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FLOOD RISK ASSESSMENT & DRAINAGE STRATEGY

for

No47 Hay's Mews

MARCH 2024

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Document Control

Status		Prepared		Checked		Approved	
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Second							
Third							
Fourth							

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CONTENTS

1. Introduction

Keystone Consulting Engineers have been appointed to prepare a Drainage Strategy and Flood Risk Assessment (FRA) for the proposed redevelopment of No47 Hays Mews.

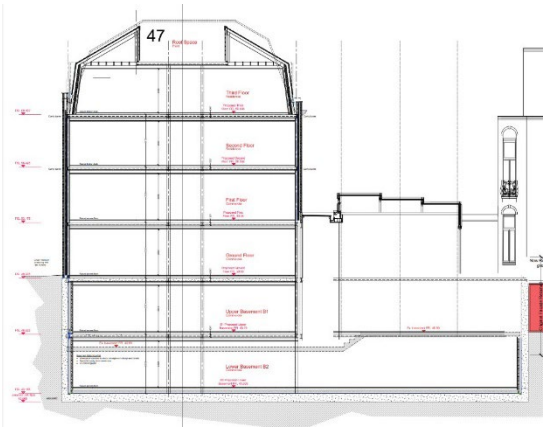
The report has been updated following initial advice and design development through the pre application process and additional information has been provided for the maintenance and management of the drainage system.

This report is produced for the sole benefit of the client for whom it was commissioned and has been prepared in response to their requirements and brief. This report may not be relied upon by any other party.

The Contracts (Rights of Third Parties) Act 1999 shall not apply to this report and the provisions of the said Act are expressly excluded from this report. This report may not be used for any purpose other than that for which it was commissioned.

2. The Site & Proposals

No47 Berkeley Square & No47 Hays Mews, postcode W1J 5AU, is located at grid reference TQ 874680536 (51 30 32 N – 0 8 46 W) and is a Grand Town house constructed circa 1750, the main building fronting Berkeley Square is grade 2* listed, the mews building to the rear was constructed early 19th century and is not listed.



Appended Architects drawings detail the scheme, as the partial demolition of No47 Hays Mews and interlinking terrace, to allow the formation of a lowered basement slab, Mews building and retractable glass covered courtyard. No47 Berkeley Square will not be affected or modified as part of the works.

Remodelling of the Mews buildings and terrace will remove the outdated cellular construction of small spaces and create high quality energy efficient office and residential accommodation spaces required for the ongoing operation of the bank.

3. Scope of Report

In the development of this report reference has been made to the NPPF, regional and local policy relating to surface water and flood risk management.

The Site is located within Flood Zone 1 (refer to appended flood plans), under 1 hectare, is not located within a "Surface Water Hotspot" as detailed in fig 3.5 SFRA, as such a full flood risk assessment (FRA) is not required in support of an application.

Flood zone 1 - Land where the probability of fluvial/tidal flooding is classified as Low (assuming no flood defences). There is less than a 0.1 per cent (1 in 1000) chance of flooding occurring each year.

The purpose of this report is to provide set out proposed drainage strategy and an assessment of flood risk to demonstrate that the Site is at low risk from all sources and will:

- Outline foul and surface drainage strategy to the building.
- Assess potential sources of flooding to the Site.
- Assess historical flood events/knowledge associated with the Site.
- Assess the potential impacts of the development proposals upon the local hydrology.
- Outline surface management and assess the ability of the site to utilise SUD's.

4. Policy Guidance

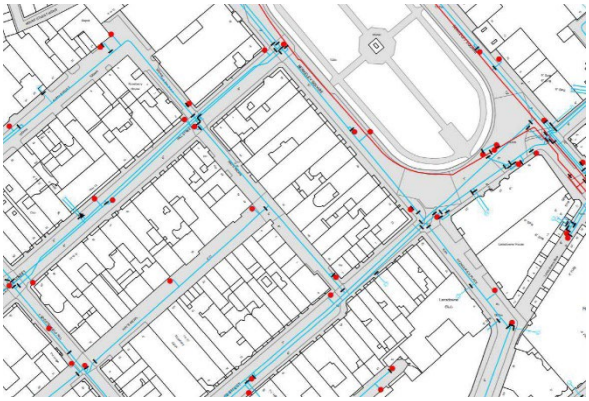
In the development of the report, reference has been made to the following guidance documents;

1. Westminster City Council – 2019 Draft Strategic Flood Risk Assessment (SRFA)
2. Westminster City Plan 2019-2040
3. The London Plan 2021
4. Building Regulations

5. Existing Drainage

The existing site/building is hard paved and positively drained and discharges via a combined gravity connection to the Thames Water sewers.

Asset plans have been obtained from Thames Water which show the general arrangement of sewers and main water apparatus in the area and these are inset below;

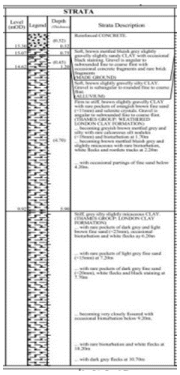


Thames Water – Water Main Apparatus

Thames Water – Sewerage Apparatus

The applicant has occupied and managed the building since 1989 and during this period have not encountered any issues with surcharge of sewers, overland flows/flooding.

6. Underlying Geology



From review of available data sources and site investigations, a detailed geotechnical assessment has been undertaken for the site by GCG.

Boreholes have confirmed that the underlying strata is a thin layer of alluvium, underlain by London clay which increases in stiffness with depth.

The borehole was advanced to 30m, later monitoring of the borehole has established a stable water level of 13.0m OD which is below the proposed basement level.

Trial pits at shallow depth indicate that the mews building is founded onto shallow spread foundations.

The soils properties do not support the use of infiltration and soakaway strategies for disposal of surface water, extract of GCG findings below;

> A summary of the anticipated ground conditions, based on the available GI data including the BGS borehole data, GI data from the adjoining site (46 Hay's Mews, Reference [5]) and GCG archive records, is presented in Table 1, which is to be verified by a site-specific ground investigation at the detailed design stage.

Table 1. Summary of anticipated ground conditions

Stratum	Top of stratum, mOD	Thickness of stratum, m
Made Ground	+19 (street level)	3.5 to 4.5
Alluvium	+15.5 to +14.5	1.0
London Clay	+14.5 to +13.5	39.5 to 43.5
Lambeth Group	-25.0 to -30.0	14.5 to 19.5
Thanet Sand	-44.5	3.0
Chalk	-47.5	Not proven

7. Hydrogeology

The depth and impermeability of the London clays and limited water strikes with overlaying alluvium indicates there is limited ground water flow in the upper strata. This is supported by the predominantly hard paved and positively drained landscape in the area preventing water ingress.

It is possible that localised perched water may be encountered during excavations but would be limited in nature.

GCG have summarised their report that the proposal is not expected to alter the current discharge of surface water into the local sewers and, as such, will not alter the existing situation with respect to the risk of flooding.

8. Exceedance/Overland Flows

Hays Mews is an established developed area dating from the mid 1700's, the area has a gentle change in level from north to south with buildings and floor levels following this topography. The area either supports buildings or hard paved areas, all of which are positively drained.

There have been no historic issues of flooding to the property or its basements, and reference to local levels show that the building is not located in an area of topography or construction that would put it at risk of localised exceedance events, nor does it pose a heightened risk of flooding to neighbour's.

Extract of Overland Flows/Exceedance Plan

9. Existing Rivers, Water Bodies and Canals

The GCG report references the presence of the lost River Tyburn to the south of the site, this was "bricked in" circa 1860 and its position and condition are not known.

The nearest main river is the River Thames which is circa 1 mile to the Southeast of the site. There are no canals in the vicinity of the site.

St James Park Lake is the nearest large body of water which is also located circa 0.5mile to the southeast of the site.

10. Proposed Surface Water Drainage

The proposed surface water drainage system will be designed to convey rainwater run off from roof areas to the drainage discharge point.

In the assessment of design options the differing disposal methods have been considered as follows;

Drainage Disposal Hierarchy Summary

1. Store rainwater for later re-use – water will be stored locally for irrigation and watering of tree wells within the building courtyard.
2. Use Infiltration Techniques – Infiltration is not possible due to the clay substrate
3. Attenuate Water in Ponds or Open Water Features for Gradual Release – The central London location and limited site area does not support the use of these options.
4. Attenuate Water by storing in tanks or sealed water features for gradual release – blue roofs have been proposed for the upper plant deck to store and discharge rainwater at a reduced rate.
5. Discharge Rainwater Direct to a Watercourse – There are no watercourses within communicable distances.
6. Discharge rainwater to a surface sewer/drain – No surface water sewers available.
7. Discharge rainwater to combined sewer – Existing discharge to public sewers will need to be maintained.

Rainwater Drainage Design

The rainwater system from roof to ground level will be designed by the M&E consultant and co-ordinated by the architect. The system will be designed with a blue roof water storage and attenuation system incorporated into the plant well on the top floor of the mews building. This will attenuate flows into the internal building drainage system. Some rainwater will be directed to tree pits and water storage systems used for irrigation.

Rainwater systems will be directed to the ground floor in a cast iron drainage network, which will connect under gravity to the sewer connection, as noted in the appended drawings the rainwater system will not enter the basement area. As the system will be sealed to the level of the lowest roof inlet which will be above external road level there is no risk of surcharge flooding to the building.

Specialist water systems will be designed and constructed using St Gobain (or equivalent) cast iron drainage systems for robustness along approved materials in line with building regulations and British standards appropriate to the location and proposed use.

In the proposed scheme the area of positively drained hard standing and roof will not increase from the existing arrangement and flows will be attenuated through the use of a blue roof to the Mews and total discharge reduced through tree pits and irrigation water storage.

Foul Water Drainage Design

The design proposals do not increase the foul drainage systems or load from the building to the sewer system and the site footprint remains unchanged. It is proposed to retain connection to the local sewerage system.

The foul drainage system within the building will be designed by the M&E consultant and co-ordinated by the architect. This will be a gravity system for the building from B1 – Roof, with the system connecting at B1 level. The drainage at B1 will be protected with a non return valve at the point of discharge as recommended by Building Regulations.

Drainage from B2 will be below the level of the discharge outlet and will be connected by gravity to a pumping station well chamber, this will pump effluent to B1 level where it can discharge under gravity into the outlet point. The pumping station will be designed with 24 hour storage and dual pump systems.

Surface water systems will be designed and constructed using St Gobain (or equivalent) cast iron drainage systems for robustness along approved materials in line with building regulations and British standards appropriate to the location and proposed use. The above approach will provide a robust foul drainage system serving the building and protect it from potential surcharge flows should the receiving sewer become overwhelmed.

Structural Integrity and Construction

Surface water systems will be designed and constructed using St Gobain (or equivalent) cast iron drainage systems for robustness along approved materials in line with building regulations and British standards appropriate to the location and proposed use.

Maintenance and Operation

The drainage system will be inspected, and pressure tested during construction with a confirmatory CCTV undertaken at handover to ensure correct construction.

11. Flood Risk Assessment

Technical guidance from the NPPF requires flood risk from the following sources to be assessed:

a) Fluvial (Rivers)
b) Tidal sources.
c) Groundwater sources;
d) Artificial sources, canals, reservoirs etc;
e) Pluvial sources (flooding from surface water/overland flows)

It also requires the risk from increases in surface water discharge to be assessed (surface water management)

Fluvial Flooding; RISK PROFILE LOW

Environment Agency (EA) Flood Maps confirm that the site is wholly located within Flood Zone 1 (FZ1), defined as land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%)

Tidal Flooding; RISK PROFILE LOW

Environment Agency (EA) Flood Maps confirm that the site is wholly located within Flood Zone 1 (FZ1), defined as land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%)

Ground Water Flooding; RISK PROFILE LOW

As evidenced through specialist investigation the presence of London clays and limited ground water presence make this very low risk.

Artificial Sources, Canals etc; RISK PROFILE LOW

As noted within the report there are no water bodies within immediate locality that pose a risk to the development.

Pluvial Flooding; RISK PROFILE LOW

Overland flows and exceedance events have been reviewed in the assessment of general topography and surrounding infrastructure the proposals do not place the development or surrounding properties at risk.

12. SUDs Options Assessment

In the development of design the varying forms of SUDs solutions have been considered and where possible incorporated.

The building location, limited site area, listed building status and ground conditions limit the options that can be incorporated and the measures included are summarised below;

No	Description	Advantages	Disadvantages	Adopted
1	Blue Roof – storage detention and flow control device included as cellular volume within flat roof.	Can be included within flat roof designs and minimises space impact	Stores water in building footprint and leaks pose issues	YES – use for flat plant roof
2	Green Roof – shallow or intensive growing roof with some water use and slowing rate of discharge	Provides additional ecology benefits	Sterilises roofs areas and has limited run off benefits, requires maintenance and watering in dry periods	NO – no space to accommodate on site.
3	Rainwater Harvesting – retention of rainwater for use in building	Can reduce water usage, use of water stored for irrigation cuts water use.	Systems can be complex and have legionella issues, space take for equipment.	YES – use tanks for irrigation
4	Soakaways/Infiltration – discharge of water to percolate into ground	Returns water to water table and limits flows into drainage networks	Requires space and suitable ground strata	NO – ground conditions do not support
5	Swales – grassed depressions use to catch and infiltrate.	Returns water to water table and limits flows into drainage networks	Requires space and suitable ground strata	NO – ground conditions do not support
6	Filter Drains – filter pipes in gravel trenches used to infiltrate	Returns water to water table and limits flows into drainage networks	Requires space and suitable ground strata	NO – ground conditions do not support
7	Rain Gardens – landscaped areas with level control and soft landscape to catch water and allow some storage and infiltration	Returns water to water table and limits flows into drainage networks	Requires space and suitable ground strata	NO – no available space or external areas
8	Tree Pits – features to support tree growth with some water storage potential	Returns water to water table and limits flows into drainage networks	Requires space and suitable ground strata	YES – tree wells to be included
9	Permeable Paving's – use in hard landscape to allow infiltration	Returns water to water table and limits flows into drainage networks	Requires space and suitable ground strata	NO – no available space or external areas.
10	Attenuation Ponds – water bodies used to store run off and discharge at controlled rate.	Controls run off to water courses and can improve water quality	Requires space and external landscaped areas.	NO – no available space or external areas.

11	Geo cellular storage used to store and attenuate discharge rate	Controls rate of run off	Requires space and location allowing gravity connection.	NO – basement and level of discharge.
12	Canals/Rivers – discharge to river or water body.	Returns water to main body of water	Control of rate of discharge requires other actions	NO – no water bodies available.

This approach accords with the principles of hierarchical assessment set out in the London plan and the building regulations.

13. Conclusions

The report has been used to document the investigations and studies that have been undertaken to assess the buildings current drainage provision and the potential opportunities for inclusion in the proposed scheme along with consideration of broader flooding and water management issues affecting the building and its environs.

A summary of the findings are set out below relating to flooding and drainage;

Flooding

The site is in flood zone 1, and assessments have shown that risks of flooding from pluvial, tidal, fluvial and groundwater are all considered to be low.

Development proposals do not increase the risk of flooding to the building itself or the surrounding buildings.

Similar developments, in the immediate vicinity have been constructed successfully with no detrimental affects.

It has been concluded that there are no issues relating to flooding.

Drainage

The area of the site and extent of hard paved drained area is not changed through the development of the scheme. The listed building and built environment do not allow the use of most forms of attenuation and control systems and ground conditions do not support infiltration.

Existing drainage rates have been accommodated adequately in the drainage network to date, the proposed scheme will retain connection to the drainage system, but will incorporate blue roof attenuation measures in conjunction with tree pits and irrigation tanks to reduce rates of discharge.

The density and usage of the building are not expected to significantly change from the buildings current capacity and usage as office and accommodation.

The development of the scheme as submitted has considered and incorporated measures and good practice as required by the relevant guidance documents.

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Appendix A

Thames Water Asset Plans

Asset Location Search

Search address supplied: Berkeley Square, LONDON, W1J 5AT

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

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

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

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

Contact Us

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

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

Email: searches@thameswater.co.uk
Web: www.thameswater-propertysearches.co.uk

Asset Location Search

Waste Water Services

Please provide a copy extract from the public sewer map.

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

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

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

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

For your guidance:

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

Clean Water Services

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

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

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

pressure test to be carried out for a fee.

For your guidance:

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

Payment for this Search

A charge will be added to your suppliers account.

Asset Location Search

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: 0845 850 2777
Email: developer.services@thameswater.co.uk

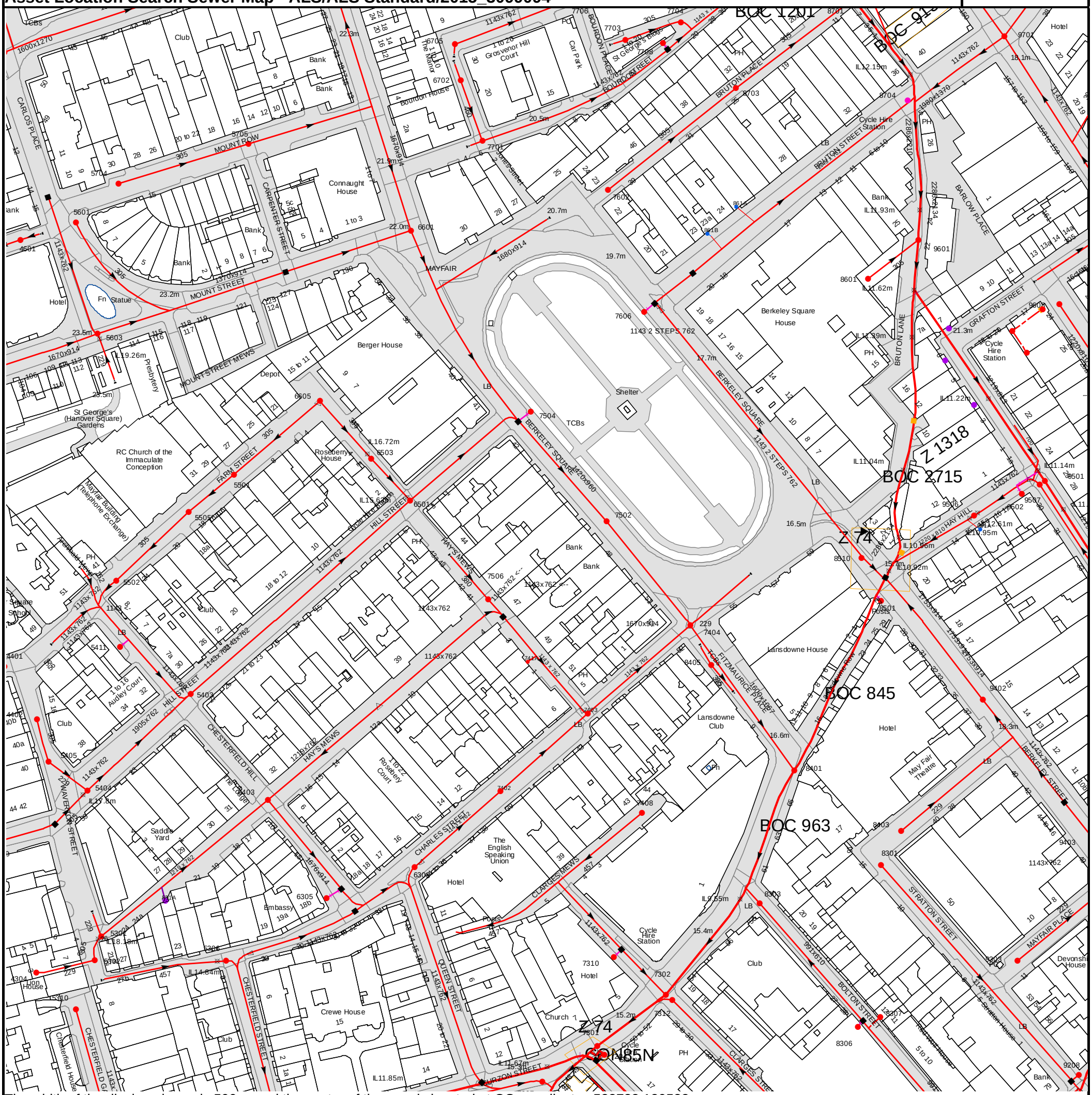
Clean Water queries

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

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

Tel: 0845 850 2777
Email: developer.services@thameswater.co.uk

Asset Location Search Sewer Map - ALS/ALS Standard/2015_3099094



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 528733,180533

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
8301	18.45	13.74
8403	18.25	14.67
8401	16.5	10.11
9402	17.72	12.65
8501	n/a	n/a
8510	15.9	11.3
951A	n/a	n/a
9506	17.84	10.95
9502	n/a	n/a
9507	20.23	13.99
9501	20.26	11.16
9516	n/a	n/a
9615	n/a	n/a
9610	n/a	n/a
9611	n/a	n/a
9614	n/a	n/a
9612	n/a	n/a
9608	21.49	16.78
8601	15.99	13.08
9601	16.13	11.84
8704	16.79	12.47
9701	17.84	13.06
7302	15.28	9.14
7312	15.28	9.93
8303	15.73	10.63
8306	n/a	n/a
8307	n/a	n/a
9303	19.01	15.81
9208	n/a	n/a
6503	20.87	15.91
6501	20.35	15.33
6601	21.86	17.01
6705	21.31	16.63
6702	21.43	15.85
7701	21.08	15.63
7506	18.56	13.28
7402	17.44	12.81
741A	n/a	n/a
7504	19.63	n/a
7403	17.35	12.27
7502	17.99	13.04
7602	20.22	16.18
7703	17.65	14.9
7408	14.01	10.46
7606	19.11	n/a
7708	n/a	n/a
7704	16.61	13.99
7404	16.55	11.68
861B	n/a	n/a
8405	16.33	11.54
8703	18.1	14.52
861A	n/a	n/a
6302	17.58	13.06
7207	14.87	8.77
7301	15.33	8.68
7204	n/a	n/a
7310	n/a	n/a
5310	19.2	15.42
4304	20.74	19.06
5306	19.13	13.69
5302	21.38	18.4
5301	21.15	17.5
531A	n/a	n/a
6305	n/a	n/a
6403	18.91	15.15
5404	21.55	17.3
5405	22.04	n/a
4402	23.05	18.37
6605	21.33	17.24
5603	23.56	18.46
4601	24.19	20.44
5601	24.19	19.93
5704	24.12	22.37
5705	23.42	19.04
5403	20.9	16.61
5411	n/a	n/a
5502	22.58	17.68
5505	21.81	18.28
5501	21.65	18.58

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ALS Sewer Map Key

Public Sewer Types (Operated & Maintained by Thames Water)

Foul: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.

Surface Water: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.

Combined: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.

Trunk Surface Water

Trunk Foul

Storm Relief

Trunk Combined

Vent Pipe

Bio-solids (Sludge)

Proposed Thames Surface Water Sewer

Proposed Thames Water Foul Sewer

Gallery

Foul Rising Main

Surface Water Rising Main

Combined Rising Main

Sludge Rising Main

Proposed Thames Water Rising Main

Vacuum

Sewer Fittings

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

Air Valve

Dam Chase

Fitting

Meter

Vent Column

Operational Controls

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

Control Valve

Drop Pipe

Ancillary

Weir

End Items

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

Outfall

Undefined End

Inlet

Other Symbols

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

Public/Private Pumping Station

Change of characteristic indicator (C.O.C.I.)

Invert Level

Summit

Areas

Lines denoting areas of underground surveys, etc.

Agreement

Operational Site

Chamber

Tunnel

Conduit Bridge

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

Foul Sewer

Surface Water Sewer

Combined Sewer

Gulley

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.

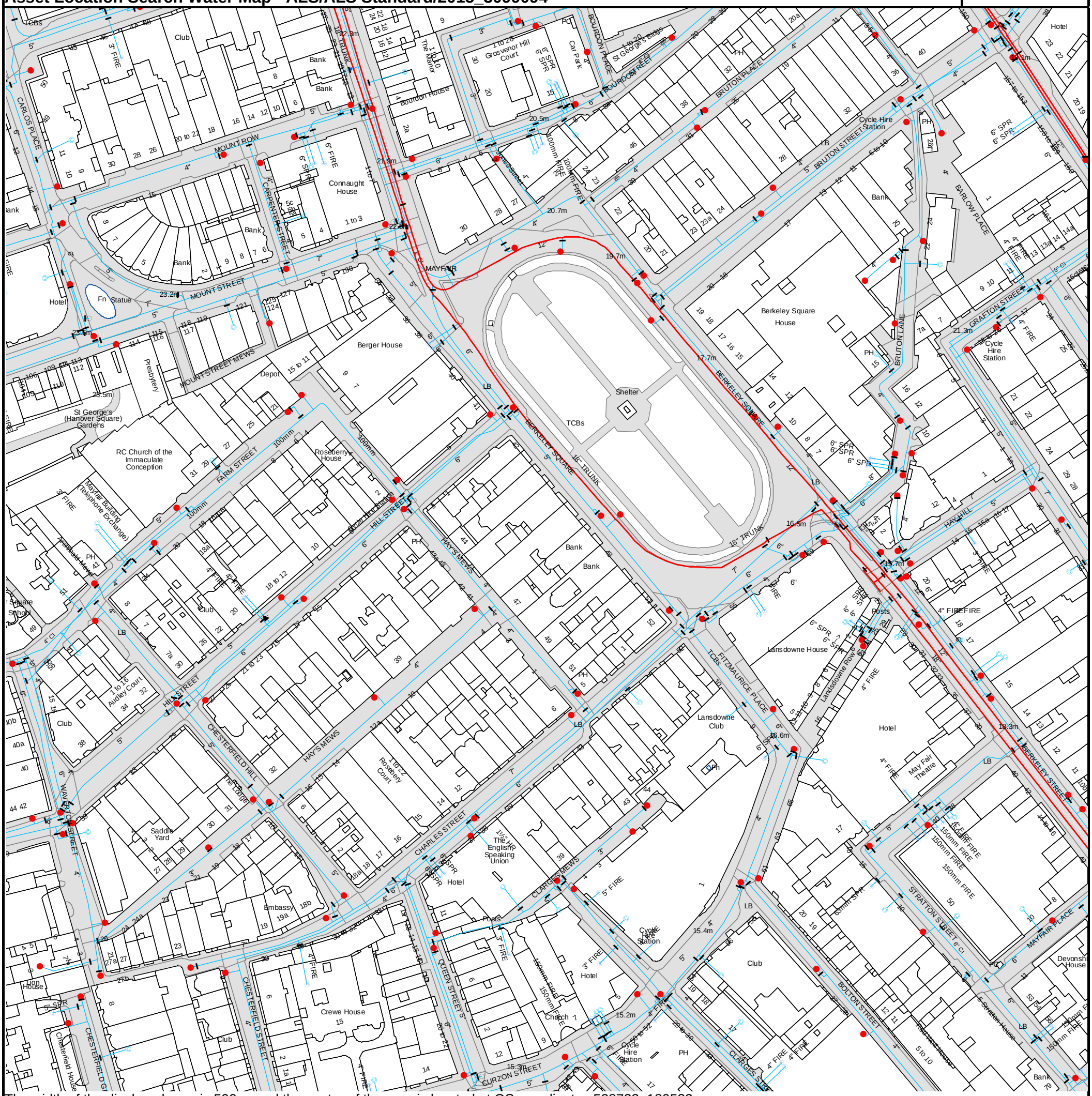
3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.

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 milimetres. 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.

Asset Location Search Water Map - ALS/ALS Standard/2015_3099094



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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.

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

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')

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

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

Search Code

IMPORTANT CONSUMER PROTECTION INFORMATION

This search has been produced by Thames Water Property Searches, Clearwater Court, Vastern Road, Reading RG1 8DB, which is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

The Search Code:

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

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

The Code's core principles

Firms which subscribe to the Search Code will:

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

Complaints

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

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

TPOs Contact Details

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

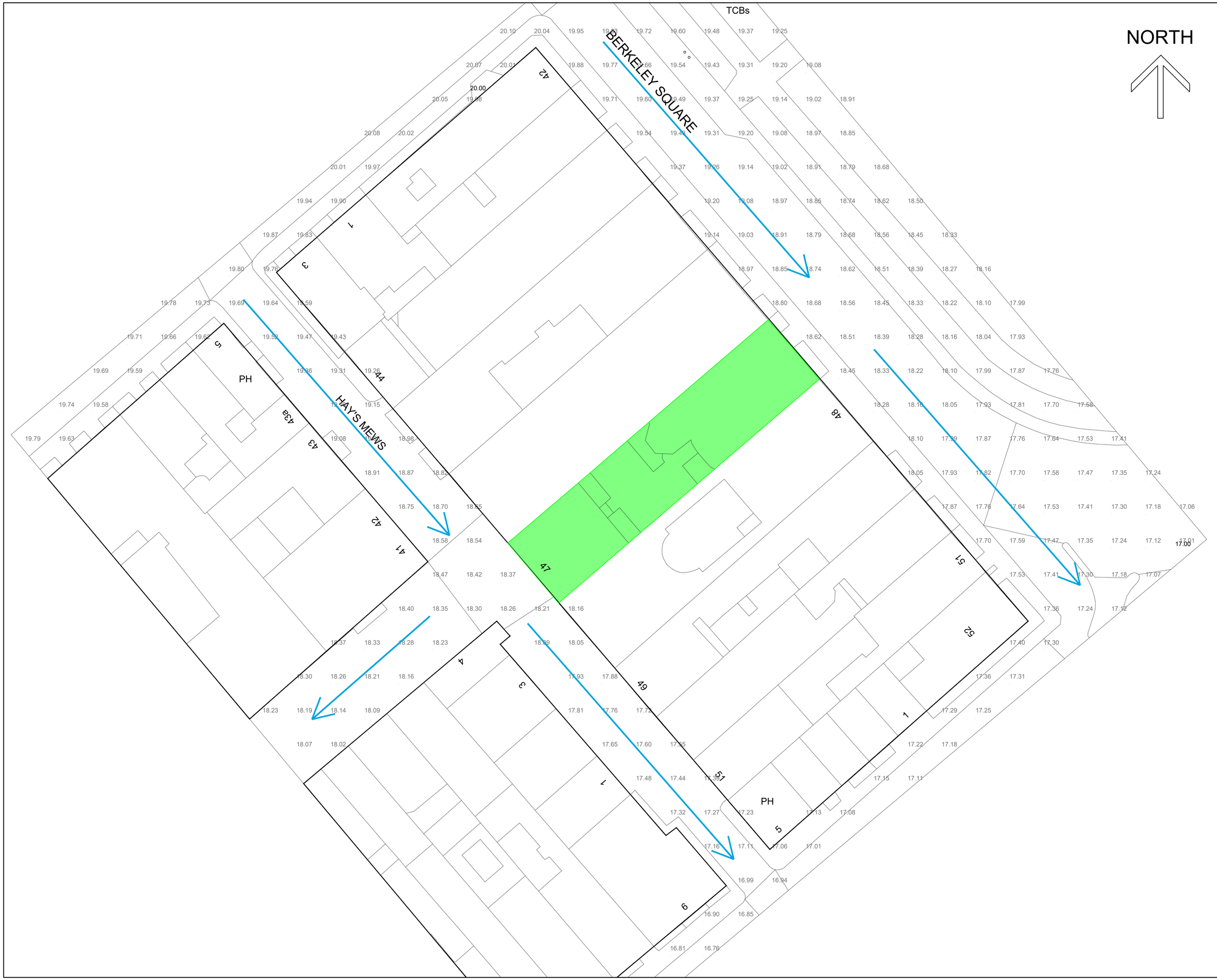
You can get more information about the PCCB from www.propertycodes.org.uk

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

KEYSTONE
CONSULTING ENGINEERS

Appendix B

Overland Exceedance Plans



100mm @ A1 (50mm @ A3)

NOTES

KEY:

INDICATES OVERLAND FLOW DIRECTION

INDICATES No. 47 BERKELEY SQUARE/HAYES MEWS

NOTE:

LEVELS ARE GENERAL DATA PROVIDED BY OS MAPPING AND ARE ACCURATE TO 0.2m

Rev	Date	Drawn	Eng	Amendments

Mob: +44 (0)7787 510110
Tel: +44 (0)29 20442900
Tel: +44 (0)207 1524416

KEYSTONE CONSULTING ENGINEERS

Project Name:
47 BERKELEY SQUARE

Drawing Title:
DRAINAGE STRATEGY
OVERLAND FLOWS

Scale(s): 1:250 @ A1

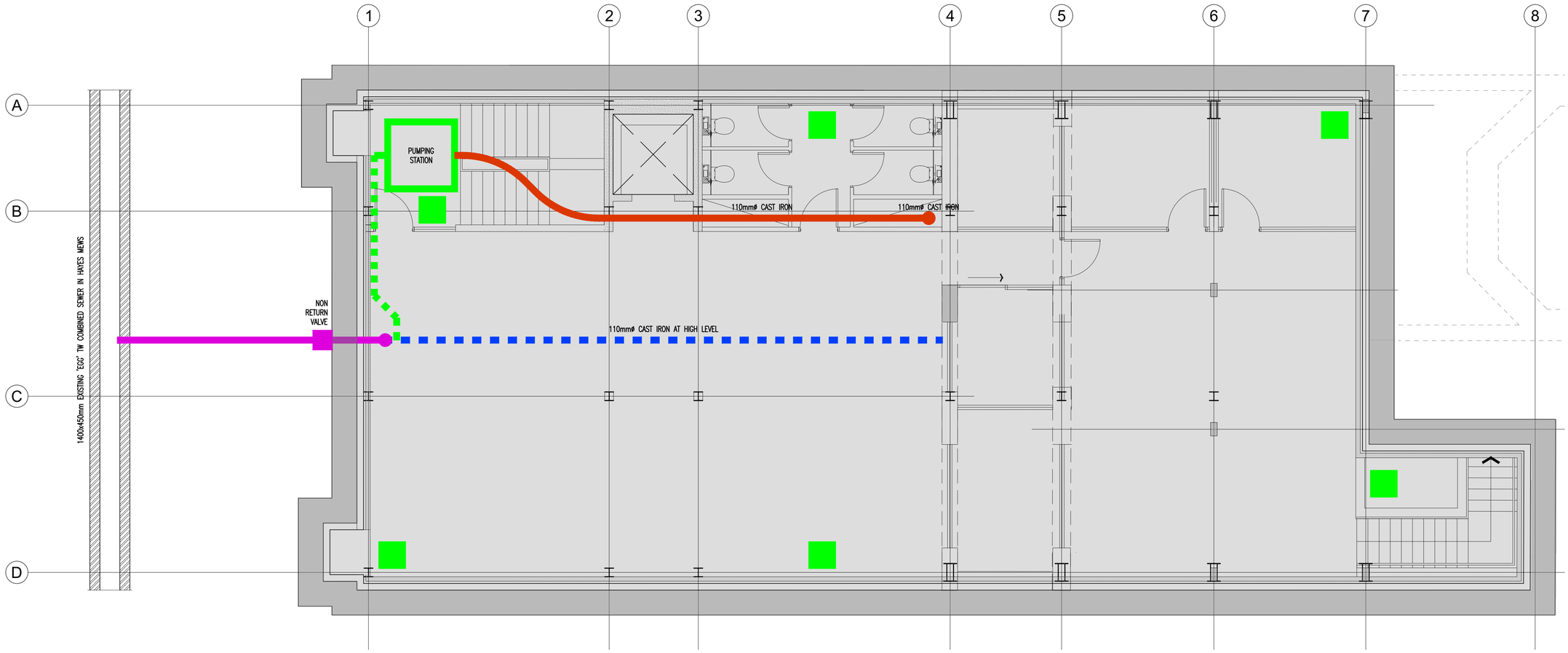
Issue Status: PRELIMINARY

Proj. No.	Dwg. No.	Rev.
2022105	802	A

KEYSTONE
CONSULTING ENGINEERS

Appendix C

Drainage Plans



KEY:

- SURFACE WATER (GRAVITY)
- FOUL (GRAVITY)
- RISING MAIN FROM PUMPING STATION
- COMBINED CONNECTION TO SEWER
- DRAINED CAVITY SYSTEM SUMP & PUMP

100mm @ A1 (50mm @ A3)

NOTES

Rev	Date	Drawn	Eng	Amendments

Mob: +44 (0)7787 510110
Tel: +44 (0)29 20442900
Tel: +44 (0)207 1524416

KEYSTONE CONSULTING ENGINEERS

Project Name:
47 BERKELEY SQUARE

Drawing Title:
DRAINAGE STRATEGY
SECTION

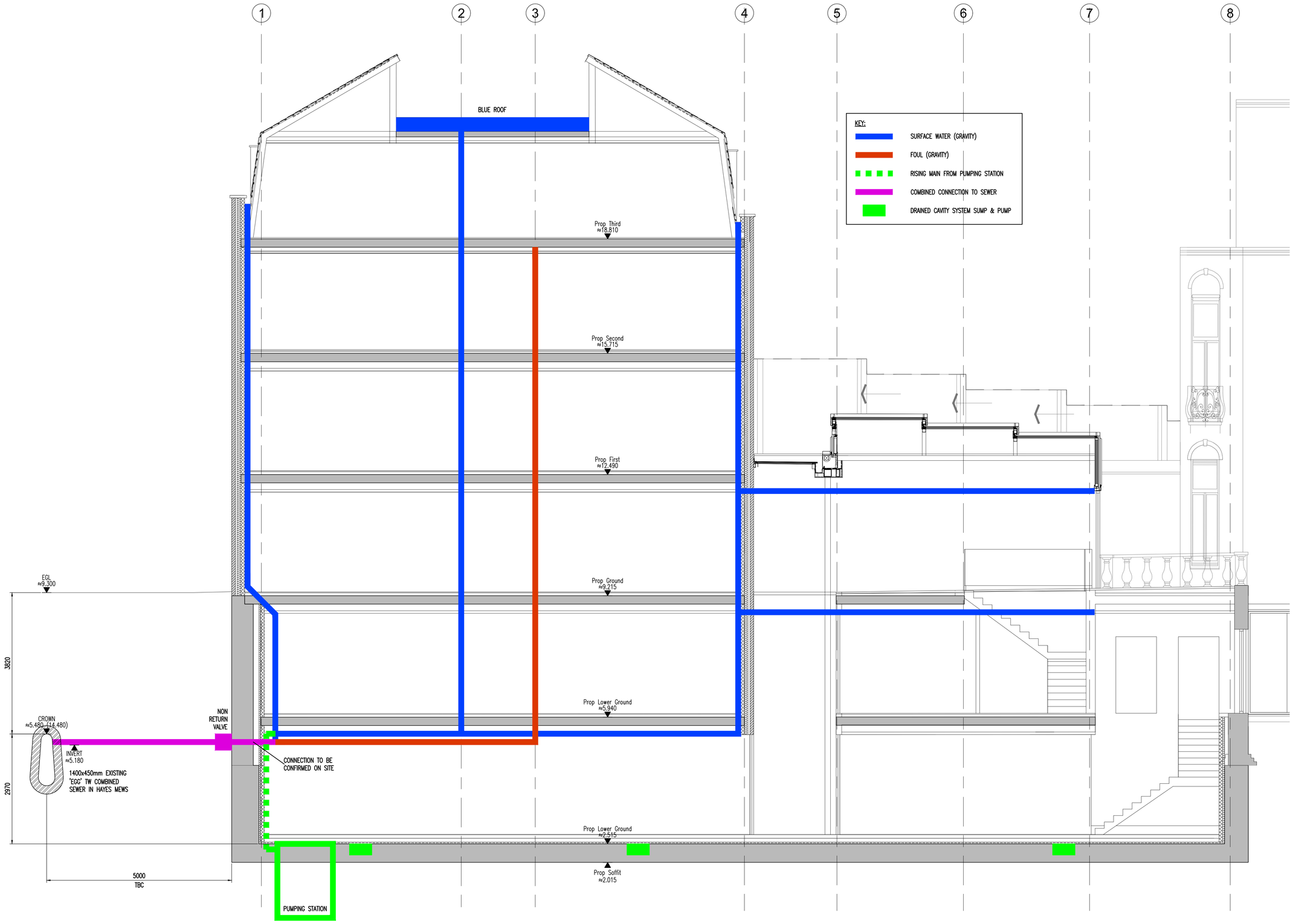
Scale(s): 1:50 @ A1

Issue Status: PRELIMINARY

Proj. No.	Dwg. No.	Rev.
2022105	800	A

100mm @ A1 (50mm @ A3)

NOTES



Rev	Date	Drawn	Eng	Amendments

Mob: +44 (0)7787 510110
Tel: +44 (0)29 20442900
Tel: +44 (0)207 1524416

KEYSTONE CONSULTING ENGINEERS

Project Name:

47 BERKELEY SQUARE

Drawing Title:

DRAINAGE STRATEGY
SECTION

Scale(s): 1:50 @ A1

Issue Status: PRELIMINARY

Proj. No.	Dwg. No.	Rev.
2022105	801	A

KEYSTONE
CONSULTING ENGINEERS

Appendix D

Environment Agency Flood Mapping

Flood map for planning

Your reference	Location (easting/northing)	Created
No47 Hays Mew	**528734/180523**	**24 Mar 2024 14:19**

Your selected location is in flood zone 1, an area with a low probability of flooding.

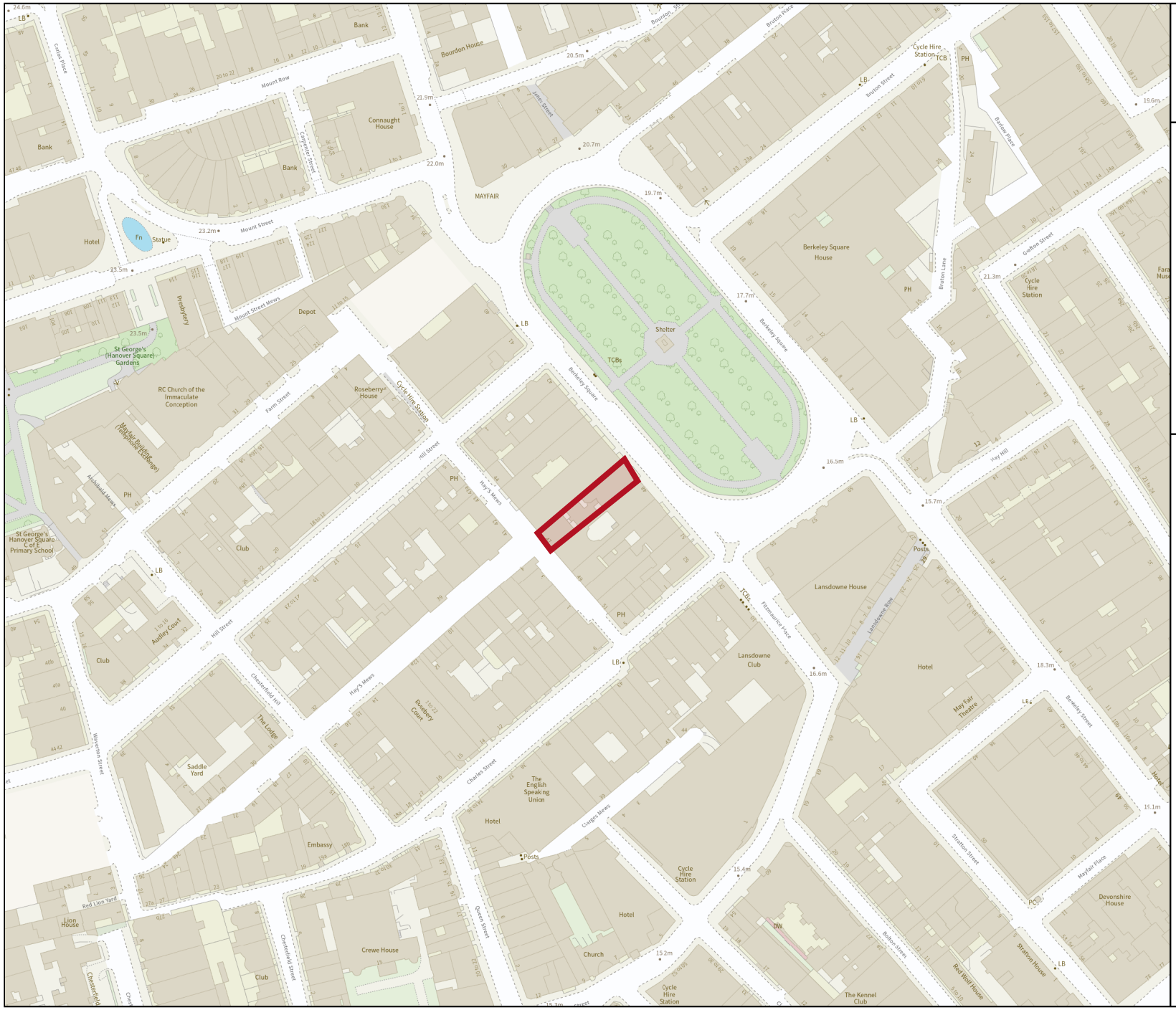
You will need to do a flood risk assessment if your site is **any of the following:**

- bigger that 1 hectare (ha)
- In an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.



Environment Agency

Flood map for planning

Your reference
No47 Hays Mew

Location (easting/northing)
528734/180523

Scale
1:2500

Created
24 Mar 2024 14:19

- Selected area
- Flood zone 3
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Water storage area

0 20 40 60m