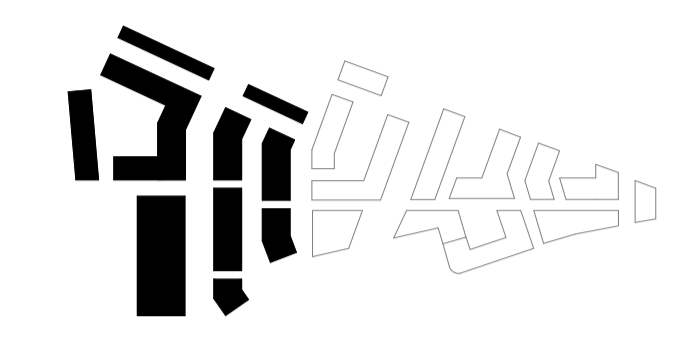
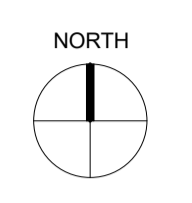




NOTES:  
 DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS TO BE CHECKED ON SITE. ALL OMISSIONS AND DISCREPANCIES TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.  
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NOTE: UNIT MIX AND LAYOUT FOR DEVELOPMENT AREA 2 IS INDICATIVE AT THIS STAGE

NOTE:  
 [Red dashed line] WHEELCHAIR ACCESSIBLE UNIT / CONVERTIBLE UNIT

- Studio
- 1B2P
- 2B3P
- 2B4P
- 3B6P
- 4B8P
- 1B2P SR
- 2B4P SR
- 3B6P SR
- 4B8P SR
- SCHOOL

LBURT 2 APPLICATION AMENDMENTS	21/07/22	BJ	E
LBURT 2 APPLICATION	25/02/22	BJ	D
GLA SUBMISSION	27/04/20	BJ	C
DRAFT GLA SUBMISSION	24/01/20	KH	B
FINAL DRAFT PLANNING APPLICATION	21/10/19	KH	A
LEGAL REVIEW	13/09/19	KH	-

Revision description	Date	Check	Rev

## SQUIRE & PARTNERS

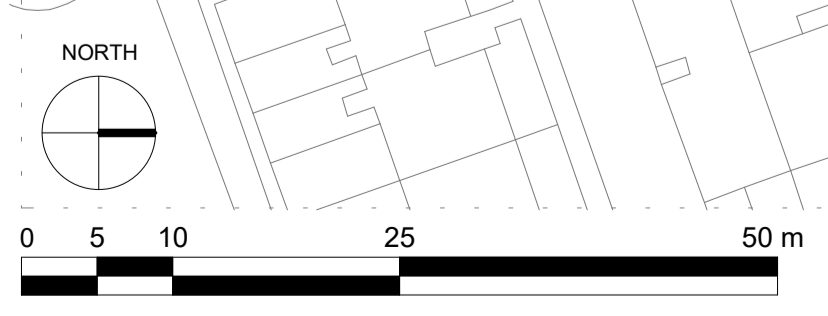
The Department Store  
 248 Ferndale Road London SW9 8FR  
 T: 020 7278 5555 F: 020 7239 0495

info@squireandpartners.com  
 www.squireandpartners.com

Project  
**Stag Brewery**  
 Richmond

Drawing  
**PROPOSED DEVELOPMENT AREA 2**  
**TYPICAL LEVEL PLAN**

Drawn	Date	Scale
RKL	18/01/18	1:500 @ A1 1:1000 @ A3
Job Number	Drawing number	Revision
18125	C645_Z2_P_TY_001	E





## **B. Thames Water Correspondence**

### **Appendices**

The Former Stag Brewery, Mortlake

Project Number: WIE18671

Document Reference: WIE18671-104-R-11-4-1-DS

# 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

T 0118 925 1504

E [searches@thameswater.co.uk](mailto:searches@thameswater.co.uk)

I [www.thameswater-propertysearches.co.uk](http://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

Thames Water Utilities Ltd

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Clearwater Court, Vastern Road  
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](http://www.thameswater.co.uk)

Thames Water Utilities Ltd

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Slough SL1 4WW

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E [searches@thameswater.co.uk](mailto:searches@thameswater.co.uk)

I [www.thameswater-propertysearches.co.uk](http://www.thameswater-propertysearches.co.uk)

Registered in England and Wales  
No. 2366661, Registered office  
Clearwater Court, Vastern Road  
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.

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
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

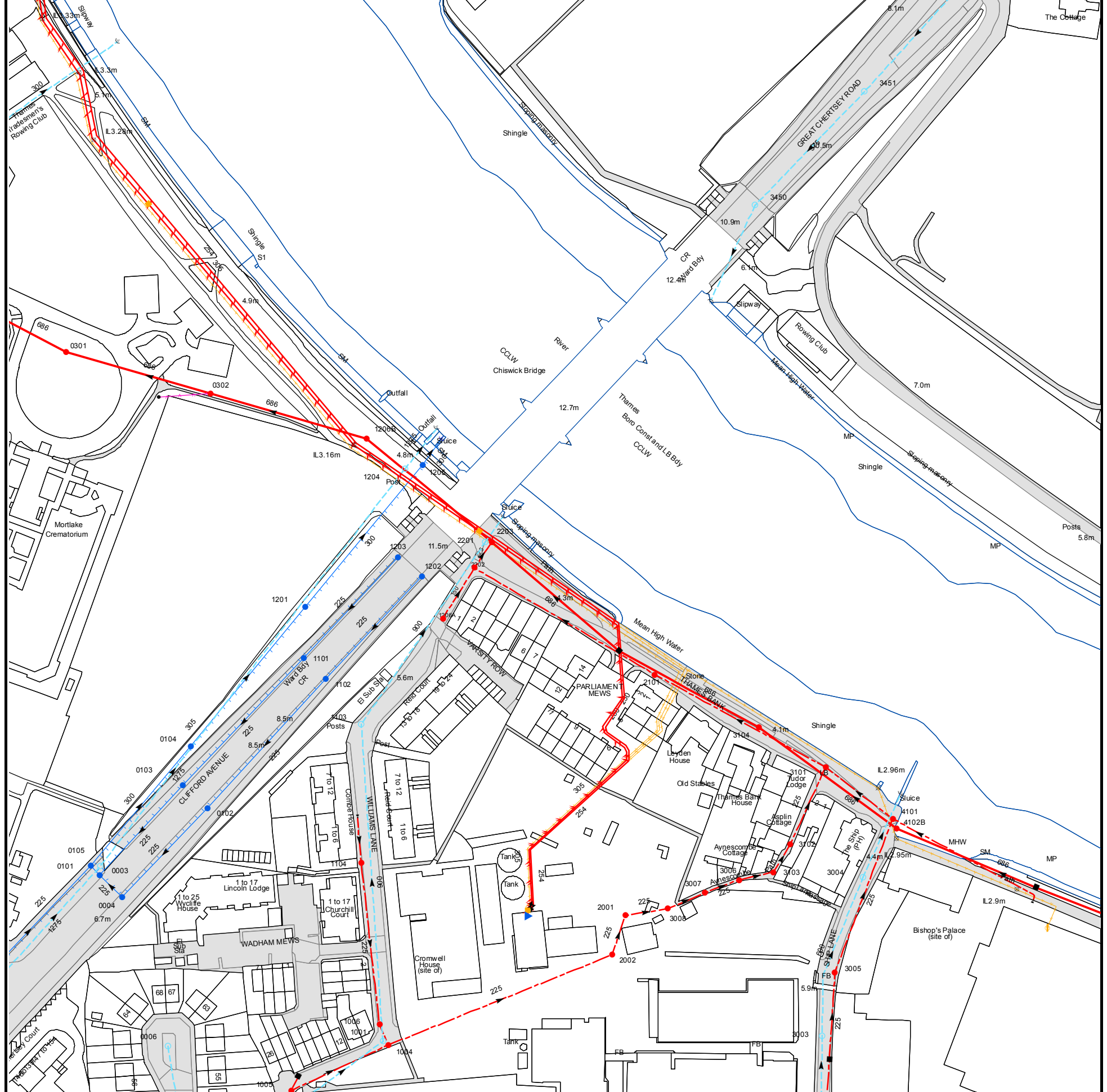
Manhole Reference	Manhole Cover Level	Manhole Invert Level
3901	5.2	1.62
361C	n/a	n/a
3608	6.19	5.48
36MJ	n/a	n/a
36MH	n/a	n/a
36NF	n/a	n/a
36ML	n/a	n/a
361D	n/a	n/a
3602	5.82	3.69
3701	6.15	3.48
3702	6.16	4.58
271D	n/a	n/a
371B	n/a	n/a
2701	5.59	2.87
371A	n/a	n/a
371D	n/a	n/a
371C	n/a	n/a
1603	6.29	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 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
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

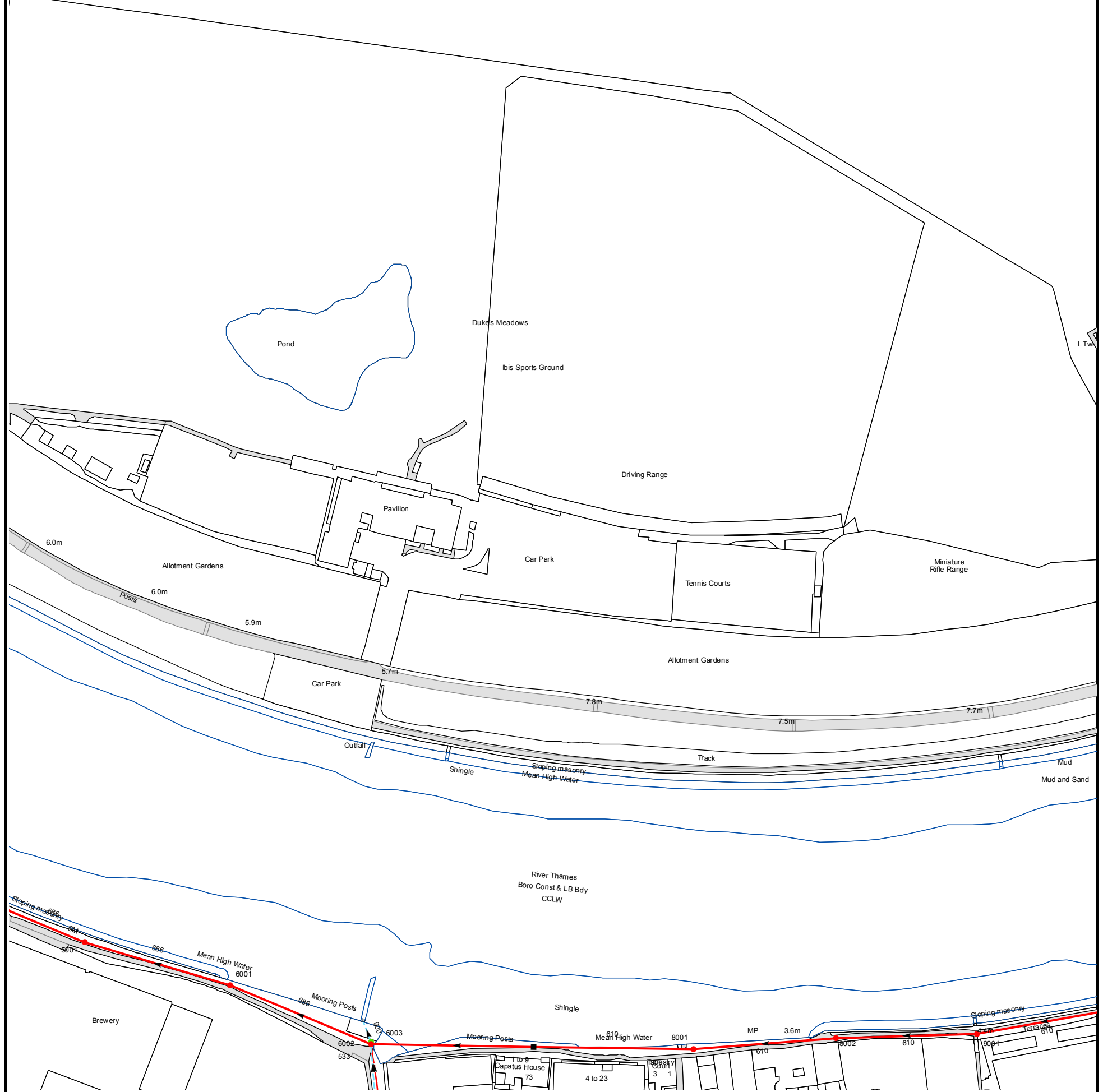
Manhole Reference	Manhole Cover Level	Manhole Invert Level
96MJ	n/a	n/a
96MK	n/a	n/a
961C	n/a	n/a
96ML	n/a	n/a
96MM	n/a	n/a
961A	n/a	n/a
971A	n/a	n/a
97MF	n/a	n/a
9605	6.24	5
971B	n/a	n/a
96KL	n/a	n/a
971C	n/a	n/a
971D	n/a	n/a
97MD	n/a	n/a
96KJ	n/a	n/a
96LH	n/a	n/a
7709	6.39	3.48
7706	6.29	3.83
77MK	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

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 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

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





## 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:

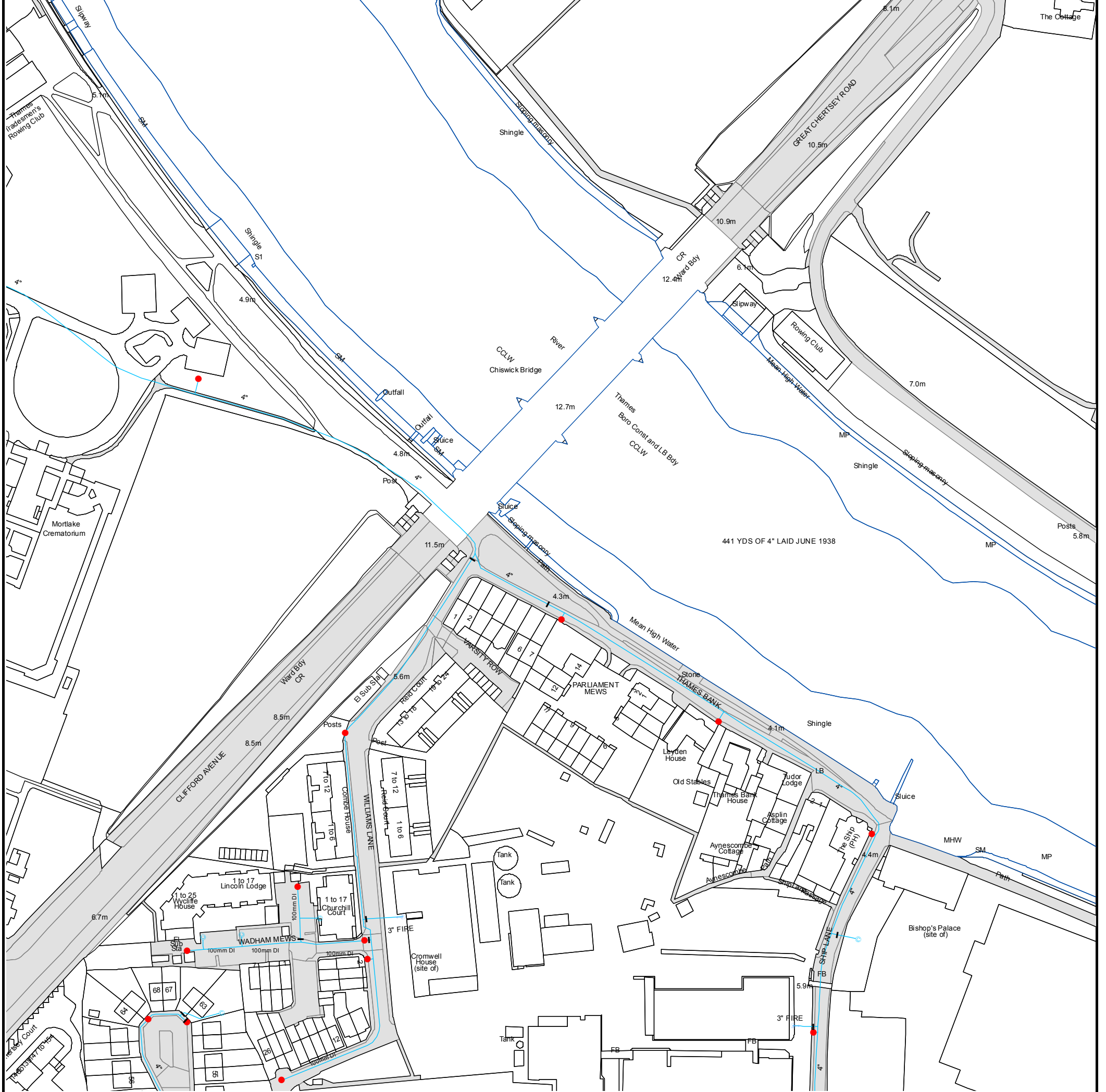
- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plans are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not 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.

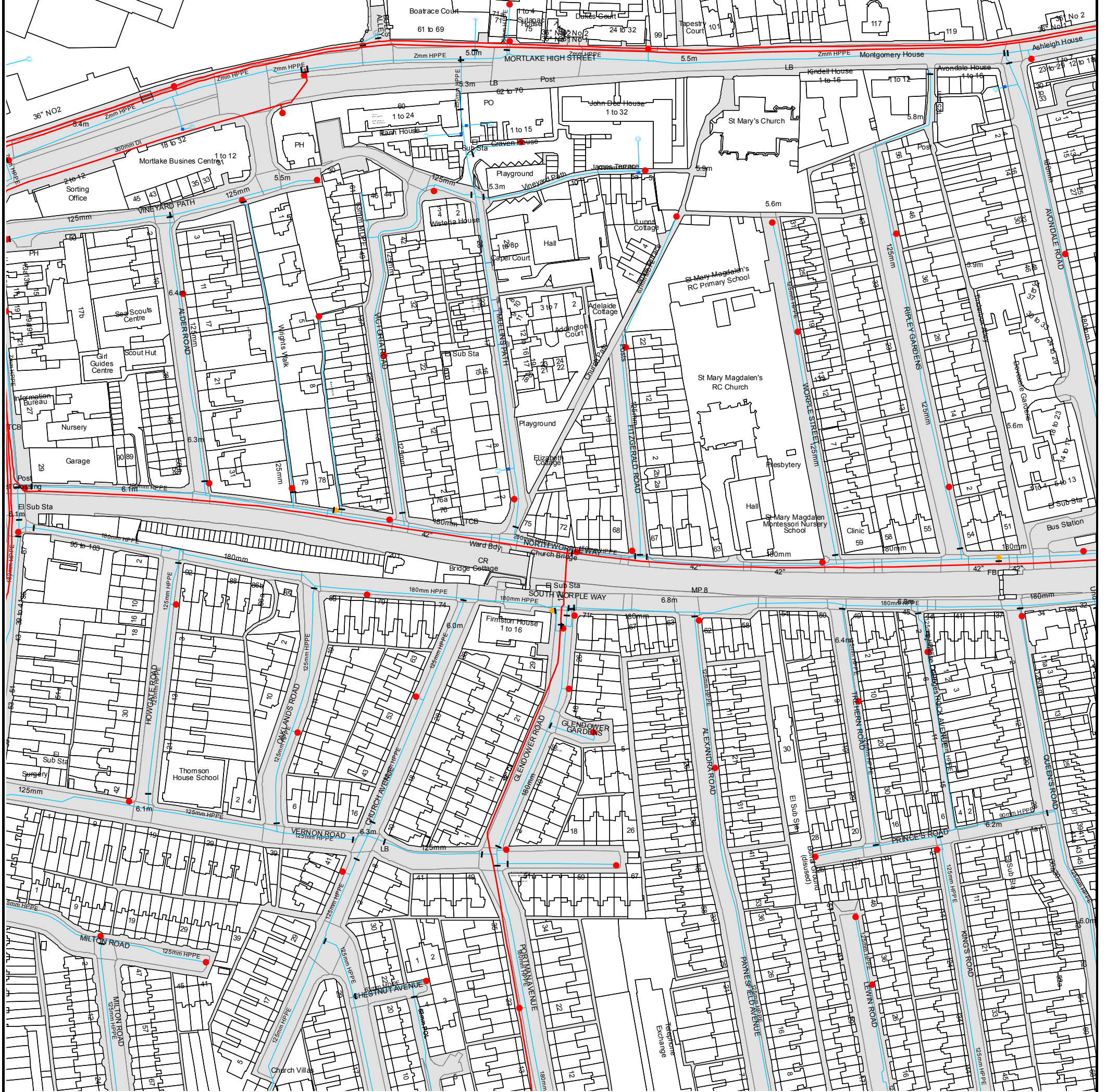
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The width of the displayed area is 500m and the centre of the map is located at OS coordinates 520250,176250

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  
 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 520750,176250  
 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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# 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.



Miss Nora Balboni  
Pickfords Wharf  
Clink Street  
SE1 9DG



**Our ref:** DS6041473



**0800 009 3921**

Monday to Friday, 8am to 5pm

13 May 2018

## Pre-planning enquiry: Confirmation of sufficient capacity

Dear Miss Balboni

Thank you for providing information on your development **Stag Brewery, Mortlake, SW14 7QR, OS grid ref. 520380, 176003.**

**Redevelopment of the former Stag Brewery site to provide mix use development (Flats: 687, Primary School for 1200 pupils, Cinema: 475 seats, Sports Hall: 189 people, Hotel: 20 rooms, Car Home: 220 beds, Offices: 2424m<sup>2</sup>, Warehouse: 5113m<sup>2</sup>). Foul Water discharging by gravity into multiple outfalls. Surface Water to be attenuated and discharged by gravity and pump into multiple outfalls (50% betterment anticipated from existing sw run-off). Surface Water from the north-eastern part of the site discharging into the River Thames.**

If your proposals progress in line with the details you've provided (drawings ref: WIE SA 92 0004 Rev A05, WIE SA 92 0005 Rev A05, WIE SA 92 0006 Rev A05, WIE SA 92 0007 Rev A05) we're pleased to confirm that there will be sufficient sewerage capacity to serve your development.

However, Thames Water has concerns with capacity to the West of the development based on the proposed flows and connection points. We request that the developer updates Thames Water in advance of building phases as they come forwards in order to ensure that any investigative or upgrade works can be carried out before development commences.

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

**Please note that you must keep us informed of any changes to your design – for example, an increase in the number or density of homes. Such changes could mean there is no longer sufficient sewerage capacity.**

### What happens next?

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

If you've any further questions, please contact me on 0203 577 8082.

Yours sincerely

Artur Jaroma

Thames Water



## **C. Onsite Drainage Records**

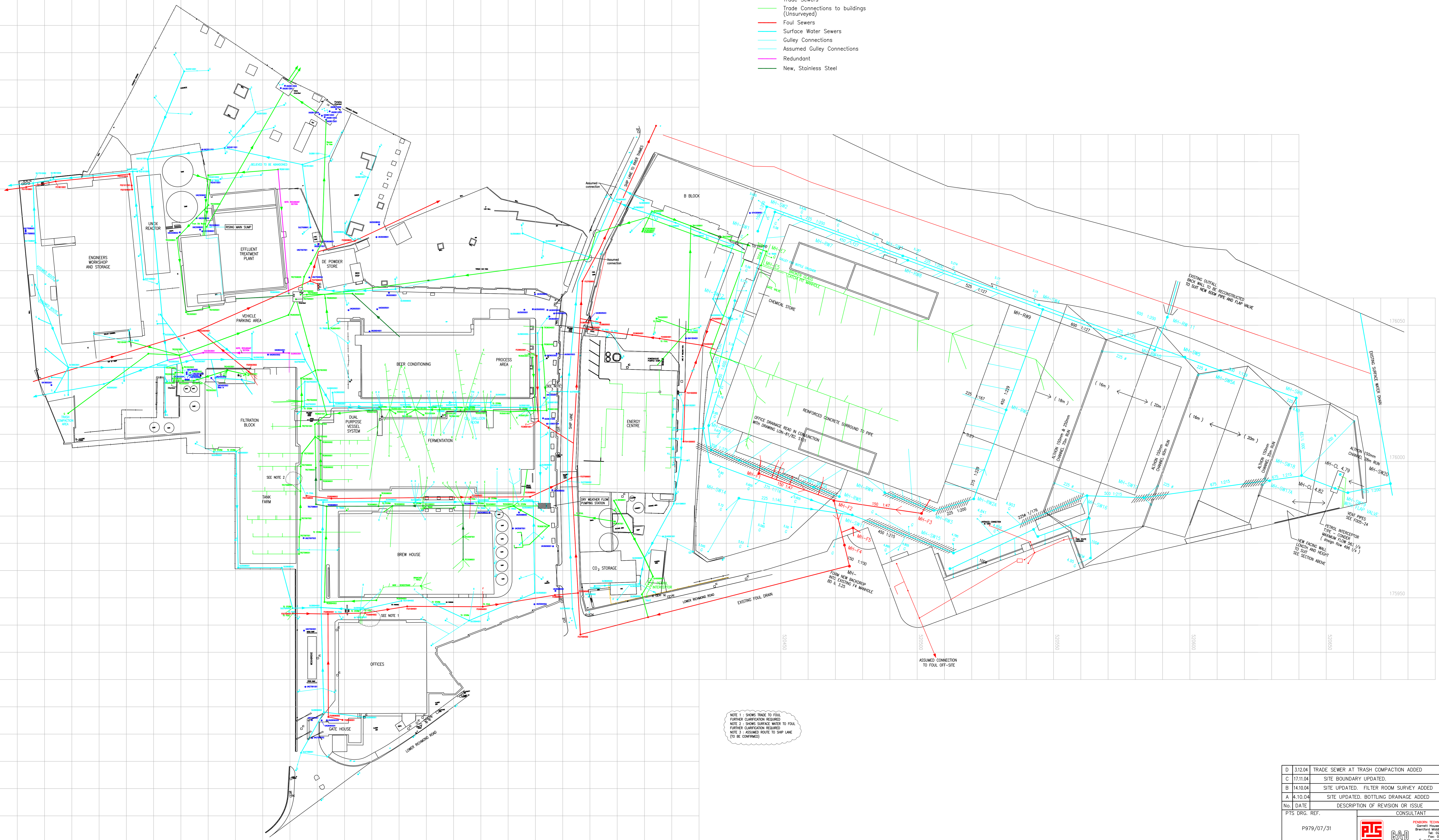
### **Appendices**

The Former Stag Brewery, Mortlake

Project Number: WIE18671

Document Reference: WIE18671-104-R-11-4-1-DS

- LEGEND**
- Trade Sewers
  - Trade Connections to buildings (Unsurveyed)
  - Foul Sewers
  - Surface Water Sewers
  - Gully Connections
  - Assumed Gully Connections
  - Redundant
  - New, Stainless Steel



NOTE 1: SHOWS TRADE TO FOUL FURTHER CLARIFICATION REQUIRED  
 NOTE 2: SHOWS SURFACE WATER TO FOUL FURTHER CLARIFICATION REQUIRED  
 NOTE 3: ASSUMED NOTE TO SHIP LANE (TO BE CONFIRMED)

D 11.10.04	TRADE SEWER AT TRASH COMPACTION ADDED	TR	ACJ	
C 17.11.04	SITE BOUNDARY UPDATED.	TR	ACJ	
B 14.10.04	SITE UPDATED. FILTER ROOM SURVEY ADDED	TR	ACJ	
A 4.10.04	SITE UPDATED. BOTTLING DRAINAGE ADDED	TR	ACJ	
No.   DATE	DESCRIPTION OF REVISION OR ISSUE	BY	CHK.	PROJ. ENG. APPROVAL

PIS ORG. REF.	CONSULTANT	PIS PROJ. REF.
P979/07/31	 <small>                 RSC                  CONSULTANT                  1000 House, Millers Road                  Brentford, Middlesex, TW8 5GL                  Tel: 020-8996-7979                  Fax: 020-8996-1821                  E-mail: pjs@rsc.com             </small>	

ESR	DESIGNED	DRAWN	CHECKED	SCALE	DATE	KEY PLAN	<b>ANHEUSER-BUSCH COMPANIES</b>	PROJ.	BD
SITE PLAN SHOWING EXIST. SERVICES ALL SERVICES									
BLDG. NAME		BLDG. No.		ENGINEER APPROVED		OWNER APPROVED			
PLANT	BLDG. No.	DIV.	DWG. No.	REV.					
STAG	O	M	1016	D					

## **D. Greater London Authority Correspondence**

### **Appendices**

The Former Stag Brewery, Mortlake

Project Number: WIE18671

Document Reference: WIE18671-104-R-11-4-1-DS

## Nora Balboni

---

**From:** Katherine Wood <Katherine.Wood@london.gov.uk>  
**Sent:** 08 February 2019 17:12  
**To:** Nora Balboni; Stuart McTaggart; Abby Crisostomo  
**Cc:** Anna Gargan; Suzanne Robson  
**Subject:** RE: Stag Brewery (GLA ref: 4172a/b) drainage strategy

Hi Nora,

Apologies, I should have confirmed with you that Stuart had reviewed this response and confirmed that it addressed outstanding issues on drainage.

Kind regards,

Katherine

**Katherine Wood**  
**Team Leader, Development Management**  
GREATERLONDONAUTHORITY  
City Hall, The Queen's Walk, London SE1 2AA  
020 7983 5743  
[www.london.gov.uk/what-we-do/planning](http://www.london.gov.uk/what-we-do/planning)  
[katherine.wood@london.gov.uk](mailto:katherine.wood@london.gov.uk)

---

**From:** Nora Balboni <nora.balboni@watermangroup.com>  
**Sent:** 08 February 2019 17:07  
**To:** Stuart McTaggart <Stuart.McTaggart@london.gov.uk>; Abby Crisostomo <Abby.Crisostomo@london.gov.uk>; Katherine Wood <Katherine.Wood@london.gov.uk>  
**Cc:** Anna Gargan <AGargan@geraldeve.com>; Suzanne Robson <SRobson@geraldeve.com>  
**Subject:** FW: Stag Brewery (GLA ref: 4172a/b) drainage strategy

Hi Stuart

Hope you are well. Have you had the chance to look at the Briefing Note?

Kind regards,

**Nora Balboni**  
**Flood Risk Engineer**  
**Waterman Infrastructure & Environment Ltd**

Pickfords Wharf | Clink Street | London SE1 9DG  
t +44 207 928 7888 | d +44 3300 602 725  
[www.watermangroup.com](http://www.watermangroup.com) | [LinkedIn](#) | [Twitter](#)

---

**From:** Nora Balboni  
**Sent:** 08 January 2019 16:22  
**To:** 'Stuart McTaggart' <[Stuart.McTaggart@london.gov.uk](mailto:Stuart.McTaggart@london.gov.uk)>  
**Cc:** 'Anna Gargan' <[AGargan@geraldeve.com](mailto:AGargan@geraldeve.com)>; 'Abby Crisostomo' <[Abby.Crisostomo@london.gov.uk](mailto:Abby.Crisostomo@london.gov.uk)>; 'Katherine Wood' <[Katherine.Wood@london.gov.uk](mailto:Katherine.Wood@london.gov.uk)>; Ellen Smith <[ellen.smith@watermangroup.com](mailto:ellen.smith@watermangroup.com)>; Donal O'Donovan

<[donal.odonovan@watermangroup.com](mailto:donal.odonovan@watermangroup.com)>; Harry Chetty <[harry.chetty@watermangroup.com](mailto:harry.chetty@watermangroup.com)>

**Subject:** RE: Stag Brewery (GLA ref: 4172a/b) drainage strategy

Hi Stuart

Happy new year, I hope you had a great break.

Please find attached the Briefing Note outlining the amendments to the drainage strategy for the Stag Brewery development as per our agreements below.

Let me know if you have any queries.

Kind regards,

**Nora Balboni**  
**Flood Risk Engineer**  
**Waterman Infrastructure & Environment Ltd**

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**From:** Nora Balboni

**Sent:** 12 December 2018 09:24

**To:** Stuart McTaggart <[Stuart.McTaggart@london.gov.uk](mailto:Stuart.McTaggart@london.gov.uk)>

**Cc:** Anna Gargan <[AGargan@geraldev.com](mailto:AGargan@geraldev.com)>; Ellen Smith <[ellen.smith@watermangroup.com](mailto:ellen.smith@watermangroup.com)>; Donal O'Donovan <[donal.odonovan@watermangroup.com](mailto:donal.odonovan@watermangroup.com)>; Abby Crisostomo <[Abby.Crisostomo@london.gov.uk](mailto:Abby.Crisostomo@london.gov.uk)>; Katherine Wood <[Katherine.Wood@london.gov.uk](mailto:Katherine.Wood@london.gov.uk)>

**Subject:** RE: Stag Brewery (GLA ref: 4172a/b) drainage strategy [Filed 12 Dec 2018 09:24]

Hi Stuart

Thank you for confirming.

As discussed, we will provide a Briefing Note which will cover the following:

- Amended drainage strategy plan to show permeable paving extents;
- Volume calculations to estimate the attenuation available within the permeable paving sub-base and rain garden feature to show that a restriction of surface water runoff beyond the minimum 50% requirement is achieved;
- Sports pitch in south-west of site removed from surface water calculations under the assumption that it would drain freely, subject to ground investigations during detailed design; and
- Summary of all SuDS included.

Kind regards,

**Nora Balboni**  
**Flood Risk Engineer**  
**Waterman Infrastructure & Environment Ltd**

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**From:** Stuart McTaggart <[Stuart.McTaggart@london.gov.uk](mailto:Stuart.McTaggart@london.gov.uk)>

**Sent:** 11 December 2018 15:23

**To:** Nora Balboni <[nora.balboni@watermangroup.com](mailto:nora.balboni@watermangroup.com)>

**Cc:** Anna Gargan <[AGargan@geraldev.com](mailto:AGargan@geraldev.com)>; Ellen Smith <[ellen.smith@watermangroup.com](mailto:ellen.smith@watermangroup.com)>; Donal O'Donovan <[donal.odonovan@watermangroup.com](mailto:donal.odonovan@watermangroup.com)>; Abby Crisostomo <[Abby.Crisostomo@london.gov.uk](mailto:Abby.Crisostomo@london.gov.uk)>; Katherine Wood



<[Katherine.Wood@london.gov.uk](mailto:Katherine.Wood@london.gov.uk)>

**Subject:** Re: Stag Brewery (GLA ref: 4172a/b) drainage strategy [Filed 12 Dec 2018 09:17]

Hi Nora,

To summarise our chat earlier:

1. The intent of the original drainage strategy was to show that it is possible within site constraints to meet the absolute minimum requirements of London Plan policy 5.13.
2. We would like to see that all efforts have been made to get as close to possible to the policy targets (i.e. greenfield runoff, drainage hierarchy, and a preference for SuDS with multiple benefits). We expect that on large sites such as this the policy targets should be able to be met in most cases.
3. Waterman will produce an addendum to the drainage strategy to more clearly show how the drainage will integrate SuDS with multiple benefits and identify an approximate maximum reduction in discharge rate. Where appropriate the reduction in discharge rate can be caveated with assumptions/risks that need confirmation during detailed design (e.g. infiltration rates of the subgrade below the 3G pitch).

Regards,

**Stuart McTaggart**

**Flood Risk, Drainage & Water Policy Officer**

Development, Enterprise & Environment

Greater London Authority

City Hall, The Queens Walk, London SE1 2AA

Email: [stuart.mctaggart@london.gov.uk](mailto:stuart.mctaggart@london.gov.uk)

Web: [Greening London / Greater London Authority](#)

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**From:** Nora Balboni <[nora.balboni@watermangroup.com](mailto:nora.balboni@watermangroup.com)>

**Sent:** 04 December 2018 10:32

**To:** Stuart McTaggart <[Stuart.McTaggart@london.gov.uk](mailto:Stuart.McTaggart@london.gov.uk)>

**Cc:** Anna Gargan <[AGargan@geraldeve.com](mailto:AGargan@geraldeve.com)>; Ellen Smith <[ellen.smith@watermangroup.com](mailto:ellen.smith@watermangroup.com)>; Donal O'Donovan <[donal.odonovan@watermangroup.com](mailto:donal.odonovan@watermangroup.com)>

**Subject:** RE: GLA Flood Feedback

Hi Stuart

Thanks for your comments. Please feel free to give me a call to discuss as I don't have your contact number.

We understand that developments should aim to achieve greenfield runoff rates, or as close as feasible. To endeavour to achieve this we took the following approach:

1. As per the drainage hierarchy, the amount of surface water that could be discharged into the River Thames was maximised by incorporating the innovative shallow conveyance channel system;
2. For the remaining site, where discharge into the Thames was not feasible due to levels or crossing third party land, as many tanks were incorporated as possible. The horizontal constraints for the tanks include the basement extent, proposed building outlines, and landscaping. The vertical constraints include the required soil depth for tree pits and achieving a gravity connection into the surrounding sewer network. London Borough of Richmond accepted the 50% restriction during pre-application consultation. Conscious that the constraints of the site preclude a greater reduction in runoff, Thames Water were consulted to ensure that the surrounding sewer network has sufficient capacity. Thames Water confirmed capacity for both surface and foul water flows. It is important to note that the surface water flows from the development are only conveyed within the Thames Water network for maximum of 350m before discharging into the River Thames.

We are keen to find a solution to reduce runoff further to find an agreeable solution. I would appreciate your thoughts on the following options:

- Allowing the proposed sports pitch to drain freely, i.e. excluding it from the surface water calculations and therefore reducing the size requirement for the tank beneath the MUGA pitch. Subject to levels I could explore the possibility of directing surface water from other areas into this tank, reducing the restriction beyond the 50% mark. In the current strategy we assumed that the pitch would need to be positively drained due to the underlying London Clay to avoid potential water logging beneath the pitch. However, if no other areas would drain towards the pitch, allowing it to free drain could be considered.
- We took a conservative approach when designing the current drainage strategy, assuming 100% impermeable proposed area (discounting the park area in the south eastern corner of the site). We did not quantify the attenuation available within the rain garden along the green link and within the permeable paving, to demonstrate the worst-case scenario that the minimum required restriction (i.e. 50%) can be achieved within the tanks themselves. I will do a quick calculation to demonstrate the additional attenuating volume that these features would hold, reducing the restriction beyond the 50% mark.
- Exploring further areas for incorporation of permeable paving.
- The current proposals do not include for blue roofs. However, green roofs are proposed throughout the development, which, although not quantifiable, provide a betterment to the surface water runoff regime.

Let me know whether you find the above agreeable, I will then amend the drainage strategy drawing to show the constraints to the attenuation volumes and incorporate any changes, and will re-issue for you to review.

Kind regards,

**Nora Balboni**  
**Flood Risk Engineer**  
**Waterman Infrastructure & Environment Ltd**

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**From:** Anna Gargan  
**Sent:** 28 November 2018 16:51  
**To:** 'Ellen Smith'; 'Nora Balboni'  
**Cc:** Guy Duckworth; Susie Taylor; Neil Henderson  
**Subject:** GLA Flood Feedback

Hi Ellen / Nora,

I hope you are well.

The GLA has provided the following response to Flood comments issued on 20 November 2018.

Please can you review and respond. The officer states that he is happy to speak with you directly.

Kind regards,  
Anna

*"I have reviewed the Applicant's second response to our Stage 1 comments. Following our previous response at the end of October the final point of contention appears to be the proposed discharge rate where the site will drain to the public sewer.*

*It is noted that the London Plan and DEFRA national guidance require a development to achieve as close to greenfield runoff rate as possible (approximately a >90% reduction from pre-development rates for a brownfield site). In this case the Applicant is proposing to reduce the discharge by 50%, well short of the policy requirements. The Applicant should calculate the greenfield runoff rate and provide calculations showing the attenuation storage required to meet this discharge rate. The Applicant should then seek to include additional attenuation storage to get as close to this value as possible. Our original comments suggested building the biodiverse roofs as green/blue roofs to provide additional storage and this has not been addressed to date. The Applicant should then provide a clear drawing or markup clearly showing the constraints to expanding attenuation storage if discharge at greenfield runoff rate is not proposed.*

***I am happy to discuss directly with the Applicant's consultant to resolve this if required.***

Regards,

**Stuart McTaggart**  
**Flood Risk, Drainage & Water Policy Officer**  
Development, Enterprise & Environment  
Greater London Authority  
City Hall, The Queens Walk, London SE1 2AA

Email: [stuart.mctaggart@london.gov.uk](mailto:stuart.mctaggart@london.gov.uk)

**Anna Gargan**  
Planning Consultant

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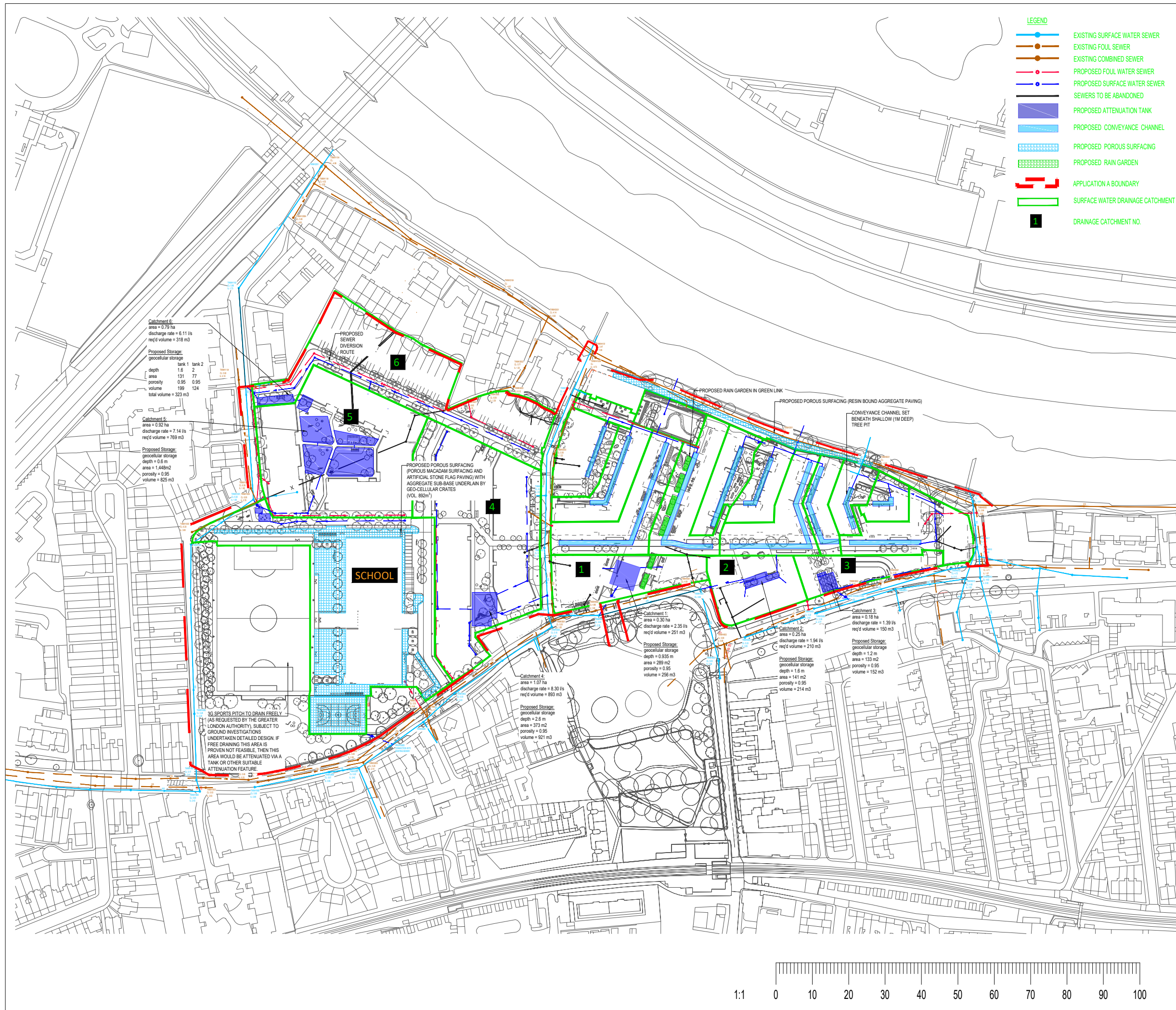
## **E. Existing and Proposed Drainage Strategy Plan**

### **Appendices**

The Former Stag Brewery, Mortlake

Project Number: WIE18671

Document Reference: WIE18671-104-R-11-4-1-DS



### GENERAL NOTES

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ENGINEER'S, ARCHITECT'S OR OTHER RELEVANT DRAWINGS AND SPECIFICATIONS.
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- ALL WORK IS TO BE CARRIED OUT IN COMPLIANCE WITH THE REQUIREMENTS OF THE RELEVANT STATUTORY AUTHORITIES AND REGULATIONS.
- EXISTING DRAINAGE LAYOUT BASED ON THAMES WATER SEWER RECORDS AND PENBORN TECHNICAL SERVICES DRAWING (REF P979/07/31).
- EXISTING FOUL AND SURFACE WATER CONNECTIONS TO BE RE-USED WHERE FEASIBLE, SUBJECT TO DETAILED DESIGN.
- GREEN ROOFS AND WATER BUTTS ARE TO BE INCORPORATED ACROSS THE SITE TO PROVIDE SOURCE CONTROL AND FACILITATE WATER REUSE. THE PROPOSED LOCATION OF GREEN ROOFS CAN BE FOUND ON THE SITEWIDE URBAN GREEN FACTOR DRAWING (P10736-00-004-GIL-0802), WHICH IS AVAILABLE IN APPENDIX K OF THE DRAINAGE STRATEGY REPORT. THE PROPOSED LOCATION OF WATER BUTTS IS TO BE DETERMINED AT DETAILED DESIGN STAGE BUT CAN BE INDICATIVELY ASSUMED BASED ON THE LOCATION OF THE DEVELOPMENT BLOCKS, AS SHOWN WITHIN THE DEVELOPMENT PROPOSALS.

REV	SO	28.07.22	ISSUED	SW	BM
Status	Date	Description		By	Chk

Amendments

## STAG BREWERY

### PROPOSED SURFACE WATER DRAINAGE STRATEGY

Client: RESELTON PROPERTIES LIMITED

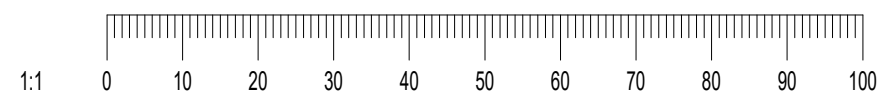


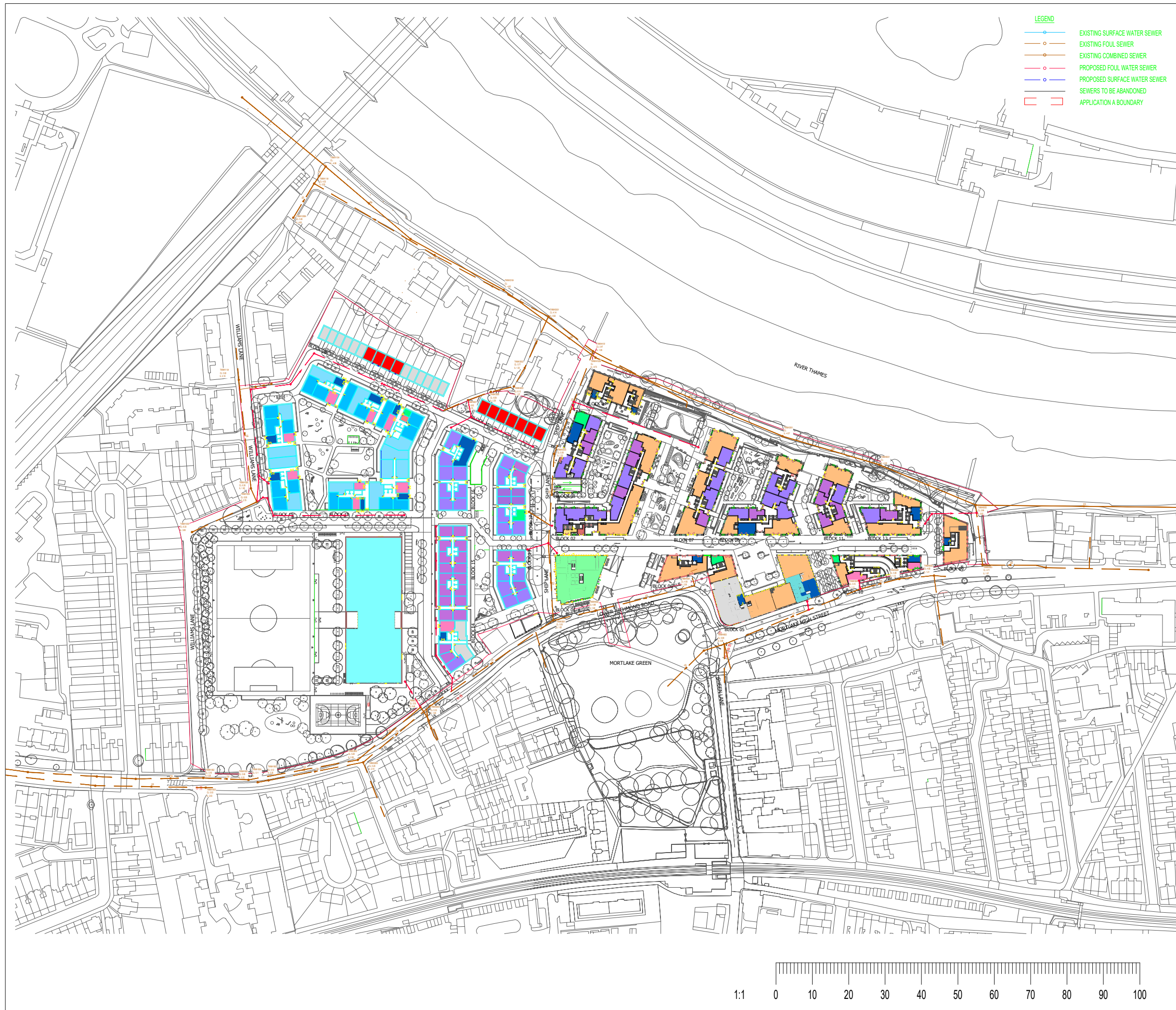
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Suitability: INITIAL STATUS (WIP) SO

Designed By	Designer	Director	BM	Waterman Ref	IProjec
Drawn By	SW	Date	August 2022	Scales @ A3	1:25,000

Project - Originator - Volume - Level - Type - Role - Number	Revision
18671-WIE-ZZ-ZZ-DR-D-92001	P01





**LEGEND**

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- EXISTING FOUL SEWER
- EXISTING COMBINED SEWER
- PROPOSED FOUL WATER SEWER
- PROPOSED SURFACE WATER SEWER
- SEWERS TO BE ABANDONED
- - - APPLICATION A BOUNDARY

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5. ALL WORK IS TO BE CARRIED OUT IN COMPLIANCE WITH THE REQUIREMENTS OF THE RELEVANT STATUTORY AUTHORITIES AND REGULATIONS.
6. EXISTING DRAINAGE LAYOUT BASED ON THAMES WATER SEWER RECORDS AND PENBORN TECHNICAL SERVICES DRAWING (REF P979/07/31).
7. EXISTING FOUL AND SURFACE WATER CONNECTIONS TO BE RE-USED WHERE FEASIBLE, SUBJECT TO DETAILED DESIGN.

REV	S0	28.07.22	ISSUED					SW	BM	
Status	Date	Description				By	Chk			

Amendments

Project  
**STAG BREWERY**

Title  
**PROPOSED FOUL WATER DRAINAGE STRATEGY**

Client  
**RESELTON PROPERTIES LIMITED**

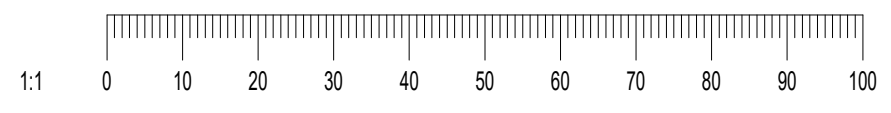


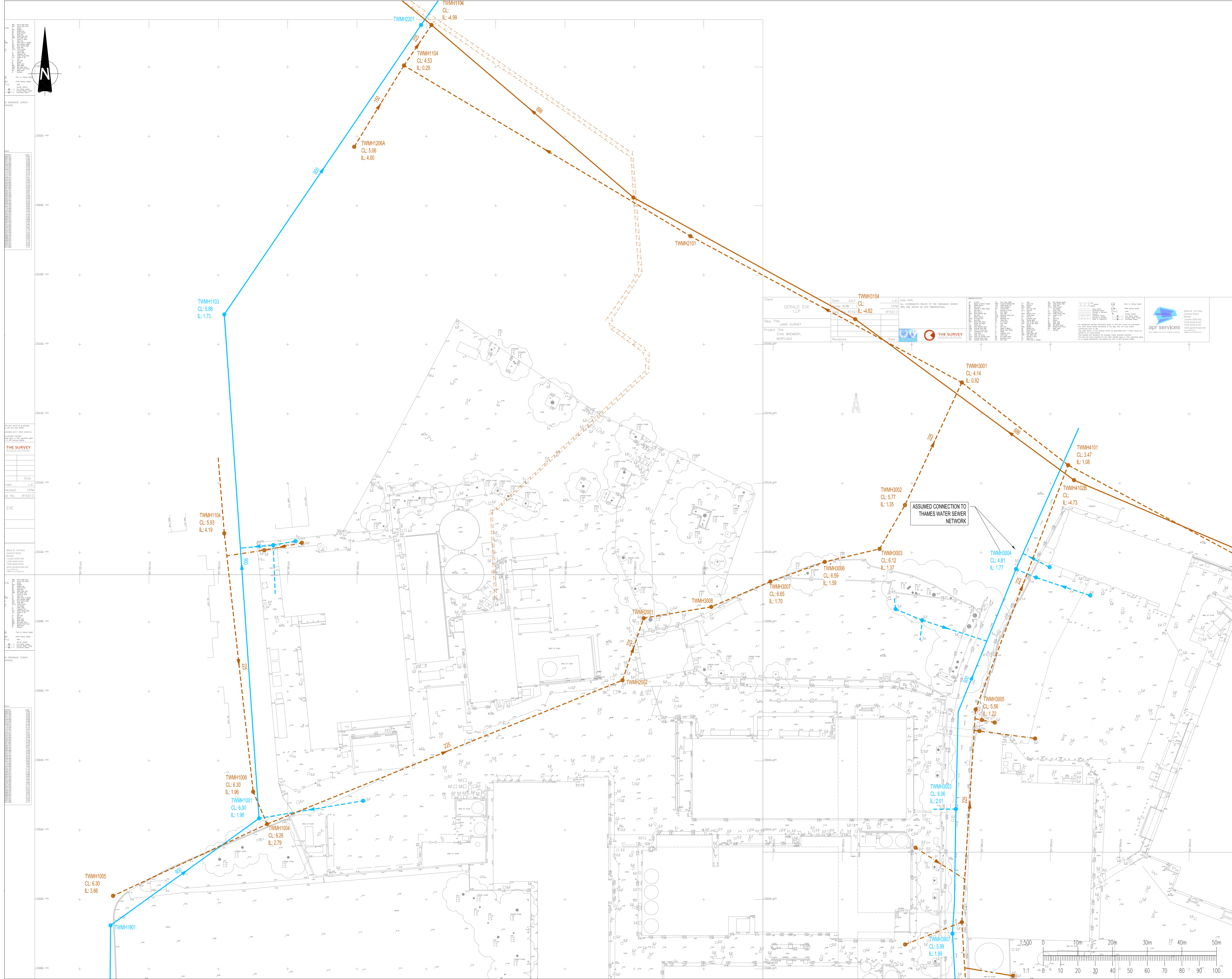
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Suitability  
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Drawn By	SW	Date	August 2022	Scales @ A3	1:25,000

Project - Originator - Volume - Level - Type - Role - Number	Revision
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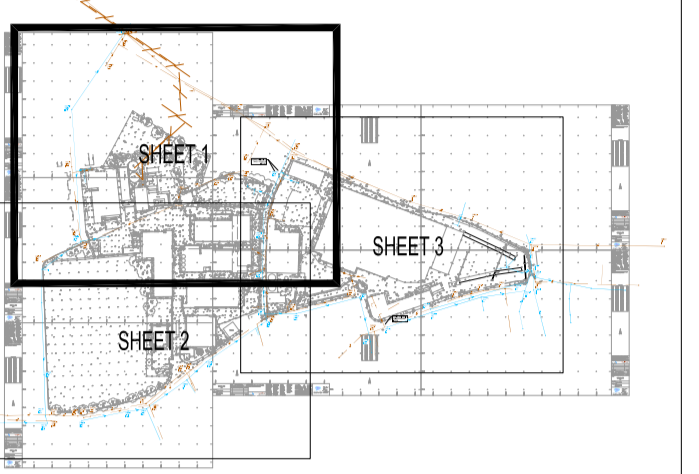




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- EXISTING PUBLIC FOUL SEWER
- EXISTING PUBLIC COMBINED SEWER
- EXISTING PUBLIC RISING MAIN

**NOTES**  
 1) EXISTING DRAINAGE LAYOUT BASED ON THAMES WATER SEWER RECORDS AND PENBORN TECHNICAL SERVICES DRAWING (REF: P979/07/31).



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Project Title	STAG BREWERY, MORTLAKE	Project No.	915213	Project Manager	ADG	Project Engineer	ADG	Project Surveyor	ADG

Rev	Date	Description	By
A01	20.10.16	PRELIMINARY ISSUE	DO

**Project**  
 Amendments  
**STAG BREWERY**

**Title**  
 EXISTING FOUL AND SURFACE WATER DRAINAGE LAYOUT  
 SHEET 1 OF 3

**Client**  
 DARTMOUTH CAPITAL ADVISORS LIMITED

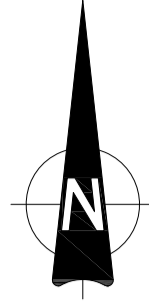


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Publisher	Zone	Category	Number	Revision
WIE	SA	92	0001	A01





Revision	Date	Drawn	Checked	CPM



Revision	Date	Drawn	Checked	CPM

Client: GERALD EVE LLP

Project Title: LAND SURVEY

Project Title: STAG BREWERY, MORTLAKE

Scale: A09 1:200

Drawn: JCP

Checked: CPU

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Date: 2015

Job No: 915213-2

Job No: 915213

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Project Title: STAG BREWERY, MORTLAKE

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Job No: 915213

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Project Title: STAG BREWERY, MORTLAKE

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CPM: CPU

Date: 2015

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Job No: 915213

Client: GERALD EVE LLP

Project Title: LAND SURVEY

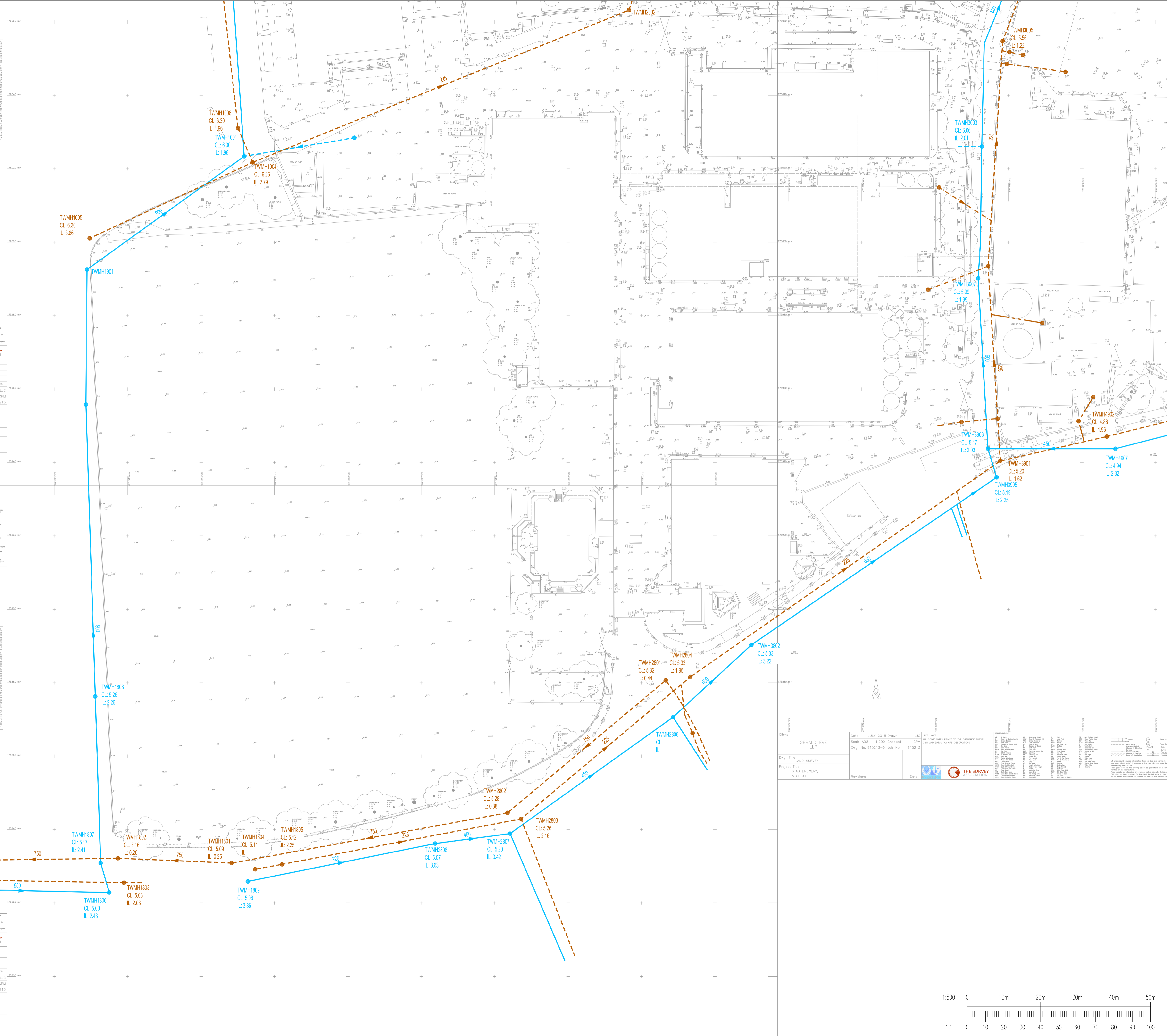
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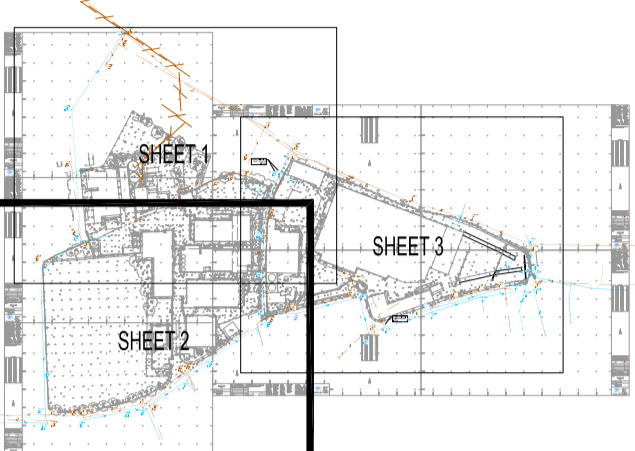
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**LEGEND**

- EXISTING PRIVATE SURFACE WATER SEWER
- EXISTING PRIVATE FOUL SEWER
- EXISTING PRIVATE COMBINED SEWER
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- EXISTING PUBLIC FOUL SEWER
- EXISTING PUBLIC COMBINED SEWER
- EXISTING PUBLIC RISING MAIN

**NOTES**  
1) EXISTING DRAINAGE LAYOUT BASED ON THAMES WATER SEWER RECORDS AND PENBORN TECHNICAL SERVICES DRAWING (REF: P97907/31).



Rev	Date	Description	By
A01	20.10.16	PRELIMINARY ISSUE	DO

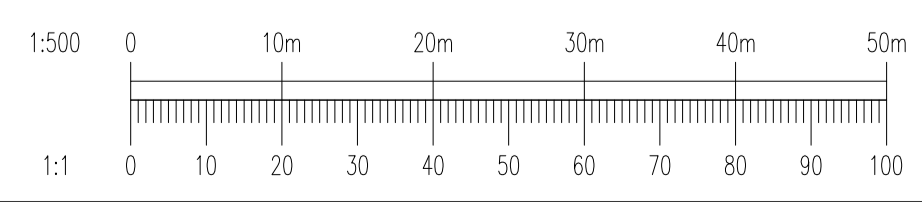
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STAG BREWERY

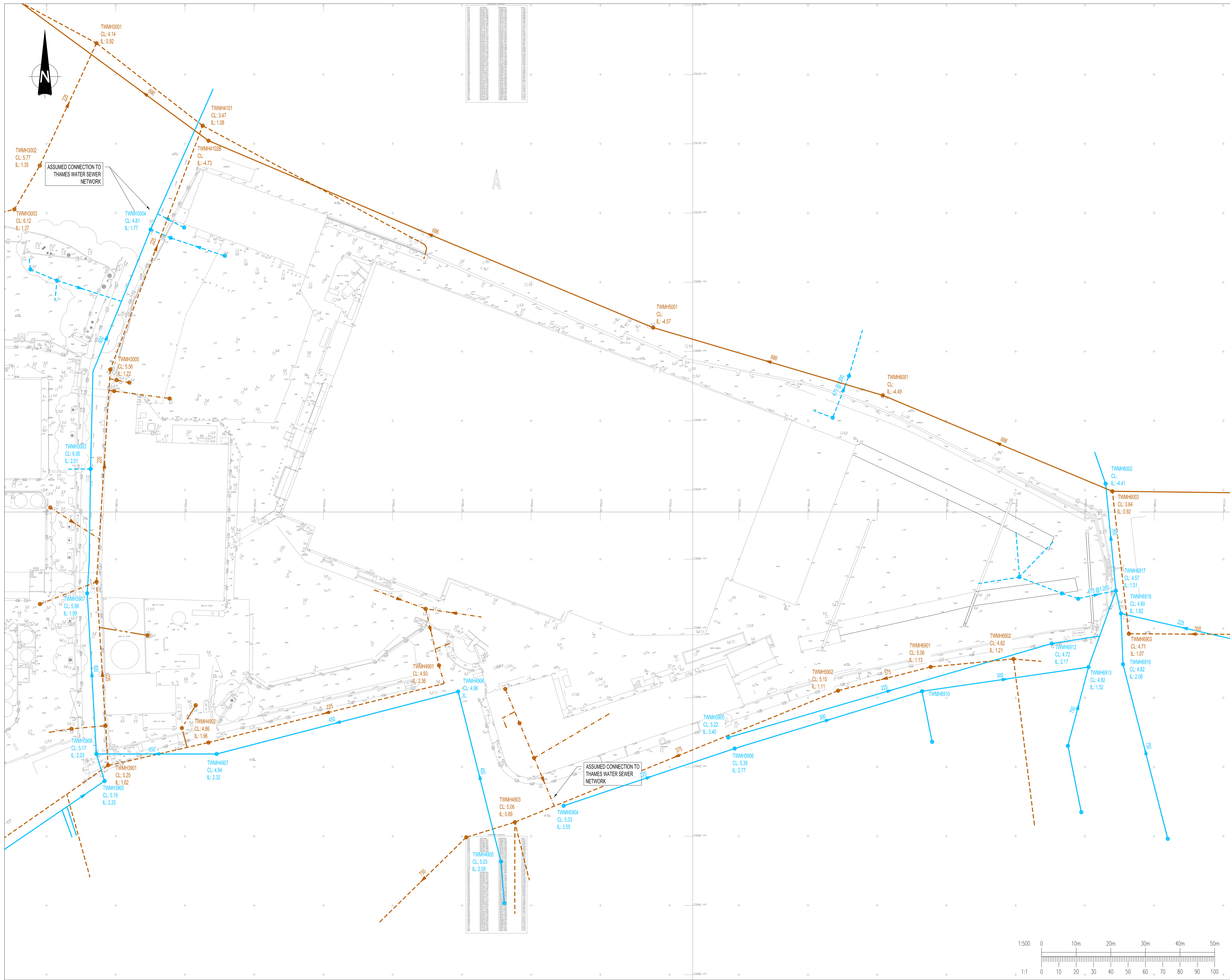
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EXISTING FOUL AND SURFACE WATER DRAINAGE LAYOUT SHEET 2 OF 3

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Drawn by	DO	Date	OCTOBER 2016	Computer File No
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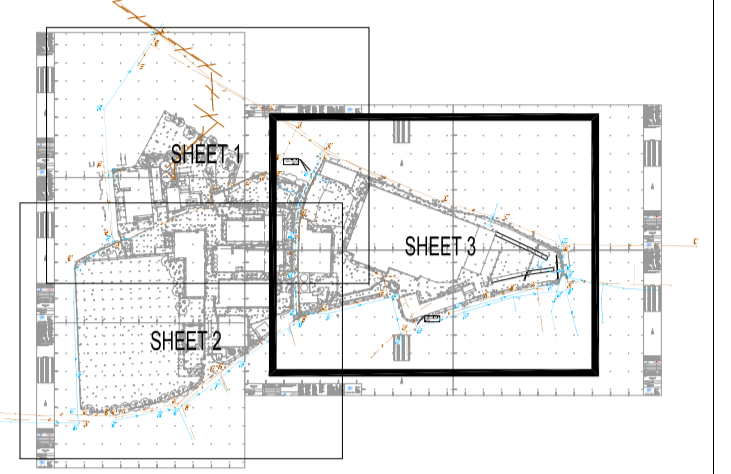




**LEGEND**

- EXISTING PRIVATE SURFACE WATER SEWER
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- EXISTING PUBLIC COMBINED SEWER
- EXISTING PUBLIC RISING MAIN

**NOTES**  
 1) EXISTING DRAINAGE LAYOUT BASED ON THAMES WATER SEWER RECORDS AND PENBORN TECHNICAL SERVICES DRAWING (REF: P979/07/31).

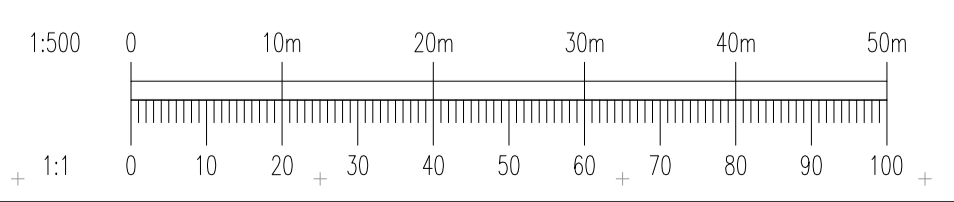


Rev	Date	Description	By
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A02	24.10.16	VIEWPORT AMENDED	DO
A01	20.10.16	PRELIMINARY ISSUE	DO

Amendments	
Project	<b>STAG BREWERY</b>
Title	<b>EXISTING FOUL AND SURFACE WATER DRAINAGE LAYOUT SHEET 3 OF 3</b>
Client	<b>DARTMOUTH CAPITAL ADVISORS LIMITED</b>

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Publisher	Zone	Category	Number
WIE	SA	92	0003
			Revision
			<b>A03</b>



## **F. London Borough Richmond upon Thames (LBRuT) Correspondence**

### **Appendices**

The Former Stag Brewery, Mortlake

Project Number: WIE18671

Document Reference: WIE18671-104-R-11-4-1-DS

## O'Donovan, Donal

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**From:** Brian Humphris <brian.humphris@richmond.gov.uk>  
**Sent:** 03 March 2016 15:32  
**To:** O'Donovan, Donal  
**Subject:** RE: WIE10667 160122 DOBH Stag Brewery Flood Risk Enquiry  
**Attachments:** Gully reports.xlsx

Donal

In response to your questions below:-

- 1 Not sure who would be the best contact but they have area teams, so any enquiry relating to Stag site would be referred to them.
- 2 I can find no record of a name either. OS plan indicates that the culvert is fed by open ditches along both sides of Sheen Common, but nothing is indicated south of the common, within Richmond Park.
- 3 Please see attached – reports as logged on our system.

Regards Brian

Brian Humphris  
Highway Asset Co-ordinator

020 8891 7738

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**From:** O'Donovan, Donal [mailto:donal.odonovan@watermangroup.com]  
**Sent:** 03 March 2016 12:03  
**To:** Brian Humphris  
**Subject:** RE: WIE10667 160122 DOBH Stag Brewery Flood Risk Enquiry

Hi Brian,

Many thanks for the response, I have a few follow up queries that I hope you will be able to answer.

1. You mentioned that we would need to confirmed if the Site had passed the Sequential Test with the Planners. Do you have the contact details for the best person/team to contact in relation to this.
2. You provided plan showing a culverted watercourse that has an outlet adjacent to the Site. Do you know what this watercourse is called? I have had a look online but not had any luck.
3. You mentioned that there have been some records of flooding due to blocked gullies. Can you provide any further information in relation to these (ie. extent, date, location etc.).

If you have any queries please feel free to give me a call.

Cheers,

Donal

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**From:** Brian Humphris [mailto:brian.humphris@richmond.gov.uk]  
**Sent:** 24 February 2016 16:23  
**To:** O'Donovan, Donal <donal.odonovan@watermangroup.com>  
**Subject:** RE: WIE10667 160122 DOBH Stag Brewery Flood Risk Enquiry

Hi Donal

Please accept my apologies for the delay in responding to your enquiry. Unfortunately some of the information that you requested has taken some time to obtain. Please see comments below.

Regards Brian

**Brian Humphris**  
Highway Asset Co-ordinator

020 8891 7738

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**From:** O'Donovan, Donal [<mailto:donal.odonovan@watermangroup.com>]  
**Sent:** 22 January 2016 14:34  
**To:** Brian Humphris  
**Subject:** WIE10667 160122 DOBH Stag Brewery Flood Risk Enquiry

Hi Brian,

Thanks for speaking to me earlier.

### **Stag Brewery – Flood Risk Enquiry**

I'm writing regarding the proposed redevelopment of Stag Brewery, located within the London Borough of Richmond upon Thames. The Site is approximately 9ha in size, and is located at approximate postcode SW14 7ET, please find attached a location plan for your information. The proposals comprise construction of a residential led mixed use development.

We have been commissioned to investigate the risk of flooding to the proposed development. I would be grateful if you could provide information relating to the following:

1. The Environment Agency mapping shows that the Site lies within Flood Zones 2 and 3, and is generally shown as being defended. The River Thames defences are identified as being continuous in this location, please could you confirm that the Site is fully defended from tidal and fluvial flooding.  
**We do not have detailed records of River Defences. However photographs on pages 24 & 25 of the SPD show that there are no defences at Ship Lane. Street View images from the river appear to show river levels approx. 1m below the towpath level, although there is no way of knowing what the Tide Status was at that time. There are defences at Bulls Alley, as indicated on Page 13 of the SPD.**
2. The Stag Brewery SPD sets out the planning brief for potential development at the Site. Please could you confirm that the Sequential Test has been passed.  
**This would need to be confirmed by our Planners.**
3. As it is very early in the decision process it is currently unknown where development would be located. However, the design would ensure that appropriate mitigation steps would be incorporated. In line with other Sites within London we currently assume that commercial and retail ('less vulnerable') uses would be acceptable on the ground floor. We also assume that duplex residential uses would be acceptable on the ground and first floor (bedrooms location on the first floor), as a means of egress would be available to ensure safety. Please could you confirm this. We will further consult once the scheme plans have evolved.  
**This approach is reasonable but Planners would make final approval. At other developments within Flood Zones floor levels are usually raised to at least 300mm above ground level to reduce flood risk.**
4. Could you please provide a map showing the location of any Ordinary Watercourses near the Site, and note any development restrictions that would therefore apply.

Please note plans attached. Watercourses plan shows a watercourse under the site, although the alignment is probably only indicative. OS plan is marked with the known extents of relevant section – ‘outlet’ is marked on the plan.

5. Please could you confirm whether or not there are any ‘lost rivers’ in the vicinity of the Site. Please could you provide any information you have relating to this, to include a map.  
**See above**
6. Please could you provide your Risk of Flooding from Surface Water map in the vicinity of the Site, as the EA’s online version is difficult to interpret due to the scale.  
**Richmond does not have its own Flood risk maps, we use the EA plans.**
7. Please provide us with details of any historic tidal, fluvial, groundwater, surface water or sewer flooding affecting or in the vicinity of the Site. Alternatively, please confirm that you have no records of flooding in the vicinity.  
**Our Highways Enquiry System has no record of any flooding reports at Mortlake High Street, Lower Richmond Road, Ship Lane or Williams Lane, other than blocked gully reports.**
8. Please could you confirm the likely groundwater levels in the vicinity of the Site.  
**Unfortunately we do not have records of likely Groundwater Levels.**
9. It is still very early in the design process and at this stage the drainage strategy is still being developed. We are currently looking at all options available to drain surface water runoff from the Site. Our approach will follow the drainage hierarchy where possible, with the preference of draining the site to the River Thames (unrestricted due to the tidal nature of the River). Should it not be possible to drain to the River Thames due to Site constraints, we would connect to the public sewer network. Following the requirements of the London Plan, we would limit surface water runoff from the Site to 50% of the existing rate, for the 1 in 100 year event, including for the predicted increase in rainfall intensity over the lifetime of the development due to climate change. Please could you confirm that this approach is acceptable.  
**This approach is acceptable.**

We are also writing to the Environment Agency and Thames Water requesting details of recorded flooding incidents and relevant information. If you are aware of any other parties that may have useful information please let me know.

This information is required as soon as possible and we would be grateful if you could provide your written response by 5<sup>th</sup> February 2016. If this is unlikely to be achievable or you require any further information please feel free to get in contact.


Please feel free to give me a call if you wish to discuss the above.

Cheers,

Donal

**C. Donal O’Donovan**  
**Engineer**  
**Waterman Infrastructure & Environment Ltd**

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## **G. Tide Locking Calculations**

### **Appendices**

The Former Stag Brewery, Mortlake

Project Number: WIE18671

Document Reference: WIE18671-104-R-11-4-1-DS






# CALCULATIONS

Company: WIE                      Office: London  
 Sheet No: 1 of 1                  Project No: WIE10667  
 By: N Balboni                      Date: 27.09.2017  
 Checked: D O'Donovan            Date: 27.09.2017

Project Title:            **Former Stag Brewery, Mortlake**  
 Calculations Title:    **Tide Locking Calculation**

CALCULATIONS						
The 'rule of twelfths' is a rule of thumb that allows the tide level to be estimated based on the high and low water levels. The rule is an approximation assuming six hours between high and low water, and does not take account of geographical location.						
Source: Port of London Authority, 2017. <i>Tide Tables and Port Information</i>						
Closest tidal stations: Barnes and Chiswick.						
Barnes MHWS (m AOD)		4.13				
Chiswick MHWS (m AOD)		4.08				
<b>Inputs</b>			<b>Rule of Twelfths</b>			
Mean High Water Spring	=	5.23 m AOD	Hour	Change	Water Level	
Mean Low Water Spring	=	-1.02 m AOD	0	-	-1.02	
			1	1/12	-0.50	
Invert Level of Outfall	=	2.60 m AOD	2	1/6	0.54	
			3	1/4	2.11	
			4	1/4	3.67	
			5	1/6	4.71	
			6	1/12	5.23	
			7	1/12	4.71	
			8	1/6	3.67	
			9	1/4	2.11	
			10	1/4	0.54	
			11	1/6	-0.50	
			12	1/12	-1.02	
<b>Output</b>						
Time that outfall becomes submerged (hrs)		=	3.3			
Time that outfall becomes unsubmerged (hrs)		=	8.6			
<b>Total time that outfall is submerged (hrs)</b>		=	<b>5.3</b>			

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Micro Drainage	Network 2017.1.2	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm





Pipe Sizes STANDARD Manhole Sizes STANDARD

FEH Rainfall Model

Return Period (years)	100
FEH Rainfall Version	1999
Site Location GB 520450 176000 TQ 20450 76000	
C (1km)	-0.024
D1 (1km)	0.322
D2 (1km)	0.262
D3 (1km)	0.219
E (1km)	0.306
F (1km)	2.539
Maximum Rainfall (mm/hr)	0
Maximum Time of Concentration (mins)	5
Foul Sewage (l/s/ha)	0.000
Volumetric Runoff Coeff.	0.750
PIMP (%)	100
Add Flow / Climate Change (%)	40
Minimum Backdrop Height (m)	0.200
Maximum Backdrop Height (m)	1.500
Min Design Depth for Optimisation (m)	1.200
Min Vel for Auto Design only (m/s)	1.00
Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	124.000	0.012	10333.3	0.300	5.00	0.0	0.600	[]	-1	Pipe/Conduit	
1.001	2.949	0.590	5.0	0.000	0.00	0.0	0.600	o	675	Pipe/Conduit	
1.002	7.594	0.051	150.0	0.000	0.00	0.0	0.600	o	675	Pipe/Conduit	
1.003	25.890	1.295	20.0	0.000	0.00	0.0	0.600	o	675	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	0.00	5.00	5.480	0.300	0.0	0.0	0.0	0.14	67.5	0.0
1.001	0.00	5.00	4.945	0.300	0.0	0.0	0.0	11.77	4211.0	0.0
1.002	0.00	5.00	4.355	0.300	0.0	0.0	0.0	2.14	765.0	0.0
1.003	0.00	5.00	4.305	0.300	0.0	0.0	0.0	5.88	2103.1	0.0

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	[ ]	-1	1	6.030	5.480	0.400	Open Manhole	3000
1.001	o	675	2	6.030	4.945	0.410	Open Manhole	3000
1.002	o	675	3	6.030	4.355	1.000	Open Manhole	1500
1.003	o	675	3	6.030	4.305	1.050	Open Manhole	2100

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	124.000	10333.3	2	6.030	5.468	0.412	Open Manhole	3000
1.001	2.949	5.0	3	6.030	4.355	1.000	Open Manhole	1500
1.002	7.594	150.0	3	6.030	4.305	1.050	Open Manhole	2100
1.003	25.890	20.0		4.500	3.010	0.815	Open Manhole	675

Surcharged Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.003		4.500	3.010	2.625	675	0

Datum (m) 0.000 Offset (mins) 0

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
30	5.230	90	5.230	150	5.230	210	5.230	270	5.230	330	5.230
60	5.230	120	5.230	180	5.230	240	5.230	300	5.230	360	5.230

Simulation Criteria for Storm

Volumetric Runoff Coeff 0.750      Additional Flow - % of Total Flow 0.000  
 Areal Reduction Factor 1.000      MADD Factor \* 10m<sup>3</sup>/ha Storage 2.000  
 Hot Start (mins) 0      Inlet Coefficient 0.800  
 Hot Start Level (mm) 0      Flow per Person per Day (l/per/day) 0.000  
 Manhole Headloss Coeff (Global) 0.500      Run Time (mins) 60  
 Foul Sewage per hectare (l/s) 0.000      Output Interval (mins) 1

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

Synthetic Rainfall Details

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Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	GB 520450 176000 TQ 20450 76000
C (1km)	-0.024
D1 (1km)	0.322
D2 (1km)	0.262
D3 (1km)	0.219
E (1km)	0.306
F (1km)	2.539
Summer Storms	Yes
Winter Storms	No
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	30

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

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coefficient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

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

Synthetic Rainfall Details


Rainfall Model	FEH
FEH Rainfall Version	1999
Site Location	GB 520450 176000 TQ 20450 76000
C (1km)	-0.024
D1 (1km)	0.322
D2 (1km)	0.262
D3 (1km)	0.219
E (1km)	0.306
F (1km)	2.539
Cv (Summer)	0.750
Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	1	15 Winter	100	+40%	100/15	Summer			5.824
1.001	2	60 Summer	100	+40%					5.274
1.002	3	60 Summer	100	+40%	100/30	Summer			5.267
1.003	3	60 Summer	100	+40%	100/30	Summer			5.254

PN	US/MH Name	Surcharged		Flooded		Pipe		Level Exceeded
		Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap. (l/s)	Overflow (l/s)	Flow (l/s)	Status	
1.000	1	0.194	0.000	1.29	285.9	FLOOD RISK		
1.001	2	-0.346	0.000	0.15	147.8	OK		
1.002	3	0.237	0.000	0.35	148.7	SURCHARGED		

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

PN	US/MH Name	Surcharged		Flooded		Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)			
1.003	3	0.274	0.000	0.10		149.6	SURCHARGED	