







Con29DW Commercial Drainage and Water Search - Water Key

Water Pipes (Operated & Maintained by Thames Water)

-  **Distribution Main:** The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.
-  **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.
-  **Supply Main:** A supply main indicates that the water main is used as a supply for a single property or group of properties.
-  **Fire Main:** Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.
-  **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
-  Manhole
-  Customer Supply
-  Fire Supply

Operational Sites

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

Other Symbols

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

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

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

For your guidance:

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

As a minimum standard Thames Water Property Searches will:

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

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

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

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

Question 1.1

For your guidance:

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

Question 1.2

For your guidance:

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

Question 2.1

For your guidance:

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

Question 2.2

For your guidance:

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

Question 2.3

For your guidance:

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

Question 2.4

For your guidance:

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

Question 2.4.1

For your guidance:

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

Question 2.5

For your guidance:

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

Question 2.5.1

For your guidance:

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

Question 2.6

For your guidance:

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

Question 2.7

For your guidance:

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

Question 2.8

For your guidance:

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

Question 2.9

For your guidance:

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

Question 3.1

For your guidance:

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

Question 3.2

For your guidance:

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

Question 3.3

For your guidance:

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

Question 3.4

For your guidance:

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

Question 3.5

For your guidance:

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

Thames Water Hardness Category	Calcium (mg/l)	Calcium Carbonate (mg/l)	English Clarke degrees	French degrees	General/ German degrees
Soft	0 to 40	0 to 500	0 to 7	0 to 10	0 to 5.6
Medium	41 to 80	101 to 200	8 to 14	11 to 20	5.7 to 11.2
Hard	Over 80	Over 200	Over 14	Over 20	over 11.2

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

Question 3.6

For your guidance:

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

Question 3.7

For your guidance:

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

Question 5.1

For your guidance:

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

Question 6.1

For your guidance:

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

CommercialDW Drainage and Water Enquiry Terms and Conditions

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

Definitions

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

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

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

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

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

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

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

Agreement

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

The Report

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

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

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

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

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

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

Liability

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

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

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

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

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

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

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

Copyright and Confidentiality

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

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

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

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

Payment

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

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

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

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

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

Cancellations or Alterations

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

Delivery

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

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

General

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

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

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

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

Payment Terms and Conditions

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

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

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

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

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

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

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

Ways to pay your bill

Credit Card	BACS Payment	Telephone Banking
Please call 0800 009 4540 quoting your invoice number starting CBA or ADS	Account Number 90478703 Sort code 60-00-01 A remittance advice must be sent to Thames Water Utilities Ltd. PO Box 3189 Slough 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

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

Appendix D

Greenfield Run-off Calculation

Calculated by:	Oliver Chard
Site name:	Shurgard Hampton
Site location:	TW12 2HR

Site Details

Latitude:	51.41561° N
Longitude:	0.37451° W
Reference:	1647952421
Date:	Feb 29 2024 09:05

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.

Runoff estimation approach

FEH Statistical

Site characteristics

Total site area (ha):	0.308
-----------------------	-------

Methodology

Q _{MED} estimation method:	Calculate from BFI and SAAR
BFI and SPR method:	Calculate from dominant HOST
HOST class:	22
BFI / BFIHOST:	0.374
Q _{MED} (l/s):	0.8
Q _{BAR} / Q _{MED} factor:	1.14

Hydrological characteristics

	Default	Edited
SAAR (mm):	598	598
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 $SPR/SPRHOST \leq 0.3$?

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

Q_{BAR} (l/s):	0.91	0.91
1 in 1 year (l/s):	0.78	0.78
1 in 30 years (l/s):	2.1	2.1
1 in 100 year (l/s):	2.91	2.91
1 in 200 years (l/s):	3.42	3.42

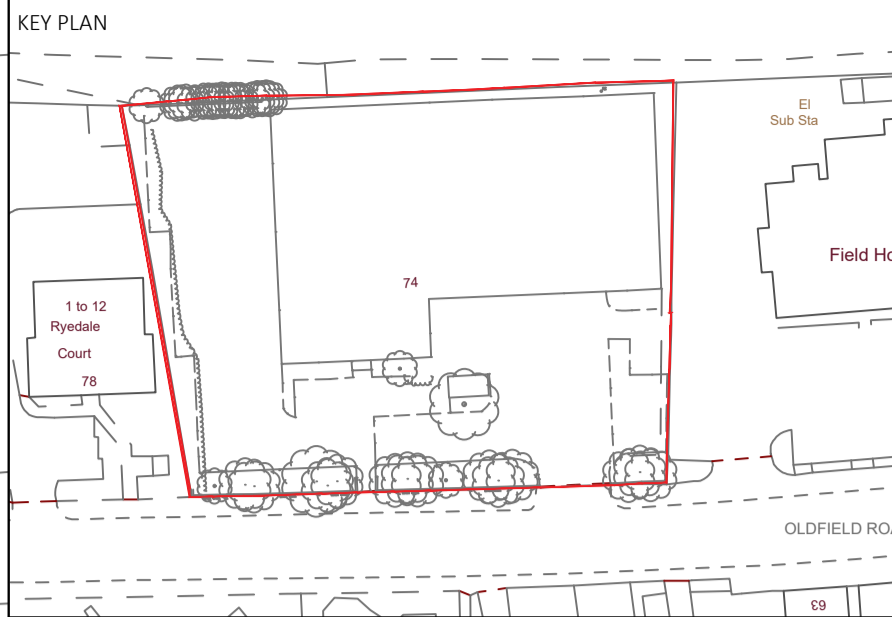
This report was produced using the greenfield runoff tool developed by HR Wallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement , which can both be found at www.uksuds.com/terms-and-conditions.htm. The outputs from this 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.

Appendix E

Not Used

Appendix F

Existing Overland Flow Routes and Catchment Plan



NOTES
1. FOR DRAINAGE NOTES REFER TO DRAWING 31569-HYD-XX-XX-DR-C-52010

LEGEND		
	BUILDING / ROOF	= 1270m ²
	HARDSTANDING (YARD)	= 1525m ²
	SOFT LANDSCAPING	= 325m ²
		TOTAL = 3120m²

THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND SHOULD NOT BE USED FOR DETAILED DESIGN OR COSTING.

REVISIONS

Rev.	INITIAL ISSUE	14/03/24	VK	CMH CMH
	Revision Notes	Date	Drawn By	Checked Approved

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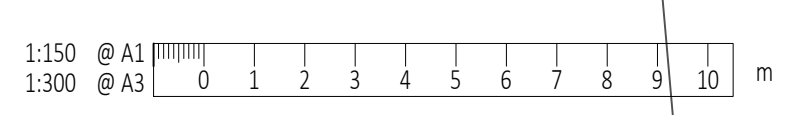
PROJECT
SHURGARD HAMPTON

TITLE
EXISTING DRAINAGE CATCHMENT PLAN

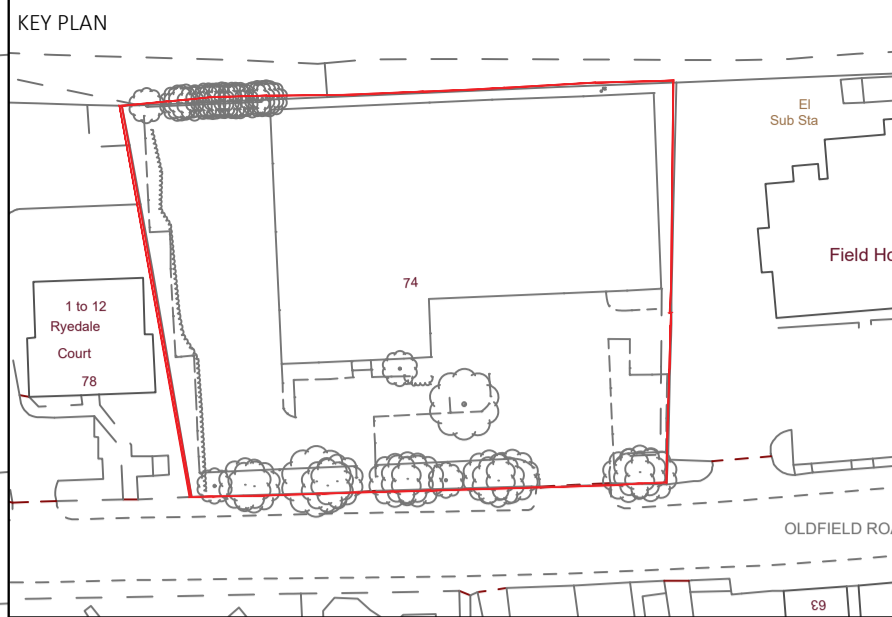
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STATUS DESCRIPTION SUITABLE FOR INFORMATION	STATUS S2
DRAWING NO. 31569-HYD-00-ZZ-DR-C-52011	REVISION P01



OLDFIELD ROAD



Filename: C:\Users\OtherChara\Documents\Projects\Hampton\CAD\31569-HYD-00-ZZ-DR-C-52011.dwg



NOTES
1. FOR DRAINAGE NOTES REFER TO DRAWING 31569-HYD-XX-DR-C-52010

El
Sub Sta

Field House

74

1 to 12
Ryedale
Court
78

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PROJECT
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TITLE
EXISTING DRAINAGE
EXCEEDANCE FLOWS

HYDROCK PROJECT NO.
C-31569

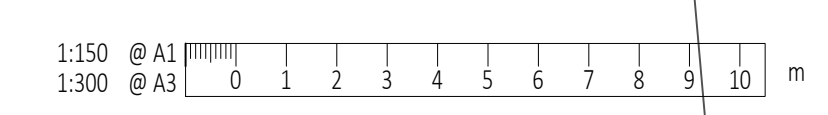
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STATUS
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DRAWING NO.
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REVISION
P01

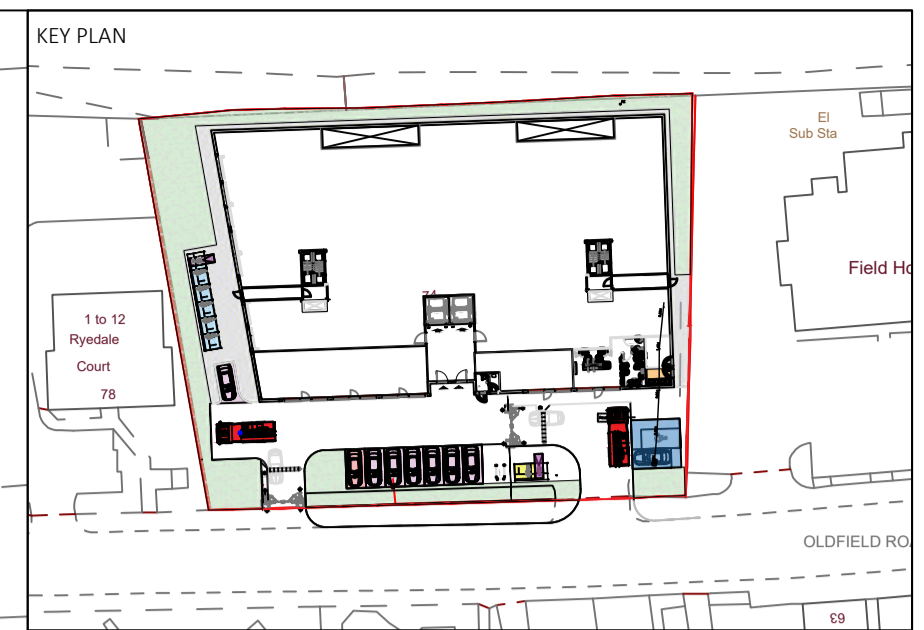
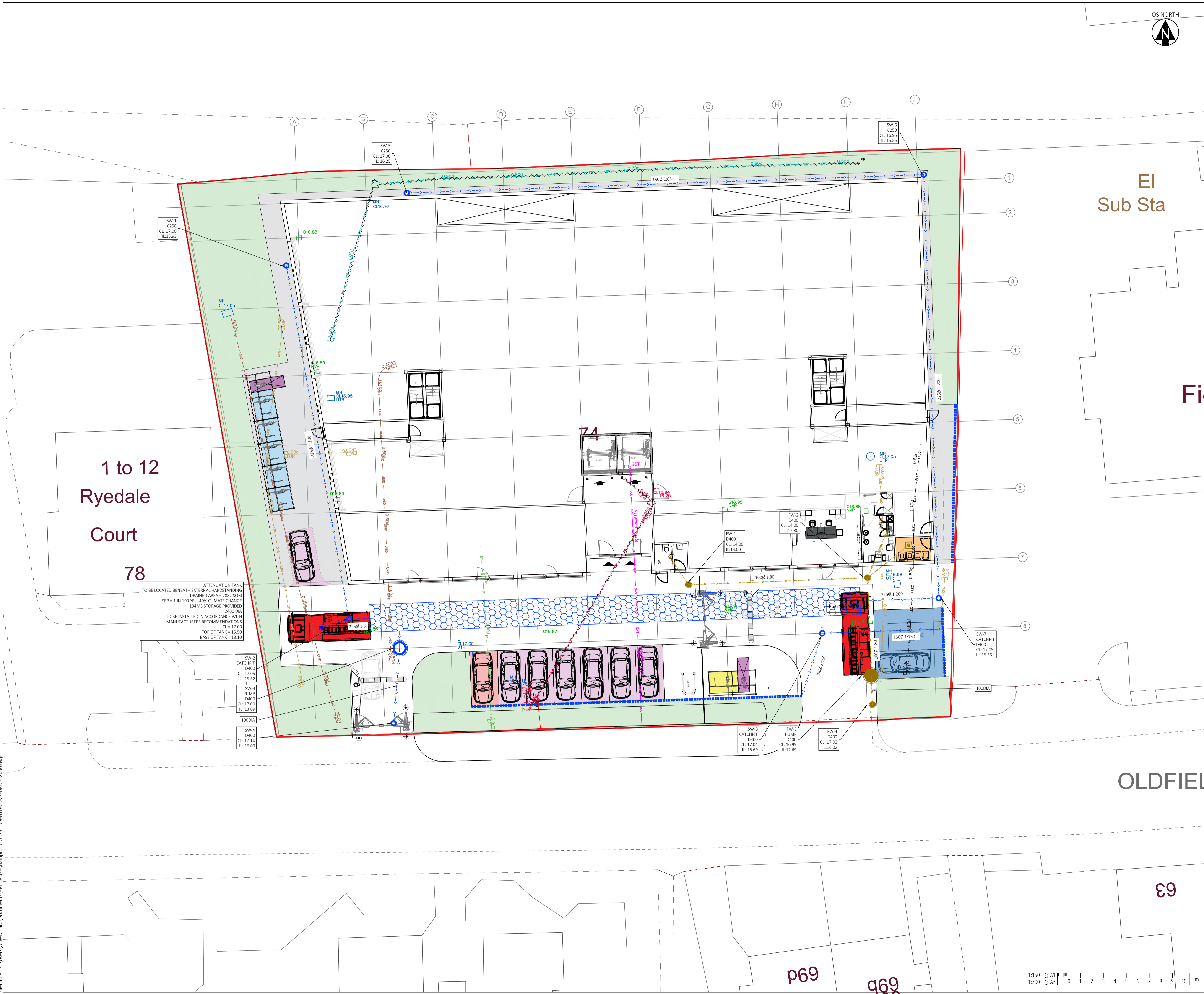


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Appendix G

Proposed Drainage Strategy General Arrangement



- NOTES
- FOR DRAINAGE NOTES REFER TO DRAWING 31569-HYD-XX-DR-C-52010
 - RAINWATER DOWNPIPE POSITIONS TO BE CONFIRMED BY ARCHITECT
 - SOIL PIPE POSITIONS TO BE CONFIRMED BY ARCHITECT
 - PUBLIC SEWER CONNECTIONS SUBJECT TO THAMES WATER S106

Field House

THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND SHOULD NOT BE USED FOR DETAILED DESIGN OR COSTING.

- KEY
- PROPOSED SURFACE WATER
 - PROPOSED FOUL WATER
 - TO BE ABANDONED
 - LINEAR DRAIN
 - YARD GULLY
 - SOIL PIPE
 - GULLY

REVISIONS

NO.	DESCRIPTION	DATE	BY	CHECKED	APPROVED
P01	INITIAL ISSUE	14/03/24	VK	CMH	CMH
Rev.	Revision Notes	Date	Drawn By	Checked	Approved

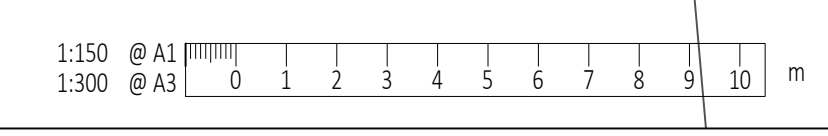
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SHURGARD HAMPTON

TITLE
PROPOSED DRAINAGE
GENERAL ARRANGEMENT

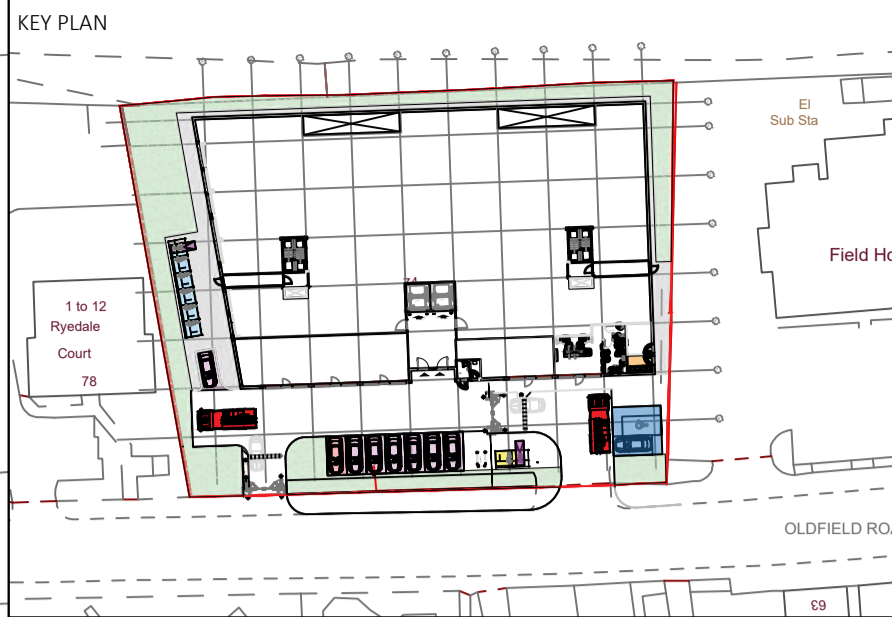
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DRAWING NO. 31569-HYD-00-ZZ-DR-C-52030		REVISION P01	



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Appendix H

Proposed Overland Flow Routes and Catchment Plan



NOTES
1. FOR DRAINAGE NOTES REFER TO DRAWING 31569-HYD-XX-XX-DR-C-52010

EI
Sub Sta

Field House

1 to 12
Ryedale
Court
78

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TITLE
PROPOSED DRAINAGE
EXCEEDANCE FLOWS

HYDROCK PROJECT NO.
C-31569 SCALE @ A1
1:150

STATUS DESCRIPTION
SUITABLE FOR INFORMATION STATUS
S2

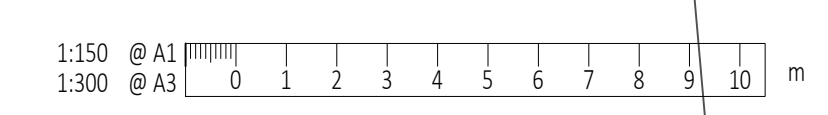
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P01

OLDFIELD ROAD

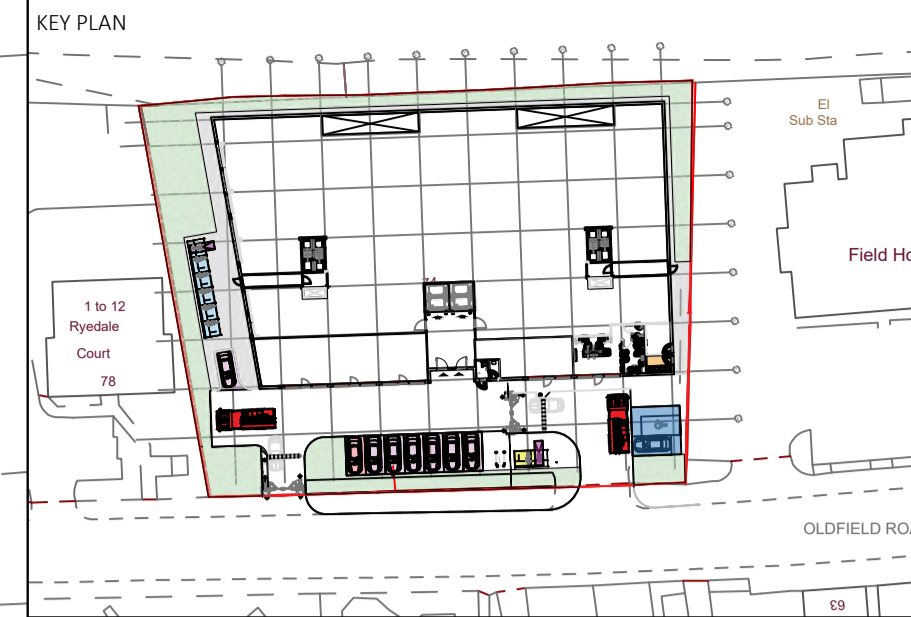
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Filename: C:\Users\Other\Chara\Documents\Projects\Hampton\CAD\31569-HYD-00-ZZ-DR-C-52025.dwg



NOTES
1. FOR DRAINAGE NOTES REFER TO DRAWING 31569-HYD-XX-XX-DR-C-52010

LEGEND		
	BUILDING / ROOF	= 1786m ²
	HARDSTANDING	= 841m ²
	SOFT LANDSCAPING	= 493m ²
		TOTAL = 3120m²

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Rev.	INITIAL ISSUE	14/03/24	VK	CMH CMH
	Revision Notes	Date	Drawn By	Checked Approved

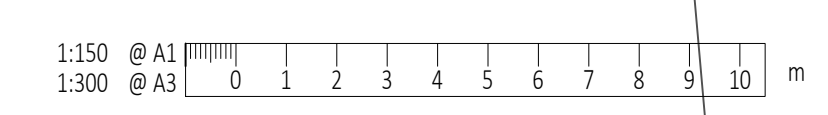
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CLIENT **SHURGARD**
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PROJECT
SHURGARD HAMPTON

TITLE
PROPOSED DRAINAGE
CATCHMENT PLAN

HYDROCK PROJECT NO. C-31569	SCALE @ A1 1:150
STATUS DESCRIPTION SUITABLE FOR INFORMATION	STATUS S2
DRAWING NO. 31569-HYD-00-ZZ-DR-C-52020	REVISION P01



Filename: C:\Users\OtherChara\Documents\Projects\Hampton\CAD\31569-HYD-00-ZZ-DR-C-52020.dwg

Appendix I

Proposed Drainage Supporting Calculations

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Junctions Storm Phase: Phase (2) (1)	Company Address:		



Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
SW-1	Outlet	Pipe	Free Discharge
SW-2	Outlet	Pipe (1)	Free Discharge
	Outlet	Pipe (5)	Pump
	Invert Level (m)	13.090	
	Depth (m)	Outflow (L/s)	
	0.100	2.0	
	0.200	2.0	
	0.300	2.0	
	0.400	2.0	
	0.500	2.0	
	0.600	2.0	
	0.700	2.0	
	0.800	2.0	
	0.900	2.0	
	1.000	2.0	
	1.100	2.0	
	1.200	2.0	
	1.300	2.0	
	1.400	2.0	
	1.500	2.0	
	1.600	2.0	
	1.700	2.0	
	1.800	2.0	
	1.900	2.0	
	2.000	2.0	
	2.100	2.0	
	2.200	2.0	
	2.300	2.0	
	2.400	2.0	
	2.500	2.0	
	2.600	2.0	
	2.700	2.0	
	2.800	2.0	
	2.900	2.0	
	3.000	2.0	
	3.100	2.0	
	3.200	2.0	
	3.300	2.0	
	3.400	2.0	
	3.500	2.0	
	3.600	2.0	
	3.700	2.0	
	3.800	2.0	
	3.900	2.0	
	4.000	2.0	
	4.100	2.0	
	4.200	2.0	
	4.300	2.0	
	4.400	2.0	
	4.500	2.0	
	4.600	2.0	
	4.700	2.0	
	4.800	2.0	
	4.900	2.0	
	5.000	2.0	
	5.100	2.0	
	5.200	2.0	
	5.300	2.0	
	5.400	2.0	
	5.500	2.0	
	5.600	2.0	
	5.700	2.0	
	5.800	2.0	
	5.900	2.0	
SW-3			

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Junctions Storm Phase: Phase (2) (1)	Company Address:		



Junction	Outlet Name	Outgoing Connection	Outlet Type
	6.000	2.0	
	6.100	2.0	
	6.200	2.0	
	6.300	2.0	
	6.400	2.0	
	6.500	2.0	
	6.600	2.0	
	6.700	2.0	
	6.800	2.0	
	6.900	2.0	
	7.000	2.0	
	7.100	2.0	
	7.200	2.0	
	7.300	2.0	
	7.400	2.0	
	7.500	2.0	
	7.600	2.0	
	7.700	2.0	
	7.800	2.0	
	7.900	2.0	
	8.000	2.0	
	8.100	2.0	
	8.200	2.0	
	8.300	2.0	
	8.400	2.0	
	8.500	2.0	
	8.600	2.0	
	8.700	2.0	
	8.800	2.0	
	8.900	2.0	
	9.000	2.0	
	9.100	2.0	
	9.200	2.0	
	9.300	2.0	
	9.400	2.0	
	9.500	2.0	
	9.600	2.0	
	9.700	2.0	
	9.800	2.0	
	9.900	2.0	
	10.000	2.0	
SW-5	Outlet	Pipe (6)	Free Discharge
SW-6	Outlet	Pipe (7)	Free Discharge
SW-7	Outlet	Pipe (8)	Free Discharge
SW-8	Outlet	Pipe (3)	Free Discharge

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Stormwater Controls Storm Phase: Phase (2) (1)	Company Address:		



Chamber

Type : Chamber

Dimensions

Exceedance Level (m)	15.500
Depth (m)	2.400
Base Level (m)	13.100
Number of Chambers	1
Number of Rows	1
Distance Between Rows (mm)	0
Total Volume (m³)	193.170

Chamber Shape

Type	Circular Chamber
Chamber Length (m)	42.700
Wall Thickness (mm)	0
Diameter / Base Width (mm)	2400

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Pipe (1)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	Pipe (8)
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (2)

Inlet Type	Point Inflow
Incoming Item(s)	Pipe (3)
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (2)
Outlet Type	Free Discharge

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Network Design Criteria Storm Phase: Phase (2) (1)	Company Address:		



Flow Options


Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

Pipe Options

Lock Slope Options	None
Design Options	Minimise Excavation
Design Level	Level Soffits
Min. Cover Depth (m)	1.200
Min. Slope (1:X)	500.00
Max. Slope (1:X)	40.00
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	<input type="checkbox"/>
Reduce Channel Depths	<input type="checkbox"/>

Manhole Options

Apply Offset	<input type="checkbox"/>
--------------	--------------------------

Project:	Date: 29/02/2024			
	Designed by: VK	Checked by: CMH	Approved By: CMH	
Report Title: Rainfall Analysis Criteria	Company Address:			

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Shortest
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	<input type="checkbox"/>

Rainfall

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

Region	England And Wales
M5-60 (mm)	20.0
Ratio R	0.425
Summer	<input checked="" type="checkbox"/>
Winter	<input checked="" type="checkbox"/>

Return Period

Return Period (years)	Increase Rainfall (%)
1.0	0.000
30.0	0.000
100.0	40.000
100.0	0.000

Storm Durations

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

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Inflows Summary Storm Phase: Phase (2) (1)	Company Address:		



FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 1 years: +0 %: 15 mins: Winter	0.04	6.5	2.982
Catchment Area (1)	FSR: 1 years: +0 %: 15 mins: Winter	0.04	5.2	2.388
Catchment Area (2)	FSR: 1 years: +0 %: 15 mins: Winter	0.04	6.4	2.949
Catchment Area (3)	FSR: 1 years: +0 %: 15 mins: Winter	0.05	7.9	3.633
Catchment Area (4)	FSR: 1 years: +0 %: 15 mins: Winter	0.02	2.2	1.032
Catchment Area (5)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	1.5	0.690
Catchment Area (6)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	1.5	0.690
Catchment Area (7)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	0.9	0.426
Catchment Area (8)	FSR: 1 years: +0 %: 15 mins: Winter	0.01	1.8	0.837
Catchment Area (9)	FSR: 1 years: +0 %: 15 mins: Winter	0.04	5.2	2.397
Catchment Area (10)	FSR: 1 years: +0 %: 15 mins: Winter	0.02	2.4	1.131

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Inflows Summary Storm Phase: Phase (2) (1)	Company Address:		



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

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 30 years: +0 %: 15 mins: Winter	0.04	15.8	7.320
Catchment Area (1)	FSR: 30 years: +0 %: 15 mins: Winter	0.04	12.7	5.865
Catchment Area (2)	FSR: 30 years: +0 %: 15 mins: Winter	0.04	15.7	7.236
Catchment Area (3)	FSR: 30 years: +0 %: 15 mins: Winter	0.05	19.3	8.913
Catchment Area (4)	FSR: 30 years: +0 %: 15 mins: Winter	0.02	5.5	2.541
Catchment Area (5)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	3.7	1.701
Catchment Area (6)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	3.7	1.698
Catchment Area (7)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	2.3	1.044
Catchment Area (8)	FSR: 30 years: +0 %: 15 mins: Winter	0.01	4.4	2.055
Catchment Area (9)	FSR: 30 years: +0 %: 15 mins: Winter	0.04	12.7	5.877
Catchment Area (10)	FSR: 30 years: +0 %: 15 mins: Winter	0.02	6.0	2.778

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Inflows Summary Storm Phase: Phase (2) (1)	Company Address:		



FSR: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 100 years: +40 %: 15 mins: Winter	0.04	28.8	13.305
Catchment Area (1)	FSR: 100 years: +40 %: 15 mins: Winter	0.04	23.1	10.668
Catchment Area (2)	FSR: 100 years: +40 %: 15 mins: Winter	0.04	28.5	13.161
Catchment Area (3)	FSR: 100 years: +40 %: 15 mins: Winter	0.05	35.1	16.200
Catchment Area (4)	FSR: 100 years: +40 %: 15 mins: Winter	0.02	10.0	4.626
Catchment Area (5)	FSR: 100 years: +40 %: 15 mins: Winter	0.01	6.7	3.099
Catchment Area (6)	FSR: 100 years: +40 %: 15 mins: Winter	0.01	6.7	3.087
Catchment Area (7)	FSR: 100 years: +40 %: 15 mins: Winter	0.01	4.1	1.902
Catchment Area (8)	FSR: 100 years: +40 %: 15 mins: Winter	0.01	8.1	3.738
Catchment Area (9)	FSR: 100 years: +40 %: 15 mins: Winter	0.04	23.1	10.680
Catchment Area (10)	FSR: 100 years: +40 %: 15 mins: Winter	0.02	10.9	5.052

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Junctions Summary Storm Phase: Phase (2) (1)	Company Address:		



FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
SW-1	FSR: 1 years: +0 %: 15 mins: Winter	17.00 0	15.93 0	15.995	0.065	8.9	0.018	0.000	8.6	4.096	OK
SW-2	FSR: 1 years: +0 %: 15 mins: Winter	17.05 0	15.62 0	15.674	0.054	18.3	0.015	0.000	18.0	8.566	OK
SW-3	FSR: 1 years: +0 %: 120 mins: Winter	17.00 0	13.09 0	13.562	0.472	2.2	0.533	0.000	2.0	27.129	Surcharged
SW-4	FSR: 1 years: +0 %: 15 mins: Summer	17.14 0	16.09 0	16.090	0.000	2.0	0.000	0.000	2.0	3.124	OK
SW-5	FSR: 1 years: +0 %: 15 mins: Winter	17.00 0	16.25 0	16.280	0.030	2.2	0.009	0.000	2.1	1.031	OK
SW-6	FSR: 1 years: +0 %: 15 mins: Winter	16.95 0	15.55 0	15.650	0.100	15.2	0.028	0.000	14.0	7.063	OK
SW-7	FSR: 1 years: +0 %: 15 mins: Winter	17.05 0	15.36 5	15.465	0.100	14.0	0.028	0.000	12.9	7.044	OK
SW-8	FSR: 1 years: +0 %: 15 mins: Winter	17.04 0	15.69 0	15.710	0.020	7.6	0.003	0.000	7.6	3.527	OK

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Junctions Summary Storm Phase: Phase (2) (1)	Company Address:		



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

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m ³)	Max. Flooded Volume (m ³)	Max. Outflow (L/s)	Total Discharge Volume (m ³)	Status
SW-1	FSR: 30 years: +0 %: 15 mins: Winter	17.00 0	15.93 0	16.036	0.106	21.8	0.030	0.000	21.2	10.060	OK
SW-2	FSR: 30 years: +0 %: 15 mins: Winter	17.05 0	15.62 0	15.715	0.095	44.9	0.027	0.000	44.3	21.027	OK
SW-3	FSR: 30 years: +0 %: 240 mins: Winter	17.00 0	13.09 0	14.114	1.024	2.2	1.159	0.000	2.0	55.947	Surcharged
SW-4	FSR: 30 years: +0 %: 15 mins: Summer	17.14 0	16.09 0	16.090	0.000	2.0	0.000	0.000	2.0	3.279	OK
SW-5	FSR: 30 years: +0 %: 15 mins: Winter	17.00 0	16.25 0	16.298	0.048	5.5	0.014	0.000	5.3	2.540	OK
SW-6	FSR: 30 years: +0 %: 15 mins: Winter	16.95 0	15.55 0	15.741	0.191	37.3	0.054	0.000	34.8	17.346	OK
SW-7	FSR: 30 years: +0 %: 15 mins: Winter	17.05 0	15.36 5	15.547	0.182	34.8	0.052	0.000	33.1	17.326	OK
SW-8	FSR: 30 years: +0 %: 15 mins: Winter	17.04 0	15.69 0	15.722	0.032	18.7	0.005	0.000	18.7	8.654	OK

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Junctions Summary Storm Phase: Phase (2) (1)	Company Address:		



FSR: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m ³)	Max. Flooded Volume (m ³)	Max. Outflow (L/s)	Total Discharge Volume (m ³)	Status
SW-1	FSR: 100 years: +40 %: 15 mins: Winter	17.00 0	15.93 0	16.086	0.156	39.6	0.044	0.000	38.6	18.292	OK
SW-2	FSR: 100 years: +40 %: 15 mins: Winter	17.05 0	15.62 0	15.763	0.143	81.8	0.040	0.000	80.7	38.229	OK
SW-3	FSR: 100 years: +40 %: 360 mins: Winter	17.00 0	13.09 0	15.011	1.921	2.3	2.173	0.000	2.0	84.728	Surcharged
SW-4	FSR: 100 years: +40 %: 15 mins: Summer	17.14 0	16.09 0	16.090	0.000	2.0	0.000	0.000	2.0	3.351	OK
SW-5	FSR: 100 years: +40 %: 15 mins: Winter	17.00 0	16.25 0	16.344	0.094	10.0	0.027	0.000	6.8	4.619	OK
SW-6	FSR: 100 years: +40 %: 15 mins: Winter	16.95 0	15.55 0	16.291	0.741	65.1	0.210	0.000	62.7	31.548	Surcharged
SW-7	FSR: 100 years: +40 %: 15 mins: Winter	17.05 0	15.36 5	15.703	0.338	62.7	0.096	0.000	62.1	31.540	Surcharged
SW-8	FSR: 100 years: +40 %: 15 mins: Winter	17.04 0	15.69 0	15.735	0.045	34.1	0.007	0.000	34.0	15.731	OK

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase (2) (1)	Company Address:		



FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residant Volume (m ³)	Max. Flooded Volume (m ³)	Total Lost Volume (m ³)	Max. Outflow (L/s)	Total Discharge Volume (m ³)	Percentage Available (%)	Status
Chamber	FSR: 1 years: +0 %: 120 mins: Winter	13.562	13.562	0.462	0.462	13.0	24.581	0.000	0.000	2.2	27.464	87.275	OK

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase (2) (1)	Company Address:		



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

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residant Volume (m ³)	Max. Flooded Volume (m ³)	Total Lost Volume (m ³)	Max. Outflow (L/s)	Total Discharge Volume (m ³)	Percentage Available (%)	Status
Chamber	FSR: 30 years: +0 %: 240 mins: Winter	14.115	14.115	1.015	1.015	18.2	76.160	0.000	0.000	2.2	56.813	60.574	OK

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase (2) (1)	Company Address:		



FSR: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Chamber	FSR: 100 years: +40 %: 360 mins: Winter	15.012	15.012	1.912	1.912	24.2	163.344	0.000	0.000	2.3	86.443	15.441	OK

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Connections Summary Storm Phase: Phase (2) (1)	Company Address:		



FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Velocity

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SW-1	SW-2	17.000	15.995	0.059	4.096	1.0	0.17	8.6	OK
Pipe (5)	FSR: 1 years: +0 %: 15 mins: Summer	Pipe	SW-3	SW-4	17.000	13.429	0.016	3.124	0.0	0.15	2.0	Surcharged
Pipe (6)	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SW-5	SW-6	17.000	16.280	0.065	1.031	0.3	0.09	2.1	OK
Pipe (7)	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SW-6	SW-7	16.950	15.650	0.100	7.063	0.8	0.38	14.0	OK
Pipe (1)	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SW-2	Chamber	17.050	15.674	0.049	8.566	2.8	0.09	18.0	OK
Pipe (8)	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SW-7	Chamber	17.050	15.465	0.096	7.044	0.8	0.35	12.9	OK
Pipe (2)	FSR: 1 years: +0 %: 240 mins: Summer	Pipe	Chamber	SW-3	17.000	13.498	0.150	41.149	0.5	0.15	2.2	Surcharged
Pipe (3)	FSR: 1 years: +0 %: 15 mins: Winter	Pipe	SW-8	Chamber	17.040	15.710	0.100	3.527	1.0	0.1	7.6	OK

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Connections Summary Storm Phase: Phase (2) (1)	Company Address:		



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

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SW-1	SW-2	17.000	16.036	0.100	10.060	1.2	0.41	21.2	OK
Pipe (5)	FSR: 30 years: +0 %: 15 mins: Summer	Pipe	SW-3	SW-4	17.000	13.728	0.015	3.279	0.0	0.15	2.0	Surcharged
Pipe (6)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SW-5	SW-6	17.000	16.298	0.120	2.540	0.3	0.24	5.3	OK
Pipe (7)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SW-6	SW-7	16.950	15.741	0.186	17.346	1.0	0.95	34.8	OK
Pipe (1)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SW-2	Chamber	17.050	15.715	0.082	21.027	3.4	0.21	44.3	OK
Pipe (8)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SW-7	Chamber	17.050	15.547	0.167	17.326	1.0	0.9	33.1	OK
Pipe (2)	FSR: 30 years: +0 %: 480 mins: Summer	Pipe	Chamber	SW-3	17.000	13.932	0.150	108.097	0.5	0.15	2.2	Surcharged
Pipe (3)	FSR: 30 years: +0 %: 15 mins: Winter	Pipe	SW-8	Chamber	17.040	15.722	0.100	8.654	2.4	0.24	18.7	OK

Project:	Date: 29/02/2024		
	Designed by: VK	Checked by: CMH	Approved By: CMH
Report Details: Type: Connections Summary Storm Phase: Phase (2) (1)	Company Address:		



FSR: 100 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Velocity

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FSR: 100 years: +40 %: 15 mins: Winter	Pipe	SW-1	SW-2	17.000	16.086	0.149	18.292	1.4	0.74	38.6	OK
Pipe (5)	FSR: 100 years: +40 %: 15 mins: Summer	Pipe	SW-3	SW-4	17.000	14.079	0.015	3.351	0.0	0.15	2.0	Surcharged
Pipe (6)	FSR: 100 years: +40 %: 15 mins: Summer	Pipe	SW-5	SW-6	17.000	16.321	0.150	4.118	0.5	0.37	8.3	OK
Pipe (7)	FSR: 100 years: +40 %: 15 mins: Winter	Pipe	SW-6	SW-7	16.950	16.291	0.225	31.548	1.6	1.71	62.7	Surcharged
Pipe (1)	FSR: 100 years: +40 %: 15 mins: Winter	Pipe	SW-2	Chamber	17.050	15.763	0.120	38.229	3.8	0.38	80.7	OK
Pipe (8)	FSR: 100 years: +40 %: 15 mins: Winter	Pipe	SW-7	Chamber	17.050	15.703	0.225	31.540	1.6	1.68	62.1	Surcharged
Pipe (2)	FSR: 100 years: +40 %: 240 mins: Winter	Pipe	Chamber	SW-3	17.000	14.984	0.150	58.278	0.5	0.16	2.4	Surcharged
Pipe (3)	FSR: 100 years: +40 %: 15 mins: Winter	Pipe	SW-8	Chamber	17.040	15.735	0.100	15.731	4.3	0.43	34.0	OK