

The Gate, The Meadway Reading
Drainage Strategy

16 November 2018

A5737

Contents

Document Status and Signatures

- 1.0 Brief**
- 2.0 Existing Site Parameters**
- 3.0 Design Criteria**
- 4.0 Existing Drainage networks**
- 5.0 Proposed Drainage Networks**
- 6.0 Further Surveys and Investigations**
- 7.0 Conclusion**

Appendices:

Appendix A – Outline Drawing scheme

Appendix B – Thames Water Asset Plans

Document Status and Signatures

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Signed on behalf of CTP	
	
Prepared by:	Stuart Macmillan – Senior Associate
	
Reviewed by:	Adrian Keith – Associate Designate

1.0 Brief

- 1.1 This report has been prepared for cpl Architects as detailed in our fee quotation dated 05/09/2018 and in accordance with their instructions received on the 25/10/2018.
- 1.2 CTP was commissioned by cpl Architects to undertake a Drainage Strategy for the proposed foul and surface water drainage at the proposed New Church and Community Centre which is situated at The Gate, Reading. The office and community areas are located over three storeys.
- 1.3 It is intended to construct a new church and community centre on the footprint of an existing building. The shape of the proposed access road and parking will also be aligned to the existing hardstanding areas.
- 1.4 The drainage strategy is to support the planning application and will demonstrate how the proposed drainage design will comply with the Reading Borough Council's (who are the Local Lead Flood Authority) Revised Sustainable Design and Construction Document Supplementary Planning Document dated July 2011.
- 1.5 This document makes reference to the Council's Core Strategy Policy CS1 which outlines the Council's requirements for new construction. An extract from this document is as follows:
- 1.6 Developments incorporate sustainable urban drainage facilities and techniques as part of the layout of a development as appropriate and as advised by the Environment Agency, including minimising the size of impermeable areas so that peak run-off and annual water run-off is reduced where possible and in any case is no greater than the original conditions of the site. Particular care will be needed in areas of flood risk where different solutions may be required.
- 1.7 The site is considered a brownfield site as it has been previously developed. However, it is intended that the proposed surface water run-off will be less than the existing surface water run-off through the introduction of a SUDS.
- 1.8 CTP has no responsibility to any other parties to whom this report may be circulated, in part or in full, and any such parties rely on the contents of this report solely at their own risk.
- 1.9 All copyright and other intellectual rights in and over this report and its contents shall remain vested in CTP. (Client) and any person authorised by them is granted an irrevocable royalty free licence to use and reproduce this report for all purposes relating to the property but CTP shall not be liable for any use of the report for any purpose other than that for which it was originally prepared.

2.0 Existing Site Parameters

2.1 Existing Site Area:

Type of Area	Impermeable	Permeable	Total
Roof	506		506
Access Road and Parking	1288		1288
Garden Areas		847	847
Total (m2)	1794	847	2641

2.2 Proposed Site Area:

Type of Area	Impermeable	Permeable	Total
Roof	189	359 (Sedum)	548
Access Road and Parking	1167		1167
Terrace Areas	111		111
Garden Areas		815	815
Total (m2)	1467 (net decrease)	1174 (net increase)	2641

- 2.3 Therefore, the proposed construction results in a reduction of the overall impermeable area of 359m2. This equates to the area provided by the Sedum roof.

3.0 Design Criteria

3.1 Foul water:

The total discharge unit design method will be used as described in BS12056 using the discharge units stated in Table 2 for a System Type II and using a frequency factor k from Table 3 of 0.5 for intermittent use.

The proposed total discharge flow rate $Q = 5.21\text{l/s}$ based on the proposed sanitaryware and water using appliances shown on the proposed plans.

3.2 Surface water:

In the absence of the more accurate FEH rainfall values, a design rainfall of 26.25mm/hr will be adopted. The rainfall will be modelled for several storm frequencies and a range of durations using the Windes Microdrainage software. It will also take into account a 40% increase for climate change.

The discharge rate for the surface water will be attenuated to match the existing greenfield run-off rate Q_{bar} which has been calculated as: 1.2l/s for the existing conditions and 3.7l/s for the 1 in 100-year event.

4.0 Existing Drainage networks

- 4.1 The following information is based on the topographical survey and the Thames Water Asset Plan only as no CCTV survey information is available at the time of writing.

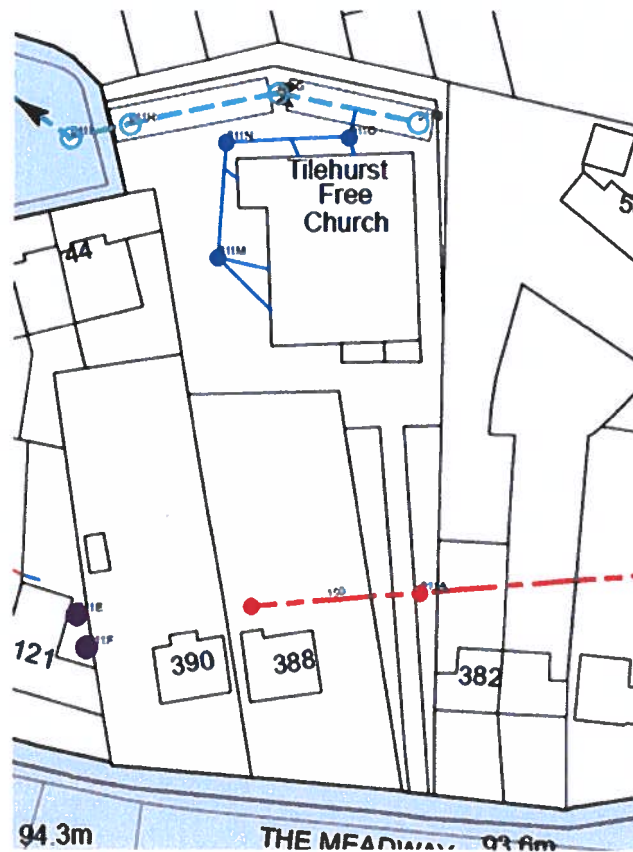


Figure 1 Extract from Thames Water Asset Plan

4.2 Foul Water Drainage

There is an existing 100mm diameter foul water sewer located on the east side of the building. It runs north to south of the site and there are several branches into it from the existing building.

Based on the proposed design flow, Q of 5.21 l/s/ha, the existing 100mm diameter will have sufficient capacity to cater for this flow.

This sewer appears to connect into an existing 150mm diameter private sewer at manhole 911A, situated in the access road. This sewer then runs through the back gardens on The Meadway and connects into a 225mm diameter public sewer in St Michael's Road. Please see Figure 1 above.

It is possible that this is a combined sewer as there are several gullies located near this run but there is no evidence of a second surface water sewer.
The number of existing appliances discharging into this sewer is unknown.

4.3 Surface Water Drainage

There appears to be an existing 100mm diameter surface water on the west side of the building, which services several gullies and rainwater pipes. This sewer runs from south to north and then turns through 90 degrees and travels from west to east, before turning through 90 degrees again to flow north offsite.

This sewer is shown as a private combined sewer on the Thames Water Asset Plan (please see figure 1 above), which connects into the public 225mm diameter surface water between manholes 911B and manholes 811G.

Again, it is possible that this sewer is a combined sewer as one of the SVP's appears to be connected to one of the manholes.

In the northeast corner of the site, a tank has been identified but the nature of the tank is unknown.

5.0 Proposed Drainage Networks

5.1 Foul water drainage:

The proposed foul water sewer will need to serve the demand from the following facilities: male and female toilets on the ground and first floors; a commercial kitchen for a café on the ground floor; male and female toilets and a small kitchen on the first floor. There was one disabled WC on the second floor only.

It is proposed to provide new soil and vent pipes for each area and discharge the foul water from these pipes into new inspection chambers and manholes situated outside the building. These inspection chambers and manholes will feed into the existing foul sewer on the south side of the building.

5.2 Surface water drainage:

The existing and proposed impermeable and permeable areas are very similar in size and location on site. It is proposed to positively drain the new hardstanding areas using gulleys and channels and to attenuate this flow by using one or mixture of the following methods:

- i) Permeable paving in the car parking areas
- ii) Storing water in the tanked selected granular fill beneath the car parking areas
- iii) Passing the water through an attenuation tank prior to discharging into the existing system
- iv) Introduction of a source control device such as a hydrobrake or orifice plate.

The total area of the new roof is 548m². However, the majority of this roof (359m²) is covered with a Sedum roof. This roof will act as both an attenuation and storage medium which will reduce the direct flow into the sewer.

Due to the configuration of the roof, the majority of the rainfall will fall on onto the Sedum roof prior to entering into any of the downpipes. This will significantly reduce the flow rate from the roof in comparison to the existing roof.

The discharge from the roof can be further attenuated by passing it through the same attenuation measures that are adopted for the hardstanding areas.

The indicative size of the attenuation tank is 5.0m x 8.0m by 0.8m deep.

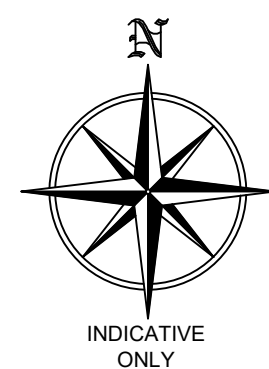
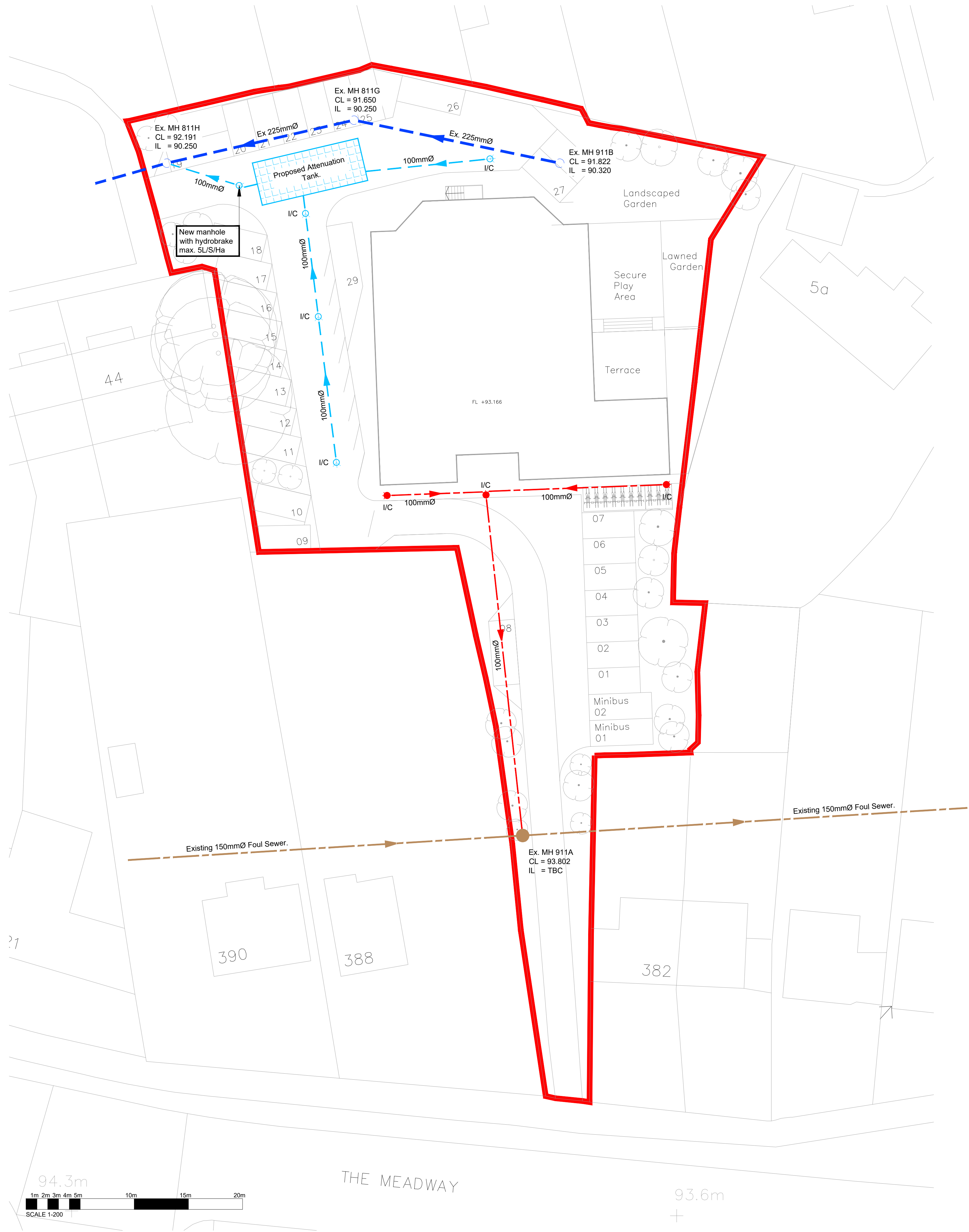
6.0 Further Surveys and Investigations

This strategy is based on several assumptions about the existing system, which were made from the information found on the topographical survey plan and the Thames Water Asset plans. It is recommended that a CCTV survey of the existing sewer system is undertaken to confirm these assumptions.

7.0 Conclusion

By following this strategy during the detailed design stage, the proposed drainage design will comply with the Council's latest Sustainable Planning guidance which will reduce the risk of future flooding as the proposed flow rates discharging off site will be less than the existing brownfield site rates.

Appendix A - Outline Drawing scheme



Outline of Basement
(Hatched)

SA1 (Area=506m²)
L=5.0m
W=8.0m
D=0.8m

FFL 65.00

1:40

- dyg Yard Gully
 - dg Road Gully
 - svp Soil & Vent Pipe
 - rwp Rain Water Pipe
 - aav Air admittance Valve
 - rodding eye
- FMHX
- PC.C. Foul water Manhole (Public)
 - FMHX P.C.C. Foul water Manhole (Private)
 - FMHX PPIC Foul water Manhole (Private)
 - FMHX PPIC Foul water Manhole (Private)
 - SMHX PPIC Storm water Manhole (Private)
 - SMHX PPIC Storm water Manhole (Private)
- XXXØ @1:XX Type 'X'
- Foul water pipe (Private)
 - Storm water pipe (Private)
 - Foul water pipe (Public)
 - Storm water pipe (Public)
 - Ex. Foul water pipe (Private)
 - Ex. Storm water pipe (Private)
 - Pipe to be abandoned
 - Suspended Foul water pipe (Private)
 - Cast-Iron Pipes by Others



- NOTES**
- DO NOT SCALE THIS DRAWING. WORK TO FIGURED DIMENSIONS ONLY. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
 - This drawing is to be read in conjunction with all relevant Architect's, Engineer's and Specialist's drawings and their respective Specifications.
 - All work to comply with the relevant British Standards, Codes of Practice and the Building Regulations.
 - Any discrepancies between all working drawings, specifications and schedules of all disciplines to be immediately notified to CTP for clarification/correction prior to construction of relevant structure.

PRELIMINARY

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Suffolk House 154 High Street
Sevenoaks Kent TN13 1XE UK
UK: +44 (0)1732 740195
Malta: +356 2778 0051
www.ctp-lp.com

Project Title:

THE GATE,
READING.

Drawing Number:

PROPOSED DRAINAGE
STRATEGY.

Drawing Number: A5737-1500
Scale: 1:200 @A1
Unless Noted Otherwise

Appendix B - Thames Water Asset Plans

Asset location search



Property Searches

Colin Toms & Partners
Suffolk House
154 High Street
SEVENOAKS
TN13 1XE

Search address supplied The Gate
384
The Meadway
Tilehurst
Reading
RG30 4NX

Your reference The Gate Reading

Our reference ALS/ALS Standard/2018_3903511

Search date 5 November 2018

Keeping you up-to-date

Notification of Price Changes

From 1 September 2018 Thames Water Property Searches will be increasing the price of its Asset Location Search in line with RPI at 3.23%.

For further details on the price increase please visit our website: www.thameswater-propertysearches.co.uk
Please note that any orders received with a higher payment prior to the 1 September 2018 will be non-refundable.



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



0845 070 9148



Search address supplied: The Gate, 384, The Meadway, Tilehurst, Reading, RG30 4NX

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 0845 070 9148, 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.

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

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



For your guidance:

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

Payment for this Search

A charge will be added to your suppliers account.

Further contacts:

Waste Water queries

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

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

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

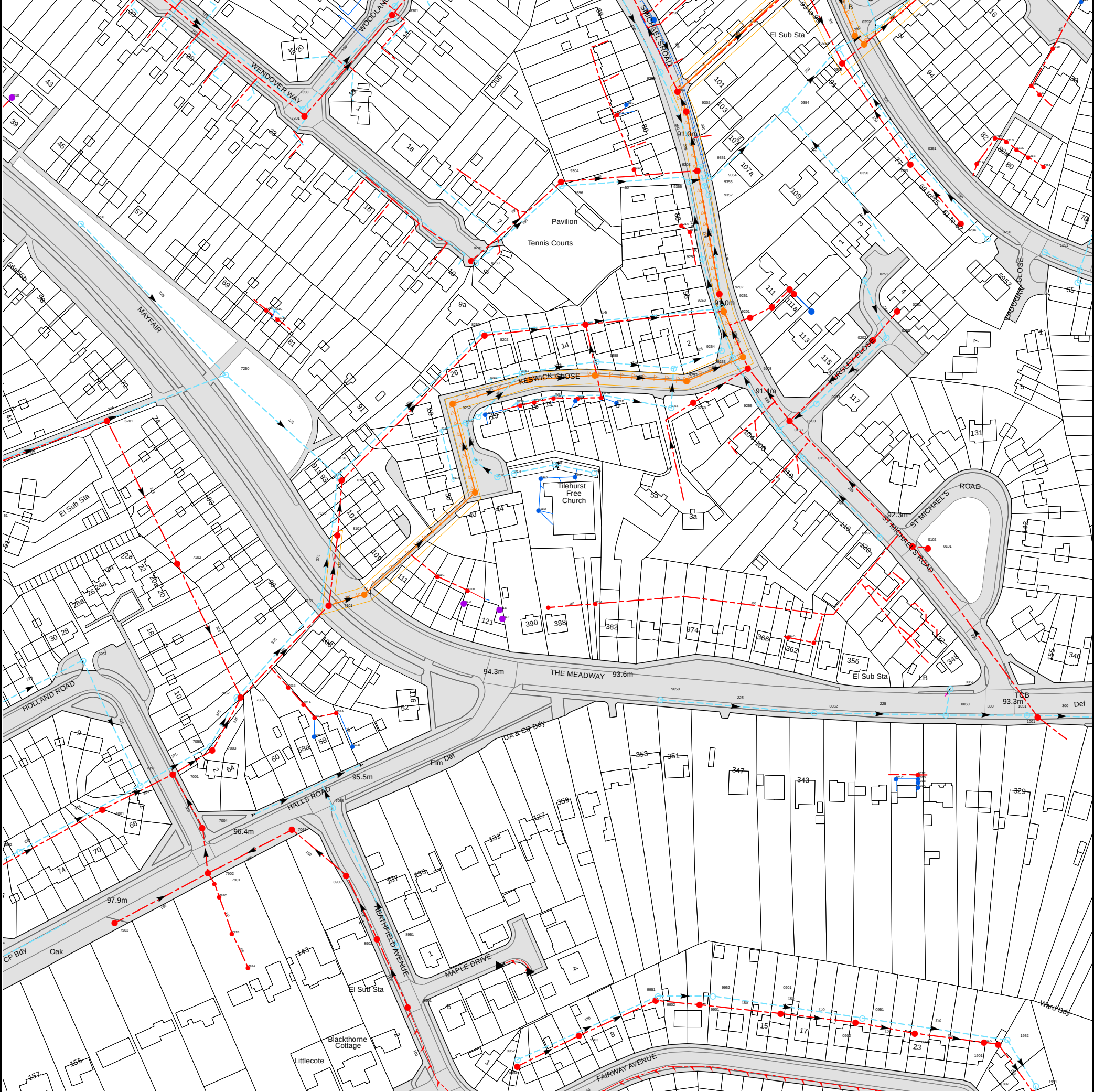
Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Clean Water queries

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

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

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



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 466898,173147

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
791A	n/a	n/a
8903	96.49	95.83
8902	96.62	96.04
8951	96.69	95.61
8901	96.9	96.23
8952	n/a	n/a
131H	n/a	n/a
131J	n/a	n/a
0303	91.65	89.54
0351	91.7	90.37
031A	n/a	n/a
131E	n/a	n/a
131D	n/a	n/a
131C	n/a	n/a
131B	n/a	n/a
131G	n/a	n/a
131F	n/a	n/a
131A	n/a	n/a
001A	n/a	n/a
001B	n/a	n/a
001C	n/a	n/a
001D	n/a	n/a
001E	n/a	n/a
1001	93.53	n/a
1050	93.64	91.43
0050	93.38	91.65
1051	n/a	n/a
0051	93.26	92.53
0101	92.75	90.6
0102	92.56	90.3
0252	92.1	90.95
0201	92.37	90.55
1250	92.77	90.13
1252	92.66	90.05
1251	92.61	90.38
0250	92.51	91.07
0204	92.21	n/a
9250	91.22	89.55
9251	91.09	89.55
92ND	n/a	n/a
02NC	n/a	n/a
9202	91.021	89.781
n/a	91.03	88.58
02MN	n/a	n/a
0251	92.21	91.2
9252	90.93	89.89
921B	n/a	n/a
921A	n/a	n/a
9352	90.75	89.42
9353	90.78	89.36
9355	90.89	90.04
0350	n/a	n/a
9354	90.96	89.97
9303	90.887	89.617
n/a	90.89	88.3
931A	n/a	n/a
9351	90.89	n/a
931B	n/a	n/a
n/a	90.97	88.15
9302	90.975	89.515
0354	n/a	n/a
931C	n/a	n/a
9301	91.11	89.46
n/a	91.08	88.06
9258	n/a	n/a
n/a	91.16	90.08
9270	n/a	n/a
921D	n/a	n/a
9050	93.79	92.24
9256	91.19	n/a
9257	91.39	89.76
n/a	91.2	88.89
9268	91.02	90.28
9254	91.4	89.61
9201	91.121	89.781
n/a	91.11	88.62
9253	91.28	90.32
n/a	91.3	88.74
9203	91.36	89.86
92NC	n/a	n/a
9255	91.64	90.39
0150	91.79	90.57
011A	n/a	n/a
0203	91.67	89.99
0151	92.01	90.78
02ND	n/a	n/a
0052	93.37	n/a
011B	n/a	n/a
0253	91.91	90.71
0202	92.07	90.45
0152	92.46	91.6

Manhole Reference	Manhole Cover Level	Manhole Invert Level
9350	91.14	89.71
0302	90.53	87.67
0353	n/a	n/a
n/a	89.82	86.8
n/a	89.65	86.83
0352	89.81	87.64
9358	n/a	n/a
1802	n/a	n/a
1951	n/a	n/a
8904	n/a	n/a
1901	n/a	n/a
091A	n/a	n/a
1952	n/a	n/a
9903	n/a	n/a
0903	93.51	92.72
0902	n/a	n/a
0951	n/a	n/a
0901	94.69	93.75
9901	n/a	n/a
9902	n/a	n/a
9951	n/a	n/a
9952	n/a	n/a
8252	91.18	90.02
8253	91.36	90.01
8202	91.29	90.2
821D	n/a	90.42
821E	n/a	n/a
811I	92.1	90.16
811E	n/a	n/a
811F	n/a	n/a
811H	92.2	90.2
8259	91.2	90.1
8257	n/a	90.3
8251	91.18	89.91
n/a	91.12	89.25
821B	90.756	90.246
811M	n/a	n/a
811N	n/a	n/a
811A	n/a	n/a
8258	n/a	n/a
811G	91.65	90.25
9269	91.03	n/a
911C	n/a	n/a
921C	n/a	n/a
9267	90.663	90.163
9204	91.15	90.02
911B	91.82	90.3
n/a	91.15	89.1
911A	n/a	n/a
7350	n/a	n/a
7301	94.78	93.32
8301	93.5	92.1
8350	93.48	92.08
8201	92.43	91.02
8250	92.4	91.36
9356	n/a	n/a
9304	n/a	n/a
721A	n/a	n/a
721C	n/a	n/a
721B	n/a	n/a
701B	n/a	n/a
7061	n/a	n/a
701A	n/a	n/a
701C	n/a	n/a
701D	n/a	n/a
7151	94.12	92.4
7101	94.02	92.01
7058	n/a	n/a
7150	93.3	91.3
801A	n/a	n/a
8101	93.3	91.26
8150	n/a	n/a
8102	n/a	n/a
801B	n/a	n/a
n/a	93.58	91.55
811C	n/a	n/a
811L	n/a	91.55
n/a	91.15	89.42
811K	n/a	92.32
811D	n/a	n/a
821C	91.31	90.05
811B	n/a	n/a
811J	91.81	90.12
n/a	92.2	90.31
7002	n/a	n/a
6051	96.94	95.42
7102	n/a	n/a
6201	97.76	96.27
7250	n/a	n/a
6250	98.12	96.21
631B	n/a	n/a
791B	n/a	n/a
7903	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
791C	n/a	n/a
7901	97.33	95.28
7902	97.34	95.25
6052	n/a	n/a
7004	96.76	94.87
6001	n/a	n/a
7051	n/a	n/a
7001	96.03	94.17
7003	n/a	n/a
7050	95.74	94.09
7052	n/a	n/a
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.		



ALS Sewer Map Key

Public Sewer Types (Operated & Maintained by Thames Water)

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

Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plans are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
- 5) 'na' or '0' on a manhole level indicates that data is unavailable.

Sewer Fittings

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

	Air Valve
	Dam Chase
	Fitting
	Meter
	Vent Column

Operational Controls

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

	Control Valve
	Drop Pipe
	Ancillary
	Weir

End Items

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

	Outfall
	Undefined End
	Inlet

Other Symbols

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

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

Areas

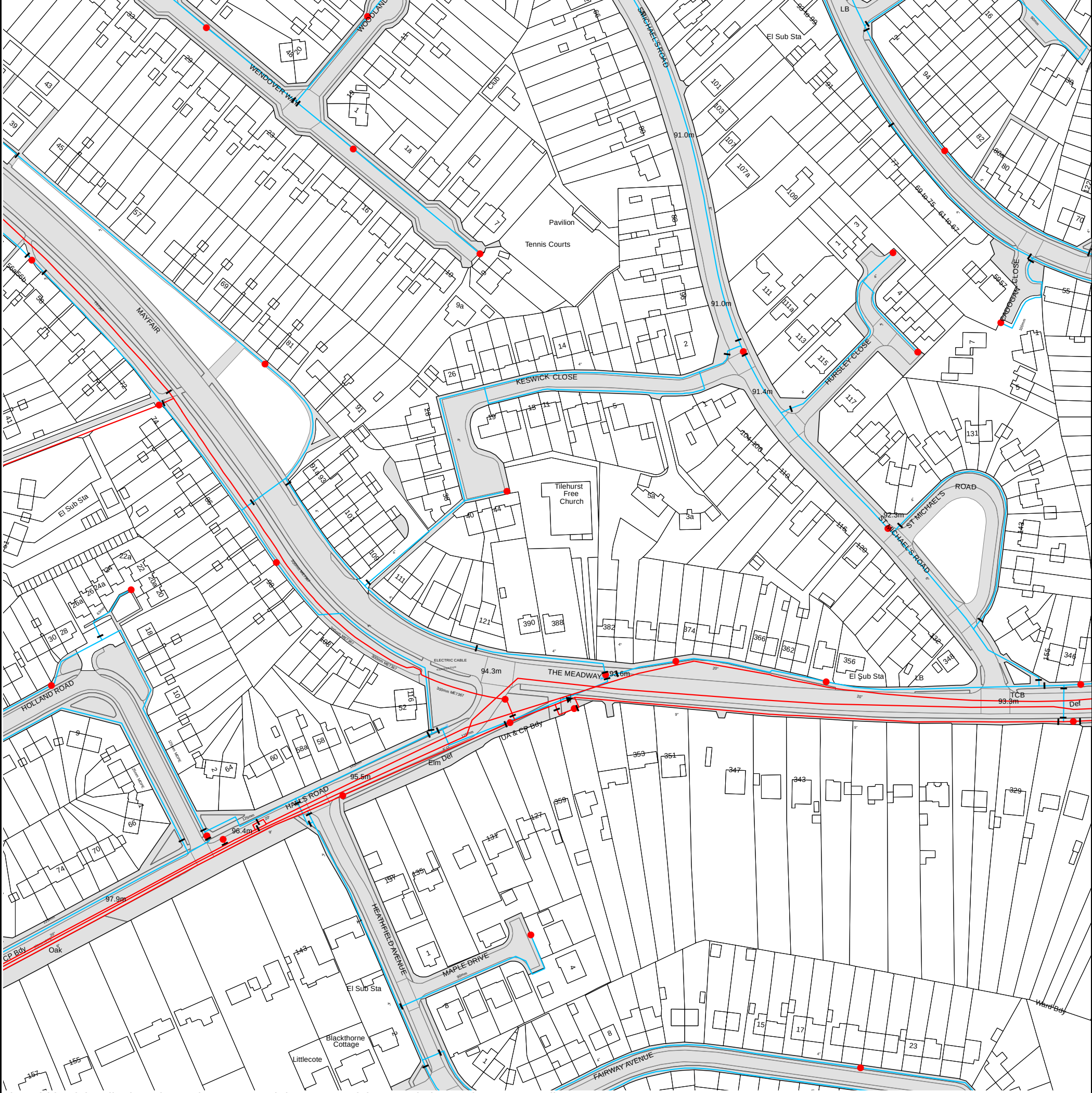
Lines denoting areas of underground surveys, etc.

	Agreement
	Operational Site
	Chamber
	Tunnel
	Conduit Bridge

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

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

- 6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimetres. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology present on the plan, please contact a member of Property Insight on 0845 070 9148.



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 466898, 173147.
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.



ALS Water Map Key

Water Pipes (Operated & Maintained by Thames Water)

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

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

Valves

	General Purpose Valve
	Air Valve
	Pressure Control Valve
	Customer Valve

Hydrants

	Single Hydrant
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Meters

	Meter
--	-------

End Items

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

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

Operational Sites

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

Other Symbols

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

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

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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.
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7. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
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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

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Ways to pay your bill

Credit Card	BACS Payment	Telephone Banking	Cheque
Call 0845 070 9148 quoting your invoice number starting CBA or ADS / OSS	Account number 90478703 Sort code 60-00-01 A remittance advice must be sent to: Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW. or email ps.billing@thameswater.co.uk	By calling your bank and quoting: Account number 90478703 Sort code 60-00-01 and your invoice number	Made payable to ' Thames Water Utilities Ltd ' Write your Thames Water account number on the back. Send to: Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW or by DX to 151280 Slough 13

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Search Code

IMPORTANT CONSUMER PROTECTION INFORMATION

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The Search Code:

- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom
- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practise and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

The Code's core principles

Firms which subscribe to the Search Code will:

- display the Search Code logo prominently on their search reports
- act with integrity and carry out work with due skill, care and diligence
- at all times maintain adequate and appropriate insurance to protect consumers
- conduct business in an honest, fair and professional manner
- handle complaints speedily and fairly
- ensure that products and services comply with industry registration rules and standards and relevant laws
- monitor their compliance with the Code

Complaints

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award compensation of up to £5,000 to you if he finds that you have suffered actual loss as a result of your search provider failing to keep to the Code.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs Contact Details

The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP
Tel: 01722 333306
Fax: 01722 332296
Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk

PLEASE ASK YOUR SEARCH PROVIDER IF YOU WOULD LIKE A COPY OF THE SEARCH CODE

Calculated by: Stuart Macmillan

Site name: The Gate

Site location: The Meadway

Site coordinates

Latitude: 51.45352° N

Longitude: 1.03853° W

This is an estimation of the greenfield runoff rate limits that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the SuDS Manual, C753 (Ciria, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Reference: 6492043

Date: 2018-11-15T15:23:50

Methodology

IH124

Site characteristics

Total site area (ha) 0.2641

Methodology

Qbar estimation method Calculate from SPR and SAAR

SPR estimation method Specify SPR manually

	Default	Edited
SOIL type	1	1
HOST class	---	---
SPR/SPRHOST	0.1	0.450

Hydrological characteristics

	Default	Edited
SAAR (mm)	649	700
Hydrological region	6	6
Growth curve factor: 1 year	0.85	0.85
Growth curve factor: 30 year	2.3	2.3
Growth curve factor: 100 year	3.19	3.19

Notes:

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

Normally limiting discharge rates which are less than 2.0 l/s/ha 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 consents are usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set in which case blockage work must be 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 may be a requirement for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited
Qbar (l/s)	0.04	1.16
1 in 1 year (l/s)	0.03	0.99
1 in 30 years (l/s)	0.09	2.67
1 in 100 years (l/s)	0.13	3.7