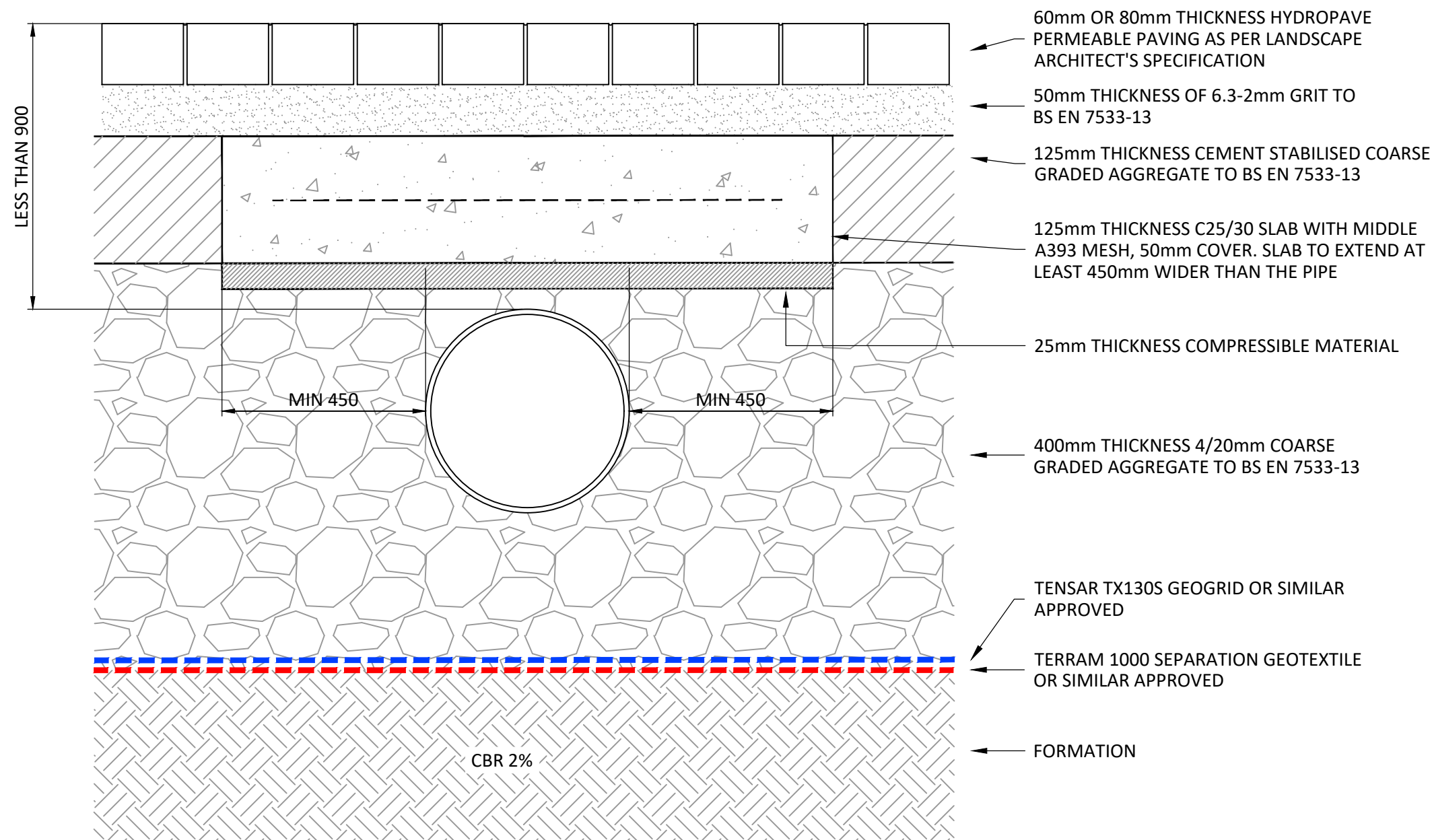
1. This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and the specification.
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4. All discrepancies should be reported to the C.A. prior to the commencement of the works.

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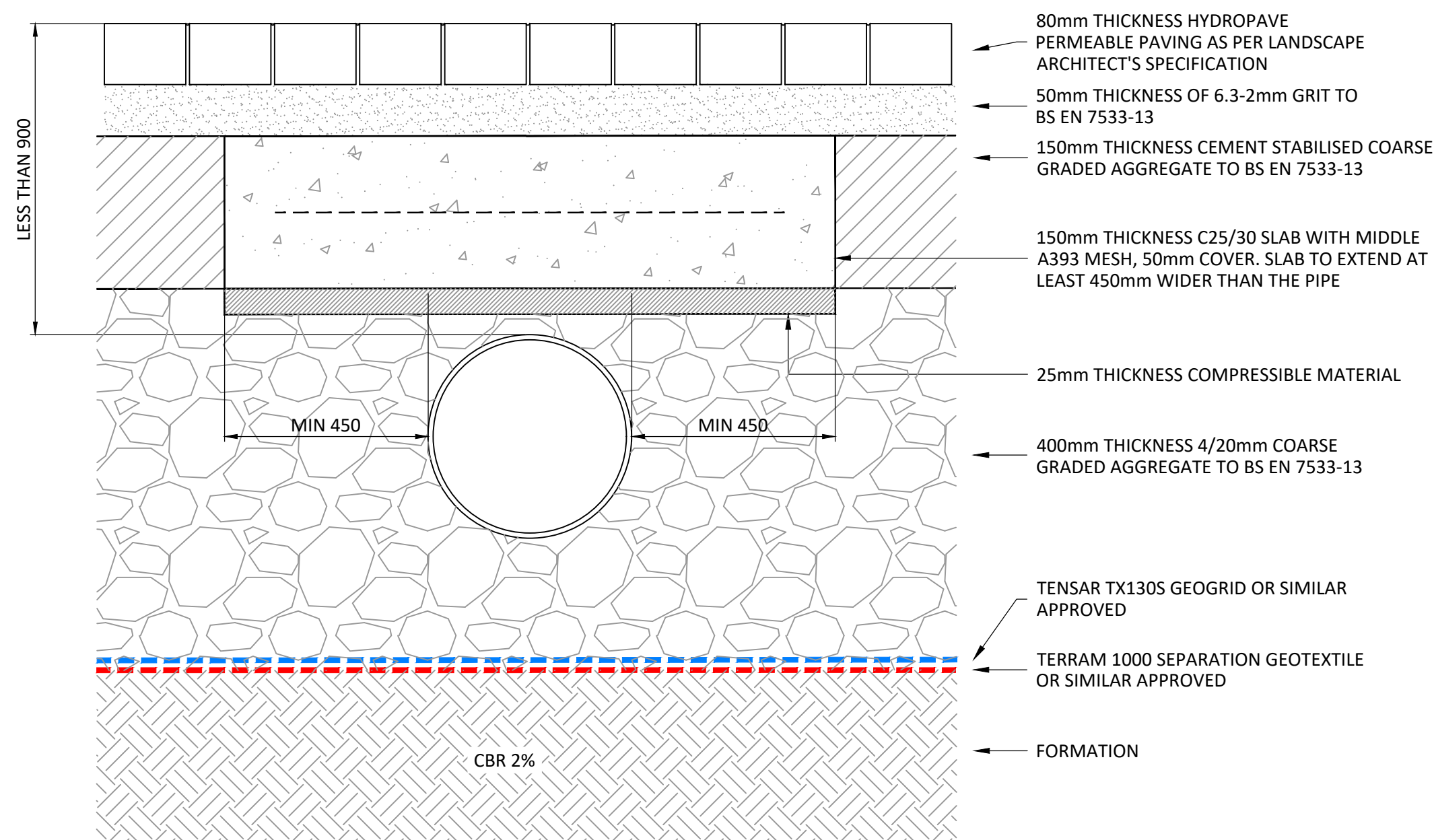
Notes and Keys

NOTES:

1. ALL DRAWINGS TO BE READ IN CONJUNCTION WITH CIVIC ENGINEERS TENDER PACKAGE



PERMEABLE PAVING BUILD UP WITH A PERFORATED PIPE WITH LESS THAN 900mm COVER - PEDESTRIAN LOADING
SCALE 1:5



PERMEABLE PAVING BUILD UP WITH A PERFORATED PIPE WITH LESS THAN 900mm COVER - VEHICLE LOADING
SCALE 1:5

29.06.22	P01	ISSUED FOR TENDER			
Date	Rev	Description			
			Drawn	Chkd	

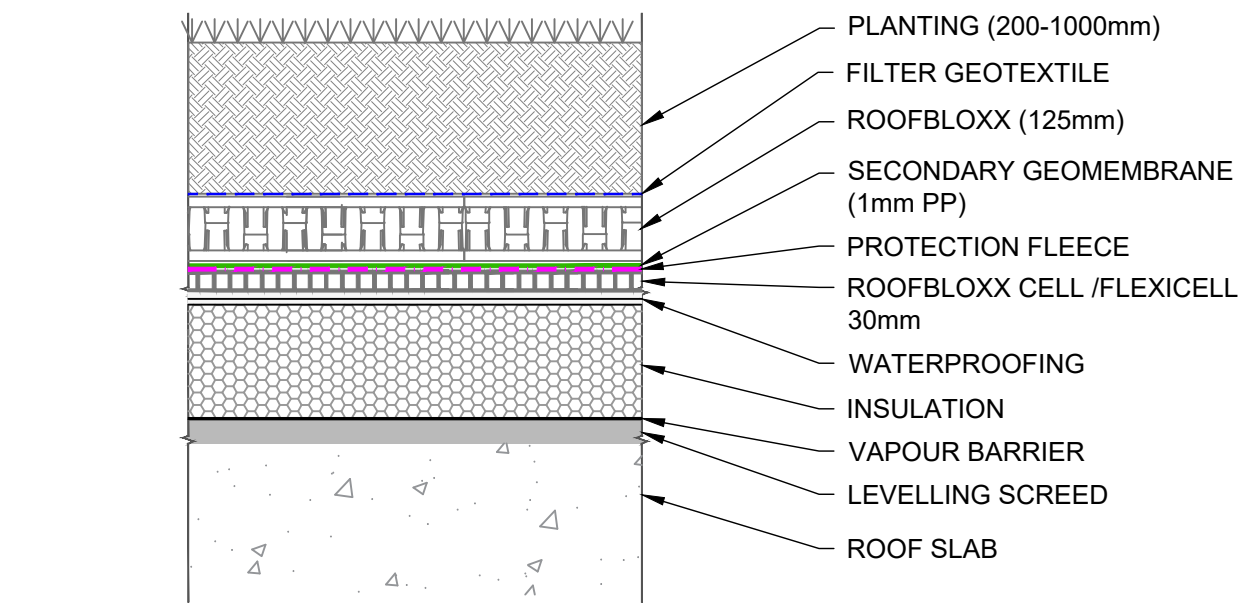


Project
ASHLEY ROAD DEPOT
LONDON BOROUGH OF HARINGEY

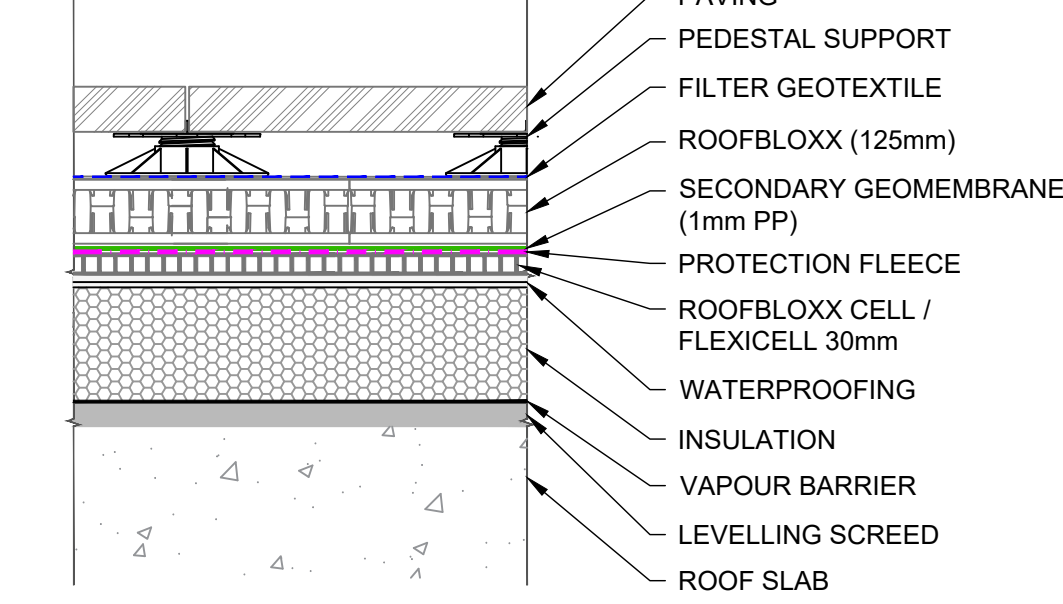
Title
DRAINAGE DETAILS
SHEET 4

Status
PRELIMINARY

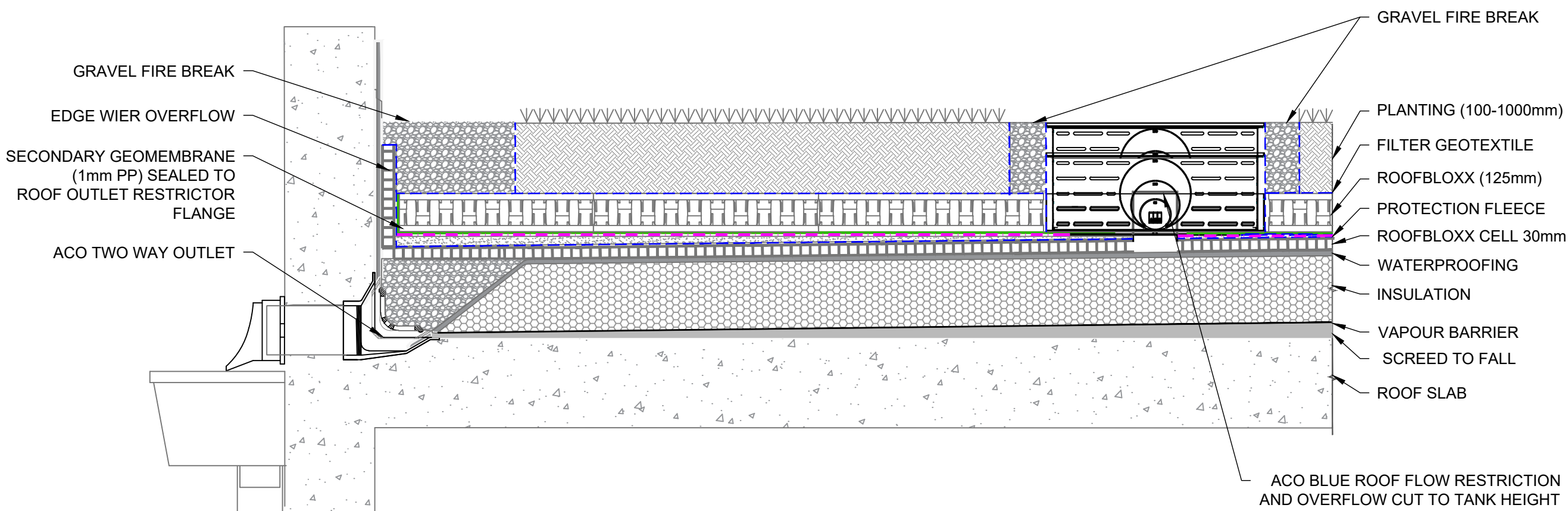
Project Number	Scale @ A1	Date Created	Drawn	Checked	Suitability
1832	1:20	JUN 22	AF	EL	S4
Drawing Number 1832-CIV-XX-XX-D-C-31004					Revision P01



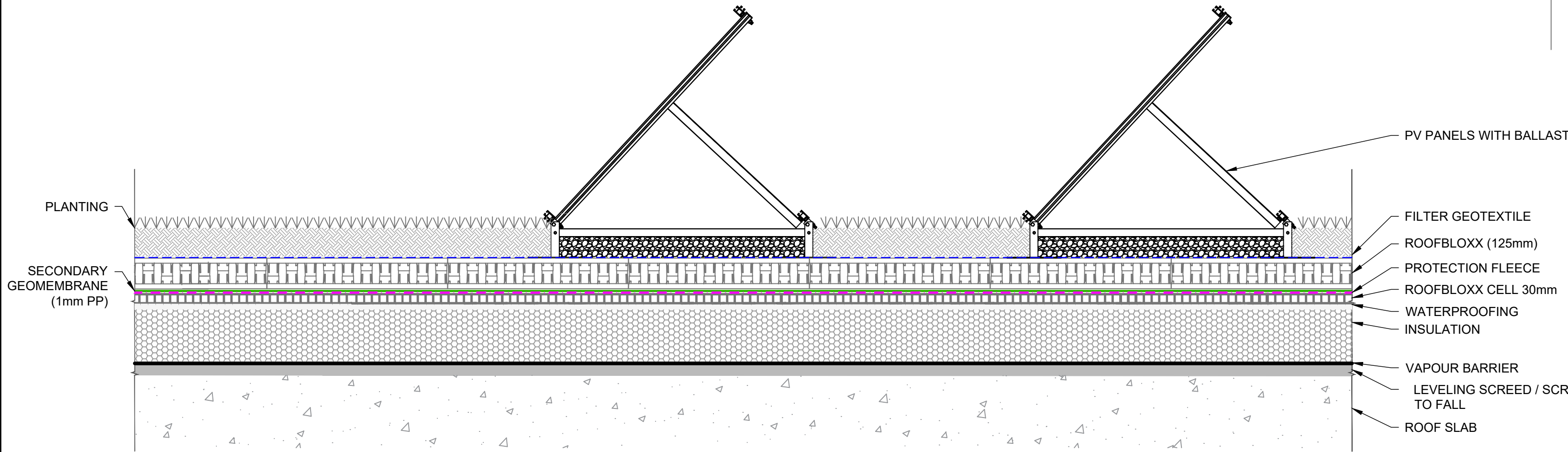
TYPICAL GREEN/BLUE ROOF DETAIL
SCALE 1:10



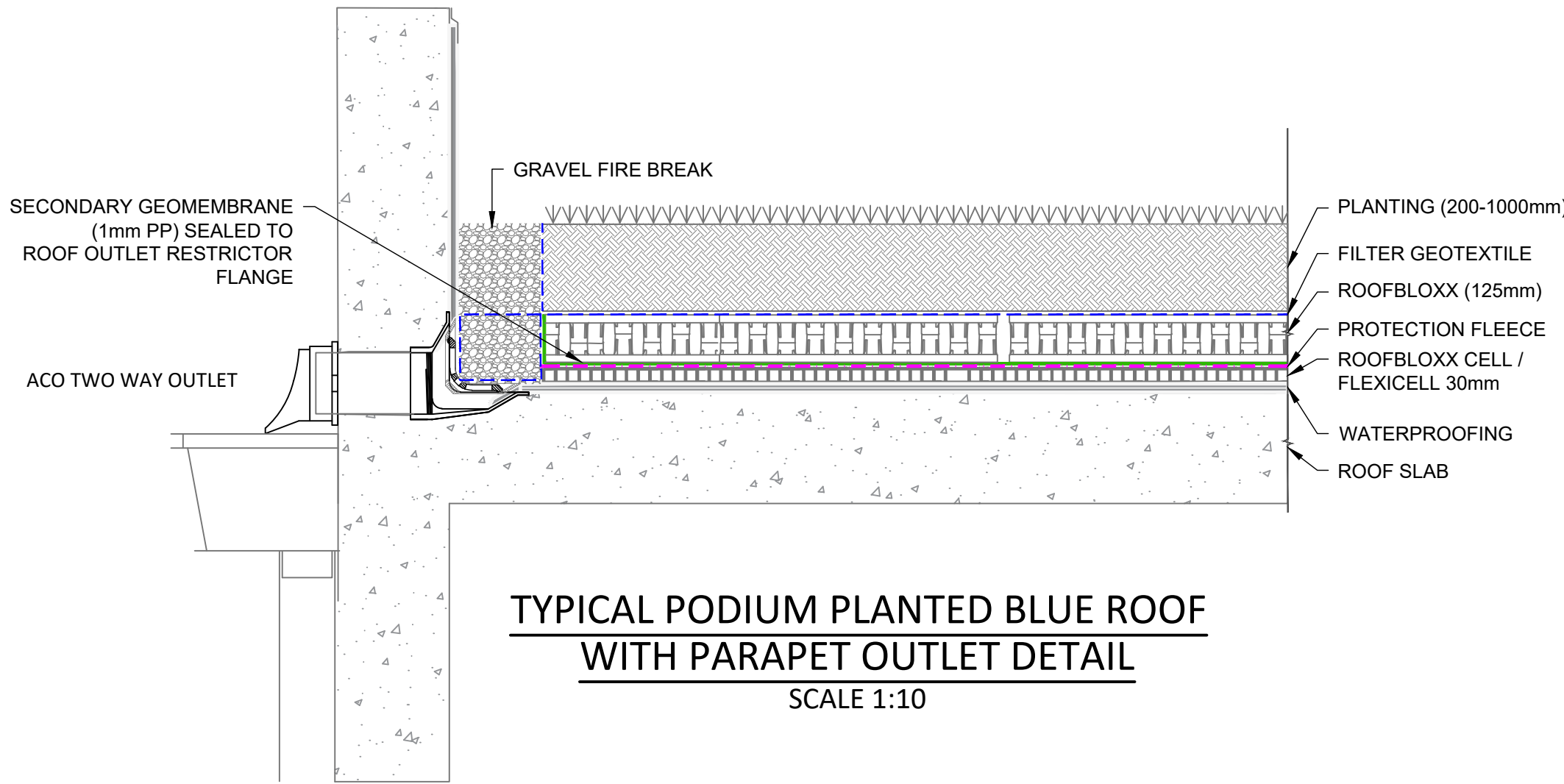
TYPICAL BLUE ROOF DETAIL
SCALE 1:10



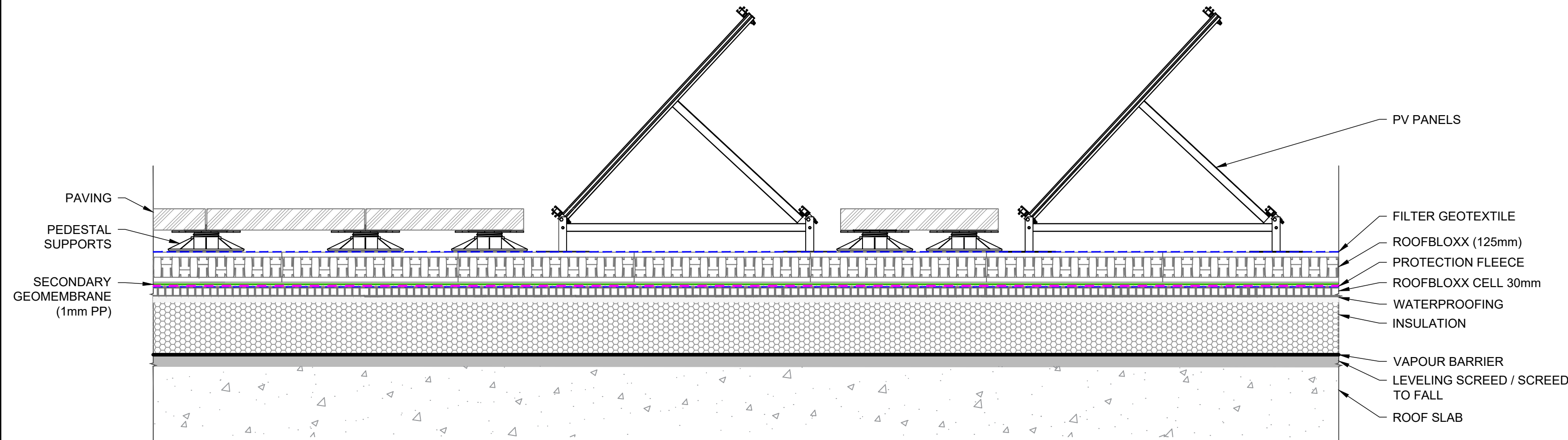
TYPICAL BLUE ROOF PARAPET OUTLET DETAIL
SCALE 1:10



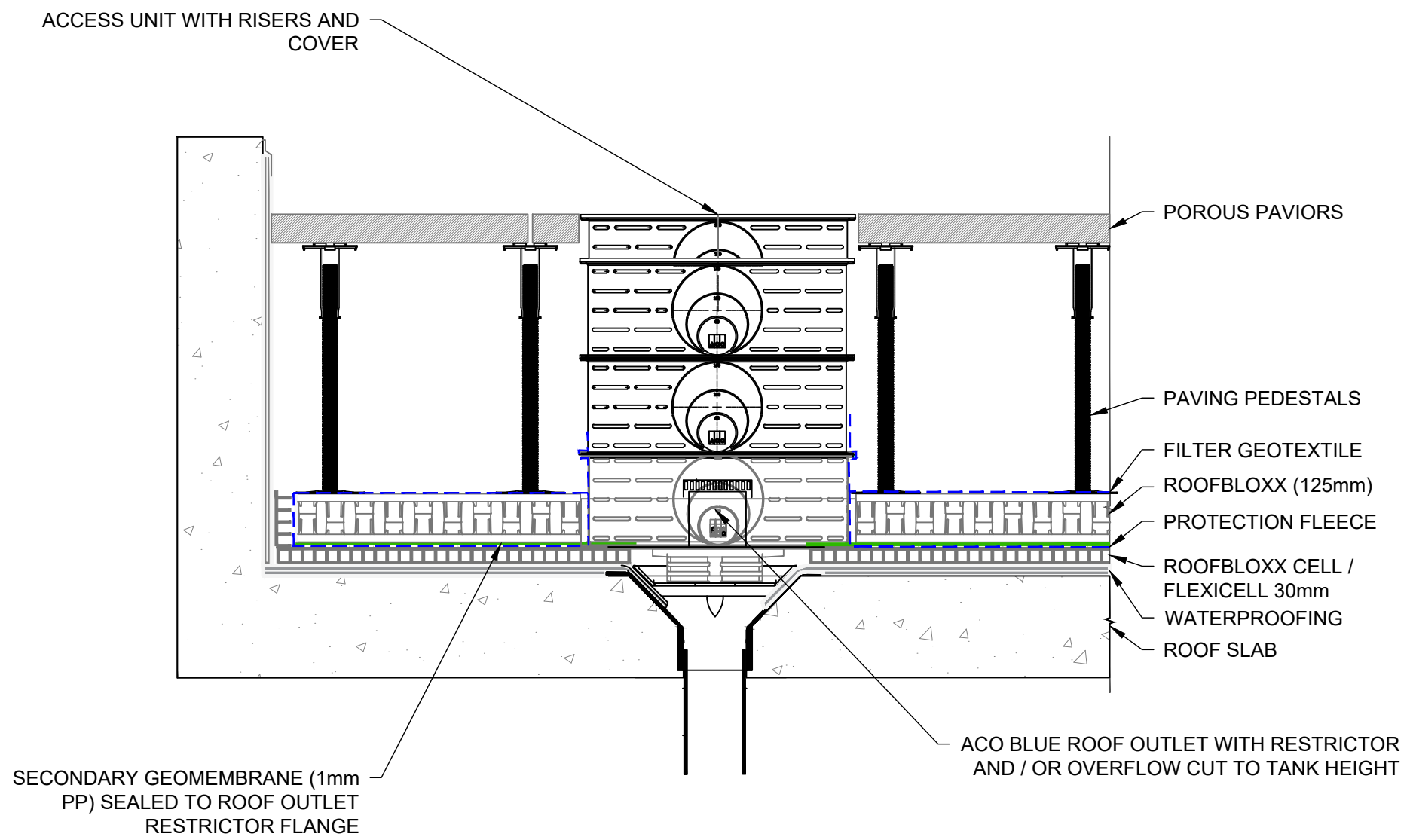
TYPICAL PLANTED BLUE ROOF WITH PV PANELS DETAIL
SCALE 1:10



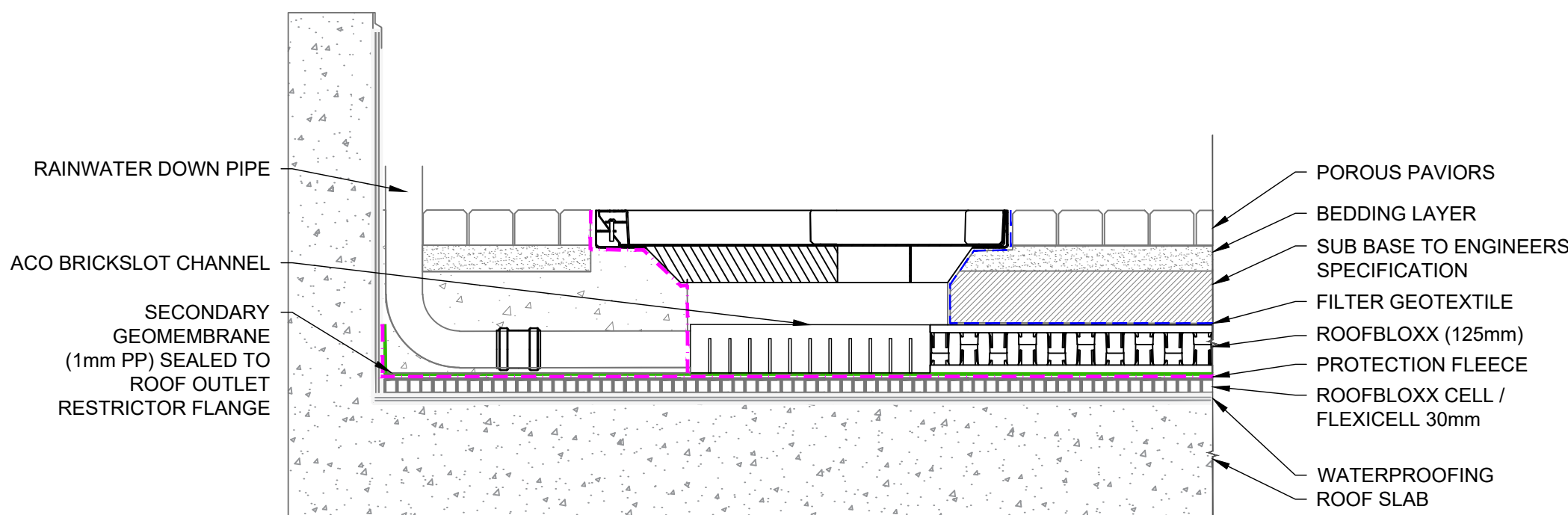
TYPICAL PODIUM PLANTED BLUE ROOF WITH PARAPET OUTLET DETAIL
SCALE 1:10



TYPICAL BLUE ROOF WITH PV PANELS DETAIL
SCALE 1:10



TYPICAL PODIUM BLUE ROOF WITH VERTICAL OUTLET DETAIL
SCALE 1:10



TYPICAL PODIUM BLUE ROOF WITH DIFFUSER DETAIL
SCALE 1:10

- Standard Notes
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 3. All dimensions are to be verified by the contractor on site.
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- Notes and Keys
1. DETAILS HAVE BEEN DRAWN AND PROVIDED BY ACO. THE SYSTEM IS COVERED BY PATENT WO 2021/140136A1 GB2590733.
 2. TO BE READ IN CONJUNCTION WITH ALL OTHER BELOW GROUND DRAINAGE DRAWINGS.
 3. FOR THE LAYOUT REFER TO DRAWINGS 1832-CIV-XX-XX-D-C-30001 TO 30003.
 4. BLUE ROOF SYSTEM SHOWN FOR INFORMATION PURPOSES. INSTALLATION TO BE CARRIED OUT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
 5. STRUCTURAL AND ARCHITECTURAL INFORMATION SHOWN IS INDICATIVE.
 6. ALL RAINWATER PIPES TO BE SET OUT BY ARCHITECT.
 7. ALL BLUE ROOF PRODUCTS TO BE INSTALLED BY ACCREDITED CONTRACTOR WITH SUFFICIENT INSTALLATION WARRANTIES.

29.06.22	P02	ISSUED FOR TENDER	ZTP	EL
18.05.22	P01	ISSUED FOR INFORMATION	EL	RW1
Date	Rev	Description	Drawn	Chkd



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Project

ASHLEY ROAD DEPOT
LONDON BOROUGH OF HARINGEY

Title

BLUE ROOF DETAILS

Status

PRELIMINARY

Project Number	Scale @ A1	Date Created	Drawn	Checked	Suitability
1832	1:10	MAY 22	EL	RW1	--
Drawing Number					Revision
1832-CIV-XX-XX-D-C-31011					P02