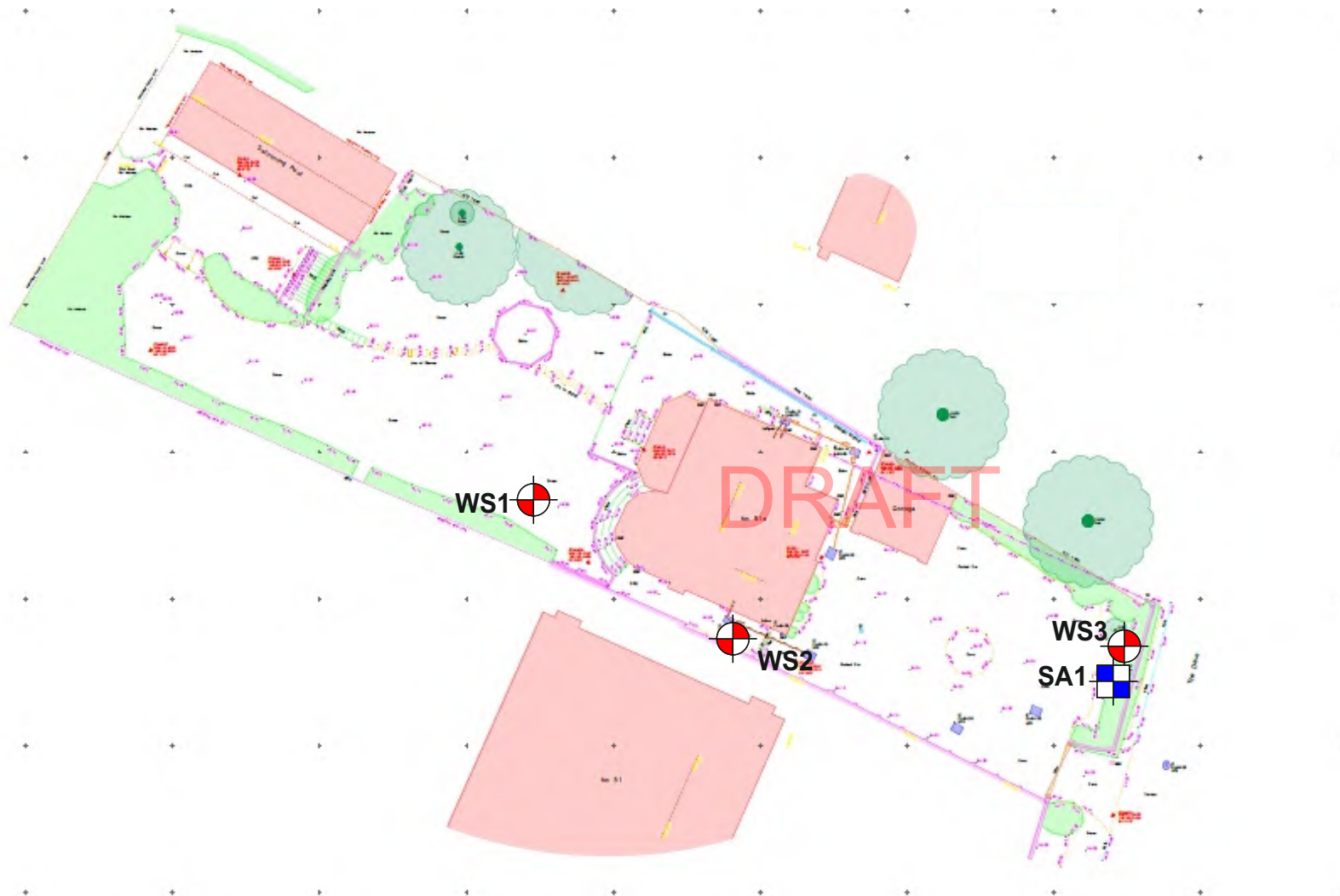


**Exploratory Point
Location Plan**

**51A The Drive,
Ickenham,
Uxbridge,
UB10 8AG.**

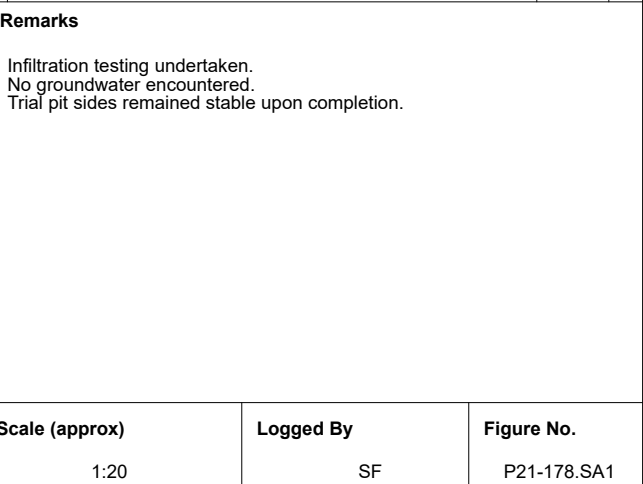
Eye Construction Limited

June 2021



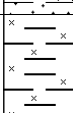
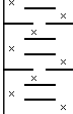
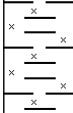
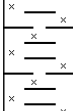
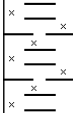
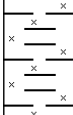
-  **Window Sampling
Locations**
-  **Infiltration testing
Locations**

**Not to scale.
All positions are approximate.
Based on plan provided
by the client.**

[illegible]

PADDOCK GEO ENGINEERING						Site 51A The Drive, Ickenham, Uxbridge, UB10 8AG		Number WS1	
Machine : Dando Terrier Rig Method : Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Eye Construction Limited		Job Number P21-178	
		Location		Dates 09/06/2021		Engineer		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.30	C				(0.20) 0.20 (0.20) 0.40	Grass onto grey gravelly sandy CLAY with frequent rootlets. (MADE GROUND)			
0.80	C					Brown sandy gravelly CLAY. Gravel of brick and flint. (MADE GROUND)			
1.00-1.45 1.00	SPT(C) N=8 D		1,2/1,2,2,3			Stiff orange brown mottled grey silty CLAY. (LONDON CLAY FORMATION)			
1.60	SV 67kPa								
1.80	D								
2.00-2.45 2.00	SPT(C) N=16 D		2,2/3,3,4,6						
2.60	SV 72kPa								
2.80	D								
3.00-3.45 3.00	SPT(C) N=19 D		3,3/4,4,5,6						
3.60	SV 84kPa								
3.80	D								
4.00-4.45 4.00	SPT(C) N=27 D		4,5/5,5,8,9						
4.60	SV 111kPa								
4.80	D								
5.00-5.45 5.00	SPT(C) N=31 D		5,6/6,8,8,9		5.00	Complete at 5.00m			
Remarks Boreholes remained stable upon completion. No groundwater encountered.							Scale (approx) 1:40	Logged By SF	
							Figure No. P21-178.WS1		

						Site 51A The Drive, Ickenham, Uxbridge, UB10 8AG	Number WS2	
Machine : Dando Terrier Rig Method : Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)	Client Eye Construction Limited	Job Number P21-178	Sheet 1/1	
		Location		Dates 09/06/2021	Engineer			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20	C				0.04 (0.12) (0.24) 0.40	Paving slabs. (MADE GROUND) Grey CONCRETE. (MADE GROUND) Brown sandy gravelly CLAY. Gravel of flint and brick. (MADE GROUND) Firm grey silty CLAY. (LONDON CLAY FORMATION)	   	
0.80	C		1,1/1,2,2,3		(0.90)		  	
1.00-1.45 1.00	SPT(C) N=8 D				1.30	Stiff to very stiff orange brown mottled grey slightly sandy silty CLAY with rare fine concretions. (LONDON CLAY FORMATION)	                                	
1.50	C						                                	
1.80	D						                                	
2.00-2.45 2.00	SPT(C) N=16 D		2,2/3,4,4,5				                                	
2.60	SV 75kPa						                                	
2.80	D						                                	
3.00-3.45 3.00	SPT(C) N=19 D		3,4/4,4,5,6				                                	
3.60	SV 117kPa				(4.70)		                	

PADDOCK GEO ENGINEERING 						Site 51A The Drive, Ickenham, Uxbridge, UB10 8AG		Number WS3	
Machine : Dando Terrier Rig Method : Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Eye Construction Limited		Job Number P21-178	
		Location		Dates 09/06/2021		Engineer		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.20	C				(0.30) 0.30	Grey brown gravelly SAND with frequent roots and rootlets upto 10mm diameter. Gravel of metal, flint, brick, sandstone and glass. (MADE GROUND)			
0.80 0.80 1.00-1.45 1.00	C D SPT(C) N=12 D		1,2/2,3,3,4		(0.70) 1.00	Stiff grey mottled orange brown sandy CLAY with rare rounded concretions and coal. (LONDON CLAY FORMATION)			
2.00 2.00-2.45 2.00	SV 49kPa SPT(C) N=17 D		2,3/3,4,5,5			Stiff orange brown mottled grey silty CLAY. (LONDON CLAY FORMATION)			
2.80 2.80	SV 104kPa D								
3.00-3.45 3.00	SPT(C) N=18 D		3,3/3,4,5,6						
3.80 3.80	SV 106kPa D				(5.00)				
4.00-4.45 4.00	SPT(C) N=21 D		3,4/4,5,5,7						
4.80 4.80	SV 135kPa D								
5.00-5.45 5.00	SPT(C) N=31 D		4,5/6,7,8,10						
5.80 6.00-6.45 6.00	D SPT(C) N=31 D		4,5/6,8,8,9		6.00	Complete at 6.00m			
Remarks Poor recovery between 3.00m and 4.00m depth. No groundwater encountered. Boreholes remained stable upon completion.								Scale (approx) 1:40	Logged By SF
								Figure No. P21-178.WS3	

Infiltration Test to BRE365 - SA1 TEST 1

Field Data

Time	Time Elapsed (min)	Time Elapsed (sec)	Depth of Water below GL (m)
	0.0	0	0.52
	2.0	120	0.52
	10.0	600	0.52
	42.0	2520	0.52
	86.0	5160	0.52
	155.0	9300	0.52
	186.0	11160	0.52

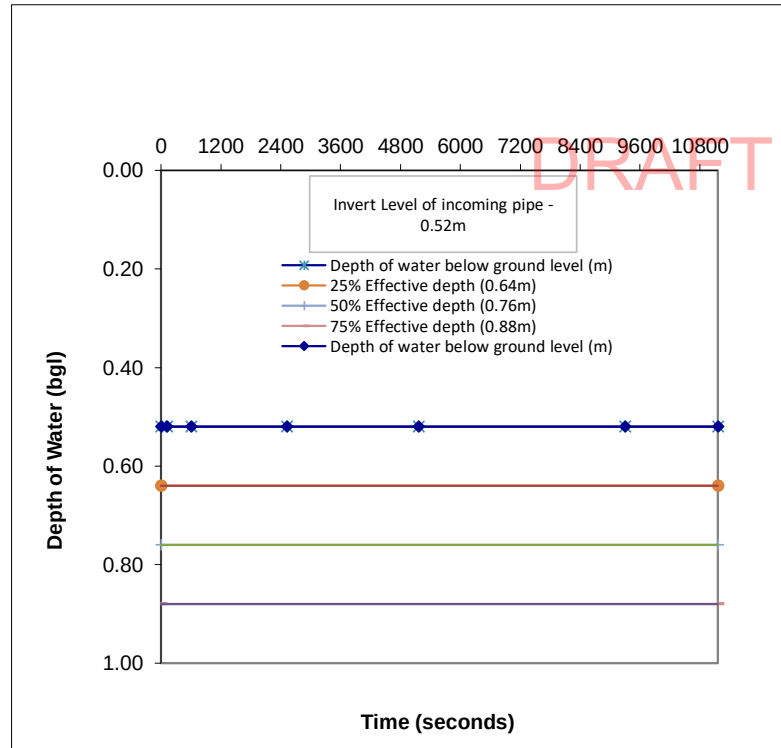
Location: SA1
Weather: Sunny
Engineer: SF
Date: 09/06/2021

TEST 1

Strata Tested London Clay Formation

1.10	SA1 - 1 m depth Assume invert level of incoming drain is 0.52m bgl. Effective depth = 0.48m	Pit Depths (m bgl)
		Length
		1.10
		Width
		0.30
		Depth
		1.00
		25% Effective Depth
		0.64
		75% Effective Depth
		0.88
		Inlet Depth
		0.52
		0.30

Linear extrapolated values for calculation



CALCULATION:

Soil Infiltration Rate(f) =
 $V_{p75-25} / (ap_{50} \times tp_{75-25})$

Where:

V_{p75-25} = effective storage volume between 75% and 25% effective depth
 $1.1 \times 0.3 \times (0.88 - 0.64)$
 = **0.0792**

ap_{50} = internal area of TP upto 50% effective depth + base of TP
 $2(1.1 \times 0.3) + 2(0.3 \times 0.3) + (1.1 \times 0.3)$
 = **1.002**

tp_{75-25} = the time for water level to fall from 75% - 25% effective depth
 = **N/A** secs

$f =$ **N/A** m/s

Comment

Infiltration testing terminated due to lack of movement over 186 minutes.

Falling Head Permeability Test - WS1 Test 1

Field Data

Time	Time Elapsed minutes	Depth of Water Below Casing (d_t)	$h_t = (d_1 - d_t)$	$\frac{h_t}{h_0}$
	0	0.00	5.000	1.000
	0.5	0.05	4.950	0.990
	1	0.09	4.910	0.982
	2	0.15	4.850	0.970
	5	0.19	4.810	0.962
	12	0.19	4.810	0.962
	46	0.19	4.810	0.962
	89	0.19	4.810	0.962
	103	0.19	4.810	0.962

Linear extrapolated value

Borehole: WS1

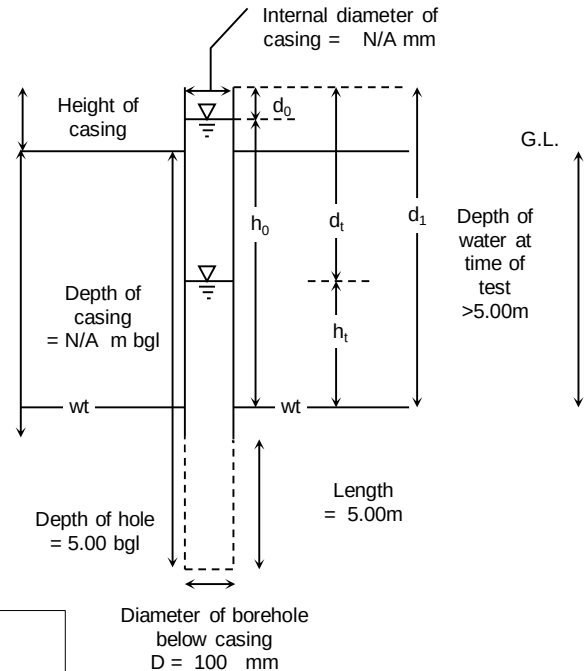
Test: 1

Weather: Sunny and warm

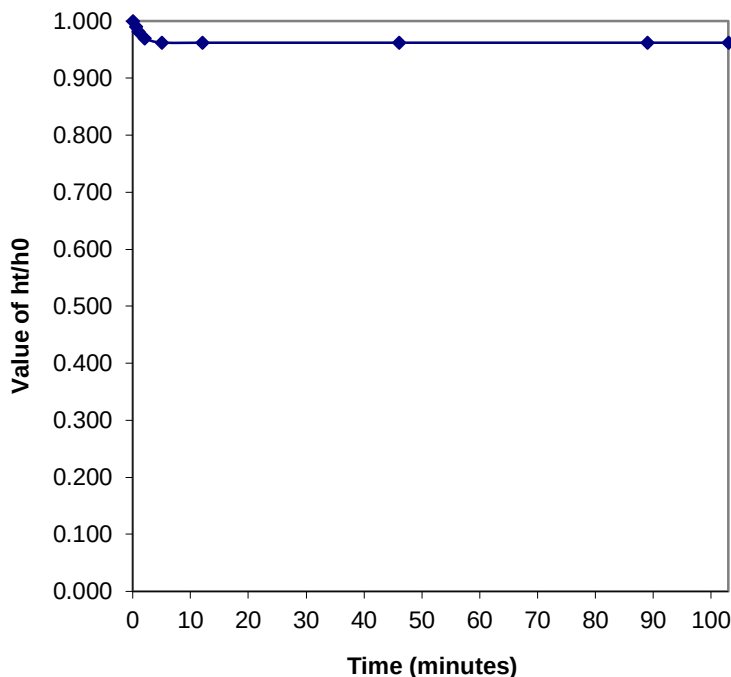
Engineer: SF

Date: 09/06/2021

Strata Tested London Clay Formation



DRAFT



Calculations

$$K = \frac{A}{FT}$$

Where :

$$A = \pi(r^2) = 0.008$$

$$F = 2.75$$

$$T = \text{N/A min} \quad \text{N/A}$$

(based upon $h_t/h_0 = 0.370$)

Therefore :

$$K = \frac{A}{FT} = \frac{0.008}{2.75 \times 1400}$$

<<<10-7 Insufficient infiltration in 103 minutes.

ms-1

Asset location search



Property Searches

Cole Easdon Consultants Limited
Unit 2 York House
Edison Park
SWINDON
SN3 3RB

Search address supplied 51A
The Drive
Ickenham
Hillingdon
UB10 8AF

Your reference 8036 (51a The Drive Ickenham)

Our reference ALS/ALS Standard/2021_4435415

Search date 25 May 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: 51A, The Drive, Ickenham, Hillingdon, UB10 8AF

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.

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.

With regard to the fresh water supply, this site falls within the boundary of another water company. For more information, please redirect your enquiry to the following address:

Affinity Water Ltd
Tamblin Way
Hatfield
AL10 9EZ
Tel: 0345 3572401



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 200 m and the centre of the map is located at OS coordinates 506164,186171
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
2101	64.4	62.65
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.		



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
	Bio-solids (Sludge)
	Proposed Thames Water Foul Sewer
	Foul Rising Main
	Combined Rising Main
	Proposed Thames Water Rising Main

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)

	Surface Water Sewer
	Gully
	Proposed

- 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.

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

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



Stuart Starr
Cole Easdon Consultants
Unit 2, York House
Edison Park
Swindon
SN1 4NQ



19 August 2021

Pre-planning enquiry: Confirmation of sufficient capacity

Site: 51A The Drive, Ickenham Hillingdon, London, UB10 8AF

Dear Mr Starr,

Thank you for providing information on your development.

Proposed site: Flats (3 units)

Proposed foul water discharge by gravity into 225mm foul water sewer in The drive via manhole TQ06862101

Proposed surface water discharge by gravity at 0.5l/s for all storm events up to and including 1:100yr+40%CC into 225mm foul water sewer in The drive via manhole TQ06862101

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 total of 0.5l/s for all storm events up to and including 1:100yr+40%CC, then Thames Water would not have any objections to the proposal.

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

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 stylized flourish at the end.

Kojo Howard

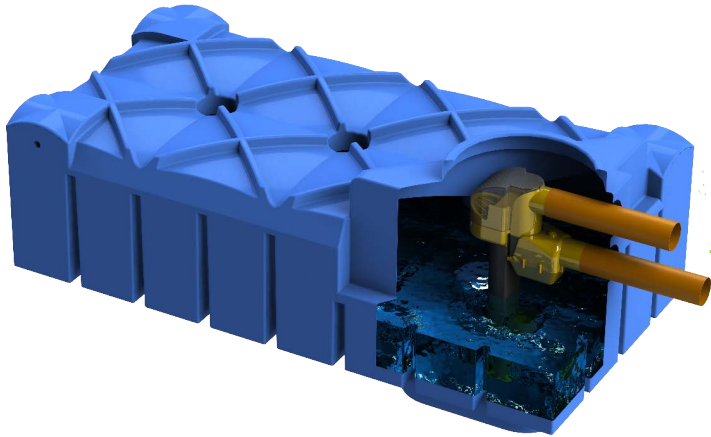
Developer Services – Adoptions Engineer, Sewer Adoptions Team

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



save water,
save money,
save the
environment

Shallow Dig (SD) Tank Product Data Sheet

Product Description

The Stormsaver Shallow Dig (SD) storage tanks are ideal for storage of rainwater for domestic rainwater harvesting systems.

Combined with our Monsoon Eco or Monsoon Favorit unit, the SD range of tanks provides a simple and cost effective solution to installing a rainwater system in any home.

Rainwater can be harvested and re-used for a number of applications including toilet flushing, laundry and garden watering and can reduce household water consumption by up to 50%.

The Shallow Dig (SD) range comes with many benefits including:

- Minimum installation depth
- Less earth to excavate and remove from site
- One piece, light and easy to manoeuvre without the need for plant equipment
- No concrete surround required
- Suitable for high water tables
- Integral leaf filter, overflow siphon and inlet calmer all pre-fitted
- Durable and economical
- Access for maintenance is easier than other circular tanks

Materials & Manufacture

The SD range is manufactured from high quality rotationally moulded Polyethylene. Being manufactured all in one piece makes it easy to deliver, manoeuvre and install.

The tanks carry a 25 Year Guarantee!

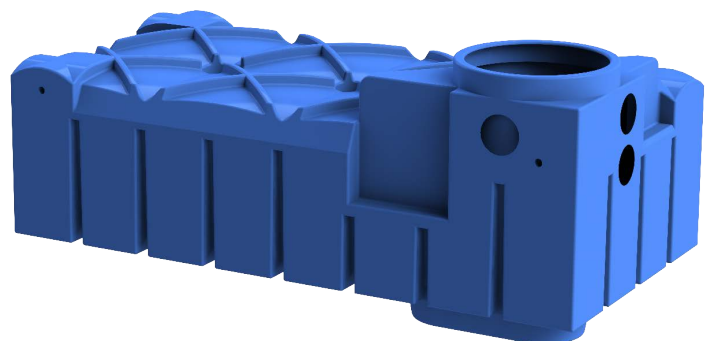
The unique anti-buoyancy technology applied to the design and manufacture means it can be installed in high water table locations so long as the earth coverage requirements are followed.

Installation

As the height of the tanks range from as little as 1015mm to 1415mm the hole needed in the ground is much less than for standard circular or oval tanks. Access for maintenance is also easier.

This also means that the hole can be dug by hand if a JCB is not available and there is no need to shore up the sides.

The structural strength of the SD range means there is no need to concrete it in, again reducing cost and easing installation.



Stormsaver Ltd.

Hockerton Moor Enterprise Park,
Winkburn Lane | Hockerton
Newark | Nottinghamshire
NG22 8PD

T 0844 884 0015
e enquiries@stormsaver.com

 Like us on facebook

 Follow us on twitter





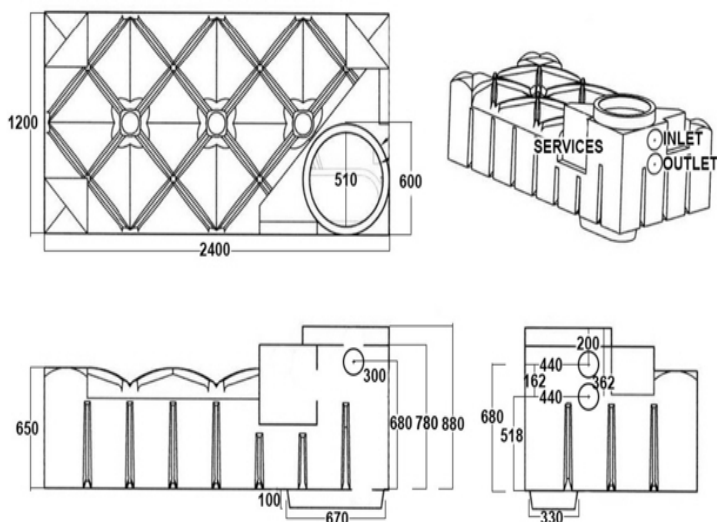
Technical Details

Size	Length	Width	Height (tank body)	Height (inc 235mm turret)	Weight	Inlet & overflow sizes	Service duct size	Height from base of tank to inlet	Height from base of tank to overflow
1500L	2400mm	1200mm	650mm*	1115mm	80kg**	110mm	110mm	680mm	518mm
3000L	2400mm	2400mm	650mm*	1115mm	170kg**	110mm	110mm	680mm	518mm
5000L	2960mm	2220mm	920mm*	1450mm	250kg**	110mm	110mm	1015mm	853mm
7500L	3340mm	2310mm	1125mm	1520mm	310kg**	110mm	110mm	1085mm	923mm

* Sump basin height is 100mm in addition. ** Weight without integral leaf filter and inlet calmer. Add 5kg for tanks which include these items.

Maximum depth of ALL tanks is 1.5m from the top of the tank to finished ground level

Technical Drawing (1500L)



Accessories



235mm
Entrance Shaft



Pedestrian duty lid



635mm
Entrance Shaft



600mm
Spacer Ring

Either a 235mm or 635mm entrance shaft must be used with the SD tank. A spacer ring can be used to extend the 235mm shaft. Vehicle duty lids and 635mm entrance shafts are available on request for driveways.

Complimentary Products

Stormsaver offer a wide range of products. Please contact our sales team to find out more about:

- Monsoon Eco and Monsoon Favorit control units low energy, compact control units housing all technology necessary to control your rainwater system and mains water back up

- Floating suction filter kits – and other fittings to make your rainwater harvesting system complete
- Suction Hose supplied in 20m or 40m lengths to connect your floating suction filter in your SD tank to the control unit in your home
- Commercial rainwater harvesting solutions

Stormsaver Ltd.

Hockerton Moor Enterprise Park,
Winkburn Lane | Hockerton
Newark | Nottinghamshire
NG22 8PD

T 0844 884 0015

e enquiries@stormsaver.com

f Like us on facebook

t Follow us on twitter





40%
Less energy*

Monsoon Favorit 20/40 Control Panel Data Sheet

Product Description

The Monsoon Favorit range of control panels have been specially developed for rainwater harvesting in large family homes or small commercial buildings. With a range of flow rates and both fixed and variable speed options, they provide the most cost effective and sustainable solution for rainwater harvesting.

The Monsoon Favorit Range

Rainwater can be harvested and re-used for a number of applications including toilet flushing, laundry, garden watering and sprinkler systems and can reduce household water consumption by up to 50%.

The control panels are easy to install and can be sited anywhere in the home. High quality components guarantee reliability and durability, all in a system compliant with BS8515 - 2009.

The Monsoon Favorit control panel activates on demand to supply a clean, clear, odourless supply of water.

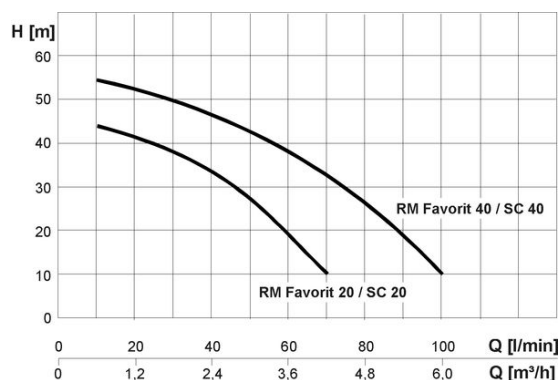
For projects where the installation goes beyond the control panel limitations, a small boosted floating suction filter kit may be required (fixed speed panels only).

During periods of low rainfall a sensor in the storage tank activates the integrated motorised valve within the control panel, switching from rainwater to mainswater. Mains water is supplied to the control panel via an automatic refill unit compliant with the Water Supply (Fittings) Regulations 1999.

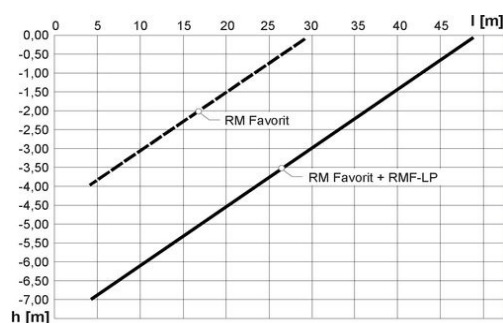
Special Features

- Compliant with Water Supply (Fittings) Regulations 1999
- Low noise levels in operation with only 65 dbA
- Available in the following range: Monsoon Favorit 20 (fixed and variable speed) Monsoon Favorit 40 (fixed and variable speed)
- Monsoon Favorit 20 = 80L/ min
- Monsoon Favorit 40 = 110L/ min
- Variable speed units can reduce energy consumption by up to 40% when compared to 800W pumped systems.
- Self priming, refer to graph below.
- Dry run protection
- Optimised for usual consumption points such as toilets, washing machines, garden tap. Also suitable for permanent running and large garden sprinklers
- Unit includes 2 x 300mm flexible reinforced hoses for potable water pipe connection and for rainwater discharge connection.
- Includes valve, expansion vessel, gauge & 10% float switch

Favorit Pump Capabilities (Head)



Do you require a Floating Booster Pump kit?



Floating booster pumps are not suitable for use with the variable speed units. This graph shows an example of when a floating suction booster kit is required as an additional item to be used with the Monsoon Favorit (fixed speed) unit:

Example A: Length of suction pipe = 12m. Depth of suction = 2.4m. Unit can be used without the booster pump as it is above the characteristic curve.

Example B: Length of suction pipe = 18m. Depth of suction = 3.2m. Unit requires the booster pump as it is below the characteristic curve

Stormsaver Ltd.

Hockerton Moor Enterprise Park,
Winkburn Lane | Hockerton
Newark | Nottinghamshire
NG22 8PD

T 0844 884 0015

e enquiries@stormsaver.com

f Like us on facebook

t Follow us on twitter





Monsoon Eco & Favorit Accessories Range

save water,
save money,
save the
environment

introduction

The Monsoon Eco and Monsoon Favorit range of control panels have been specially developed for rainwater harvesting in domestic properties or small commercial buildings. With a range of flow rates and both fixed and variable speed options, they provide the most cost effective and sustainable solution for rainwater harvesting. As part of the range of control units, Stormsaver offer a selection of accessories to enable our customers to source all the parts required for a complete rainwater harvesting system.

Floating suction filter kits

Stormsaver provide a complete coarse floating suction filter kit for connection to the Monsoon Eco and Monsoon Favorit. The kit comes complete with coarse floating suction filter, ball float, hose tail and clips for connection to the suction hose, hose tail to the control panel and non return valve.

Floating suction filters are available in 1/2" or 1" options.



Boosted floating suction filter kits

A boosted floating suction filter kit is recommended where the installation requirements exceed the capabilities of the suction pump alone. A chart detailing this is available on the Monsoon Eco and Monsoon Favorit data sheets.

The kit contains a small booster pump, ball float, hose tail and clips for connection to the suction hose, non return valve and electrical connection box. If you need this kit you **will not need** to purchase the floating suction filter kit as well as all the same parts are included in the boosted floating suction filter kit.



Level display for the Monsoon Eco

Stormsaver can provide a level display which is easily fitted to the Monsoon Eco unit and shows the rainwater level in the storage tank. This comes complete with LED display board, level sensor cable and electrical connection box. The measuring range is approximately 1.2m - 2.8m



Suction Hose

Stormsaver can provide flexible suction hose to connect your control panel to the floating suction filter. Hose can be supplied in 20m or 40m lengths and is available in 1/2" and 1" diameters. Hose should be connected in one continuous length without breaks to ensure good suction is achieved.



Stormsaver Ltd.

Hockerton Moor Enterprise Park,
Winkburn Lane | Hockerton
Newark | Nottinghamshire
NG22 8PD

T 0844 884 0015
e enquiries@stormsaver.com
f like us on facebook
t Follow us on twitter



Cole Easdon		Page 1
160 Aztec, Aztec West Almondsbury Bristol, BS32 4TU	8036 GFRR	
Date 31/08/2021 15:38 File	Designed by njackson Checked by DF	
Innovyze Source Control 2020.1		

ICP SUDS Mean Annual Flood

Input

Return Period (years) 100 SAAR (mm) 700 Urban 0.000
 Area (ha) 0.061 Soil 0.300 Region Number Region 6

Results 1/s

QBAR Rural 0.1
 QBAR Urban 0.1

 Q100 years 0.4

 Q1 year 0.1
 Q30 years 0.3
 Q100 years 0.4

©1982-2020 Innovyze

Cole Easdon		Page 1																																																																																																																																																																																																																																						
160 Aztec, Aztec West Almondsbury Bristol, BS32 4TU	8036 Network																																																																																																																																																																																																																																							
Date 03/09/2021 11:51 File 8036 PERMEABLE PAVING NE...	Designed by njackson Checked by DF																																																																																																																																																																																																																																							
Innovyze	Network 2020.1																																																																																																																																																																																																																																							
<u>STORM SEWER DESIGN by the Modified Rational Method</u> <u>Design Criteria for Storm</u> Pipe Sizes STANDARD Manhole Sizes STANDARD FSR Rainfall Model - England and Wales <table><tr><td>Return Period (years)</td><td>100</td><td>PIMP (%)</td><td>100</td></tr><tr><td>M5-60 (mm)</td><td>20.000</td><td>Add Flow / Climate Change (%)</td><td>0</td></tr><tr><td>Ratio R</td><td>0.401</td><td>Minimum Backdrop Height (m)</td><td>0.200</td></tr><tr><td>Maximum Rainfall (mm/hr)</td><td>50</td><td>Maximum Backdrop Height (m)</td><td>1.500</td></tr><tr><td>Maximum Time of Concentration (mins)</td><td>30</td><td>Min Design Depth for Optimisation (m)</td><td>1.200</td></tr><tr><td>Foul Sewage (l/s/ha)</td><td>0.000</td><td>Min Vel for Auto Design only (m/s)</td><td>1.00</td></tr><tr><td>Volumetric Runoff Coeff.</td><td>0.750</td><td>Min Slope for Optimisation (1:X)</td><td>500</td></tr></table> Designed with Level Soffits			Return Period (years)	100	PIMP (%)	100	M5-60 (mm)	20.000	Add Flow / Climate Change (%)	0	Ratio R	0.401	Minimum Backdrop Height (m)	0.200	Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500	Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200	Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00	Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500																																																																																																																																																																																																										
Return Period (years)	100	PIMP (%)	100																																																																																																																																																																																																																																					
M5-60 (mm)	20.000	Add Flow / Climate Change (%)	0																																																																																																																																																																																																																																					
Ratio R	0.401	Minimum Backdrop Height (m)	0.200																																																																																																																																																																																																																																					
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500																																																																																																																																																																																																																																					
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200																																																																																																																																																																																																																																					
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00																																																																																																																																																																																																																																					
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500																																																																																																																																																																																																																																					
<u>Network Design Table for Storm</u> <table><tr><th>PN</th><th>Length (m)</th><th>Fall (m)</th><th>Slope (1:X)</th><th>I.Area (ha)</th><th>T.E. (mins)</th><th>Base Flow (l/s)</th><th>k (mm)</th><th>HYD SECT</th><th>DIA (mm)</th><th>Section Type</th><th>Auto Design</th></tr><tr><td>S1.000</td><td>7.900</td><td>0.100</td><td>79.0</td><td>0.001</td><td>1.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S1.001</td><td>5.600</td><td>0.056</td><td>100.0</td><td>0.003</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S1.002</td><td>3.300</td><td>0.079</td><td>41.8</td><td>0.004</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S1.003</td><td>3.300</td><td>0.053</td><td>62.3</td><td>0.000</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S1.004</td><td>24.600</td><td>0.250</td><td>98.4</td><td>0.006</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S1.005</td><td>3.000</td><td>0.030</td><td>100.0</td><td>0.011</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S2.000</td><td>18.200</td><td>0.200</td><td>91.0</td><td>0.003</td><td>1.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S2.001</td><td>4.300</td><td>0.050</td><td>86.0</td><td>0.008</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr><tr><td>S2.002</td><td>4.700</td><td>0.480</td><td>9.8</td><td>0.002</td><td>0.00</td><td>0.0</td><td>0.600</td><td>o</td><td>100</td><td>Pipe/Conduit</td><td></td></tr></table> <u>Network Results Table</u> <table><tr><th>PN</th><th>Rain (mm/hr)</th><th>T.C. (mins)</th><th>US/IL (m)</th><th>Σ I.Area (ha)</th><th>Σ Base Flow (l/s)</th><th>Foul (l/s)</th><th>Add Flow (l/s)</th><th>Vel (m/s)</th><th>Cap (l/s)</th><th>Flow (l/s)</th></tr><tr><td>S1.000</td><td>50.00</td><td>1.15</td><td>63.600</td><td>0.001</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.87</td><td>6.8</td><td>0.1</td></tr><tr><td>S1.001</td><td>50.00</td><td>1.27</td><td>63.500</td><td>0.004</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.77</td><td>6.0</td><td>0.5</td></tr><tr><td>S1.002</td><td>50.00</td><td>1.32</td><td>63.444</td><td>0.008</td><td>0.0</td><td>0.0</td><td>0.0</td><td>1.20</td><td>9.4</td><td>1.1</td></tr><tr><td>S1.003</td><td>50.00</td><td>1.38</td><td>63.203</td><td>0.008</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.98</td><td>7.7</td><td>1.1</td></tr><tr><td>S1.004</td><td>50.00</td><td>1.90</td><td>63.150</td><td>0.014</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.78</td><td>6.1</td><td>1.9</td></tr><tr><td>S1.005</td><td>50.00</td><td>1.97</td><td>62.900</td><td>0.025</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.77</td><td>6.0</td><td>3.4</td></tr><tr><td>S2.000</td><td>50.00</td><td>1.38</td><td>63.600</td><td>0.003</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.81</td><td>6.3</td><td>0.4</td></tr><tr><td>S2.001</td><td>50.00</td><td>1.46</td><td>63.400</td><td>0.011</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.83</td><td>6.5</td><td>1.5</td></tr><tr><td>S2.002</td><td>50.00</td><td>1.49</td><td>63.350</td><td>0.013</td><td>0.0</td><td>0.0</td><td>0.0</td><td>2.48</td><td>19.5</td><td>1.8</td></tr></table>			PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design	S1.000	7.900	0.100	79.0	0.001	1.00	0.0	0.600	o	100	Pipe/Conduit		S1.001	5.600	0.056	100.0	0.003	0.00	0.0	0.600	o	100	Pipe/Conduit		S1.002	3.300	0.079	41.8	0.004	0.00	0.0	0.600	o	100	Pipe/Conduit		S1.003	3.300	0.053	62.3	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit		S1.004	24.600	0.250	98.4	0.006	0.00	0.0	0.600	o	100	Pipe/Conduit		S1.005	3.000	0.030	100.0	0.011	0.00	0.0	0.600	o	100	Pipe/Conduit		S2.000	18.200	0.200	91.0	0.003	1.00	0.0	0.600	o	100	Pipe/Conduit		S2.001	4.300	0.050	86.0	0.008	0.00	0.0	0.600	o	100	Pipe/Conduit		S2.002	4.700	0.480	9.8	0.002	0.00	0.0	0.600	o	100	Pipe/Conduit		PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	S1.000	50.00	1.15	63.600	0.001	0.0	0.0	0.0	0.87	6.8	0.1	S1.001	50.00	1.27	63.500	0.004	0.0	0.0	0.0	0.77	6.0	0.5	S1.002	50.00	1.32	63.444	0.008	0.0	0.0	0.0	1.20	9.4	1.1	S1.003	50.00	1.38	63.203	0.008	0.0	0.0	0.0	0.98	7.7	1.1	S1.004	50.00	1.90	63.150	0.014	0.0	0.0	0.0	0.78	6.1	1.9	S1.005	50.00	1.97	62.900	0.025	0.0	0.0	0.0	0.77	6.0	3.4	S2.000	50.00	1.38	63.600	0.003	0.0	0.0	0.0	0.81	6.3	0.4	S2.001	50.00	1.46	63.400	0.011	0.0	0.0	0.0	0.83	6.5	1.5	S2.002	50.00	1.49	63.350	0.013	0.0	0.0	0.0	2.48	19.5	1.8
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design																																																																																																																																																																																																																													
S1.000	7.900	0.100	79.0	0.001	1.00	0.0	0.600	o	100	Pipe/Conduit																																																																																																																																																																																																																														
S1.001	5.600	0.056	100.0	0.003	0.00	0.0	0.600	o	100	Pipe/Conduit																																																																																																																																																																																																																														
S1.002	3.300	0.079	41.8	0.004	0.00	0.0	0.600	o	100	Pipe/Conduit																																																																																																																																																																																																																														
S1.003	3.300	0.053	62.3	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit																																																																																																																																																																																																																														
S1.004	24.600	0.250	98.4	0.006	0.00	0.0	0.600	o	100	Pipe/Conduit																																																																																																																																																																																																																														
S1.005	3.000	0.030	100.0	0.011	0.00	0.0	0.600	o	100	Pipe/Conduit																																																																																																																																																																																																																														
S2.000	18.200	0.200	91.0	0.003	1.00	0.0	0.600	o	100	Pipe/Conduit																																																																																																																																																																																																																														
S2.001	4.300	0.050	86.0	0.008	0.00	0.0	0.600	o	100	Pipe/Conduit																																																																																																																																																																																																																														
S2.002	4.700	0.480	9.8	0.002	0.00	0.0	0.600	o	100	Pipe/Conduit																																																																																																																																																																																																																														
PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)																																																																																																																																																																																																																														
S1.000	50.00	1.15	63.600	0.001	0.0	0.0	0.0	0.87	6.8	0.1																																																																																																																																																																																																																														
S1.001	50.00	1.27	63.500	0.004	0.0	0.0	0.0	0.77	6.0	0.5																																																																																																																																																																																																																														
S1.002	50.00	1.32	63.444	0.008	0.0	0.0	0.0	1.20	9.4	1.1																																																																																																																																																																																																																														
S1.003	50.00	1.38	63.203	0.008	0.0	0.0	0.0	0.98	7.7	1.1																																																																																																																																																																																																																														
S1.004	50.00	1.90	63.150	0.014	0.0	0.0	0.0	0.78	6.1	1.9																																																																																																																																																																																																																														
S1.005	50.00	1.97	62.900	0.025	0.0	0.0	0.0	0.77	6.0	3.4																																																																																																																																																																																																																														
S2.000	50.00	1.38	63.600	0.003	0.0	0.0	0.0	0.81	6.3	0.4																																																																																																																																																																																																																														
S2.001	50.00	1.46	63.400	0.011	0.0	0.0	0.0	0.83	6.5	1.5																																																																																																																																																																																																																														
S2.002	50.00	1.49	63.350	0.013	0.0	0.0	0.0	2.48	19.5	1.8																																																																																																																																																																																																																														
©1982-2020 Innovyze																																																																																																																																																																																																																																								

Cole Easdon		Page 3
160 Aztec, Aztec West Almondsbury Bristol, BS32 4TU	8036 Network	
Date 03/09/2021 11:51 File 8036 PERMEABLE PAVING NE...	Designed by njackson Checked by DF	
Innovyze	Network 2020.1	

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backd (mm)
SS1	64.200	0.600	Open Manhole	600	S1.000	63.600	100				
SS2	64.200	0.700	Open Manhole	600	S1.001	63.500	100	S1.000	63.500	100	
SS3	64.200	0.756	Open Manhole	600	S1.002	63.444	100	S1.001	63.444	100	
SS4 (RWH)	64.200	0.997	Open Manhole	600	S1.003	63.203	100	S1.002	63.365	100	
SS5	64.200	1.050	Open Manhole	600	S1.004	63.150	100	S1.003	63.150	100	
SS6	64.200	1.300	Open Manhole	600	S1.005	62.900	100	S1.004	62.900	100	
SS7	64.200	0.600	Open Manhole	600	S2.000	63.600	100				
SS8	64.200	0.800	Open Manhole	600	S2.001	63.400	100	S2.000	63.400	100	
SS9	64.200	0.850	Open Manhole	600	S2.002	63.350	100	S2.001	63.350	100	
SS10 (Paving)	64.150	1.295	Open Manhole	1200	S1.006	62.855	150	S1.005	62.870	100	
								S2.002	62.870	100	
SS11 (FC)	64.280	1.465	Open Manhole	1200	S1.007	62.815	150	S1.006	62.815	150	
S	64.400	1.625	Open Manhole	0		OUTFALL		S1.007	62.775	150	

No coordinates have been specified, layout information cannot be produced.

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D, L (mm)	W (mm)
S1.007	S	64.400	62.775	0.000	0	0

Cole Easdon		Page 4
160 Aztec, Aztec West Almondsbury Bristol, BS32 4TU	8036 Network	
Date 03/09/2021 11:51 File 8036 PERMEABLE PAVING NE...	Designed by njackson Checked by DF	
Innovyze	Network 2020.1	

Cole Easdon		Page 5																								
160 Aztec, Aztec West Almondsbury Bristol, BS32 4TU	8036 Network																									
Date 03/09/2021 11:51 File 8036 PERMEABLE PAVING NE...	Designed by njackson Checked by DF																									
Innovyze	Network 2020.1																									
Storage Structures for Storm Porous Car Park Manhole: SS10 (Paving), DS/PN: S1.006 <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Width (m)</td><td>12.6</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>18.0</td></tr><tr><td>Max Percolation (l/s)</td><td>63.0</td><td>Slope (1:X)</td><td>1000.0</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Porosity</td><td>0.30</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Invert Level (m)</td><td>62.855</td><td>Cap Volume Depth (m)</td><td>1.065</td></tr></table>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	12.6	Membrane Percolation (mm/hr)	1000	Length (m)	18.0	Max Percolation (l/s)	63.0	Slope (1:X)	1000.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	62.855	Cap Volume Depth (m)	1.065
Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	12.6																							
Membrane Percolation (mm/hr)	1000	Length (m)	18.0																							
Max Percolation (l/s)	63.0	Slope (1:X)	1000.0																							
Safety Factor	2.0	Depression Storage (mm)	5																							
Porosity	0.30	Evaporation (mm/day)	3																							
Invert Level (m)	62.855	Cap Volume Depth (m)	1.065																							
©1982-2020 Innovyze																										

Cole Easdon		Page 6
160 Aztec, Aztec West Almondsbury Bristol, BS32 4TU	8036 Network	
Date 03/09/2021 11:51 File 8036 PERMEABLE PAVING NE...	Designed by njackson Checked by DF	
Innovyze	Network 2020.1	

Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

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

Number of Input Hydrographs	0	Number of Offline Controls	0	Number of Time/Area Diagrams	0
Number of Online Controls	1	Number of Storage Structures	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.400
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	20.000	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	ON
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	100
Climate Change (%)	40

WARNING: Half Drain Time has not been calculated as the structure is too full.

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	SS1	4320 Winter	100	+40%				
S1.001	SS2	4320 Winter	100	+40%	100/15	Summer		
S1.002	SS3	4320 Winter	100	+40%	100/15	Summer		
S1.003	SS4 (RWH)	4320 Winter	100	+40%	100/15	Summer		
S1.004	SS5	4320 Winter	100	+40%	100/15	Summer		
S1.005	SS6	4320 Winter	100	+40%	100/15	Summer		
S2.000	SS7	4320 Winter	100	+40%				
S2.001	SS8	4320 Winter	100	+40%	100/15	Summer		
S2.002	SS9	4320 Winter	100	+40%	100/360	Winter		
S1.006	SS10 (Paving)	4320 Winter	100	+40%	100/15	Summer		
S1.007	SS11 (FC)	4320 Winter	100	+40%	100/15	Summer		

©1982-2020 Innovyze

Cole Easdon		Page 7
160 Aztec, Aztec West Almondsbury Bristol, BS32 4TU	8036 Network	
Date 03/09/2021 11:51 File 8036 PERMEABLE PAVING NE...	Designed by njackson Checked by DF	
Innovyze	Network 2020.1	

Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Water		Surcharged	Flooded	Flow / Cap.	Overflow (l/s)	Half Drain	Pipe	Status
		Level (m)	Depth (m)	Volume (m³)	Time (mins)			Flow (l/s)		
S1.000	SS1	63.667	-0.033	0.000	0.00				0.0	OK
S1.001	SS2	63.667	0.067	0.000	0.01				0.0	SURCHARGED
S1.002	SS3	63.667	0.123	0.000	0.01				0.1	SURCHARGED
S1.003	SS4 (RWH)	63.667	0.364	0.000	0.01				0.1	SURCHARGED
S1.004	SS5	63.667	0.417	0.000	0.03				0.2	SURCHARGED
S1.005	SS6	63.667	0.667	0.000	0.06				0.3	SURCHARGED
S2.000	SS7	63.667	-0.033	0.000	0.01				0.0	OK
S2.001	SS8	63.667	0.167	0.000	0.02				0.1	SURCHARGED
S2.002	SS9	63.667	0.217	0.000	0.01				0.2	SURCHARGED
S1.006	SS10 (Paving)	63.667	0.662	0.000	0.15				1.9	SURCHARGED
S1.007	SS11 (FC)	63.696	0.731	0.000	0.01				0.1	SURCHARGED

PN	US/MH Name	Level Exceeded
S1.000	SS1	
S1.001	SS2	
S1.002	SS3	
S1.003	SS4 (RWH)	
S1.004	SS5	
S1.005	SS6	
S2.000	SS7	
S2.001	SS8	
S2.002	SS9	
S1.006	SS10 (Paving)	
S1.007	SS11 (FC)	