

Drainage Strategy Note (including SuDS Pro-Forma)

The Former Stag Brewery - Permanent Filming Use Application

Date: February 2023

Client Name: Reselton Properties Ltd

Document Reference: WIE18671-116-R.19.2.1

This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

Issue	Prepared by	Checked by	Approved by
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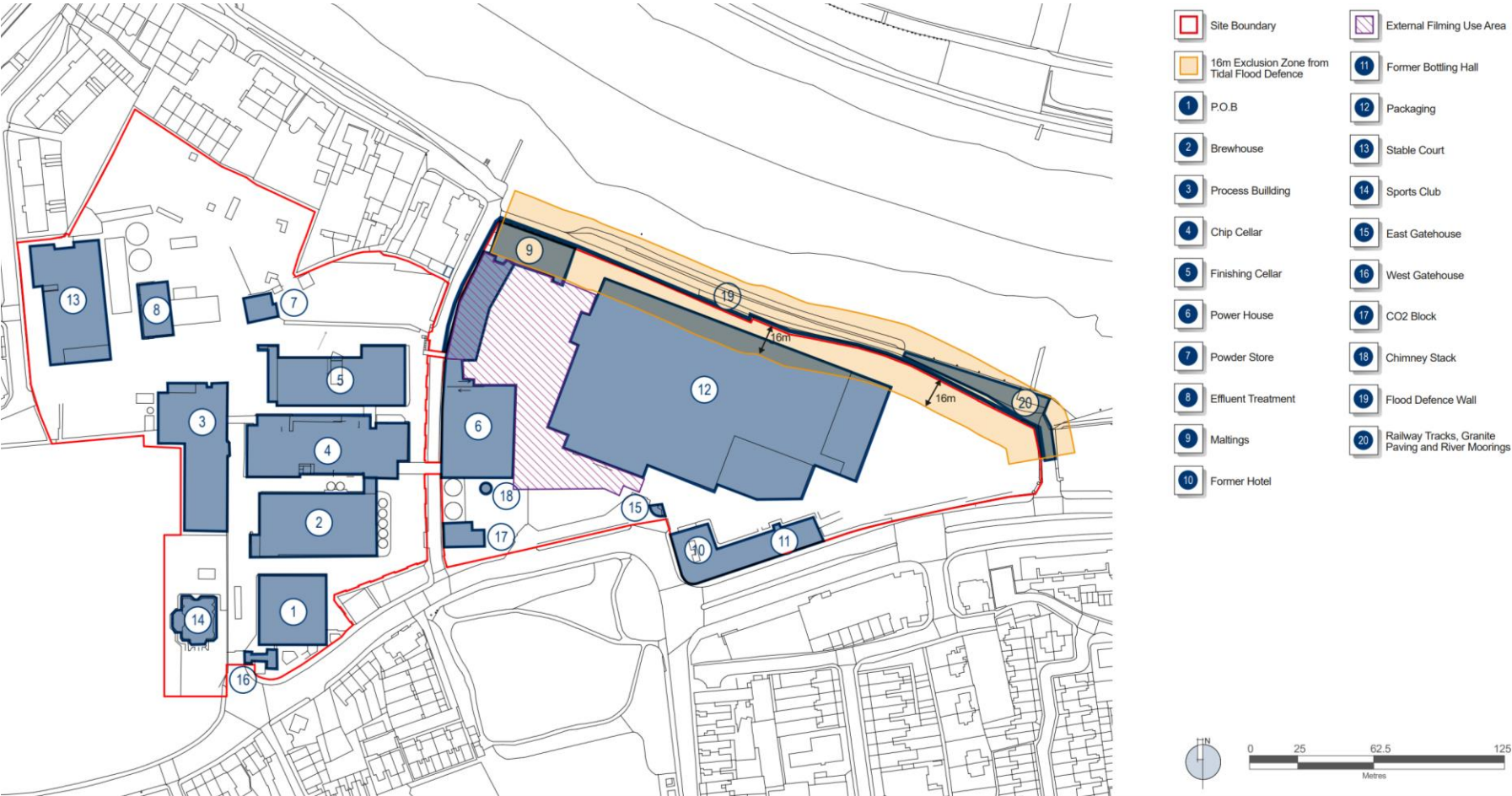
1. Introduction

- 1.1. Waterman Infrastructure & Environment Ltd (Waterman IE) was commissioned by Reselton Properties Ltd to undertake a Drainage Strategy at the former Stag Brewery Site in Mortlake ('the Site') within the London Borough of Richmond Upon Thames ('LBRuT').
- 1.2. This Drainage Strategy Note has been prepared to support a planning application for film production operations and ancillary activities within the Site (hereafter referred to as the 'Development'). The application seeks planning permission for the use of the whole Site for filming purposes and associated ancillary activities. Initially, it is envisaged that the operator will only utilise Buildings 11, 12, 14 and 15 as well as yard areas in the east of the Site and an external area adjacent to the Maltings building (Building 9). All necessary information has been submitted alongside the application to enable the immediate occupation of these buildings and should other buildings on the site be required to be utilised under the permission, it is envisaged that further details would be required to be provided by way of a suitably worded condition attached to the permission. It should also be noted that the application also includes the erection of external film sets outside of the Maltings building (Building 9). The application would be limited in duration by a legal agreement, so that it would not preclude the hybrid 2022 planning application being considered at the Site (Application A, planning ref: 22/0900/OUT) and the Detailed Application School (Application B, planning ref: 22/0902/FUL) coming forward as and when these are granted planning permission. For full details of the proposed operations and activities as part of the Development please refer to the Environmental Assessment Note submitted with the planning application.

Site Setting

- 1.3. The Site is centred on Ordnance Survey Grid Reference (NGR) TQ 204 760 and is bounded by Lower Richmond Road to the south, the River Thames and the Thames Bank to the north, Williams Lane to the east and Bulls Alley (off Mortlake High Street) to the west. The Site is bisected by Ship Lane. The Site is dominated by a mixture of large-scale industrial brewing structures (refer to Figure 1 overleaf) and large areas of hardstanding with scattered trees.

Figure 1: Existing Buildings and Structures on the Site



Topography

- 1.4. The Site is generally flat with no significant variations in the topographical gradient. The LiDAR map indicates that it is lowest to the east of the Site (4 to 6 m AOD) and highest in the north west of the Site (8 to 10 m AOD).

Drainage

- 1.5. Thames Water sewer records (Appendix A) indicate that several sewers are present in the vicinity of and crossing the Site, as indicated in Table 1.

Table 1: Existing Sewers Associated with the Site

Location	Sewer
Crossing through the north-west of the Site.	225mm diameter Thames Water foul sewer.
Within north-west of the Site.	Two Thames Water foul rising mains.
Along north-eastern boundary of the Site along Thames towpath.	686mm diameter combined Thames Water sewer.
West of the Site along Williams Lane.	900mm diameter Thames Water surface water sewer.
South of the Site along Lower Richmond Road.	600mm diameter Thames Water surface water sewer.
	750mm diameter and 225mm diameter Thames Water foul water sewer.
Centre of the Site along Ship Lane.	600mm diameter Thames Water surface water sewer.
	225mm diameter Thames Water foul water sewer.

- 1.6. The existing surface water drainage regime has been established to be as follows:
- Existing surface water flows from the north-east of the Site discharges into the Thames via an existing outfall; and
 - Existing surface water flows from the remainder of the Site discharges to the Thames Water sewer network at various connection points.

2. Assessment

- 2.1. No intrusive works are proposed as part of the proposals, with no change to external surfaces or to the external footprint of the buildings (other than the erection of a film set in the external area adjacent to the Maltings). The proposals comprise a permanent change of use for film production operations and ancillary activities only, which would have no effect on the physical buildings/areas within the site. There would therefore be no change to the impermeable area as a result of the proposed Development. The surface water discharge rate from the site would therefore remain as per the existing situation, draining via the existing regime outlined above. Rainwater downpipes and existing connections would remain unchanged. The proposed Development would therefore have no impact on the surface water drainage regime within the Site.

- 2.2. It is therefore not considered appropriate or sustainable to include surface water attenuation features or Sustainable Drainage Systems (SuDS), which would require intrusive works.
- 2.3. The LBRuT SuDS Pro Forma has been completed (Appendix B), summarising the above assessment.

3. Conclusion

- 3.1. The proposed Development, including the erection of external film sets, would not alter the external fabric of the buildings on site, or the areas of hard and soft landscaping and therefore surface water runoff from the Site would continue to drain through the existing downpipes and connections into the Thames Water sewer network and into the River Thames via the existing outfall, as per the existing situation. The proposed Development would result in no increase in impermeable area. Irrespective of the point of discharge from the Site, there would be no impact on the capacity of the existing network.
- 3.2. In summary, no significant adverse surface water drainage effects would arise as a result of the planning application.



APPENDICES

Appendices

Drainage Strategy Note (including SuDS Pro-Forma)

WIE18671-116-R.19.2.1



A. Thames Water Asset Plans

Appendices

Sewer Flooding

History Enquiry



Waterman Infrastructure & Environment

Search address supplied Stag Brewing Co Ltd
The Stag Brewery
Mortlake
London
SW14 7ET

Your reference WIE10667

Our reference SFH/SFH Standard/2016_3238633

Received date 22 January 2016

Search date 23 January 2016

Thames Water Utilities Ltd

Property Searches
PO Box 3189
Slough SL1 4WW

DX 151280 Slough 13

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I www.thameswater-propertysearches.co.uk

Registered in England and Wales
No. 2366661, Registered office
Clearwater Court, Vastern Road
Reading RG1 8DB

Sewer Flooding

History Enquiry



Search address supplied: Stag Brewing Co Ltd, The Stag
Brewery, Mortlake, London, SW14 7ET

This search is recommended to check for any sewer flooding in a specific address or area

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

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

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Reading RG1 8DB

Sewer Flooding

History Enquiry



History of Sewer Flooding

Is the requested address or area at risk of flooding due to overloaded public sewers?

The flooding records held by Thames Water indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.

For your guidance:

- 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 on Tel: 0800 316 9800 or website www.thameswater.co.uk

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No. 2366661, Registered office
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Reading RG1 8DB



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 520250,175750
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

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

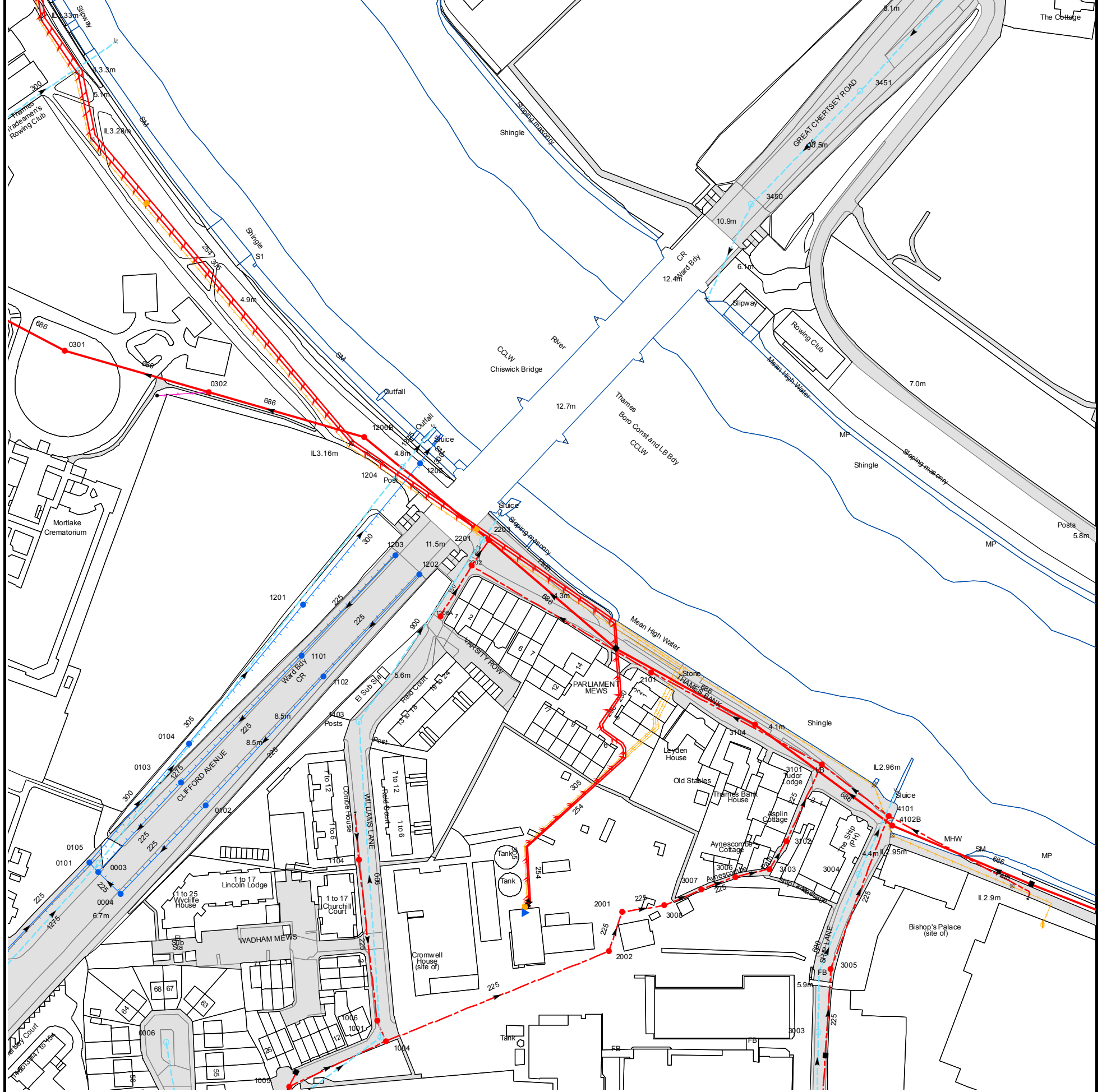
Manhole Reference	Manhole Cover Level	Manhole Invert Level
4512	6.54	4.41
4601	6.78	4.11
46MK	n/a	n/a
46NE	n/a	n/a
46NL	n/a	n/a
4605	6.03	4.3
4604	5.92	2.97
4603	6.02	4.11
4602	5.92	2.18
46MN	n/a	n/a
46NH	n/a	n/a
46LN	n/a	n/a
461A	n/a	n/a
4508	6.77	5.28
4507	n/a	n/a
4506	6.76	5.22
4501	6.75	4.26
451B	n/a	n/a
451A	n/a	n/a
4502	6.44	3.91
4510	6.45	3.59
4511	6.34	3.37
4504	6.33	2.52
4503	6.45	2.92
4513	6.36	3.22
4505	n/a	2.86
4802	5.35	.8
4716	n/a	n/a
4706	6.33	4.22
4717	n/a	n/a
4707	n/a	n/a
4801	5.22	1.38
4708	n/a	n/a
4714	5.95	3.74
4718	n/a	n/a
4705	5.87	2.69
4713	5.79	1.65
4715	5.75	2.45
4711	6.05	2.52
4712	n/a	n/a
4703	5.84	1.98
4804	5.05	2.06
4803	4.95	n/a
4908	4.97	n/a
4905	5.03	2.59
4904	5.02	.89
4903	5.08	.89
4907	4.94	2.32
4902	4.86	1.96
4906	4.96	n/a
4901	4.93	2.36
35LH	n/a	n/a
35LJ	n/a	n/a
3502	6.37	5.2
3501	6.57	5.49
4509	5.71	5.46
351A	n/a	n/a
361A	n/a	n/a
3611	6.7	4.84
3610	6.8	4.74
3609	6.77	4.77
3604	6.76	4.09
46ME	n/a	n/a
3605	6.78	3.94
36LL	n/a	n/a
36LM	n/a	n/a
3603	n/a	n/a
36NC	n/a	n/a
36NL	n/a	n/a
36NK	n/a	n/a
36NH	n/a	n/a
36MM	n/a	n/a
361B	n/a	n/a
3802	5.33	3.22
39MJ	n/a	n/a
39NE	n/a	n/a
391A	n/a	n/a
38LK	n/a	n/a
38MK	n/a	n/a
38ML	n/a	n/a
39ND	n/a	n/a
39NK	n/a	n/a
3904	5.14	2.68
3907	5.99	1.99
39NJ	n/a	n/a
39NC	n/a	n/a
3902	4.98	3.64
3903	6	1.53
3906	5.17	2.03
3908	n/a	n/a
3905	5.19	2.25

Manhole Reference	Manhole Cover Level	Manhole Invert Level
3901	5.2	1.62
361C	n/a	n/a
3608	6.19	5.48
36MJ	n/a	n/a
36MH	n/a	n/a
36NF	n/a	n/a
36ML	n/a	n/a
361D	n/a	n/a
3602	5.82	3.69
3701	6.15	3.48
3702	6.16	4.58
271D	n/a	n/a
371B	n/a	n/a
2701	5.59	2.87
371A	n/a	n/a
371D	n/a	n/a
371C	n/a	n/a
1603	6.29	5.13
1506	6.76	5.16
1503	6.75	4.86
26MK	n/a	n/a
26ME	n/a	n/a
26LF	n/a	n/a
26LE	n/a	n/a
26LN	n/a	n/a
26LM	n/a	n/a
26LD	n/a	n/a
26LL	n/a	n/a
2601	6.27	4.87
2602	6.33	5.17
2510	6.72	4.76
2508	6.68	5.12
26HD	n/a	n/a
2502	6.83	5.04
2503	6.67	4.98
261A	n/a	n/a
26FN	n/a	n/a
2604	n/a	n/a
251B	n/a	n/a
251A	n/a	n/a
35MN	n/a	n/a
3607	6.32	4.48
3606	6.55	4.89
35NF	n/a	n/a
35MJ	n/a	n/a
3601	6.58	4.51
16NK	n/a	n/a
16ME	n/a	n/a
16LM	n/a	n/a
271A	n/a	n/a
271C	n/a	n/a
26MF	n/a	n/a
271B	n/a	n/a
27NM	n/a	n/a
26HM	n/a	n/a
26HL	n/a	n/a
2702	6.33	5.28
281A	n/a	n/a
261B	n/a	n/a
2703	5.61	2.87
2603	n/a	n/a
3804	4.67	4.08
3801	n/a	n/a
1809	5.06	3.86
1804	5.11	n/a
1805	5.12	2.35
1801	5.09	.25
2808	5.07	3.63
381D	n/a	n/a
2807	5.2	3.42
381C	n/a	n/a
381B	n/a	n/a
2803	5.26	2.16
2802	5.28	.38
381A	n/a	n/a
38NL	n/a	n/a
38NH	n/a	n/a
38NM	n/a	n/a
38NJ	n/a	n/a
2809	5.07	n/a
2805	5.19	2.78
2806	5.3	3.26
3803	4.87	3.65
38LM	n/a	n/a
2801	5.32	.44
38MM	n/a	n/a
2804	5.33	1.95
38LL	n/a	n/a
16JM	n/a	n/a
26KL	n/a	n/a
06NL	n/a	n/a
26KK	n/a	n/a
16LH	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
26KJ	n/a	n/a
1604	6.26	5.46
16LD	n/a	n/a
1601	6.28	4.59
26KD	n/a	n/a
16KM	n/a	n/a
26KC	n/a	n/a
16KJ	n/a	n/a
16MM	n/a	n/a
26JN	n/a	n/a
16KE	n/a	n/a
261C	n/a	n/a
1606	6.33	5.49
1602	6.34	5.24
26JJ	n/a	n/a
26JH	n/a	n/a
26JF	n/a	n/a
161A	n/a	n/a
16MN	n/a	n/a
16NG	n/a	n/a
26HN	n/a	n/a
16LN	n/a	n/a
0613	6.15	4.12
0606	n/a	n/a
0614	6.16	3.64
0506	n/a	n/a
0610	6.19	5.11
0517	n/a	n/a
0611	n/a	n/a
0604	6.15	3.68
0516	n/a	n/a
0504	6.97	4.62
0609	6.14	4.77
0515	6.78	3.96
0501	6.94	4.13
151A	n/a	n/a
151C	n/a	n/a
151B	n/a	n/a
16JJ	n/a	n/a
1508	6.71	4.9
1504	6.71	5.25
1502	6.89	5.09
16LL	n/a	n/a
1505	6.86	5.41
16MF	n/a	n/a
1605	6.3	5.42
09ND	n/a	n/a
09NM	n/a	n/a
09NJ	n/a	n/a
09NL	n/a	n/a
091A	n/a	n/a
0903	n/a	n/a
0904	5.55	3.51
0901	n/a	n/a
0902	5.59	1.67
09MN	n/a	n/a
19NE	n/a	n/a
19NL	n/a	n/a
19NM	n/a	n/a
19NF	n/a	n/a
19NH	n/a	n/a
19MK	n/a	n/a
19MJ	n/a	n/a
19MF	n/a	n/a
19MH	n/a	n/a
18ME	n/a	n/a
1901	n/a	n/a
0807	5.16	2.54
07NK	n/a	n/a
0804	5.18	1.83
0802	5.19	.09
0703	5.21	3.38
0701	5.18	2.31
0702	n/a	n/a
0605	6.1	2.99
0809	5.08	2.26
0808	5.06	2.47
07ML	n/a	n/a
07NE	n/a	n/a
0805	5.1	1.16
0801	5.15	.14
08NM	n/a	n/a
18NJ	n/a	n/a
18MN	n/a	n/a
18NK	n/a	n/a
18NC	n/a	n/a
18NL	n/a	n/a
18ND	n/a	n/a
18NM	n/a	n/a
1808	5.26	2.26
1807	5.17	2.41
1806	5	2.43
1802	5.16	.2

Manhole Reference	Manhole Cover Level	Manhole Invert Level
1803	5.03	2.03
05LD	n/a	n/a
05LE	n/a	n/a
07LK	n/a	n/a
07KN	n/a	n/a
08NE	n/a	n/a
08NC	n/a	n/a
0803	5.12	.01
07LM	n/a	n/a
07LD	n/a	n/a
071B	n/a	n/a
07NM	n/a	n/a
0806	5.16	2.62
071A	n/a	n/a
07ME	n/a	n/a
07LJ	n/a	n/a
0507	6.41	5.15
0503	6.36	4.68
0607	5.99	4.16
0608	6	4.7
25ML	n/a	n/a
25MN	n/a	n/a
35LD	n/a	n/a
35LE	n/a	n/a
35LF	n/a	n/a
2506	6.95	5.58
2501	6.76	5.28
2504	6.82	5.1
35LC	n/a	n/a
2507	6.79	5.15
2505	6.65	5.28
25MJ	n/a	n/a
35NK	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.



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 520250,176250
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Manhole Reference	Manhole Cover Level	Manhole Invert Level
3103	6.12	1.37
1104	5.93	4.19
3102	5.77	1.35
4102B	n/a	-4.73
4101	3.47	1.08
0102	n/a	n/a
0103	n/a	n/a
3101	4.14	.92
0104	n/a	n/a
3104	n/a	-4.82
1103	5.88	1.73
1102	n/a	n/a
2101	n/a	n/a
1101	n/a	n/a
1206A	5.06	4
1201	n/a	n/a
1202	n/a	n/a
2202	4.53	.29
1203	n/a	n/a
2201	n/a	n/a
2203	n/a	-4.99
1204	n/a	n/a
1205	4.62	2.02
1206B	n/a	-5.07
0302	n/a	-5.16
3450	10.79	1.9
3451	9.23	2.01
0003	n/a	n/a
0105	n/a	n/a
0101	n/a	n/a
0301	n/a	-5.24
2002	n/a	n/a
2001	n/a	n/a
3008	n/a	n/a
3007	6.65	1.7
3006	6.59	1.59
3003	6.06	2.01
3005	5.56	1.22
3004	4.81	1.77
0004	n/a	n/a
0006	5.52	4.54
1005	6.3	3.66
1006	6.3	1.96
1001	6.3	1.96
1004	6.26	2.79

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The width of the displayed area is 500m and the centre of the map is located at OS coordinates 520750,175750

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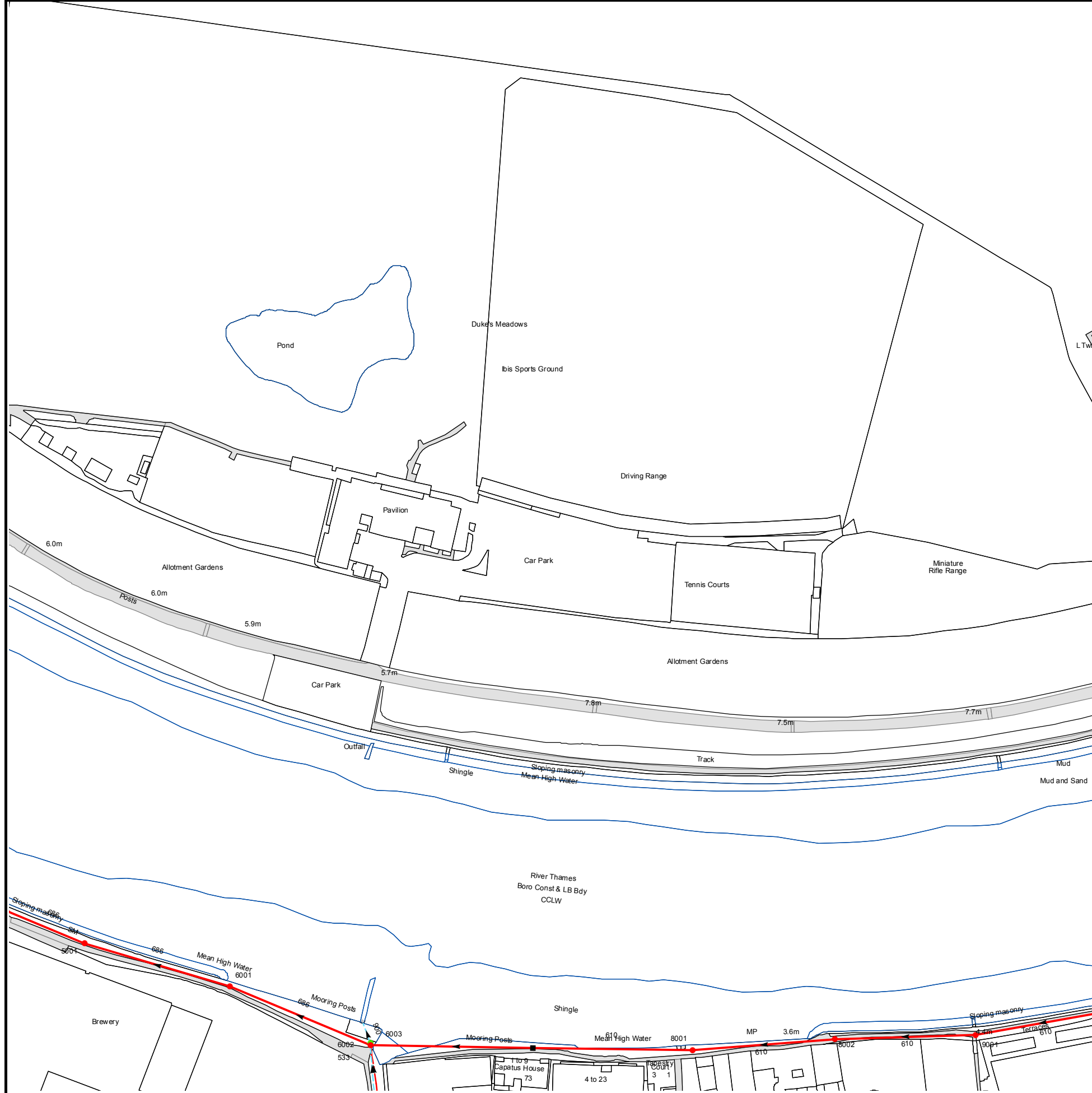
Manhole Reference	Manhole Cover Level	Manhole Invert Level
96MD	n/a	n/a
971E	n/a	n/a
96LF	n/a	n/a
96LE	n/a	n/a
96LL	n/a	n/a
96LM	n/a	n/a
96LN	n/a	n/a
96MC	n/a	n/a
96ME	n/a	n/a
9710	6.67	4.13
971F	n/a	n/a
9707	6.64	2.63
96LK	n/a	n/a
9601	6.12	2.72
97MJ	n/a	n/a
9609	6.31	4.48
9602	6.33	2.85
96KN	n/a	n/a
97MK	n/a	n/a
96KF	n/a	n/a
97MN	n/a	n/a
96LD	n/a	n/a
96LC	n/a	n/a
971G	n/a	n/a
851C	n/a	n/a
851D	n/a	n/a
851A	n/a	n/a
8503	6.32	4.8
8513	6.29	5.27
951D	n/a	n/a
951B	n/a	n/a
951C	n/a	n/a
961B	n/a	n/a
95NC	n/a	n/a
9603	6.17	4.47
9608	6.18	4.65
9604	6.14	4.4
9507	5.96	4.66
9510	5.92	4.84
95HH	n/a	n/a
951A	n/a	n/a
96NM	n/a	n/a
95HJ	n/a	n/a
9511	5.91	4.65
9501	6.01	2.93
95JC	n/a	n/a
8804	5.61	4.52
88MF	n/a	n/a
8801	5.95	2.33
88LM	n/a	n/a
88MK	n/a	n/a
88MM	n/a	n/a
88MN	n/a	n/a
8709	6.12	3.86
88MH	n/a	n/a
8705	6.09	2.51
88LN	n/a	n/a
9806	5.91	4.13
9805	5.91	3.33
9708	6.06	3.86
9702	6.14	2.54
9703	6.11	n/a
9709	5.94	4.62
9804	5.62	4.66
98KJ	n/a	n/a
98KE	n/a	n/a
98KC	n/a	n/a
9802	5.7	3.13
9801	5.44	2.75
8802	5.62	2.12
8910	5.9	4.51
8903	5.91	3.91
99MM	n/a	n/a
99MN	n/a	n/a
9905	5.4	4.49
891B	n/a	n/a
9902	5.43	n/a
9901	5.71	2.13
89ND	n/a	n/a
89NE	n/a	n/a
861A	n/a	n/a
871A	n/a	n/a
861C	n/a	n/a
861D	n/a	n/a
8711	6.83	4.51
8704	6.85	4.1
8701	6.37	4.24
87NH	n/a	n/a
8601	6.19	4.92
8611	6.14	4.94
97MM	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
96MJ	n/a	n/a
96MK	n/a	n/a
961C	n/a	n/a
96ML	n/a	n/a
96MM	n/a	n/a
961A	n/a	n/a
971A	n/a	n/a
97MF	n/a	n/a
9605	6.24	5
971B	n/a	n/a
96KL	n/a	n/a
971C	n/a	n/a
971D	n/a	n/a
97MD	n/a	n/a
96KJ	n/a	n/a
96LH	n/a	n/a
7709	6.39	3.48
7706	6.29	3.83
77MK	n/a	n/a
77NF	n/a	n/a
77NC	n/a	n/a
77NH	n/a	n/a
7602	6.24	4.7
7601	6.39	4.58
7704	6.45	4.56
77MN	n/a	n/a
7703	6.89	4.35
7713	6.37	4.63
77KN	n/a	n/a
7621	n/a	n/a
7610	n/a	n/a
77MC	n/a	n/a
7708	6.18	3.64
7701	6.1	3.73
761A	n/a	n/a
761B	n/a	n/a
771A	n/a	n/a
8707	6.77	4.33
8706	6.16	1.91
8708	6.38	4.35
8602	6.35	4.39
8710	6.83	4.66
861B	n/a	n/a
7917	5.32	2.72
7916	5.32	2.75
7915	5.31	2.8
7910	n/a	2.98
7914	5.41	2.87
7913	5.07	3.02
7901	4.94	1.5
7904	5.06	2.39
7919	n/a	n/a
7805	n/a	n/a
7911	5.13	3.41
7918	5.14	2.67
791B	n/a	n/a
791A	n/a	n/a
7905	5.32	2.96
7912	5.21	3.71
781A	n/a	n/a
791C	n/a	n/a
781B	n/a	n/a
7902	5.37	1.76
7906	5.76	3.88
8911	n/a	n/a
8909	5.67	4.34
8904	5.68	2.08
8908	5.52	3.96
8905	5.55	1.97
891C	n/a	n/a
8901	5.61	1.86
7613	6.53	4.74
7614	6.39	5.01
8606	6.3	4.55
861E	n/a	n/a
7615	n/a	n/a
7604	n/a	n/a
66NH	n/a	n/a
66NL	n/a	n/a
8605	6.32	2.1
7605	n/a	n/a
8604	6.3	4.52
7606	n/a	n/a
7616	n/a	n/a
8610	6.29	4.09
7617	n/a	n/a
7618	6.11	5.01
76JF	n/a	n/a
76HC	n/a	n/a
7607	6.16	5.12
76MJ	n/a	n/a
7619	6.37	4.27
7608	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
8603	6.25	4.44
8609	6.27	4.84
7622	n/a	n/a
7609	n/a	n/a
7620	6.3	4.27
6520	6.28	4.78
6506	6.31	5.29
65LM	n/a	n/a
65MK	n/a	n/a
65MM	n/a	n/a
65NE	n/a	n/a
65NC	n/a	n/a
6511	n/a	n/a
6512	n/a	n/a
7612	6.38	4.92
75NG	n/a	n/a
75NF	n/a	n/a
751B	n/a	n/a
75NH	n/a	n/a
7511	6.4	4.85
7510	6.39	4.86
7508	6.1	5.05
75NM	n/a	n/a
7507	6.51	5.34
75NL	n/a	n/a
77LF	n/a	n/a
6808	5.94	4.75
68LJ	n/a	n/a
78KN	n/a	n/a
6809	5.95	3.03
78LH	n/a	n/a
68JM	n/a	n/a
68JC	n/a	n/a
68LL	n/a	n/a
68MD	n/a	n/a
68JF	n/a	n/a
68JD	n/a	n/a
7804	n/a	n/a
7802	5.84	3.2
68MF	n/a	n/a
78NM	n/a	n/a
78ML	n/a	n/a
7801	5.67	3.09
7803	5.69	3.92
68LC	n/a	n/a
68KH	n/a	n/a
78ME	n/a	n/a
78NF	n/a	n/a
68ND	n/a	n/a
7806	n/a	n/a
6807	5.66	4.37
68MN	n/a	n/a
6907	5.38	2.03
69NK	n/a	n/a
68NH	n/a	n/a
6912	4.72	2.17
68MM	n/a	n/a
681B	n/a	n/a
68ML	n/a	n/a
6914	5.5	1.63
6915	5.27	1.67
6913	4.82	1.52
6917	4.57	1.51
69NC	n/a	n/a
6806	5.34	2.58
6918	4.6	1.82
6919	4.82	2.06
6805	5.36	3.72
6903	4.71	1.07
6803	5.3	3.44
6920	4.9	2.26
6921	4.91	3.31
6804	5.26	2.5
6908	4.96	2.33
68NM	n/a	n/a
78LM	n/a	n/a
7909	4.94	2.63
6707	6.05	4.43
6704	6.04	4.24
67KL	n/a	n/a
67LF	n/a	n/a
67LD	n/a	n/a
6703	5.93	4.58
67MJ	n/a	n/a
67ML	n/a	n/a
6708	5.92	4.26
6706	6.73	3.34
67MH	n/a	n/a
67MK	n/a	n/a
7712	6.05	3.64
77LH	n/a	n/a
77LK	n/a	n/a
7705	6.46	1.76

Manhole Reference	Manhole Cover Level	Manhole Invert Level
77LE	n/a	n/a
7710	6.73	3.44
7702	6.75	4.27
7711	6.78	4.67
76HK	n/a	n/a
76FF	n/a	n/a
7611	5.99	4.16
76FH	n/a	n/a
76NL	n/a	n/a
76NM	n/a	n/a
7603	6.02	4.9
65NM	n/a	n/a
55JL	n/a	n/a
6501	n/a	n/a
55JK	n/a	n/a
65KE	n/a	n/a
66LD	n/a	n/a
66LF	n/a	n/a
6604	6.22	5.14
6605	6.21	5.01
66LE	n/a	n/a
6606	6.26	4.81
6601	n/a	n/a
66LK	n/a	n/a
66LN	n/a	n/a
6608	n/a	n/a
66LJ	n/a	n/a
66LM	n/a	n/a
6602	n/a	n/a
6609	6.09	4.68
6603	6.08	4.75
6607	6.03	3.82
66ND	n/a	n/a
66LH	n/a	n/a
66LL	n/a	n/a
66MM	n/a	n/a
661B	n/a	n/a
661A	n/a	n/a
5514	6.58	5.12
55MN	n/a	n/a
65NL	n/a	n/a
65JJ	n/a	n/a
65JE	n/a	n/a
65HN	n/a	n/a
65HK	n/a	n/a
651B	n/a	n/a
6514	n/a	n/a
65HF	n/a	n/a
65KC	n/a	n/a
65JD	n/a	n/a
65HM	n/a	n/a
6516	6.27	5.28
65HJ	n/a	n/a
651A	n/a	n/a
6503	6.31	4.79
65HE	n/a	n/a
6515	6.33	5.14
6504	n/a	n/a
6521	6.31	4.13
6518	6.37	5.51
6505	6.36	4.54
6519	6.32	4.23
65KK	n/a	n/a
65LC	n/a	n/a
65LF	n/a	n/a
65MD	n/a	n/a
57NH	n/a	n/a
5803	n/a	1.33
5705	n/a	n/a
58LK	n/a	n/a
5704	6.83	3.79
581A	n/a	n/a
5718	6.57	5.16
5804	6.28	1.37
5717	6.88	4.38
57ML	n/a	n/a
5808	6.27	5.43
5806	6.21	4.15
5710	6.2	1.5
5712	6.26	5.22
5713	6.04	4.5
5706	6.04	3.81
67NM	n/a	n/a

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The width of the displayed area is 500m and the centre of the map is located at OS coordinates 520750,176250
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

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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
8002	n/a	-4.15
9001	n/a	-4.06
8001	n/a	-4.23
6003	3.64	.92
6002	n/a	-4.41
6001	n/a	-4.49
5001	n/a	-4.57

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ALS Sewer Map Key

Public Sewer Types (Operated & Maintained by Thames Water)

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





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

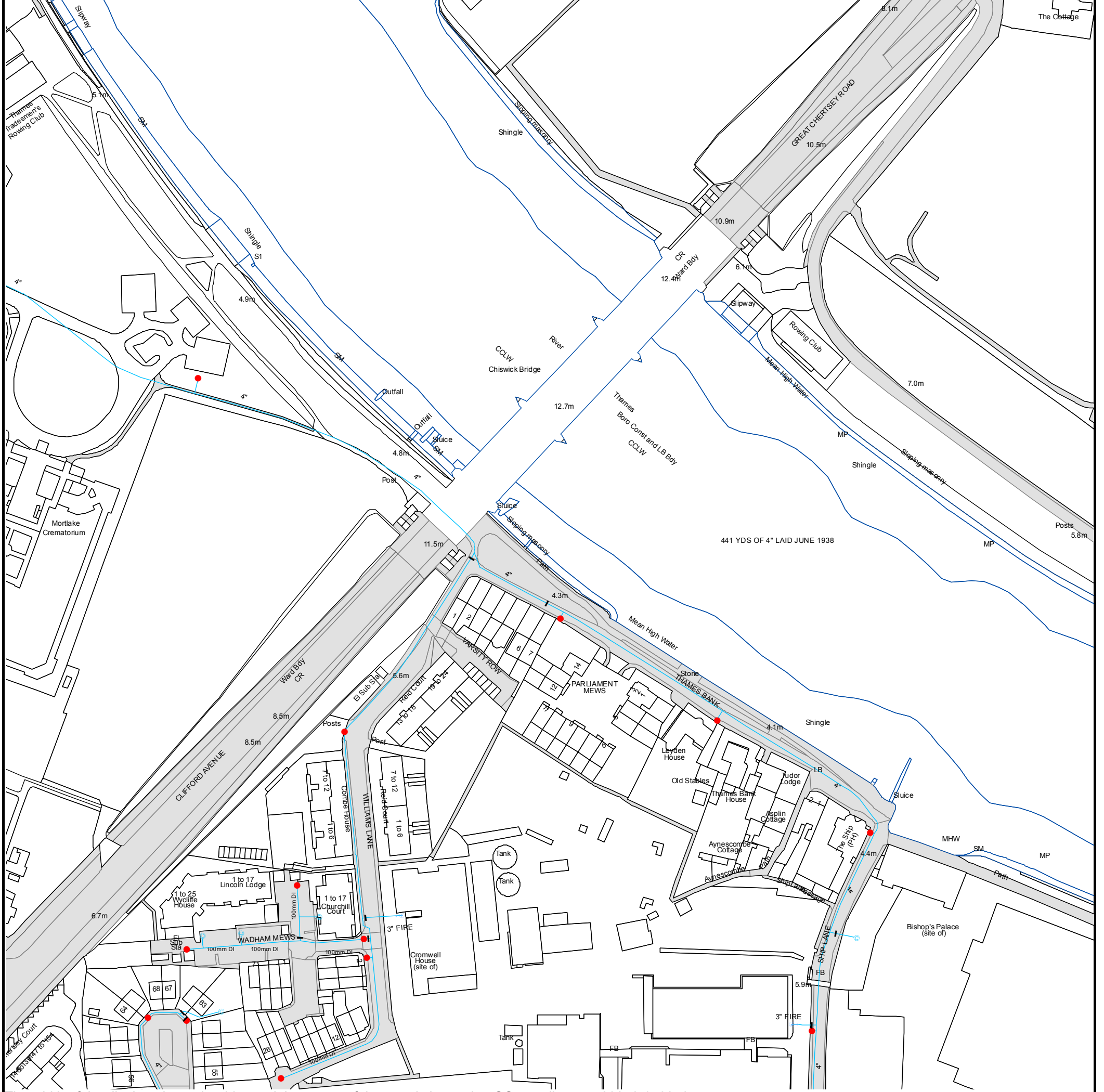
Notes:

- 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.
- 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.



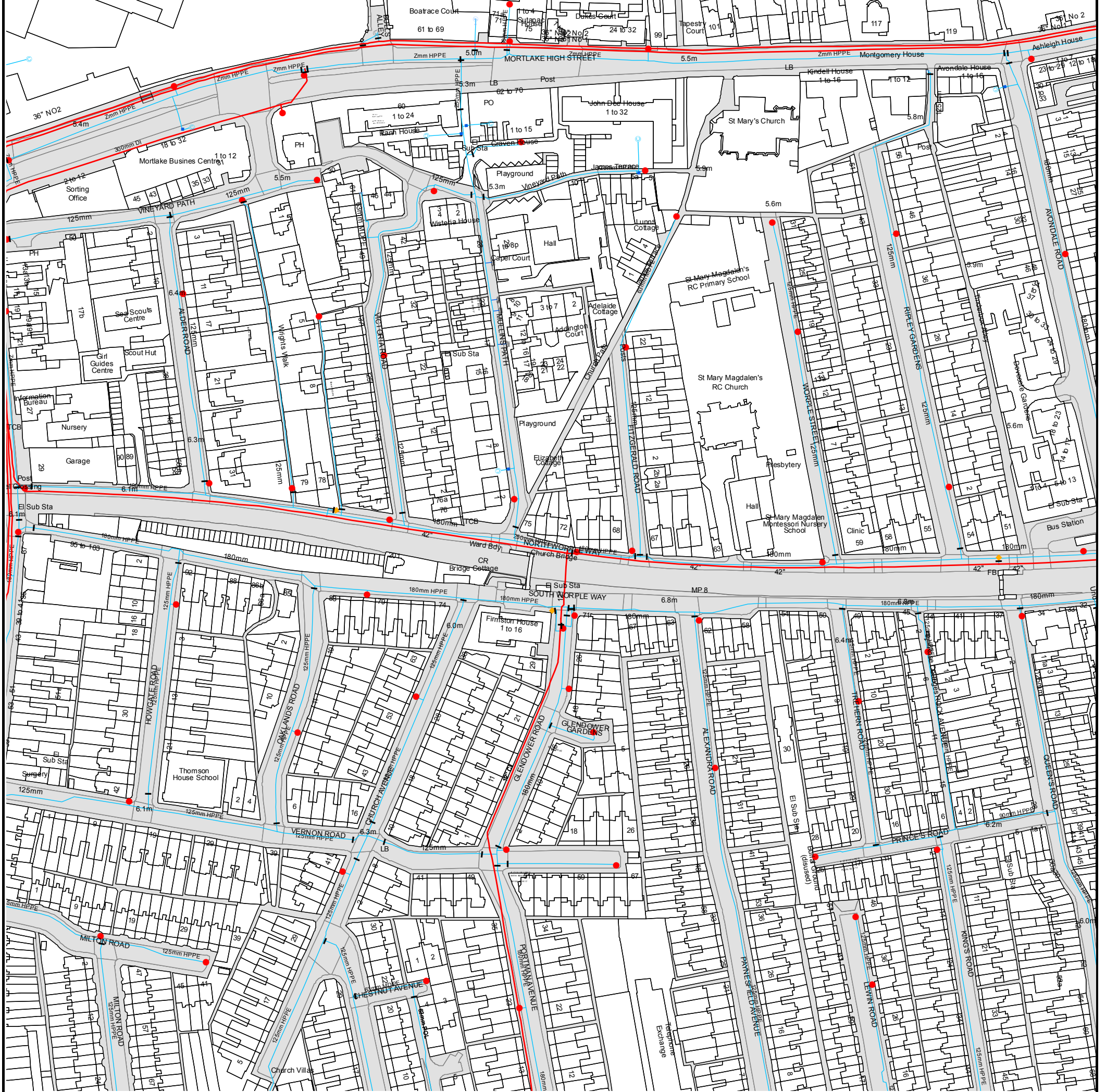
The width of the displayed area is 500m and the centre of the map is located at OS coordinates 520250,175750
 The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

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The width of the displayed area is 500m and the centre of the map is located at OS coordinates 520250,176250
 The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

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The width of the displayed area is 500m and the centre of the map is located at OS coordinates 520750,175750
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The width of the displayed area is 500m and the centre of the map is located at OS coordinates 520750,176250
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ALS Water Map Key

Water Pipes (Operated & Maintained by Thames Water)

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

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

Valves

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

Hydrants

- Single Hydrant

Meters

- Meter

End Items

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

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

Operational Sites

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

Other Symbols

- Data Logger

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

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



**B. London Borough of Richmond Upon Thames Sustainable Drainage Systems
Pro Forma**

Appendices

Drainage Strategy Note (including SuDS Pro-Forma)

WIE18671-116-R.19.2.1

1. Project & Site Details	Project / Site Name (including sub-catchment / stage / phase where appropriate)	The Former Stag Brewery - Permanent Application for Filming	
	Address & post code	Former Stag Brewery Site, Mortlake, Richmond Upon Thames	
	OS Grid ref. (Easting, Northing)	E 520380	
		N 176003	
	LPA reference (if applicable)	PP-08380962	
	Brief description of proposed work	Permanent use planning application for film production operations, erection of external film sets and ancillary activities within the Site	
	Total site Area	61344 m ²	
	Total existing impervious area	61344 m ²	
	Total proposed impervious area	61344 m ²	
	Is the site in a surface water flood risk catchment (ref. local Surface Water Management Plan)?	in critical drainage area (LFRMS)	
	Existing drainage connection type and location	River Thames via outfall & into Thames Water surface water network	
	Designer Name	Sean Whelan	
	Designer Position	Principal Engineer	
Designer Company	Waterman Infrastructure & Environment		

2. Proposed Discharge Arrangements	2a. Infiltration Feasibility		
	Superficial geology classification	Made Ground/Alluvium and Kempton Park Gravel	
	Bedrock geology classification	London Clay	
	Site infiltration rate	n/a	m/s
	Depth to groundwater level	n/a	m below ground level
	Is infiltration feasible?	no	
	2b. Drainage Hierarchy		
		<i>Feasible (Y/N)</i>	<i>Proposed (Y/N)</i>
	1 store rainwater for later use	N	N
	2 use infiltration techniques, such as porous surfaces in non-clay areas	N	N
	3 attenuate rainwater in ponds or open water features for gradual release	N	N
	4 attenuate rainwater by storing in tanks or sealed water features for gradual release	N	N
	5 discharge rainwater direct to a watercourse	N	N
	6 discharge rainwater to a surface water sewer/drain	N	N
	7 discharge rainwater to the combined sewer.	N	N
2c. Proposed Discharge Details			
Proposed discharge location	as existing		
Has the owner/regulator of the discharge location been consulted?	no change to existing regime		

3a. Discharge Rates & Required Storage				
	Greenfield (GF) runoff rate (l/s)	Existing discharge rate (l/s)	Required storage for GF rate (m ³)	Proposed discharge rate (l/s)
Q _{bar}				
1 in 1				
1 in 30				
1 in 100				
1 in 100 + CC				
Climate change allowance used		40%		
3b. Principal Method of Flow Control	n/a - as existing			
3c. Proposed SuDS Measures				
	Catchment area (m ²)	Plan area (m ²)	Storage vol. (m ³)	
Rainwater harvesting	0		0	
Infiltration systems	0		0	
Green roofs	0	0	0	
Blue roofs	0	0	0	
Filter strips	0	0	0	
Filter drains	0	0	0	
Bioretention / tree pits	0	0	0	
Pervious pavements	0	0	0	
Swales	0	0	0	
Basins/ponds	0	0	0	
Attenuation tanks	0		0	
Total	0	0	0	

4a. Discharge & Drainage Strategy	Page/section of drainage report
Infiltration feasibility (2a) – geotechnical factual and interpretive reports, including infiltration results	underlying contamination and potential for shallow groundwater in superficial deposits
Drainage hierarchy (2b)	n/a
Proposed discharge details (2c) – utility plans, correspondence / approval from owner/regulator of discharge location	n/a - no change in drainage regime
Discharge rates & storage (3a) – detailed hydrologic and hydraulic calculations	n/a - no change in drainage regime
Proposed SuDS measures & specifications (3b)	n/a - no change in drainage regime
4b. Other Supporting Details	Page/section of drainage report
Detailed Development Layout	Page 2
Detailed drainage design drawings, including exceedance flow routes	n/a - no change in drainage regime
Detailed landscaping plans	Page 2
Maintenance strategy	n/a
Demonstration of how the proposed SuDS measures improve:	
a) water quality of the runoff?	n/a
b) biodiversity?	n/a
c) amenity?	n/a

Our vision

“Engineering a better environment for people and the planet”

Our mission

“To solve complex problems for the benefit of clients, communities and the climate”

Our values

People orientated

Individually and collectively, people are our business. We strive to create environments for everyone to flourish and thrive.

Flexible

Pragmatic by nature and dedicated to getting the job done to the highest possible standard.

Professional

Operating at pace with integrity to deliver technical and robust solutions.

Environmentally aware

We understand our responsibility to the environment, it shapes our decision making and informs our practice.

Innovative

Our forensic questioning provides the ability to deliver appropriate innovations at every stage on every project.

Relationship focused

We value individuality and the benefits of working collaboratively to achieve positive outcomes for all.



Appendices

Drainage Strategy Note (including SuDS Pro-Forma)

WIE18671-116-R.19.2.1