











**Search address supplied:** Aberfeldy Village, Aberfeldy Street, London, London, UK,

Dear Sir / Madam

**An Asset Location Search is recommended when undertaking a site development.** It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This search provides maps showing the position, size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

#### Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0845 070 9148, or use the address below:

Thames Water Utilities Ltd  
Property Searches  
PO Box 3189  
Slough  
SL1 4WW

Email: [searches@thameswater.co.uk](mailto:searches@thameswater.co.uk)  
Web: [www.thameswater-propertysearches.co.uk](http://www.thameswater-propertysearches.co.uk)

#### Waste Water Services

**Please provide a copy extract from the public sewer map.**

The following quartiles have been printed as they fall within Thames' sewerage area:

TQ3881NE  
TQ3881SW  
TQ3881NW  
TQ3881SE

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority.

Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners.

This report relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus.

The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

#### Clean Water Services

**Please provide a copy extract from the public water main map.**

The following quartiles have been printed as they fall within Thames' water area:

TQ3881NE  
TQ3881SW

TQ3881NW  
TQ3881SE

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

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

**For your guidance:**

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

**Payment for this Search**

A charge will be added to your suppliers account.

**Further contacts:**

**Waste Water queries**

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

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

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

Tel: 0800 009 3921  
Email: [developer.services@thameswater.co.uk](mailto:developer.services@thameswater.co.uk)

**Clean Water queries**

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

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

Tel: 0800 009 3921  
Email: [developer.services@thameswater.co.uk](mailto:developer.services@thameswater.co.uk)







The width of the displayed area is 500m and the centre of the map is located at OS coordinates 538250,181250  
 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

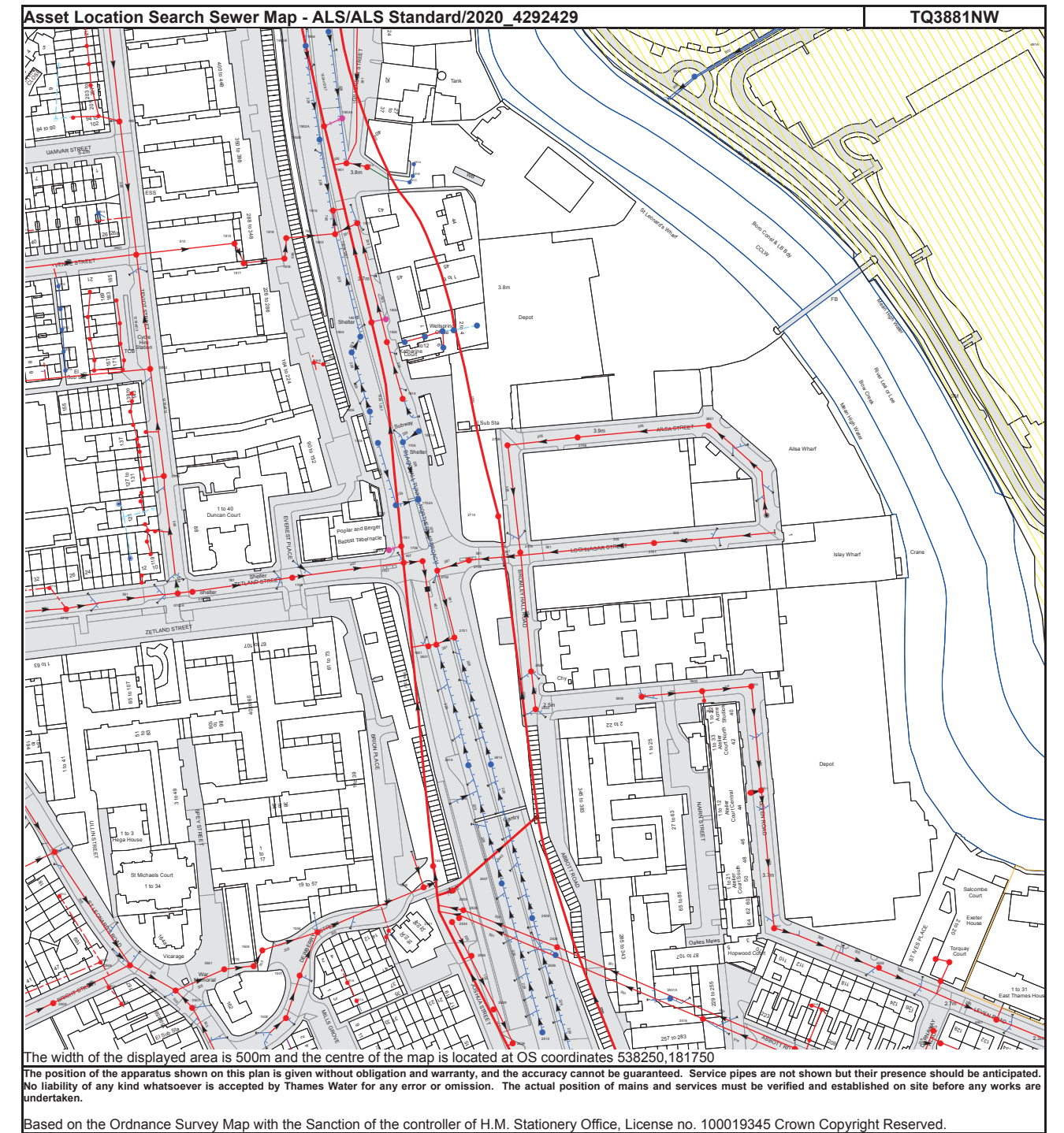
Manhole Reference	Manhole Cover Level	Manhole Invert Level
3407	2.25	.86
3402	1.92	-3.79
3403	1.94	-.54
2417	3	1.5
141A	n/a	n/a
2424	2.32	n/a
141G	n/a	n/a
411H	n/a	n/a
4203	1.7	-.48
4204	1.79	-.7
4202	1.71	-.9
4201	1.7	-.94
42DH	n/a	n/a
42DI	n/a	n/a
42DJ	n/a	n/a
42EA	n/a	n/a
4216	1.57	-1.33
42EE	n/a	n/a
4215	1.61	-2.24
42EG	n/a	n/a
42ED	n/a	n/a
43DB	n/a	n/a
33CH	n/a	n/a
4301A	1.77	-2.82
43DE	n/a	n/a
431E	n/a	n/a
43DD	n/a	n/a
43DF	n/a	n/a
4319	1.76	-1.28
43DG	n/a	n/a
44DB	n/a	n/a
44DA	n/a	n/a
44CI	n/a	n/a
44DC	n/a	n/a
44DD	n/a	n/a
44CH	n/a	n/a
44CJ	n/a	n/a
3432	1.68	-1.72
4420	1.59	-3.16
4419	1.7	-3.27
4408	1.75	-3.45
3405	1.72	.13
4407	1.97	-3.55
4401	1.76	-.05
3404	1.67	-.33
3222	2.36	.55
32CG	n/a	n/a
42EC	n/a	n/a
33EE	n/a	n/a
4313	2.04	-1.04
43DI	n/a	n/a
33ED	n/a	n/a
33EC	n/a	n/a
33EB	n/a	n/a
4312	1.73	-2.54
33EA	n/a	n/a
33DJ	n/a	n/a
431D	n/a	n/a
431C	n/a	n/a
33CE	n/a	n/a
4303	n/a	n/a
4302	n/a	n/a
431B	n/a	n/a
33DB	n/a	n/a
33DC	n/a	n/a
431A	n/a	n/a
33DD	n/a	n/a
3016	4.41	-1.42
3015	4.08	-1.55
3014	3.45	-1.74
3010	n/a	n/a
3023	4.25	1.24
3005	n/a	n/a
3009	3.98	1.27
3008	4.06	2.68
3007	4.16	-1.23
3006	6.19	2.89
2422	2.26	-4.27
2406	2.7	1.83
2409	2.99	2.3
2408	n/a	n/a
2304	2.49	1.07
2420	3.36	1.54
2303	2.35	.8
2305	2.66	1.02
2301	2.38	.73
3306	2.49	1.72
3310	2.57	.74
3406	2.76	1.11
3401	3.04	-8.94

Manhole Reference	Manhole Cover Level	Manhole Invert Level
3302	2.7	.54
3301B	2.29	-1.11
33CI	n/a	n/a
3205	2.35	-4.07
33CD	n/a	n/a
3202	n/a	n/a
33CJ	n/a	n/a
33DE	n/a	n/a
33DF	n/a	n/a
33DG	n/a	n/a
33DH	n/a	n/a
33DA	n/a	n/a
33DI	n/a	n/a
3316	n/a	n/a
2102	4.37	1.67
2012	4.38	1.37
2112	4.66	-8.47
3112	n/a	n/a
3101	n/a	n/a
3102	n/a	n/a
3103	n/a	n/a
3106	n/a	n/a
311C	n/a	n/a
311B	n/a	n/a
311A	n/a	n/a
4104	1.72	-.02
411E	n/a	n/a
411A	n/a	n/a
411J	n/a	n/a
411F	n/a	n/a
411B	n/a	n/a
411I	n/a	n/a
411G	n/a	n/a
411C	n/a	n/a
4103	1.85	-.11
411D	n/a	n/a
4011	4.17	1.55
4102	1.93	-.22
4101	1.93	-.49
12BD	n/a	n/a
12BE	n/a	n/a
2208	5.19	2.74
22CE	n/a	n/a
22CD	n/a	n/a
12BF	n/a	n/a
22BH	n/a	n/a
22BI	n/a	n/a
22BJ	n/a	n/a
22CA	n/a	n/a
22CB	n/a	n/a
22CC	n/a	n/a
2207	5.18	2.47
21CE	n/a	n/a
21CD	n/a	n/a
2203	5.2	2.35
21CC	n/a	n/a
2202	3.7	1.85
2204	3.93	2.12
2201	2.97	.77
2212	2.64	1.93
3218	2.85	1.21
3217	2.94	.53
3219	2.74	1.64
3201	2.44	-8.63
3204	2.34	-.83
3203	2.47	-1.25
12EB	n/a	n/a
12EA	n/a	n/a
121I	n/a	n/a
121F	5.7	4.88
121K	5.65	4.88
121T	5.98	3.89
121J	n/a	n/a
121G	5.7	4.55
12DJ	n/a	n/a
121E	n/a	n/a
121H	n/a	n/a
121D	5.7	3.04
1210	6.31	4.9
12DI	n/a	n/a
121C	5.99	3.08
121R	6.17	4.07
12DH	n/a	n/a
12FH	n/a	n/a
12FI	n/a	n/a
12BJ	n/a	n/a
12CA	n/a	n/a
12CB	n/a	n/a
12AI	n/a	n/a
12AJ	n/a	n/a
12BA	n/a	n/a
12BB	n/a	n/a
12BC	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
11ED	n/a	n/a
11EC	n/a	n/a
11EB	n/a	n/a
21BE	n/a	n/a
11CG	n/a	n/a
11EA	n/a	n/a
21CH	n/a	n/a
21BF	n/a	n/a
11CH	n/a	n/a
11DJ	n/a	n/a
11CI	n/a	n/a
11CJ	n/a	n/a
21BG	n/a	n/a
11DA	n/a	n/a
11DB	n/a	n/a
11DI	n/a	n/a
21BH	n/a	n/a
11DC	n/a	n/a
11DH	n/a	n/a
21BI	n/a	n/a
11DF	n/a	n/a
11DG	n/a	n/a
21BJ	n/a	n/a
2110	5.27	3.03
21CA	n/a	n/a
21CB	n/a	n/a
2109	4.66	2.72
10DF	n/a	n/a
20DC	n/a	n/a
101A	n/a	n/a
20CD	n/a	n/a
10CC	n/a	n/a
10CI	n/a	n/a
20CI	n/a	n/a
1017	5.67	2.64
10CD	n/a	n/a
1016	5.23	2.03
10FD	n/a	n/a
20CJ	n/a	n/a
2019	4.77	1.79
10FE	n/a	n/a
11EI	n/a	n/a
11EJ	n/a	n/a
11FA	n/a	n/a
11FB	n/a	n/a
11FC	n/a	n/a
11FE	n/a	n/a
11FH	n/a	n/a
1102B	5.81	2.58
11EG	n/a	n/a
11EF	n/a	n/a
1101A	5.8	2.17
11EE	n/a	n/a
2103	4.5	2.19
02CH	n/a	n/a
12GD	n/a	n/a
12DG	n/a	n/a
12BI	n/a	n/a
12DF	n/a	n/a
12DD	n/a	n/a
12DC	n/a	n/a
12BH	n/a	n/a
12DB	n/a	n/a
12DA	n/a	n/a
12CJ	n/a	n/a
12GF	n/a	n/a
1205	n/a	n/a
12CI	n/a	n/a
12BG	n/a	n/a
12CH	n/a	n/a
12CC	n/a	n/a
13DH	n/a	n/a
13DE	n/a	n/a
13DG	n/a	n/a
13DF	n/a	n/a
13DD	n/a	n/a
13DI	n/a	n/a
13DC	n/a	n/a
13DB	n/a	n/a
1303	n/a	n/a
1301	5.33	3.16
1004	n/a	n/a
1009	n/a	n/a
1003	n/a	n/a
1001A	n/a	n/a
1010	5.03	1.14
2004	5.3	2.58
1013	5.52	1.82
2005	4.86	3.56
2006	4.74	3.75
1011	5.33	1.55
001D	n/a	n/a
10DH	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
2011	4.53	1.22
10FA	n/a	n/a
10EJ	n/a	n/a
10DG	n/a	n/a
10DE	n/a	n/a
10DB	n/a	n/a
101B	n/a	n/a
10DD	n/a	n/a
20DB	n/a	n/a
01FD	n/a	n/a
0102A	6.44	3.38
01FG	n/a	n/a
01FH	n/a	n/a
01FI	n/a	n/a
01FJ	n/a	n/a
01FF	n/a	n/a
01GA	n/a	n/a
01GB	n/a	n/a
01GC	n/a	n/a
01BE	n/a	n/a
01BF	n/a	n/a
0003	6.02	2.89
11CB	n/a	n/a
11GI	n/a	n/a
11GA	n/a	n/a
11CC	n/a	n/a
11GB	n/a	n/a
11GC	n/a	n/a
11GD	n/a	n/a
11GE	n/a	n/a
11GF	n/a	n/a
11GG	n/a	n/a
10FC	n/a	n/a
11HC	n/a	n/a
11HA	n/a	n/a
11HD	n/a	n/a
0302	5.99	3.98
0312	n/a	2.95
0402	5.17	2.45
0301	5.75	3.69
0311	5.81	2.78
1410	5.02	1.25
141E	n/a	n/a
1411	5.23	1.47
141D	n/a	n/a
1404	5.25	1.53
141C	n/a	n/a
1312	5.55	3.33
1405	5.47	2.46
1415	n/a	n/a
1311	5.43	2.97
1403	4.55	1.3
1414	n/a	n/a
1310	5.38	3.07
1302	n/a	n/a
141H	n/a	n/a
131A	n/a	n/a
1402	4.17	1.17
141B	n/a	n/a
1401	3.58	1.08
2315	4.46	1.69
2314	3.26	1.25
2403	2.27	-5.19
2407	2.81	2.25
0212	n/a	n/a
0201B	6.49	3.67
02CI	n/a	n/a
0202	6.24	3.38
12FD	n/a	n/a
1103B	5.94	3.13
12FC	n/a	n/a
11CD	n/a	n/a
121S	6.11	5.25
12FB	n/a	n/a
12FA	n/a	n/a
12EJ	n/a	n/a
12EI	n/a	n/a
12EH	n/a	n/a
12EG	n/a	n/a
121L	5.71	4.55
12EF	n/a	n/a
121M	5.73	4.28
121A	5.6	3.17
12EE	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.

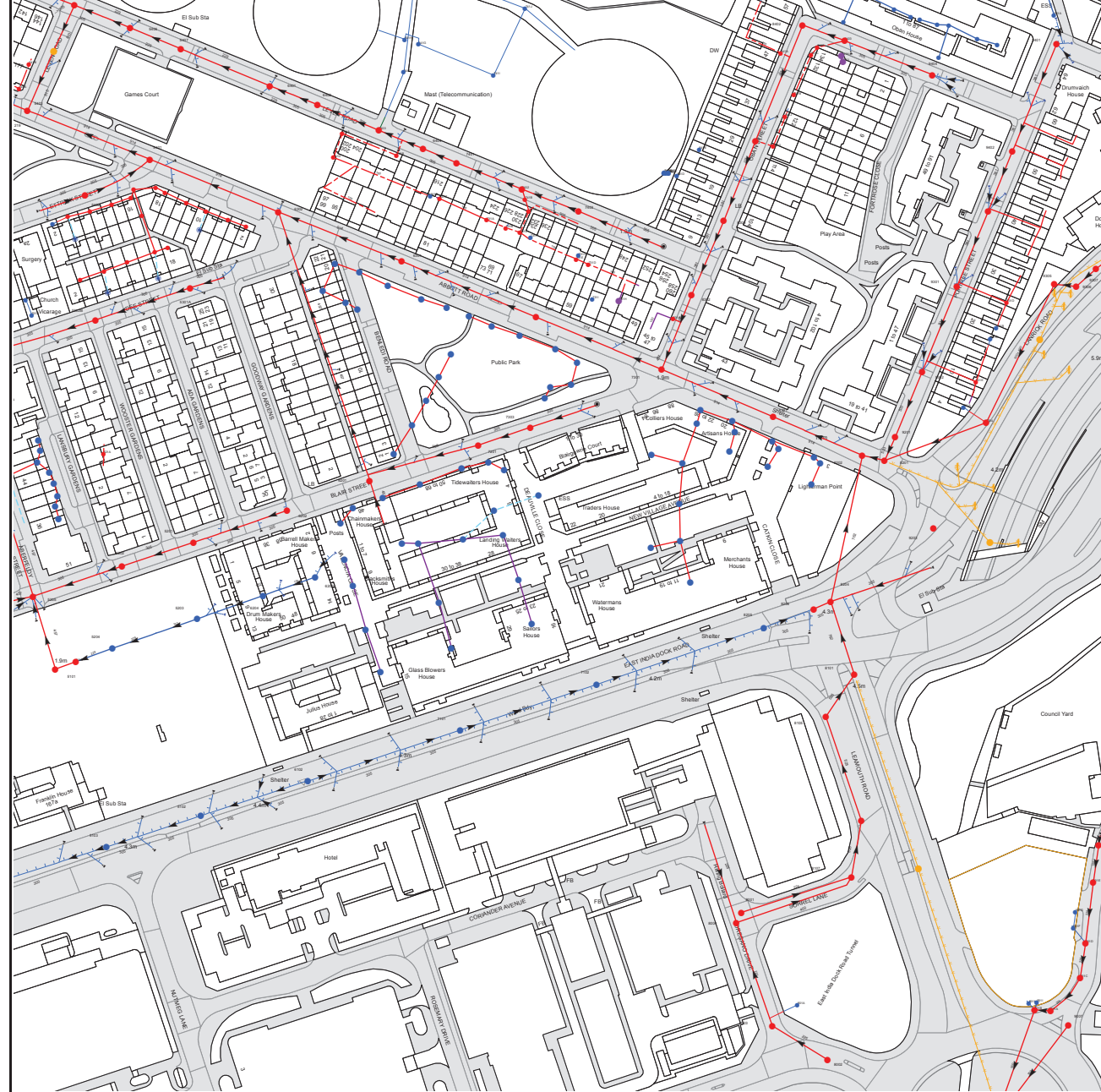


NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
3701	n/a	n/a
3501A	n/a	n/a
3603	3.19	1.1
3516	n/a	n/a
3604	3.24	n/a
361A	3.5	.4
3602	3.75	.78
3601	3.55	.29
3507	3.39	n/a
3517	n/a	n/a
35CH	n/a	n/a
351A	n/a	n/a
35CG	n/a	n/a
4502	n/a	n/a
4511	n/a	n/a
45BF	n/a	n/a
45CB	n/a	n/a
45BH	n/a	n/a
45BG	n/a	n/a
4501	n/a	n/a
1705	n/a	n/a
2709	n/a	n/a
1801A	n/a	n/a
3801	n/a	n/a
1806	n/a	n/a
1814	n/a	n/a
181A	n/a	n/a
181B	n/a	n/a
1805	n/a	n/a
28AB	n/a	n/a
18C1	n/a	n/a
1820	n/a	n/a
18CH	n/a	n/a
1804	n/a	n/a
28AC	n/a	n/a
28AE	n/a	n/a
28AD	n/a	n/a
1801B	n/a	n/a
1802	n/a	n/a
1817	n/a	n/a
1818	n/a	n/a
1816	n/a	n/a
1819	n/a	n/a
1803	n/a	n/a
1917	n/a	n/a
1915	n/a	n/a
191C	n/a	n/a
191B	n/a	n/a
1914	n/a	n/a
191A	n/a	n/a
1901	n/a	n/a
1902B	n/a	n/a
1902A	n/a	n/a
1903A	n/a	n/a
391A	n/a	n/a
1903B	n/a	n/a
491A	n/a	n/a
1904	n/a	n/a
391B	n/a	n/a
2538	n/a	n/a
2510	n/a	n/a
1508	n/a	n/a
2539	n/a	n/a
0503	n/a	n/a
151A	n/a	n/a
0502	n/a	n/a
151B	n/a	n/a
1507	n/a	n/a
0501	n/a	n/a
1510	n/a	n/a
2540	n/a	n/a
2509	n/a	n/a
1509	n/a	n/a
2536	n/a	n/a
151D	n/a	n/a
1506	n/a	n/a
151C	n/a	n/a
2541	n/a	n/a
2534	n/a	n/a
2508	n/a	n/a
2535	n/a	n/a
2505	2.25	-8.8
1505	n/a	n/a
2507	n/a	n/a
1501	2.32	-5.24
2614	n/a	n/a
2615	n/a	n/a
2630	n/a	n/a
3605	n/a	n/a
2629	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
1601	n/a	n/a
2601	n/a	n/a
2701	n/a	n/a
0702A	n/a	n/a
0701B	n/a	n/a
1708	n/a	n/a
2702	n/a	n/a
1707	n/a	n/a
1706	n/a	n/a
2704	n/a	n/a
2705	n/a	n/a
1702B	n/a	n/a
1701	n/a	n/a
2714	3.24	-9.46
1703	n/a	n/a
1702A	n/a	n/a
0713	n/a	n/a
2708	n/a	n/a
1704	n/a	n/a
07CH	n/a	n/a
07DB	n/a	n/a
07DD	n/a	n/a
07DE	n/a	n/a
07DJ	n/a	n/a
07EA	n/a	n/a
07EB	n/a	n/a
07DI	n/a	n/a
07DH	n/a	n/a
08BJ	n/a	n/a
08CA	n/a	n/a
08CB	n/a	n/a
08CC	n/a	n/a
08AH	n/a	n/a
081A	n/a	n/a
08EE	n/a	n/a
08DI	n/a	n/a
0802	n/a	n/a
08DH	n/a	n/a
08ED	n/a	n/a
081B	n/a	n/a
08DG	n/a	n/a
08EC	n/a	n/a
081C	n/a	n/a
08DF	n/a	n/a
08EB	n/a	n/a
081D	n/a	n/a
08DE	n/a	n/a
08EA	n/a	n/a
081E	n/a	n/a
0801	n/a	n/a
091A	n/a	n/a
0901	n/a	n/a
09BD	n/a	n/a
09BE	n/a	n/a
09BF	n/a	n/a
09CA	n/a	n/a
09BJ	n/a	n/a
09BC	n/a	n/a
09BI	n/a	n/a
09BH	n/a	n/a
071A	n/a	n/a
0506	n/a	n/a
051C	n/a	n/a
0712	n/a	n/a
051D	n/a	n/a
07CI	n/a	n/a
0504	n/a	n/a
07AH	n/a	n/a
07BJ	n/a	n/a
07CE	n/a	n/a
07CF	n/a	n/a
07CD	n/a	n/a
07CG	n/a	n/a
07CC	n/a	n/a
051B	n/a	n/a
0505	n/a	n/a
051A	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 538750,181250  
 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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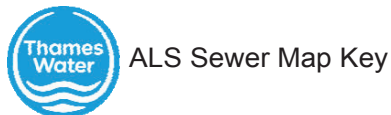
NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
8401	n/a	n/a
841G	n/a	n/a
841A	n/a	n/a
841J	n/a	n/a
841B	n/a	n/a
8402	n/a	n/a
841C	n/a	n/a
841F	n/a	n/a
841H	n/a	n/a
841I	n/a	n/a
84DH	n/a	n/a
8403	n/a	n/a
94CI	n/a	n/a
94CH	n/a	n/a
94CJ	n/a	n/a
9404	n/a	n/a
94DA	n/a	n/a
94DC	n/a	n/a
94DB	n/a	n/a
9402	n/a	n/a
9401	n/a	n/a
7403	n/a	n/a
741A	n/a	n/a
741B	n/a	n/a
641C	n/a	n/a
641E	n/a	n/a
7402	n/a	n/a
841D	n/a	n/a
741E	n/a	n/a
741D	n/a	n/a
741H	n/a	n/a
741C	n/a	n/a
741G	n/a	n/a
741F	n/a	n/a
7401	n/a	n/a
641D	n/a	n/a
641B	n/a	n/a
841E	n/a	n/a
6404	n/a	n/a
641A	n/a	n/a
6403	n/a	n/a
6402	n/a	n/a
741I	n/a	n/a
641F	n/a	n/a
641G	n/a	n/a
641H	n/a	n/a
741J	n/a	n/a
5405	n/a	n/a
9203	n/a	n/a
82CD	n/a	n/a
82CH	n/a	n/a
82CE	n/a	n/a
8201	n/a	n/a
82CF	n/a	n/a
8202	n/a	n/a
82CJ	n/a	n/a
82CI	n/a	n/a
82CG	n/a	n/a
9201	n/a	n/a
83CF	n/a	n/a
9304	n/a	n/a
83CE	n/a	n/a
8301	n/a	n/a
931A	n/a	n/a
931E	n/a	n/a
9302	n/a	n/a
931C	n/a	n/a
931B	n/a	n/a
931D	n/a	n/a
9301	n/a	n/a
9306	n/a	n/a
9305	n/a	n/a
9307	n/a	n/a
9403	n/a	n/a
72A1	n/a	n/a
731B	n/a	n/a
73CI	n/a	n/a
731C	n/a	n/a
731F	n/a	n/a
7303	n/a	n/a
7302	n/a	n/a
72CD	n/a	n/a
73DD	n/a	n/a
73DB	n/a	n/a
73CG	n/a	n/a
73DA	n/a	n/a
731E	n/a	n/a
73CJ	n/a	n/a
731G	n/a	n/a
731D	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
731I	n/a	n/a
731H	n/a	n/a
72AH	n/a	n/a
730I	n/a	n/a
831A	n/a	n/a
82CB	n/a	n/a
82CC	n/a	n/a
8302	n/a	n/a
83CB	n/a	n/a
83CC	n/a	n/a
8303	n/a	n/a
8004	n/a	n/a
8003	n/a	n/a
801A	6.29	5.79
8002	n/a	n/a
9007	n/a	n/a
8001	n/a	n/a
8107	n/a	n/a
8106	n/a	n/a
6102	n/a	n/a
7101	n/a	n/a
8105	n/a	n/a
7102	n/a	n/a
8101	n/a	n/a
61BC	n/a	n/a
62DF	n/a	n/a
62CJ	n/a	n/a
8205	n/a	n/a
72CB	n/a	n/a
8206	n/a	n/a
62DE	n/a	n/a
8204	n/a	n/a
62DA	n/a	n/a
82BJ	n/a	n/a
72CA	n/a	n/a
6203	n/a	n/a
62DB	n/a	n/a
72AG	n/a	n/a
62DD	n/a	n/a
62DC	n/a	n/a
82CA	n/a	n/a
72BJ	n/a	n/a
72BI	n/a	n/a
6202	n/a	n/a
63DI	n/a	n/a
63DJ	n/a	n/a
62CA	n/a	n/a
63EI	n/a	n/a
62CB	n/a	n/a
63FA	n/a	n/a
63EA	n/a	n/a
6201	n/a	n/a
62CE	n/a	n/a
63ED	n/a	n/a
62EF	n/a	n/a
6301	n/a	n/a
63EG	n/a	n/a
62CD	n/a	n/a
63EC	n/a	n/a
63EF	n/a	n/a
63EH	n/a	n/a
63EB	n/a	n/a
63EE	n/a	n/a
72BA	n/a	n/a
73CF	n/a	n/a
7201	n/a	n/a
731A	n/a	n/a
72AJ	n/a	n/a
73CH	n/a	n/a
72CC	n/a	n/a
53AE	n/a	n/a
53BG	n/a	n/a
53BH	n/a	n/a
5402	n/a	n/a
54DI	n/a	n/a
5302B	n/a	n/a
521A	n/a	n/a
53BI	n/a	n/a
54BH	n/a	n/a
53BJ	n/a	n/a
5406	n/a	n/a
54DH	n/a	n/a
54DJ	n/a	n/a
53CC	n/a	n/a
5401	n/a	n/a
53CA	n/a	n/a
54EA	n/a	n/a
54EB	n/a	n/a
53CB	n/a	n/a
5407	n/a	n/a
54EC	n/a	n/a
5301A	n/a	n/a
54ED	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
53CD	n/a	n/a
63CF	n/a	n/a
6401	n/a	n/a
6302	n/a	n/a
5101	n/a	n/a
511B	n/a	n/a
5204	n/a	n/a
5203	n/a	n/a
5205	n/a	n/a
6204	n/a	n/a
5202	n/a	n/a
5201	n/a	n/a
52CH	n/a	n/a
52CI	n/a	n/a
52CJ	n/a	n/a
52DA	n/a	n/a
52DB	n/a	n/a
5403	n/a	n/a
541A	n/a	n/a
541B	n/a	n/a
52DC	n/a	n/a
52DE	n/a	n/a
52DD	n/a	n/a
531B	n/a	n/a
531A	n/a	n/a
5103	n/a	n/a
5102	n/a	n/a
901H	5.1	4.21
901B	5.1	2.1
901I	5.1	4.39
901A	4.91	2.2
901F	5.59	4.52
901G	5.59	2.97
901C	4.96	2.37
901D	4.82	2.43
901E	4.68	2.58
911B	4.6	3.15
94DF	n/a	n/a
94DE	n/a	n/a
941A	n/a	n/a

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**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

**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.

**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

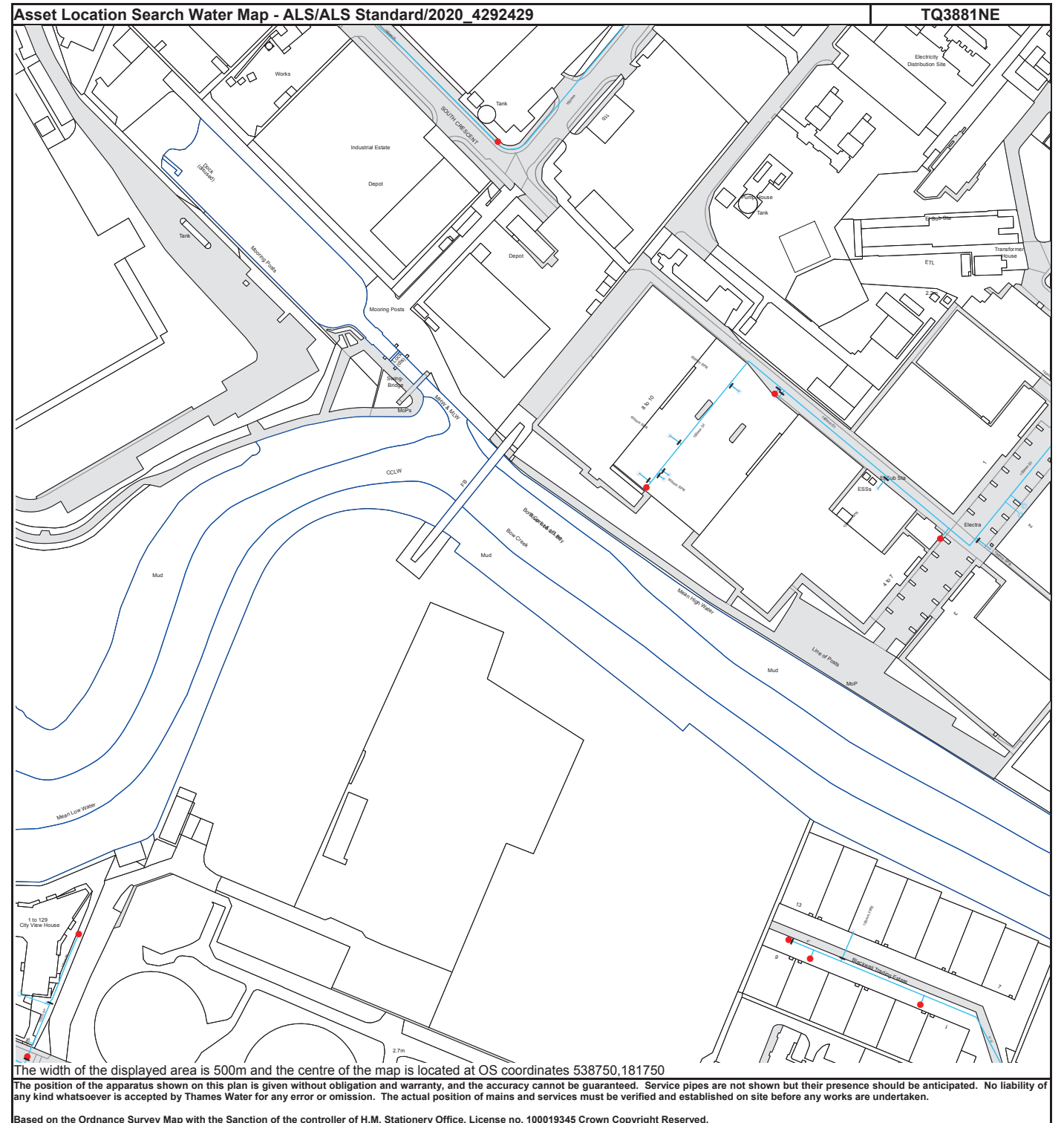
**Areas**

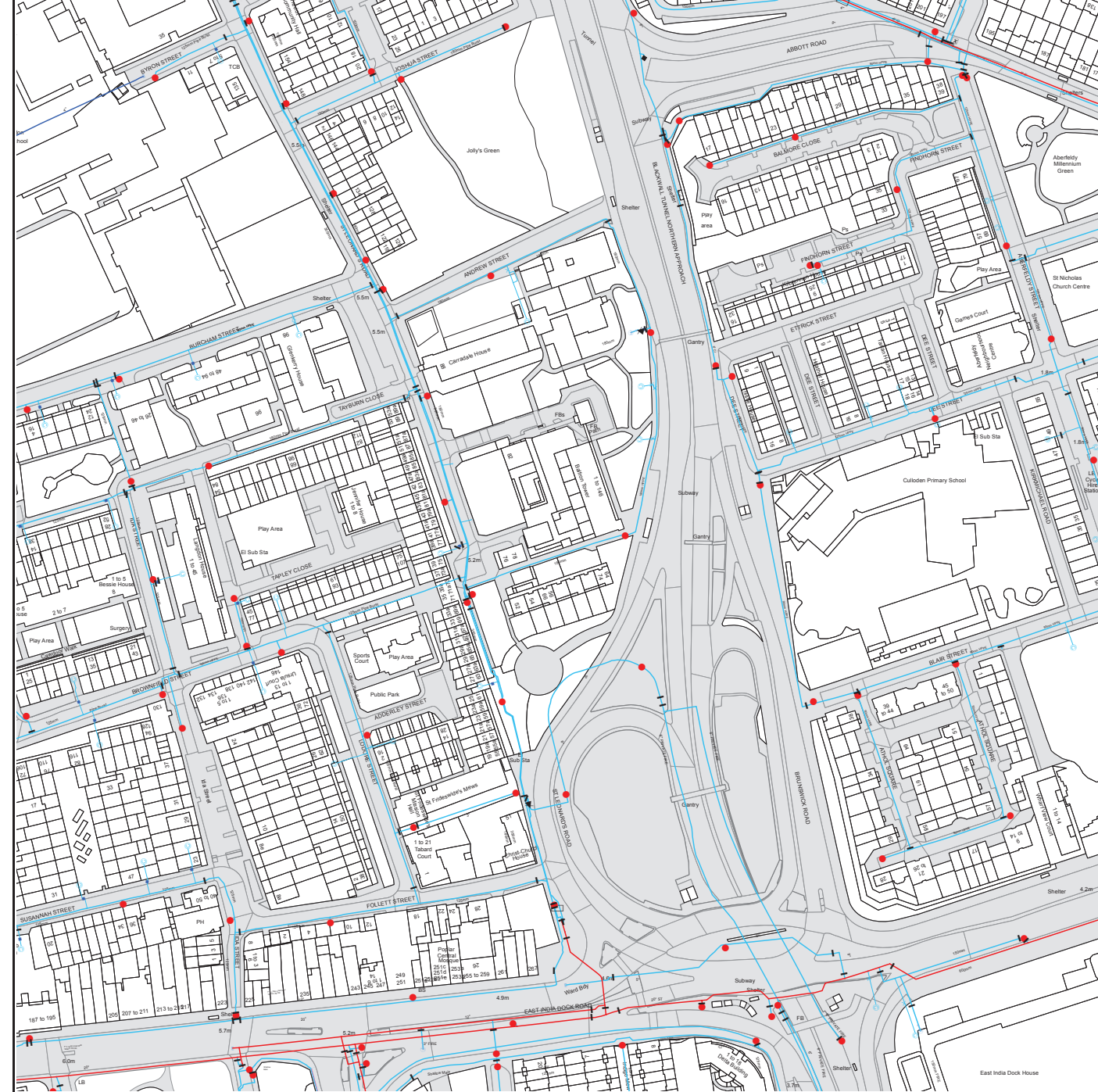
Lines denoting areas of underground surveys, etc.

- Agreement
- Operational Site
- Chamber
- Tunnel
- Conduit Bridge

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

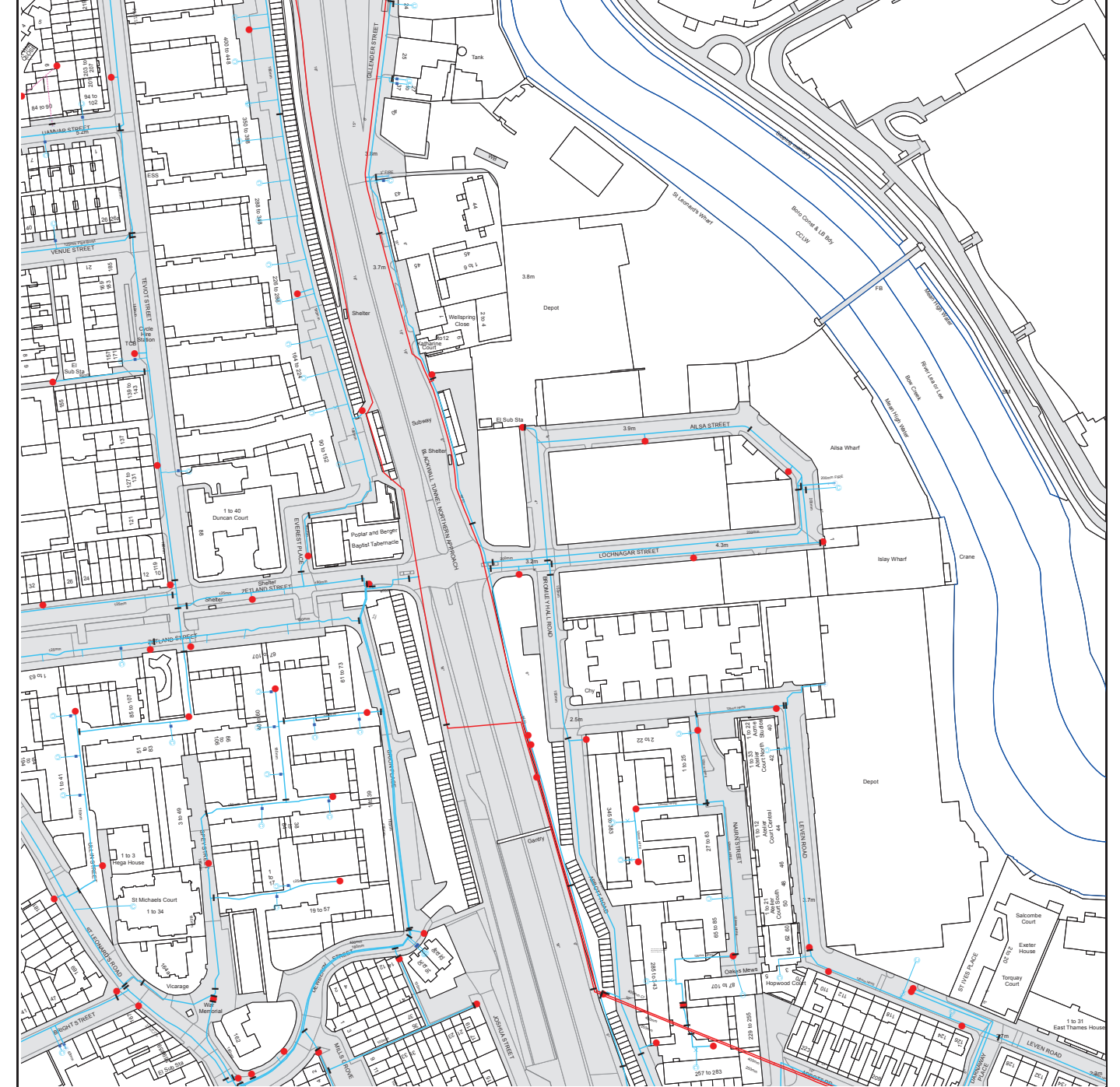
- Foul Sewer
- Surface Water Sewer
- Combined Sewer
- Gully
- Culverted Watercourse
- Proposed
- Abandoned Sewer





The width of the displayed area is 500m and the centre of the map is located at OS coordinates 538250,181250  
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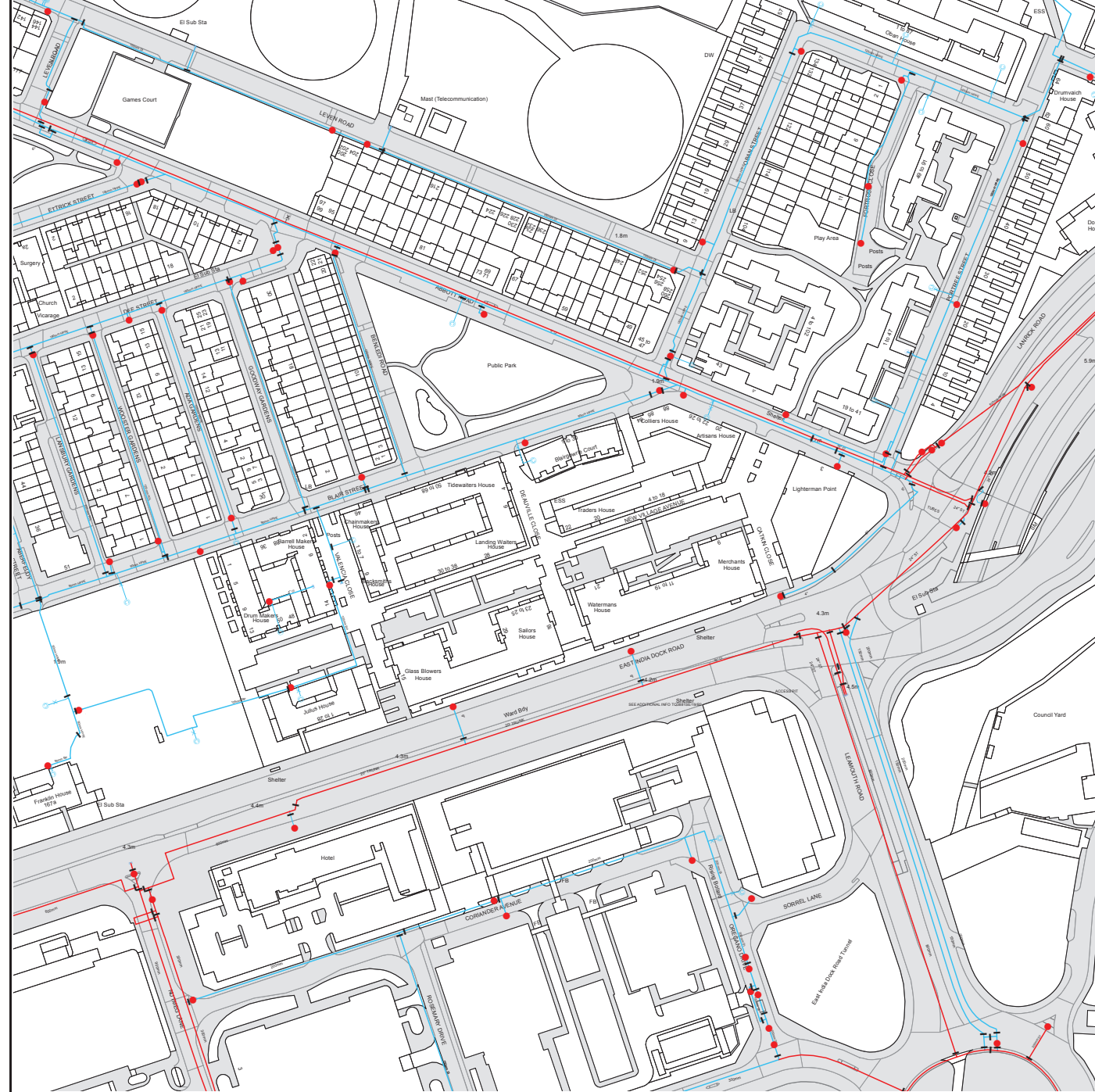
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The width of the displayed area is 500m and the centre of the map is located at OS coordinates 538250,181750  
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### ALS Water Map Key

#### 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')

Thames Water Utilities Ltd, Property Searches, PO Box 3189, Slough SL1 4W, DX 151280 Slough 13  
 T 0845 070 9148 E [searches@thameswater.co.uk](mailto:searches@thameswater.co.uk) | [www.thameswater-propertysearches.co.uk](http://www.thameswater-propertysearches.co.uk)

#### Valves

- | General Purpose Valve
- ◆ Air Valve
- ▲ Pressure Control Valve
- X 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.

## Terms and Conditions

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

1. All goods remain in the property of Thames Water Utilities Ltd until full payment is received.
2. Provision of service will be in accordance with all legal requirements and published TWUL policies.
3. All invoices are strictly due for payment 14 days from due date of the invoice. Any other terms must be accepted/agreed in writing prior to provision of goods or service, or will be held to be invalid.
4. Thames Water does not accept post-dated cheques-any cheques received will be processed for payment on date of receipt.
5. In case of dispute TWUL's terms and conditions shall apply.
6. Penalty interest may be invoked by TWUL in the event of unjustifiable payment delay. Interest charges will be in line with UK Statute Law 'The Late Payment of Commercial Debts (Interest) Act 1998'.
7. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
8. A charge may be made at the discretion of the company for increased administration costs.

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

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

If you are unhappy with our service you can speak to your original goods or customer service provider. If you are not satisfied with the response, your complaint will be reviewed by the Customer Services Director. You can write to her at: Thames Water Utilities Ltd. PO Box 492, Swindon, SN38 8TU.

If the Goods or Services covered by this invoice falls under the regulation of the 1991 Water Industry Act, and you remain dissatisfied you can refer your complaint to Consumer Council for Water on 0121 345 1000 or write to them at Consumer Council for Water, 1st Floor, Victoria Square House, Victoria Square, Birmingham, B2 4AJ.

### Ways to pay your bill

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

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



Mrs Maria Magdalena Burca  
Ecoworld and Poplar Harca C/O Meinhardt (UK) Ltd  
10 Aldersgate Street  
London  
EC1A 4HJ



24 March 2021

### Pre-planning enquiry: Confirmation of sufficient capacity

Dear Mrs Burca,

Thank you for providing information on your development:

**Aberfeldy Village, Area known as Poplar Riverside, London, E14 0HT.**

**Existing: 297 dwellings, primary school and commercial space (2,217sqm).**

**Proposed: Demolition of existing site. Phase A – 250 residential units. Foul water discharging by gravity. 50 units to MH7303, 23 units to MH3605, 75 units to MH4301A, 102 units to MH4215. Surface water discharging by gravity attenuated to 8.59l/s to manholes 7303, 3605, 4301A and 4215.**

**Phase B – 573 residential units, 920.3sqm of workspace, 1,894.9sqm of residential hub, 344,8sqm of estate management space and 443.3sqm of retail space. Foul water discharging by gravity. 79 units to MH3605, 222 units to MH3517 and MH2536, 160 units to MH3516. Surface water discharging by gravity attenuated to 8l/s to manholes 3605, 3517, 2536 and 3516.**

**Phase C – 622 residential units and 4,816.7sqm workspace. Foul water discharging by gravity to manhole 4303. Surface water discharging by gravity attenuated to 6l/s to manhole 4303.**

**Phase D – Primary school. Foul water discharging by gravity to manhole 4302. Surface water discharging by gravity attenuated to 3l/s to manhole 4302.**

**Phase E – 427 residential units and 2,808.3sqm of workspace. Foul water discharging by gravity. 220 units to the manhole upstream of MH4203 in Blair Street, 151 units to MH4202 and 78 units to MH4216.**

**Overall surface water discharge rates for the development will be restricted to 33.59l/s.**

We have completed the assessment of the foul water flows and surface water run-off based on the information submitted in your application with the purpose of assessing sewerage capacity within the existing Thames Water sewer network.

### Foul Water

If your proposals progress in line with the details you've provided, we're pleased to confirm that there will be sufficient sewerage capacity in the adjacent combined sewer network to serve your development.

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

**You'll need to keep us informed of any changes to your design – for example, an increase in the number or density of homes. Such changes could mean there is no longer sufficient capacity.**

### Surface Water

Please note that discharging surface water to the public sewer network should only be considered after all other methods of disposal have been investigated and proven to not be viable. In accordance with the Building Act 2000 Clause H3.3, positive connection to a public sewer will only be consented when it can be demonstrated that the hierarchy of disposal methods have been examined and proven to be impracticable. The disposal hierarchy being: 1st Soakaways; 2nd Watercourses; 3rd Sewers.

Only when it can be proven that soakage into the ground or a connection into an adjacent watercourse is not possible would we consider a restricted discharge into the public combined sewer network.

If the peak surface water run-off discharge is then restricted to Greenfield run-off rates/a maximum of 33.59l/s as your drainage strategy indicates, then we would have no objections to the proposals.

Thames Water Planning team would ask to see why it is not practicable on the site to restrict to Greenfield run-off rates if they are consulted as part of any planning application.

In considering your surface water needs, we support the use of sustainable drainage on development sites. You'll need to show the local authority and/or lead local flood authority how you've taken into account the surface water hierarchy that we've included.

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

### What happens next?

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

If you've any further questions, please contact me on 0203 577 9811.

Yours sincerely

Siva Rajaratnam - Adoptions Engineer

Thames Water

## Appendix C – Drainage Strategy Drawings and Calculations

**Proposed Surface Water Discharge rates**

**Total Site Area = 48334m<sup>2</sup> = 4.83 ha**

Calculated Green field runoff rate = 18.8 l/s

**Phase A**

1. **Block F1:** Hard standing area (excluding green areas, roads): 2145m<sup>2</sup>
2. **Block H1/H2:** Hard standing area (excluding green areas, roads): 2025m<sup>2</sup>
3. **Block H3:** Hard standing area (excluding green areas, roads): 1700m<sup>2</sup>
4. **Block I1:** Hard standing area (excluding green areas, roads): 905m<sup>2</sup>
5. **Block J1:** Hard standing area (excluding green areas, roads): 2624m<sup>2</sup>

**Phase B**

1. **Block A1/A2:** Hard standing area (excluding green areas, roads): 3570m<sup>2</sup>
2. **Block A3:** Hard standing area (excluding green areas, roads): 1265m<sup>2</sup>
3. **Block B1/B2:** Hard standing area (excluding green areas, roads): 2225m<sup>2</sup>
4. **Block B3:** Hard standing area (excluding green areas, roads): 1525m<sup>2</sup>
5. **Block B4:** Hard standing area (excluding green areas, roads): 1255m<sup>2</sup>
6. **Block B5:** Hard standing area (excluding green areas, roads): 321m<sup>2</sup>

**Phase C**

1. **Block C1/C2/C3/C4:** Hard standing area (excluding green areas, roads): 6005m<sup>2</sup>
2. **Block C5:** Hard standing area (excluding green areas, roads): 210m<sup>2</sup>
3. **Block C6:** Hard standing area (excluding green areas, roads): 148m<sup>2</sup>
4. **Block E1/E2/E3:** Hard standing area (excluding green areas, roads): 5185m<sup>2</sup>

**Phase D**

1. **Block D1/D2/D3/D4:** Hard standing area (excluding green areas, roads): 5310m<sup>2</sup>

Phase	Storm Event	Proposed Surface Water Discharge Rate	Proposed connections For connection location refer to Proposed Discharge Location Section	Required Surface Water Attenuation
Phase A Block F1	1 in 100 year + 40% CC	1.25 l/s	1 connection	185m <sup>3</sup>
Phase A Block H1/H2	1 in 100 year + 40% CC	1.5 l/s	1 connection	161m <sup>3</sup>
Phase A Block H3	1 in 100 year + 40% CC	1.25 l/s	1 connection	135m <sup>3</sup>
Phase A Block I1	1 in 100 year + 40% CC	1 l/s	1 connection	69m <sup>3</sup>
Phase A Block J1	1 in 100 year + 40% CC	1 l/s	1 connection	260m <sup>3</sup>
Phase B Block A1/A2	1 in 100 year + 40% CC	1.5 l/s	1 connections	343m <sup>3</sup>
Phase B Block A3	1 in 100 year + 40% CC	1 l/s	Shared Connection with Block B1/B2/B4 (0.33')	98m <sup>3</sup>
Phase B Block B1/B2	1 in 100 year + 40% CC	1.5 l/s	Shared Connection with Block A3/B4 (0.33')	183m <sup>3</sup>
Phase B Block B3	1 in 100 year + 40% CC	1.3 l/s	Shared connection with Block B5 (0.5)	129m <sup>3</sup>

Phase B Block B4	1 in 100 year + 40% CC	1 l/s	Shared Connection with Block A3/B1/B2 (0.33')	97m <sup>3</sup>
Phase B Block B5	1 in 100 year + 40% CC	1 l/s	Shared connection with Block B3 (0.5)	13m <sup>3</sup>
Phase C Block C1/C2/C3/C4	1 in 100 year + 40% CC	1.5 l/s	Shared Connection with Block E1/E2/E3 & C5 (0.25)	651m <sup>3</sup>
Phase C Block C5	1 in 100 year + 40% CC	0.75 l/s	Shared Connection with Block E1/E2/E3 & C1/C2/C3/C4 (0.25)	10m <sup>3</sup>
Phase C Block C6	1 in 100 year + 40% CC	0.25 l/s	Shared Connection with Block E1/E2/E3 & C1/C2/C3/C4 (0.25)	10m <sup>3</sup>
Phase C Block E1/E2/E3	1 in 100 year + 40% CC	1.5 l/s	Shared Connection with Block C1/C2/C3/C4 & (0.25)	562m <sup>3</sup>
Phase D Block D1/D2/D3/D4	1 in 100 year + 40% CC	1.5 l/s	1 connection	576m <sup>3</sup>
<b>Total</b>		19.05 l/s	12 connections	3568m <sup>3</sup>

**Proposed Discharge Locations**

It is proposed to discharge surface water from all blocks via gravity to the surrounding Thames Water combined water sewers, the below are the locations of proposed connections and the proposed discharge rate, please also refer to the below ground drainage masterplan drawing (2812-MHT-CV-BG-DR-100);

- One new connection to the northwest corner of the building I1 into the Thames Water combined water network in Blair Street (TWMH7303); Proposed discharge rate is 1l/s;
- One new connection to the southeast corner of the building J1 into Thames Water combined water sewer in Leven Road (TWMH3602); Proposed discharge rate is 1.25l/s;
- One new connection to the northeast of building A1/A2 into the Thames Water combined water sewer in Leven Road (TWMH3605); Proposed discharge rate 1.5l/s;
- One new connection serving blocks A3, B1/B2 and B4 located to the south of the buildings discharging into Thames Water manhole (TWMH3501A); Proposed discharge rate 3.5l/s;
- One new connection north of block B3 downstream of Thames Water combined water manhole (TWMH3516); Proposed discharge rate is 2.3l/s;
- One new connection to the Thames Water combined sewer manhole in Ettrick Street (TWMH4303); Proposed discharge rate is 4l/s.
- One new connection to the Thames Water combined sewer manhole in Ettrick Street (TWMH4302); Proposed discharge rate is 1.5l/s.
- One new connection to the southeast corner of the building F1 into the Thames Water combined water sewer in Aberfeldy Street (TWMH4312); Proposed discharge rate is 1.25l/s; and
- Two new connections for Building H1&H2 and H3 which will discharge surface water via two new separate connections into Thames Water combined sewer in Aberfeldy Street (TWMH4215). Proposed discharge rate for Building H1&H2 connection is 1.5l/s and for Building H3 is 1.25l/s.

The proposed new connections are subject to a CCTV survey which will survey the line, level and condition of the existing sewers. If this survey identifies any available existing connections in those locations there may be an opportunity to reuse. This will be explored during detailed design.



# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). It is not to be used for detailed design of drainage systems. It is recommended that hydraulic modelling software is used to calculate volume requirements and design details before finalising the design of the drainage scheme.

### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	101.64
FEH / FSR conversion factor:	1.32	1.32
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	0.83	0.83
Q <sub>BAR</sub> for net site area (l/s):	0.83	0.83

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	1.3	1.3
1 in 30 years (l/s):	1.9	1.9
1 in 100 year (l/s):	2.7	2.7

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	163	163
Long term storage 1/100 years (m³):	22	22
Total storage 1/100 years (m³):	185	185

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# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

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Longitude:

Reference:

Date:

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### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	101.64
FEH / FSR conversion factor:	1.32	1.32
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	0.78	0.78
Q <sub>BAR</sub> for net site area (l/s):	0.78	0.78

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	1.5	1.5
1 in 30 years (l/s):	1.8	1.8
1 in 100 year (l/s):	2.5	2.5

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	140	140
Long term storage 1/100 years (m³):	21	21
Total storage 1/100 years (m³):	161	161

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# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

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### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	101.64
FEH / FSR conversion factor:	1.3	1.32
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	0.66	0.66
Q <sub>BAR</sub> for net site area (l/s):	0.66	0.66

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	1.3	1.3
1 in 30 years (l/s):	1.5	1.5
1 in 100 year (l/s):	2.1	2.1

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	115	118
Long term storage 1/100 years (m³):	18	18
Total storage 1/100 years (m³):	133	135

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# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

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### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	101.64
FEH / FSR conversion factor:	1.3	1.32
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	0.35	0.35
Q <sub>BAR</sub> for net site area (l/s):	0.35	0.35

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	1	1
1 in 30 years (l/s):	1	1
1 in 100 year (l/s):	1.1	1.1

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	69	70
Long term storage 1/100 years (m³):	0	0
Total storage 1/100 years (m³):	69	70

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# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

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### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	101.64
FEH / FSR conversion factor:	1.32	1.32
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	1.02	1.02
Q <sub>BAR</sub> for net site area (l/s):	1.02	1.02

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	1	1
1 in 30 years (l/s):	1	1
1 in 100 year (l/s):	1	1

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	259	259
Long term storage 1/100 years (m³):	0	0
Total storage 1/100 years (m³):	259	259

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# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

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### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	101.64
FEH / FSR conversion factor:	1.33	1.32
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	1.38	1.38
Q <sub>BAR</sub> for net site area (l/s):	1.38	1.38

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	1.5	1.5
1 in 30 years (l/s):	3.2	3.2
1 in 100 year (l/s):	4.4	4.4

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	302	299
Long term storage 1/100 years (m³):	44	44
Total storage 1/100 years (m³):	346	343

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# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

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### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	101.64
FEH / FSR conversion factor:	1.33	1.32
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	0.49	0.49
Q <sub>BAR</sub> for net site area (l/s):	0.49	0.49

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	1	1
1 in 30 years (l/s):	1.1	1.1
1 in 100 year (l/s):	1.6	1.6

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	86	85
Long term storage 1/100 years (m³):	13	13
Total storage 1/100 years (m³):	99	98

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# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). It is not to be used for detailed design of drainage systems. It is recommended that hydraulic modelling software is used to calculate volume requirements and design details before finalising the design of the drainage scheme.

### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	101.64
FEH / FSR conversion factor:	1.33	1.32
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	0.86	0.86
Q <sub>BAR</sub> for net site area (l/s):	0.86	0.86

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	1.5	1.5
1 in 30 years (l/s):	2	2
1 in 100 year (l/s):	2.7	2.7

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	161	160
Long term storage 1/100 years (m³):	23	23
Total storage 1/100 years (m³):	185	183

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# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). It is not to be used for detailed design of drainage systems. It is recommended that hydraulic modelling software is used to calculate volume requirements and design details before finalising the design of the drainage scheme.

### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	101.64
FEH / FSR conversion factor:	1.32	1.32
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	0.59	0.59
Q <sub>BAR</sub> for net site area (l/s):	0.59	0.59

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	1.3	1.3
1 in 30 years (l/s):	1.4	1.4
1 in 100 year (l/s):	1.9	1.9

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	113	113
Long term storage 1/100 years (m³):	16	16
Total storage 1/100 years (m³):	129	129

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# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). It is not to be used for detailed design of drainage systems. It is recommended that hydraulic modelling software is used to calculate volume requirements and design details before finalising the design of the drainage scheme.

### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	101.64
FEH / FSR conversion factor:	1.33	1.32
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	0.49	0.49
Q <sub>BAR</sub> for net site area (l/s):	0.49	0.49

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	1	1
1 in 30 years (l/s):	1.1	1.1
1 in 100 year (l/s):	1.6	1.6

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	85	84
Long term storage 1/100 years (m³):	13	13
Total storage 1/100 years (m³):	98	97

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# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). It is not to be used for detailed design of drainage systems. It is recommended that hydraulic modelling software is used to calculate volume requirements and design details before finalising the design of the drainage scheme.

### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	83.16
FEH / FSR conversion factor:	1.32	1.08
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	0.12	0.12
Q <sub>BAR</sub> for net site area (l/s):	0.12	0.12

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	1	1
1 in 30 years (l/s):	1	1
1 in 100 year (l/s):	1	1

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	16	13
Long term storage 1/100 years (m³):	0	0
Total storage 1/100 years (m³):	16	13

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# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). It is not to be used for detailed design of drainage systems. It is recommended that hydraulic modelling software is used to calculate volume requirements and design details before finalising the design of the drainage scheme.

### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	101.64
FEH / FSR conversion factor:	1.32	1.32
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	2.33	2.33
Q <sub>BAR</sub> for net site area (l/s):	2.33	2.33

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	2	2
1 in 30 years (l/s):	5.4	5.4
1 in 100 year (l/s):	7.4	7.4

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	526	526
Long term storage 1/100 years (m³):	125	125
Total storage 1/100 years (m³):	651	651

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# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). It is not to be used for detailed design of drainage systems. It is recommended that hydraulic modelling software is used to calculate volume requirements and design details before finalising the design of the drainage scheme.

### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	83.16
FEH / FSR conversion factor:	1.32	1.08
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	0.08	0.08
Q <sub>BAR</sub> for net site area (l/s):	0.08	0.08

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	0.8	0.8
1 in 30 years (l/s):	0.8	0.8
1 in 100 year (l/s):	0.8	0.8

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	10	8
Long term storage 1/100 years (m³):	0	0
Total storage 1/100 years (m³):	10	8

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# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). It is not to be used for detailed design of drainage systems. It is recommended that hydraulic modelling software is used to calculate volume requirements and design details before finalising the design of the drainage scheme.

### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	101.64
FEH / FSR conversion factor:	1.32	1.32
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	0.06	0.06
Q <sub>BAR</sub> for net site area (l/s):	0.08	0.08

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	0.3	0.3
1 in 30 years (l/s):	0.3	0.3
1 in 100 year (l/s):	0.3	0.3

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	10	10
Long term storage 1/100 years (m³):	0	0
Total storage 1/100 years (m³):	10	10

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# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). It is not to be used for detailed design of drainage systems. It is recommended that hydraulic modelling software is used to calculate volume requirements and design details before finalising the design of the drainage scheme.

### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	101.64
FEH / FSR conversion factor:	1.32	1.32
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	2.01	2.01
Q <sub>BAR</sub> for net site area (l/s):	2.01	2.01

### Site discharge rates

	Default	Edited
1 in 1 year (l/s):	1.7	1.7
1 in 30 years (l/s):	4.6	4.6
1 in 100 year (l/s):	6.4	6.4

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	454	454
Long term storage 1/100 years (m³):	108	108
Total storage 1/100 years (m³):	562	562

This report was produced using the storage estimation tool developed by HR Wallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at <http://uksuds.com/terms-and-conditions.htm>. The outputs from this tool have been used to estimate storage volume requirements. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.



# Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:

Site name:

Site location:

### Site Details

Latitude:

Longitude:

Reference:

Date:

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). It is not to be used for detailed design of drainage systems. It is recommended that hydraulic modelling software is used to calculate volume requirements and design details before finalising the design of the drainage scheme.

### Site characteristics

Total site area (ha):

Significant public open space (ha):

Area positively drained (ha):

Impermeable area (ha):

Percentage of drained area that is impermeable (%):

Impervious area drained via infiltration (ha):

Return period for infiltration system design (year):

Impervious area drained to rainwater harvesting (ha):

Return period for rainwater harvesting system (year):

Compliance factor for rainwater harvesting system (%):

Net site area for storage volume design (ha):

Net impermeable area for storage volume design (ha):

Pervious area contribution to runoff (%):

\* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q<sub>BAR</sub> and other flow rates will have been reduced accordingly.

### Design criteria

Climate change allowance factor:

Urban creep allowance factor:

Volume control approach:

Interception rainfall depth (mm):

Minimum flow rate (l/s):

### Methodology

esti:

Q<sub>BAR</sub> estimation method:

SPR estimation method:

### Soil characteristics

	Default	Edited
SOIL type:	4	4
SPR:	0.47	0.47

### Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	101.64
FEH / FSR conversion factor:	1.32	1.32
SAAR (mm):	580	580
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.62	1.62
Growth curve factor 30 year:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Q <sub>BAR</sub> for total site area (l/s):	2.06	2.06
Q <sub>BAR</sub> for net site area (l/s):	2.06	2.06

### Site discharge rates

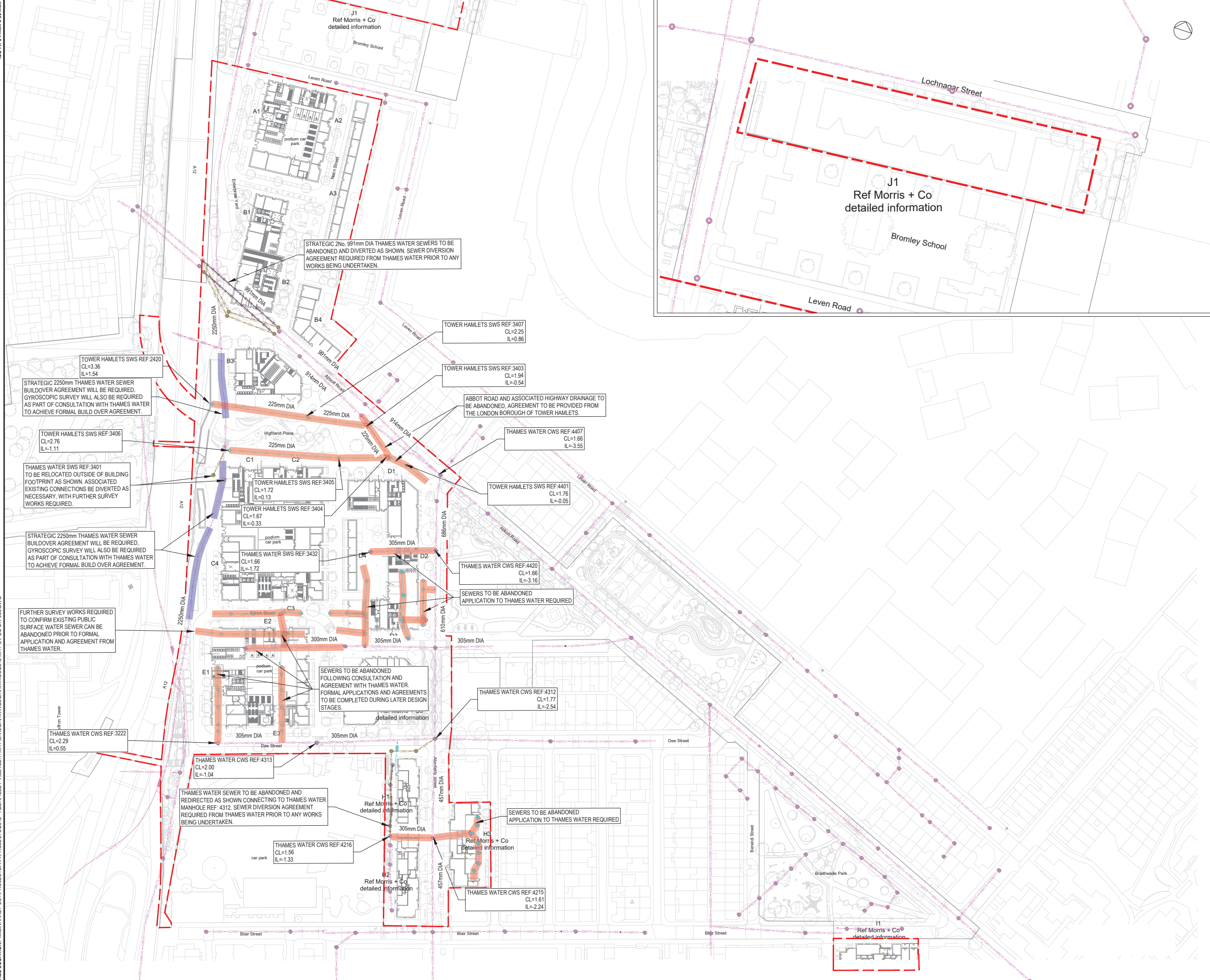
	Default	Edited
1 in 1 year (l/s):	1.7	1.7
1 in 30 years (l/s):	4.7	4.7
1 in 100 year (l/s):	6.6	6.6

### Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	465	465
Long term storage 1/100 years (m³):	110	110
Total storage 1/100 years (m³):	576	576

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ISO A1 841mm x 594mm  
 DATE: 14/10/2021  
 FILE LOCATION: \\MEINHARDT-DC\PROJECTS\2812 - ABERFELDY VILLAGE\1. MHT\CIVIL\DRAWINGS\DRAWINGS\2812.MHT-CV-BG-DR-050.DWG



**ISSUED FOR INFORMATION**

REV	DESCRIPTION	BY	DATE
P01	STAGE 2 ISSUE	LH	20/08/21
P02	DRAFT STAGE 2 - ISSUED FOR PLANNING	LH	17/09/21
P03	ISSUED FOR PLANNING	LB	14/10/21

- NOTES:**
- DO NOT SCALE FROM THIS DRAWING
  - ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
  - THIS DRAWING IS FOR INFORMATION ONLY.
  - DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND CONSULTANTS DRAWINGS AND SPECIFICATIONS.
  - THIS DRAWING IS BASED ON:
    - THAMES WATER ASSET RECORDS DATED NOVEMBER 2020
    - LEVITT BERNSTEIN ARCHITECTURAL MASTERPLAN 3663 - 100A - Proposed LGF Plan - Scenario A - P10, DATED: 10/08/21
    - TOPOGRAPHICAL & UTILITIES COMBINED SURVEY FULL SITE V2

**KEY:**

	SITE BOUNDARY
	EXISTING SURFACE WATER SEWER
	EXISTING COMBINED WATER SEWER
	PROPOSED COMBINED WATER SEWER
	EXISTING SURFACE WATER MANHOLE
	EXISTING COMBINED WATER MANHOLE
	PROPOSED COMBINED WATER MANHOLE
	SEWER TO BE ABANDONED
	SEWER TO BE PASSED THROUGH STRATEGIC THAMES WATER SEWER BUILD OVER AGREEMENT
	SEWER TO BE DIVERTED & ABANDONED

CDM RESIDUAL CIVIL / STRUCTURAL DESIGN RISKS



PROJECT  
**ABERFELDY VILLAGE MASTERPLAN**

CLIENT  
**ECOWORLD**

TITLE  
**THAMES WATER SEWER ABANDONMENT AND BUILD OVER MAP**

DISCIPLINE	SCALE
CIVIL	1:1000
DRAWN	DESIGNED
LH	LH
CHECKED	APPROVED
LB	CM
DRAWING No	ISSUE
2812-MHT-CV-BG-DR-050	P03