Grand Union House, London NW1

Flood Risk Assessment & Outline Drainage Strategy

December 2018

SELLAR PROPERTY

GRAND UNION HOUSE

FLOOD RISK ASSESSMENT AND OUTLINE DRAINAGE STRATEGY

RP-FRA-001
NOVEMBER 2018

CONFIDENTIAL

SELLAR PROPERTY

GRAND UNION HOUSE

FLOOD RISK ASSESSMENT AND OUTLINE DRAINAGE STRATEGY

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FLOOD RISK ASSESSMENT AND OUTLINE DRAINAGE STRATEGY

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Signature					
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Signature					
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1 INTRODUCTION

1.1 APPOINTMENT AND BRIEF

1.1.1 WSP has been commissioned by Camden Mixed Developments Limited ('The Applicant') to carry out a Drainage Strategy (DS) and a Flood Risk Assessment (FRA) to support a planning application for the proposals at Grand Union House, 16-20 Kentish Town Road, Camden Town, NW1 9NX ('The Site'). The proposals are for a mixed-use building consisting of office, flexible retail, restaurant and/or leisure spaces, and 6 affordable housing units.

1.1.2 Under an Appointment in 2018 between WSP and The Applicant, WSP were employed as Consultant to provide this DS and FRA and in doing so has exercised reasonable skill and care. This Report relates solely to the DS and FRA for the above-mentioned development.

1.1.3 This Report is intended for the sole benefit of the parties named above and shall not be capable of assignment. WSP shall not be liable for any use of the report for any reasons other than that for which the report was originally prepared and provided.

1.2 OBJECTIVE OF THE STUDY

1.2.1 This FRA investigates flood risk within the area and establishes the mitigation measures proposed to ensure the sustainability and safety of the scheme over its lifetime.

1.2.2 The FRA and DS has been produced in line with the requirements of the National Planning Policy Framework (NPPF) and the Environment Agency (EA) Standing Advice as well as through consultation with the EA, Thames Water (TW) and the London Borough of Camden (LBC) [the Lead Local Flood Authority (LLFA)] and the proposed re-development and has been produced to inform the BREEAM UK New Construction 2014 assessments from a flood risk and drainage perspective (Pol 03 credits).

1.3 STUDY METHODOLOGY

1.3.1 The appraisal process comprised of a site visit on September 2018, a desktop study, data research and in accordance with regulatory bodies and third party standing advice.

1.3.2 The following documents, policies and resources have been reviewed in producing this FRA:

- LBC Flood Risk Management Strategy (2013)
- LBC Strategic Flood Risk Assessment (2014);
- LBC Surface Water Management Plan (2011);
- LBC Preliminary Flood Risk Assessment (2011).
- LBC Local Plan (2017);
- London Plan (2016); and
- Draft New London Plan (2018).

1.3.3 This FRA and DS makes partial use of third party information and contains EA information.

2 EXISTING SITE

2.1 SITE LOCATION

2.1.1 Grand Union House is located on Kentish Town Road.

2.1.2 The Site is situated approximately 25 metres to the south of Regent's Canal at OS Grid Reference: 528953, 184033.

2.1.3 The Site is located in an urban setting in a mixed use area in Camden Town town centre. The Site is bounded at the north by Grand Union Walk houses and The Grand Union Canal, to the east by Sainsbury's supermarket and St Michael's Church, to the west by Kentish Town Road, and a commercial property just south of the Site.

2.1.4 An indicative Site location plan can be seen below in Figure 1.

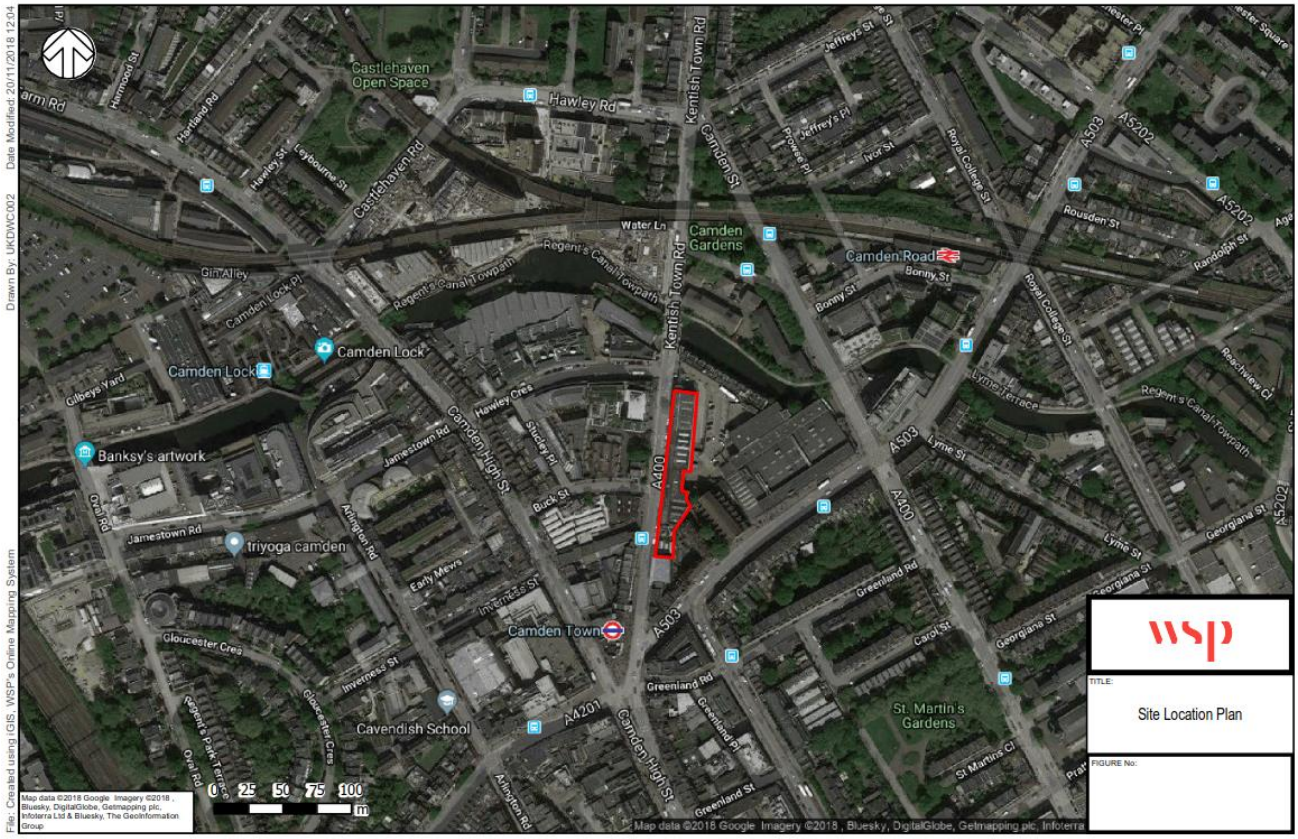


Figure 1 - Site Location Plan

2.1.5 Refer to Appendix A for a Site Location Plan.

2.2 EXISTING SITE DESCRIPTION

2.2.1 The Site covers an area of 0.183 hectares (ha) and comprises a ground level car park, a single storey, plus a mezzanine floor of offices and roof plant areas. There is also a restaurant and retail bar at ground floor level. The existing retail units and main office entrance are on the Kentish Town Road frontage.

2.3 SITE TOPOGRAPHY

2.3.1 Based on topographical survey data undertaken by Plowman Craven in May 2015, see Appendix B, the Site is relatively flat. The north-west point of the Site has a level of circa 25.94m AOD and at the south west of the Site the level is circa 26.14m AOD.

2.4 GEOLOGY AND HYDRO-GEOLOGY

2.4.1 This section of the report has been informed by mapping from the British Geological Survey (BGS) Geology of Britain viewer 1:50 000 scale mapping and magic maps data.

2.4.2 Geology underlying the Site is:

- Superficial Geology - None Recorded
- Bedrock Geology - Thames Group - Clay, Silt, Sand and Gravel. Sedimentary Bedrock formed approximately 34 to 56 million years ago in the Palaeogene Period. Local environment previously dominated by shallow seas.
- There are no source protection zones (SPZs) under the Site with the closest SPZ (SPZ 3) located approximately 1.17km west of the Site. SPZs show the risk of contamination from any activities that might cause pollution in the area. The closer the activity, the greater the risk. The maps show three main zones (inner, outer and total catchment) and a fourth zone of special interest, which is occasionally applied to a groundwater source.

2.4.3 The Site is not located in an aquifer designation area.

2.5 EXISTING WATERCOURSES, FLOOD DEFENCES AND OTHER STRUCTURES

2.5.1 The River Thames is located approximately 3.80km south-east of the Site and runs from west to east.

2.6 EXISTING SEWERS/ DRAINAGE

2.6.1 Based on the TW Asset Records (Appendix B), there is a 1372x787mm increasing to a 1422x762mm combined water sewer running in a southern direction beneath the carriageway of Kentish Town Road. A 1422x762mm combined sewer crosses the southern part of the Site in an easterly direction and additionally, a 1372x787mm combined sewer is also shown to run north east beneath Camden Road.

2.7 ARTIFICIAL WATERCOURSES

2.7.1 Regent's Canal, maintained by the Canal and River Trust is located approximately 25m north of the Site and runs from east to west.

2.7.2 The Serpentine, a 16 hectare lake in Hyde Park is located approximately 1.40km south-west of the Site.

3 PROPOSED DEVELOPMENT

3.1 DEVELOPMENT PROPOSALS

3.1.1 Partial demolition and redevelopment of the existing building, to provide a new office (Class B1) building with associated roof terraces, ground floor flexible town centre uses (Class A1 and/or A3 and/or D2), and 6 affordable housing units, along with associated landscaping works.

3.2 VULNERABILITY CLASSIFICATION

3.2.1 In accordance with the NPPF (2018) and associated flood risk and coastal planning practice guidance (2014) (Table 2: Flood risk vulnerability classification) the proposed development usage (offices, residential and flexible town centre uses) is classified as a more vulnerable development.

3.3 SEQUENTIAL TEST AND EXCEPTION TESTS

3.3.1 As stated in the NPPF, a sequential risk-based approach to determine the suitability of land for development in flood risk areas should be applied at all stages of the planning process giving precedence to low flood risk areas wherever possible.

3.3.2 Based on the Flood Map for Planning, see Figure 2, the Site is located in Flood Zone 1.

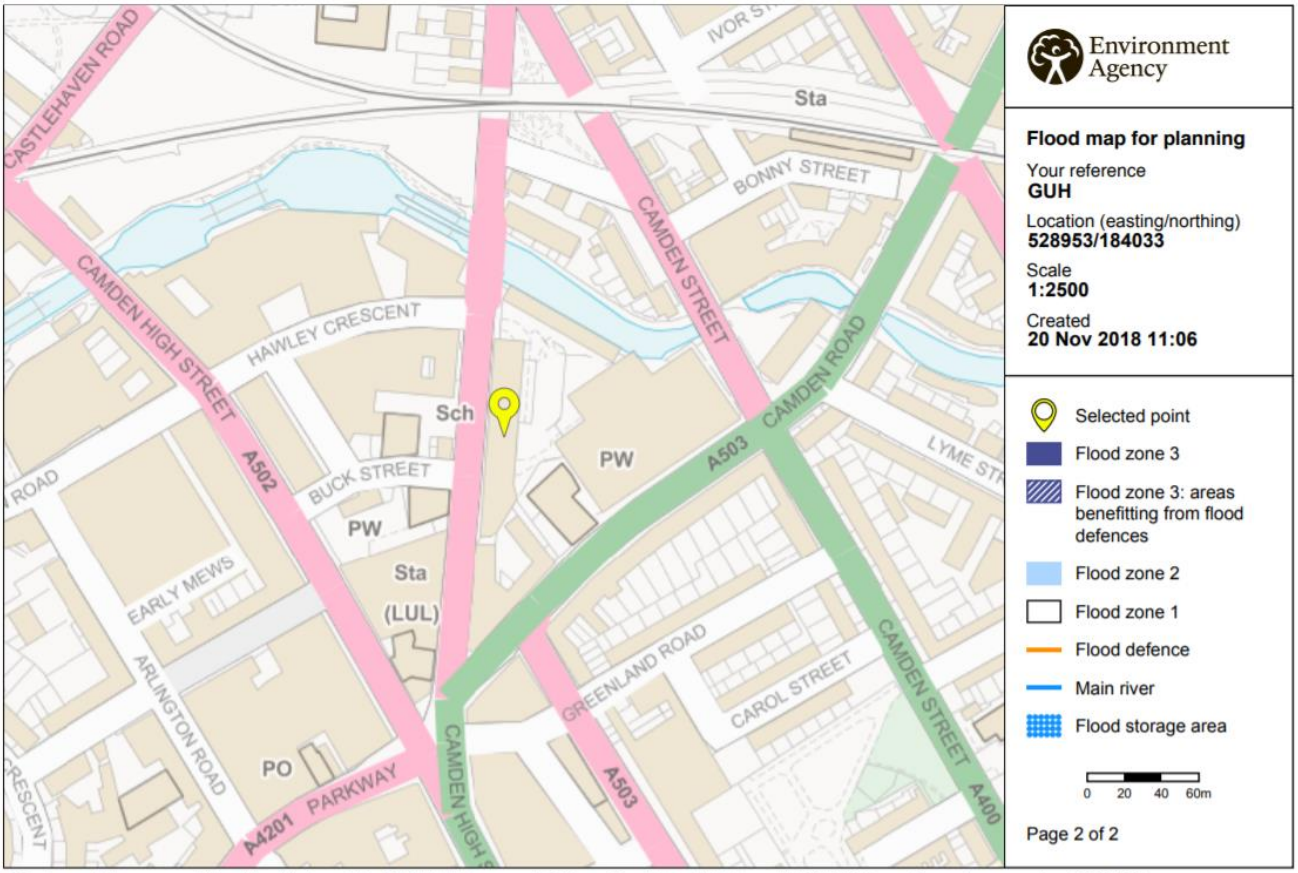


Figure 2 - Flood Map for Planning

3.3.3 Based on the flood risk and coastal planning practice guidance (2014) (Table 3: Flood risk vulnerability and flood zone 'compatibility') as the Site is located within Flood Zone 1 and classified as a more vulnerable development, development is appropriate and the Site can be considered as sequentially acceptable. The exception test does not need to be applied as the Site is sequentially acceptable.

4 DEFINITION OF THE FLOOD HAZARD

4.1 FLUVIAL AND TIDAL FLOODING

4.1.1 Based on the flood map for planning the Site is located in Flood Zone 1, as confirmed through correspondence with the EA, which is classified as land having a less than 0.1% annual probability of river (fluvial) or sea (tidal) flooding (1 in 1000 year return period event). In consistency with the above, the Site is classified as having a 'very low' probability of flooding from fluvial or tidal sources on the 'long term flood risk information', see extract in Figure 3.

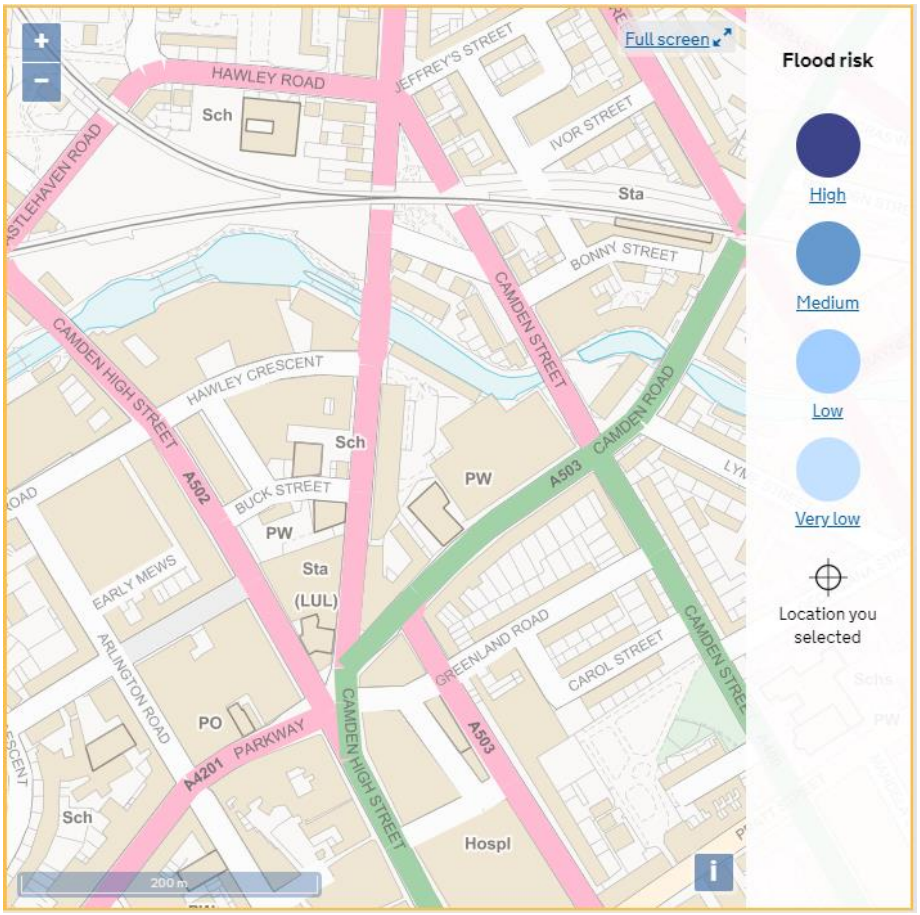


Figure 3 - Extract from gov.uk 'long term flood risk information' Extent of flooding (rivers and sea)

4.1.2 It is stated in the LBC Strategic Flood Risk Assessment (2014) that "all main rivers located in the LBC are now culverted and incorporated into the Thames Water Sewer Network and therefore there is no fluvial flood risk in LBC."

4.1.3 Therefore, from a fluvial and tidal flood risk perspective the Site is at negligible risk of flooding.

4.2 GROUNDWATER FLOODING

4.2.1 The appended mapping in the LBC Strategic Flood Risk Assessment shows that the Site is not located within an area of increased susceptibility in elevated groundwater.

4.2.2 The Site is also not located in an area that has experienced either an EA groundwater flood incident or a LBC historic groundwater flood incident.

4.2.3 Therefore, from a groundwater flood risk perspective the Site is deemed to be at a negligible risk.

4.3 SURFACE WATER FLOODING

4.3.1 Based on the 'long term flood risk information' mapping, see extract in Figure 4, there are areas at risk of surface water flooding present within and immediately adjacent to the Site.

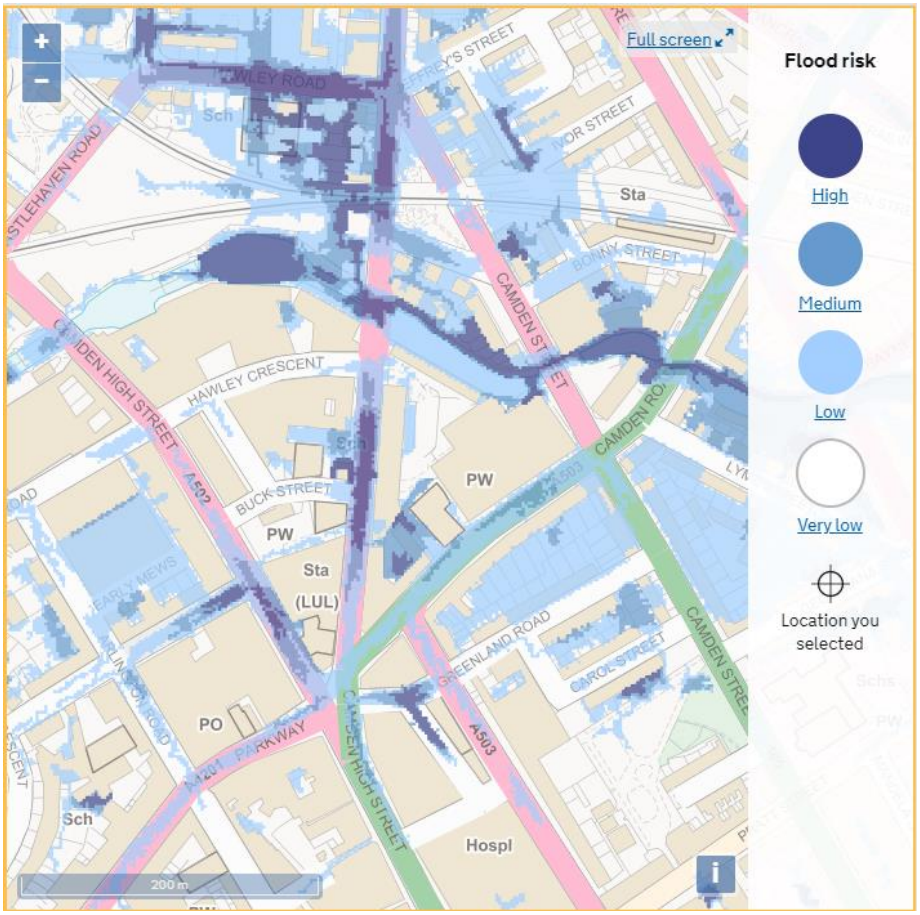


Figure 4 - Extract from gov.uk 'long term flood risk information' Extent of flooding (surface water)

4.3.2 The flood risk contours in Figure 4 represent the following probability of flooding.

- High risk means that each year this area has a chance of flooding of greater than 3.3% annual probability (less than 1 in 30 year return period);
- Medium risk means that each year this area has a chance of flooding of between 1% and 3.3% annual probability (1 in 100 and 1 in 30 year return period respectively);

- Low risk means that each year this area has a chance of flooding of between 0.1% and 1% annual probability (1 in 1000 to 1 in 100 year return period respectively); and
- Very low risk means that each year this area has a chance of flooding of less than 0.1% annual probability (less than 1 in 1000 year return period).

4.3.3 The High risk of flooding is localised to the highway, which sits outside the development extent and is due to the natural low spot of the road, and due to the expected kerb heights is unlikely to directly affect the development proposal. It should be noted that the EA flood mapping assumes that there are minimal highway/public sewer systems in place and therefore indicates somewhat of a worst case.

4.3.4 Based on a review of the SFRA/SWMP there have been no reports of surface water flooding occurring. The Site is not located in either a Local Flood Risk Zone or a Critical Drainage Area.

4.3.5 Based on our assessment there is a low/medium risk of surface water flooding occurring on Site.

4.4 SEWER FLOODING

4.4.1 Within the LBC Strategic Flood Risk Assessment, an extract of the TW DG5 Flood Register is provided which indicates within the last 10 years (prior to 2014) the number of properties affected by internal and external sewer flooding within each 4 digit postcode area of the LBC. From this it is identified that the 4 digit postcode area that the Site is located in has not had any properties effected by external flooding however there has been 1 property effected by internal sewer flooding.

4.4.2 Through consultation with TW it has been determined that “the flooding records held by TW indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.”

4.4.3 Therefore, from a sewer flooding flood risk perspective, the Site is deemed to be at negligible risk.

4.5 RESERVOIR AND ARTIFICIAL SOURCES OF FLOODING

4.5.1 Based on the ‘long term flood risk information’ mapping, see extract in Figure 5, the Site does not lie within an area susceptible to reservoir flooding. Areas which lie within the maximum extent of flooding are considered to be areas which peoples' lives could be threatened by an uncontrolled release of water from a reservoir.

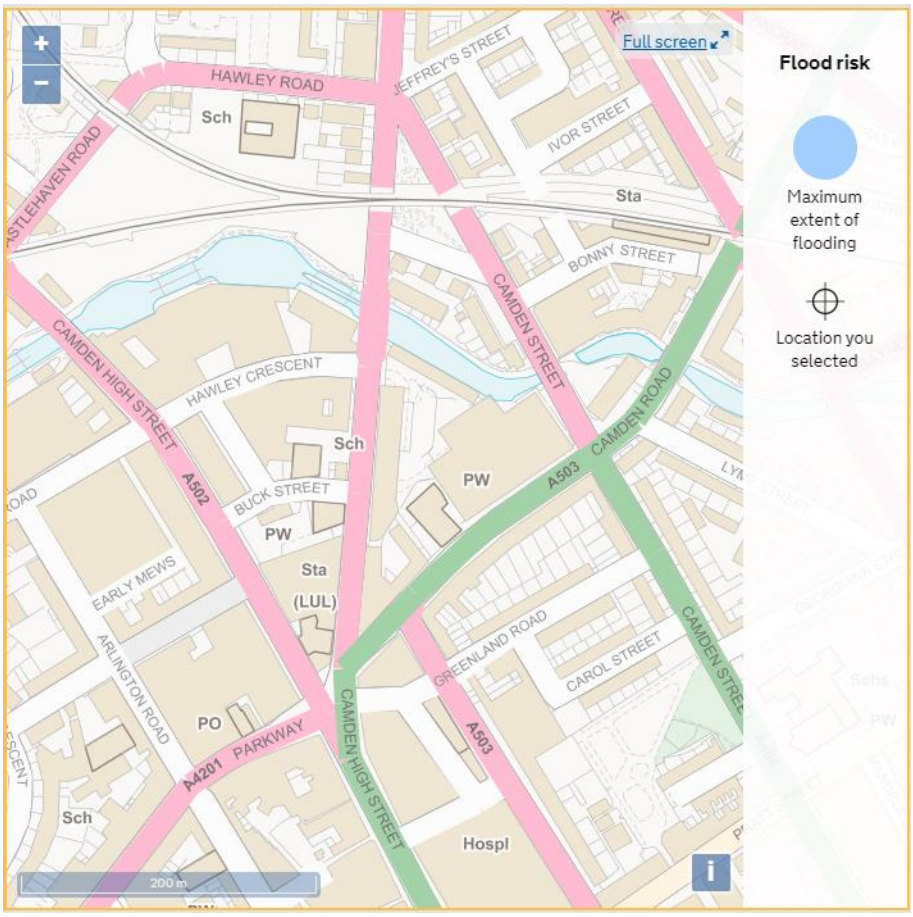


Figure 5 - Extract from gov.uk 'long term flood risk information' Extent of flooding (reservoirs)

4.5.2 It should be noted that flooding from reservoirs is extremely unlikely and there has been no loss of life in the UK from reservoir flooding since 1925.

4.5.3 It is stated in the LBC Strategic Flood Risk Assessment that “the Canal and River Trust have confirmed that no flooding incidents associated with Regent’s Canal have been recorded in LBC.”

4.5.4 Therefore, from an artificial sources flood risk perspective, the Site is deemed to be at negligible risk.

5 CLIMATE CHANGE

5.1 BACKGROUND INFORMATION

5.1.1 As explained in the Climate Change Adaptation Sub-Committee Progress Report 2014, increased flood risk is the greatest threat to the UK from climate change. Models of the climate system suggest floods of the type experienced in England and Wales in autumn 2000, and between December 2013 and February 2014, have become more likely as a consequence of increased concentrations of greenhouse gases in the atmosphere.

5.1.2 More frequent short-duration, high intensity rainfall and more frequent periods of long-duration rainfall could be expected. Sea levels are also expected to continue to rise.

5.1.3 New EA guidance "Flood risk assessments: climate change allowances" issued on the 19th February 2016 (and subsequent minor updates) provides up to date information on expected changes in rainfall, river flows and sea level rise as a consequence of climate change.

5.1.4 A key change from the previous guidance is that the climate change allowances for peak river flows now are shown as variable on a regional basis; allowances are also now based on percentiles, whereby a percentile is a measure used in statistics to describe the proportion of possible scenarios that fall below an allowance level (e.g. a 50% percentile means that the allowance has 50% chances of not being exceeded).

5.1.5 Sea levels allowances reflect the previous guidance and vary on a regional basis and for each epoch as shown in Table 3 of the EA guidance.

5.1.6 The EA have provided guidance to assess the impact of climate change on fluvial flooding. Technical assessment of climate change impacts on fluvial flooding appropriate for new developments depending on their scale and location (see following section).

5.1.7 For peak rainfall the EA Guidance provides an upper end and central allowance depending on epoch; the guidance recommends assessing both the central and upper end allowances to understand the range of possible impacts. These allowances are detailed in Table 2 (Peak rainfall intensity allowance in small and urban catchments) of the EA guidance.

5.2 DEVELOPMENT LIFESPAN

5.2.1 A typical lifespan for residential units is 100 years, and 60 years for commercial.

5.2.2 Based on this, the contingency peak rainfall allowances for climate change that are potentially applicable to this Site are as set out in Table 2 of the EA's "Flood risk assessments: climate change allowances" advice are:

- Upper End – 40% increase in peak rainfall by 2115;
- Central – 20% increase in peak rainfall by 2115.

5.3 IMPACT OF CLIMATE CHANGE ON THE DEVELOPMENT

5.3.1 Given the location of the Site in Flood Zone 1, away from the floodplain, it is deemed that the Site being affected by fluvial and tidal flooding, within a climate change scenario, is highly unlikely.

5.3.2 The probability of surface water flooding is expected to increase over time as a consequence of climate change, as rainfall intensity in extreme events is expected to increase. However, the potential impact of flooding is mitigated by the commercial “less vulnerable” usage on the ground floor. Where possible threshold drains and levels falling away from entrances will also reduce the potential risk of surface water flooding on Site now and in the future.

6 FLOOD RISK MITIGATION MEASURES

6.1.1 As discussed in the previous pages surface water flood risk at the Site has been deemed low/medium risk, no significant sources of flood risk for the Site have been identified.

6.1.2 The impact of surface water flooding on Site would be mitigated by the existing drainage which serves the retained lower basement and ramp. Furthermore if viable threshold drains will be provided, and levels will be designed to fall away from ground level entrances where possible. The impact of any possible surface water flooding is further minimised in terms of safety given the commercial usage on the ground floor, as all residential elements are located at upper floors and will not be impacted by surface water flooding.

6.2 OUTLINE SURFACE WATER DRAINAGE STRATEGY

6.2.1 The proposed scheme utilises the existing concrete structure from the foundations to level one. This is due to Sainsbury's having an operational customer car park at basement level below GUH which needs to remain in operation both during construction stage and in the future. Accordingly, and in order to maximise the building envelope, in response to comments from officers, a structural analysis was undertaken to investigate how many new storeys can be added above this to provide the maximum floorspace on the Site.

6.2.2 This analysis showed that adding green roof/blue roof attenuation would not be possible as it would require strengthening works to be undertaken to the internal columns between basement and ground level. These works would be disruptive and would render the scheme undeliverable due to the impact on the basement operation.

6.2.3 There is no scope within the existing structure to incorporate any surface water attenuation, and due to lease restrictions regarding access under the ground as set out above, providing attenuation within the new build area is also restricted. Therefore, it is proposed that the development will mimic existing discharge rates with no formal attenuation proposed.

6.2.4 Surface water will discharge as the same rate as existing as there is currently no scope to incorporate surface water attenuation within the plot.

6.2.5 As such the development will not be increasing the rate of surface water runoff into the public sewer system where it is believed where the existing plot currently drains, and thus no increased risk to the local public network or third parties.

6.2.6 The foul and surface water from the Site will discharge to the local Thames Water (TW) combined sewer which sits within Kentish Town Road.

6.2.7 The correspondence with LBC regarding the proposed drainage strategy is included in Appendix D.

6.3 SURFACE WATER DRAINAGE MAINTENANCE AND MANAGEMENT STRATEGY

Table 1 - Drainage Maintenance Requirements

Drainage Feature	Regular Maintenance	Occasional Maintenance	Monitoring
Drainage Channels	Inspections will be frequent and regular, depending on local conditions, but at least annually by Site management. Inspections will include gratings; covers including their locking bolts; sumps and sump buckets; exposed concrete surround and adjacent paving. Channels will be flushed with water or high pressure jetting (no boiling water or cleaning agent will be used). All silt buckets and sumps will be cleaned out replaced back into the units ensuring they are correctly fitted.	All channel surfaces and joints will be checked and repaired as necessary.	Inspected every 6 months or after large storm.
Manholes / Inspection Chambers	Inspection chambers will be checked every 6 months for the accumulation of debris and silt and cleaned as necessary.		Inspect every 6 months or after large storm.

7 RESIDUAL RISKS

7.1.1 Since the Site is located within Flood Zone 1, away from any floodplain, residual fluvial / tidal flood risk is considered to be negligible.

7.1.2 The impact of surface water flooding on site would be mitigated by the existing drainage which serves the retained lower basement and ramp. Furthermore if viable threshold drains will be provided, and levels will be designed to fall away from ground level entrances where possible. The impact of any possible surface water flooding is further minimised in terms of safety given the commercial usage on the ground floor, as all residential elements are located at upper floors and will not be impacted by surface water flooding.

8 CONCLUSIONS

8.1.1 Flood Risk within the area has been assessed and mitigated where appropriate; and this FRA informs the BREEAM NC 2018 assessment from a flood risk and drainage perspective (Pol 03 criteria).

8.1.2 The Site is shown in the EA Flood Maps as being located within Flood Zone 1, which based on the NPPF, is classified as having a 'negligible' probability of tidal and fluvial flooding. Other potential sources of flooding have been investigated however no significant sources of flooding have been identified apart from a low risk of surface water flooding.

8.1.3 The surface water strategy is to drain the Site as its currently draining as there is no scope to incorporate attenuation. This in turn will not increase the risk of surface water flooding occurring on or offsite.

8.1.4 The BREEAM credits expected to be achievable are summarised below; final assessment and confirmation on the credits achieved is the responsibility of the BREEAM assessor.

Table 2 - BREEAM Pol 03 Credit Summary

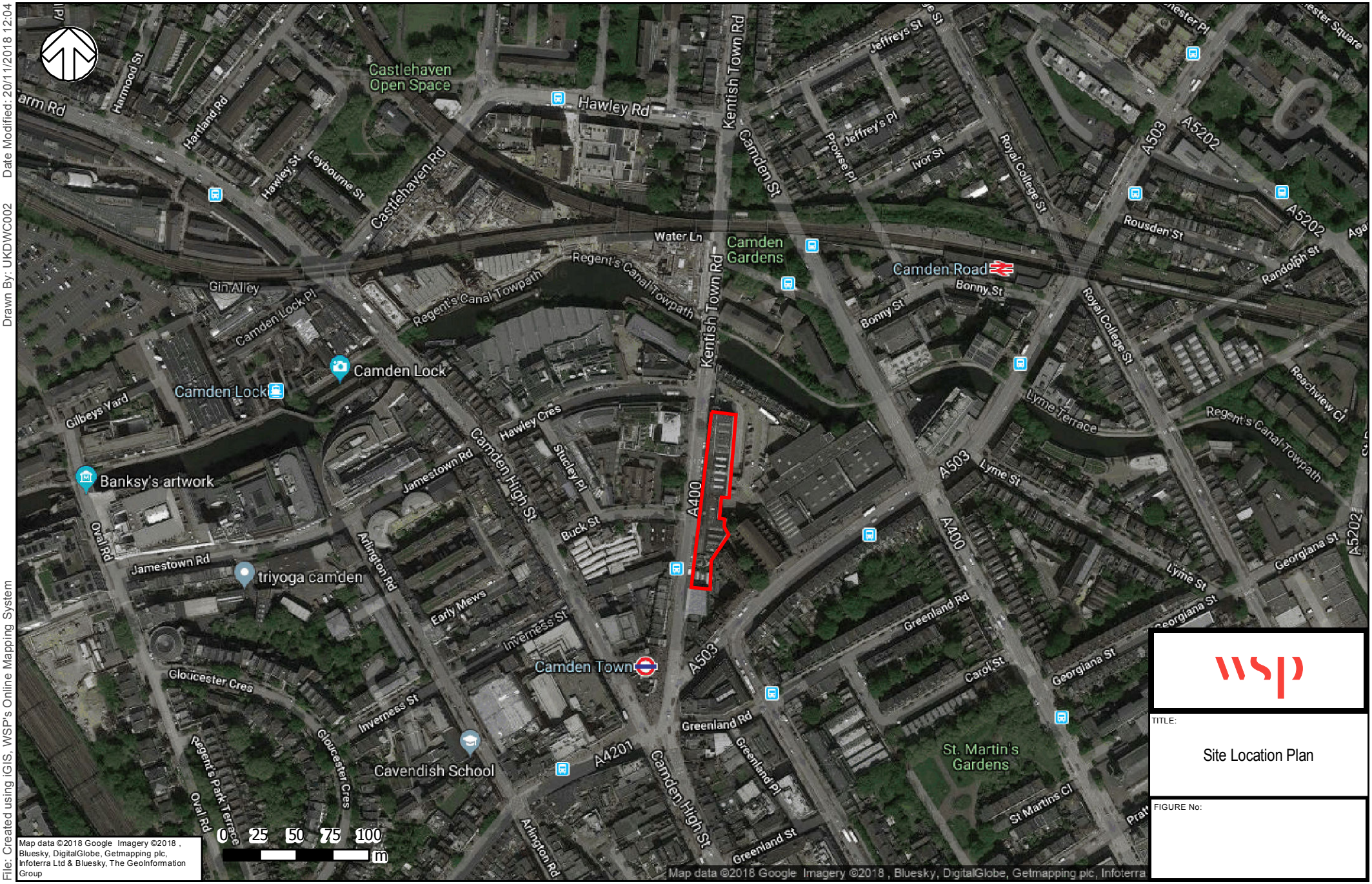
Pol 03 Credit	Relevant Criteria (summary)	Comments
Flood Resilience	**Pre-requisite:** An Appropriate Consultant is appointed to carry out, demonstrate and/or confirm the development's compliance with the following criteria. **Two credits available (flood resilience):** 1) Where a site-specific flood risk assessment (FRA) confirms the development is situated in a flood zone that is defined as having a low annual probability of flooding (in accordance with current best practice national planning guidance). The FRA must take all current and future sources of flooding into consideration	**Expected to achieve two credits for flood resilience:** This FRA has identified that the development Site is located within Flood Zone 1 and the development is at low risk of flooding from all sources when taking into account the effects of climate change.
Surface Water Run-off	**Pre-requisite:** Surface water run-off design solutions must be bespoke, i.e. they must take account of the specific Site requirements and natural or man-made environment of and surrounding the Site. The priority levels detailed in the Methodology must be followed, with justification given by the appropriate consultant where water is allowed to leave the Site. **One credit available (surface water management):** 1. Drainage measures are specified so that the peak rate of run-off from the Site to the watercourses (natural or municipal) shows a 30% improvement for the developed Site compared with the pre-developed Site. This should comply at the 1-year and 100-year return period events. 2. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place. 3. Calculations for surface water runoff need to include an allowance for climate change, in accordance to best practice planning guidance. **One credit available (surface water resilience):**	**Expected not to achieve any credits for surface water management**: Due to the constraints associated with the structural capacity of the structure, the drainage strategy does not incorporate any attenuation and therefore does not provide any improvement in run-off rates.

	1. Where flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance); AND EITHER 2. Drainage design measures are specified to ensure that the post development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed Site's development for the 100-year 6-hour event, including an allowance for climate change. 3. Any additional predicted volume of run-off for this event is prevented from leaving the Site by using infiltration or other Sustainable Drainage System (SuDS) techniques. OR (only where criteria 2 and 3 for this credit cannot be achieved): 4. Justification from the Appropriate Consultant indicating why the above criteria cannot be achieved, i.e. where infiltration or other SuDS techniques are not technically viable options. 5. Drainage design measures are specified so that the post development peak rate of run-off is reduced to the limiting discharge. The limiting discharge is defined as the highest flow rate from the following options: a. The pre-development 1-year peak flow rate; OR b. The mean annual flow rate Qbar; OR c. 2L/s/ha. Note that for the 1-year peak flow rate the 1-year return period event criterion applies (as described in the peak run-off criteria above). 6. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place. 7. For either option, above calculations must include an allowance for climate change; this should be made in accordance with current best practice planning guidance.	
Minimising Watercourse pollution	**Pre-requisite:** An Appropriate Consultant is appointed to carry out, demonstrate and/or confirm the development's compliance with the following criteria. **One credit available for minimising watercourse pollution:** 8. There is no discharge from the developed site for rainfall up to 5mm (confirmed by the Appropriate Consultant). 9. In areas with a low risk source of watercourse pollution, an appropriate level of pollution prevention treatment is provided, using appropriate SuDS techniques. 10. Where there is a high risk of contamination or spillage of substances such as petrol and oil (see Compliance notes for a list of areas), separators (or an equivalent system) are installed in surface water drainage systems. 11. Where the building has chemical/liquid gas storage areas, a means of containment is fitted to the site drainage system (i.e. shut-off valves) to prevent the escape of chemicals to natural watercourses (in the event of a spillage or bunding failure). 12. All water pollution prevention systems have been designed and installed in accordance with the recommendations of documents such as the SuDS manual and other relevant industry best practice. They must be bespoke solutions	**Expected not to achieve one credit for minimising watercourse pollution**: Due to the pre-development and post development site being having no option to infiltrate which eliminates the opportunity of ensuring 'no discharge from the developed site for rainfall up to 5mm'.

	taking account of the specific site requirements and natural or man-made environment of and surrounding the site. 13. A comprehensive and up to date drainage plan of the site will be made available for the building/site occupiers. 14. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place. 15. Where present, all external storage and delivery areas designed and detailed in accordance with the current best practice planning guidance.	

Appendix A

SITE LOCATION



File: Created using iGIS, WSP's Online Mapping System Drawn By: UKDWC002 Date Modified: 20/11/2018 12:04

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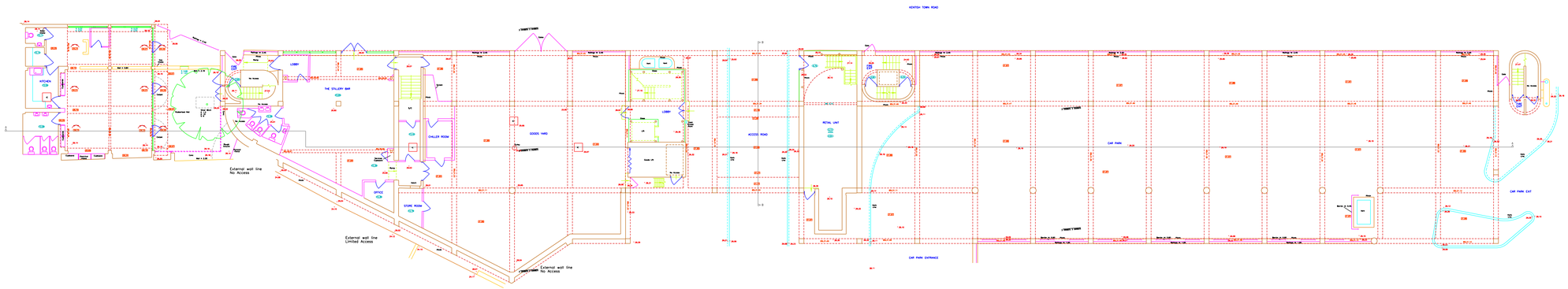
TITLE:

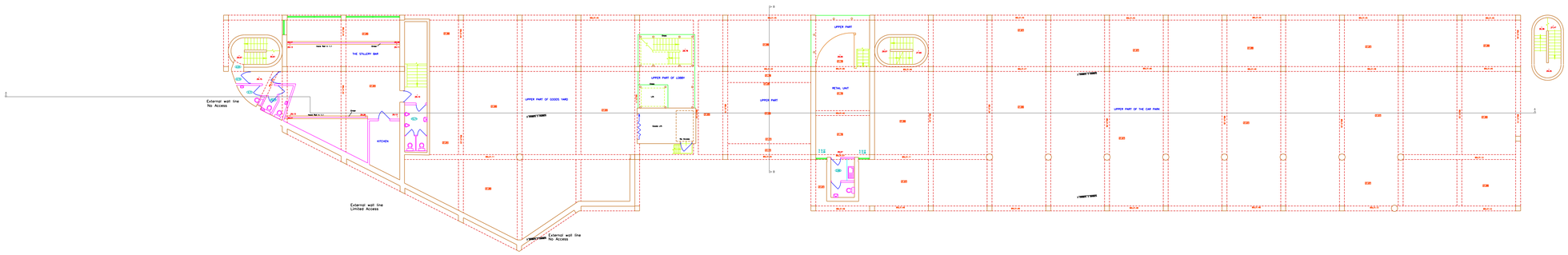
Site Location Plan

FIGURE No:

Appendix B

SURVEY INFORMATION


KENTISH TOWN ROAD
THE STILLERY BAR
LOBBY
KITCHEN
CHILLER ROOM
OFFICE
STORE ROOM
GOODS YARD
ACCESS ROAD
RETAIL UNIT
LOBBY
CAR PARK
CAR PARK EXIT
CAR PARK ENTRANCE
External wall line
No Access
External wall line
Limited Access
External wall line
No Access


External wall line
No Access
THE STILLERY BAR
KITCHEN
UPPER PART OF GOODS YARD
UPPER PART OF LOBBY
UPPER PART
RETAIL UNIT
UPPER PART OF THE CAR PARK
External wall line
Limited Access
External wall line
No Access

1:200 at A1

Appendix C

WATER COMPANY DATA AND CORRESPONDENCE

Sewer Flooding
History Enquiry

Thames Water Property Searches

WSP UK Ltd
London London
Chancery Lane

Search address supplied	Grand Union House Grand Union House Kentish Town Road London NW1 9LQ
Your reference	Grand Union House
Our reference	SFH/SFH Standard/2018_3912946
Received date	**21 November 2018**
Search date	**21 November 2018**

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0845 070 9148

Sewer Flooding
History Enquiry

Property Searches

Search address supplied: Grand Union House,Grand Union House,Kentish Town Road,London,NW1 9LQ

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

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

(i) any negligent or incorrect entry in the records searched;

(ii) any negligent or incorrect interpretation of the records searched;

(iii) and any negligent or incorrect recording of that interpretation in the search report

(iv) compensation payments

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0845 070 9148

Sewer Flooding
History Enquiry

Thames Water Property Searches

History of Sewer Flooding

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

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

For your guidance:

- A sewer is "overloaded" when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- "Internal flooding" from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- "At Risk" properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company's reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water on Tel: 0800 316 9800 or website www.thameswater.co.uk

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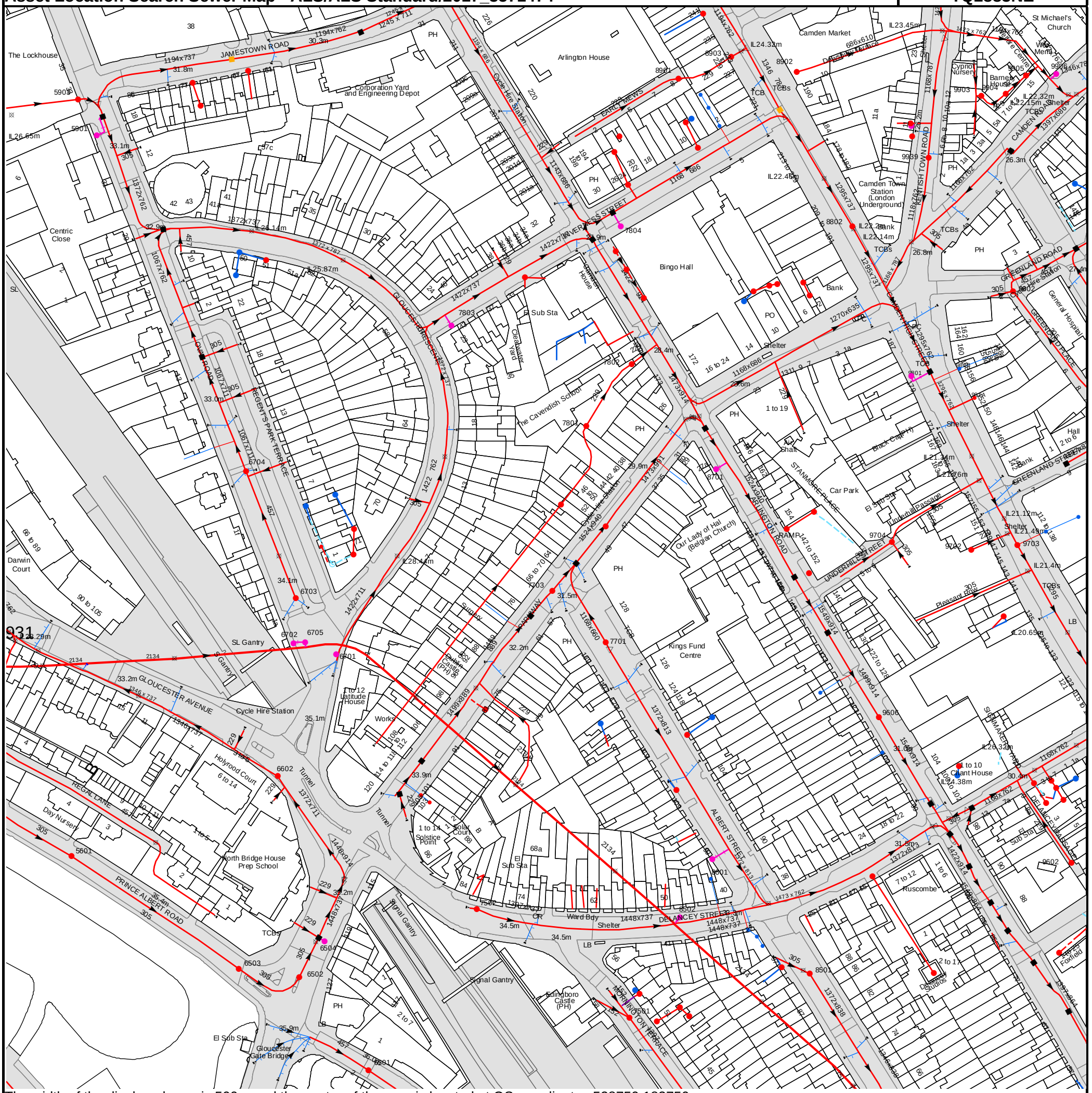
Asset Location Search Sewer Map - ALS/ALS Standard/2017_3571474

TQ2883NE



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 528750,183750

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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
6501	35.91	32.46
9633	29.89	29.03
95AB	n/a	n/a
96EH	n/a	n/a
9602	29.41	n/a
9903	26.24	23.61
9904	23.85	23.31
9905	23.84	23.13
9906	n/a	n/a
99AB	n/a	n/a
971A	n/a	n/a
981A	n/a	n/a
9802	26.55	23.53
9702	n/a	25.67
97DA	n/a	n/a
9703	n/a	n/a
9634	29.96	28.46
971B	n/a	n/a
9632	29.82	28.19
96EI	n/a	n/a
96EG	n/a	n/a
7802	28.5	26.37
781C	n/a	n/a
8701	n/a	n/a
88EH	n/a	n/a
88EF	n/a	n/a
88EG	n/a	n/a
88EE	n/a	n/a
87CA	n/a	n/a
88DI	n/a	n/a
87CB	n/a	n/a
88DJ	n/a	n/a
87BJ	n/a	n/a
8802	n/a	n/a
9704	30.25	27.43
9801	n/a	n/a
981B	n/a	n/a
79DG	n/a	n/a
9939	26.15	22.47
79DF	n/a	n/a
89FC	n/a	n/a
79DC	n/a	n/a
9940	n/a	n/a
9942	n/a	n/a
891A	n/a	n/a
9941	n/a	n/a
89FB	n/a	n/a
89FA	n/a	n/a
891B	n/a	n/a
891C	n/a	n/a
8901	26.78	25.74
8902	27.29	24.65
8903	n/a	n/a
89DJ	n/a	n/a
6504	35.51	31.84
661A	n/a	n/a
661B	n/a	n/a
7502	34.45	30.8
7615	n/a	n/a
76BJ	n/a	n/a
7501	33.89	29.52
75EH	n/a	n/a
75EI	n/a	n/a
75EE	n/a	n/a
86CG	n/a	n/a
85HE	n/a	n/a
8502	33.38	14.44
86DB	n/a	n/a
85HD	n/a	n/a
851A	n/a	n/a
86DC	n/a	n/a
8601	n/a	n/a
851D	n/a	n/a
851C	n/a	n/a
851B	n/a	n/a
85DD	n/a	n/a
8501	32.52	27.91
861A	n/a	n/a
95EB	n/a	n/a
9606	31.16	23.96
961A	n/a	n/a
95EA	n/a	n/a
96DG	n/a	n/a
96DH	n/a	n/a
6701	34.24	29.74
7701	31.79	28.32
7703	31.3	28.11
67EJ	n/a	n/a
67EF	n/a	n/a
671A	n/a	n/a
67EE	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
771A	n/a	n/a
771B	n/a	n/a
67ED	n/a	n/a
7801	n/a	n/a
7803	n/a	n/a
78ED	n/a	n/a
781B	n/a	n/a
781A	n/a	n/a
7804	n/a	n/a
6502	35.83	32.06
6503	35.67	32.12
5601	35.36	32.33
6602	34.69	30.66
6702	34.32	n/a
6705	34.4	14.54
6703	n/a	31.39
67EH	n/a	n/a
6704	33.43	28.77
68BJ	n/a	n/a
68CB	n/a	n/a
68CA	n/a	n/a
5901	n/a	n/a
59AF	n/a	n/a
5903	n/a	n/a
59BI	n/a	n/a
69CI	n/a	n/a

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Asset Location Search Sewer Map - ALS/ALS Standard/2017_3571474

TQ2984SW

The width of the displayed area is 500m and the centre of the map is located at OS coordinates 529250,184250

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Manhole Reference	Manhole Cover Level	Manhole Invert Level
40DA	n/a	n/a
40BI	n/a	n/a
40DF	n/a	n/a
40BJ	n/a	n/a
41CB	n/a	n/a
41BE	n/a	n/a
41BJ	n/a	n/a
41BI	n/a	n/a
42DH	n/a	n/a
42DF	n/a	n/a
42DG	n/a	n/a
42DE	n/a	n/a
42DD	n/a	n/a
42DC	n/a	n/a
40EB	n/a	n/a
40DC	n/a	n/a
40FC	n/a	n/a
40FA	n/a	n/a
40DB	n/a	n/a
44CC	n/a	n/a
44BJ	n/a	n/a
4302B	31.33	28.64
44CB	n/a	n/a
44BD	n/a	n/a
44CG	n/a	n/a
4316	n/a	n/a
4317	n/a	n/a
4403B	34.35	30.87
4401A	n/a	n/a
4204A	30.14	28.61
4301B	31.53	27.68
3302	30.54	29.9
3217	27.88	23.77
3019	26.44	n/a
40GA	n/a	n/a
4101B	26.49	22.99
4010	26.7	20.12
40GB	n/a	n/a
4001A	26.29	13.44
4102A	27.1	n/a
40FG	n/a	n/a
4226	28.97	n/a
40FI	n/a	n/a
40FH	n/a	n/a
40FJ	n/a	n/a
40GC	n/a	n/a
4011	27.8	23.74
40GD	n/a	n/a
4002A	27.8	21.85
40FD	n/a	n/a
40DJ	n/a	n/a
40FE	n/a	n/a
40EC	n/a	n/a
40BF	n/a	n/a
40EJ	n/a	n/a
40BG	n/a	n/a
40AE	n/a	n/a
4012	28.3	24.2
4003B	28.3	21.97
1201	n/a	23.55
2234	28.42	12.52
2206	n/a	23.47
221E	n/a	n/a
221D	n/a	n/a
2236	29.06	n/a
2242	n/a	n/a
22FA	n/a	n/a
2235	29.44	n/a
3202	29.5	25.41
321A	n/a	n/a
3301	29.84	25.66
2301B	29.74	25.28
231C	n/a	n/a
231B	n/a	n/a
231A	n/a	n/a
241A	n/a	n/a
041A	n/a	n/a
0406	n/a	n/a
1303	28.82	25.11
1401	n/a	n/a
1403	30.57	27.93
2403	31.45	26.3
2303	31.05	26.45
34AC	n/a	n/a
34AE	n/a	n/a
34AI	n/a	n/a
3401	31.13	n/a
3407	31.45	13.58
0207	n/a	n/a
02FJ	n/a	n/a
02FI	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
02FH	n/a	n/a
02FG	n/a	n/a
02FF	n/a	n/a
03FI	n/a	n/a
03FH	n/a	n/a
1301	28.75	23.09
0301	n/a	n/a
03DH	n/a	n/a
03CI	n/a	n/a
03CE	n/a	n/a
0302	28.5	25.91
03DF	n/a	n/a
0325	n/a	n/a
0324	n/a	n/a
03FF	n/a	n/a
03FD	n/a	n/a
03FE	n/a	n/a
04ED	n/a	n/a
04EC	n/a	n/a
04EB	n/a	n/a
04CH	n/a	n/a
04EE	n/a	n/a
04AI	n/a	n/a
0404	n/a	n/a
3105	n/a	n/a
2107	n/a	n/a
1104	n/a	n/a
2108	27.88	n/a
21CG	n/a	n/a
221F	n/a	n/a
22FD	n/a	n/a
2201	n/a	n/a
2241	n/a	n/a
2240	n/a	n/a
2239	n/a	n/a
221A	n/a	n/a
221B	n/a	n/a
221C	n/a	n/a
2202	n/a	25.51
3001	25.29	12.67
201A	n/a	n/a
201B	n/a	n/a
2002	26.34	22.4
10DJ	n/a	n/a
10DI	n/a	n/a
2003	n/a	n/a
11DG	n/a	n/a
11DB	n/a	n/a
11DA	n/a	n/a
11CJ	n/a	n/a
2101	n/a	n/a
2124	n/a	n/a
2102	n/a	n/a
11CI	n/a	n/a
11CH	n/a	n/a
2103	27.58	23.31
211B	n/a	n/a
2125	n/a	n/a
211A	n/a	n/a
00AD	n/a	n/a
00CD	n/a	n/a
001A	n/a	n/a
1023	26.68	n/a
1003	n/a	n/a
1024	26.67	18.53
10CH	n/a	n/a
0201	26.39	22.77
02AF	n/a	n/a
0206	25.63	23.93
0202	25.6	23.49
02EF	n/a	n/a
0141	26.94	22.6
0102	n/a	n/a
0204	n/a	n/a
02DB	n/a	n/a
02DC	n/a	n/a
11ED	n/a	n/a
11EE	n/a	n/a
1102	24.61	21.79
121A	n/a	n/a
1101	27.58	22.24
1103	27.7	n/a
11DE	n/a	n/a
11DD	n/a	n/a

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Asset Location Search Sewer Map - ALS/ALS Standard/2017_3571474

TQ2884SE

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Manhole Reference	Manhole Cover Level	Manhole Invert Level
9227	26.01	n/a
9207	n/a	n/a
93EA	n/a	n/a
93ED	n/a	n/a
93DC	n/a	n/a
9317	26.26	n/a
93DD	n/a	n/a
94DI	n/a	n/a
94EA	n/a	n/a
94CD	n/a	n/a
94EB	n/a	n/a
94EC	n/a	n/a
94ED	n/a	n/a
9401	n/a	n/a
93EG	n/a	n/a
93EH	n/a	n/a
94AH	n/a	n/a
94AG	n/a	n/a
94AF	n/a	n/a
84CC	n/a	n/a
84CE	n/a	n/a
84CB	n/a	n/a
84CA	n/a	n/a
84BJ	n/a	n/a
84BB	n/a	n/a
84AH	n/a	n/a
84BA	n/a	n/a
84AG	n/a	n/a
84AI	n/a	n/a
84AJ	n/a	n/a
94AD	n/a	n/a
94BF	n/a	n/a
94BE	n/a	n/a
94AD	n/a	n/a
94BC	n/a	n/a
93CC	n/a	n/a
94AC	n/a	n/a
94AB	n/a	n/a
9402	27.64	23.6
94AJ	n/a	n/a
94AI	n/a	n/a
94AF	n/a	n/a
94BA	n/a	n/a
94DJ	n/a	n/a
94BH	n/a	n/a
94BG	n/a	n/a
8401	27.32	23.36
64CJ	n/a	n/a
631A	n/a	n/a
64BB	n/a	n/a
6401	n/a	n/a
6403	28.31	26.18
64FC	n/a	n/a
64FE	n/a	n/a
7402	27.19	24.19
74AB	n/a	n/a
74AG	n/a	n/a
74AE	n/a	n/a
74AC	n/a	n/a
74AF	n/a	n/a
74AD	n/a	n/a
74BB	n/a	n/a
74AI	n/a	n/a
74AJ	n/a	n/a
74BA	n/a	n/a
7411	n/a	n/a
7412	27.53	23.18
831A	n/a	n/a
84BE	n/a	n/a
84BD	n/a	n/a
84CD	n/a	n/a
83AG	n/a	n/a
84BF	n/a	n/a
84BC	n/a	n/a
84BG	n/a	n/a
64EE	n/a	n/a
64AF	n/a	n/a
64BJ	n/a	n/a
64BH	n/a	n/a
54CA	n/a	n/a
54AJ	n/a	n/a
54CB	n/a	n/a
64EA	n/a	n/a
54BH	n/a	n/a
54BI	n/a	n/a
64EB	n/a	n/a
54BJ	n/a	n/a
54AE	n/a	n/a
54BE	n/a	n/a
54BG	n/a	n/a
54BF	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
64EC	n/a	n/a
64ED	n/a	n/a
64DJ	n/a	n/a
64EH	n/a	n/a
541B	n/a	n/a
541A	n/a	n/a
54BC	n/a	n/a
54BD	n/a	n/a
54BB	n/a	n/a
54DE	n/a	n/a
5403	28.07	25.52
54DI	n/a	n/a
64FA	n/a	n/a
90AB	n/a	n/a
9206	25.9	19.9
9203	25.87	23.75
9102	26.21	23.16
9202	25.74	23.29
9201	n/a	n/a
9228	26.05	19.35
92AG	n/a	n/a
911B	n/a	n/a
911A	n/a	n/a
9229	26.38	19.17
92AF	n/a	n/a
92AB	n/a	n/a
8001	27.43	24.26
9002	n/a	n/a
80BI	n/a	n/a
801B	n/a	n/a
901A	n/a	n/a
801A	n/a	n/a
7001	n/a	n/a
7016	n/a	n/a
8002	25.41	24.87
8003	26.19	24.36
9001	n/a	n/a
8004	27.03	25.41
71BE	n/a	n/a
7201	26.91	23.72
8201	26.24	24.17
6204	27.89	23.85
72AE	n/a	n/a
72AF	n/a	n/a
7202	n/a	n/a
92DE	n/a	n/a
92EB	n/a	n/a
92DI	n/a	n/a
7205	n/a	n/a
6301	n/a	n/a
93CB	n/a	n/a
73AC	n/a	n/a
93CA	n/a	n/a
93CF	n/a	n/a
93CE	n/a	n/a
83AD	n/a	n/a
83AI	n/a	n/a
73AD	n/a	n/a
83AH	n/a	n/a
93BJ	n/a	n/a
93CD	n/a	n/a
93BI	n/a	n/a
93BE	n/a	n/a
511B	n/a	n/a
511A	n/a	n/a
6101	30.18	27.3
611A	n/a	n/a
611B	n/a	n/a
611C	n/a	n/a
6202	n/a	n/a
621A	n/a	n/a
5201	n/a	n/a
5203	28.17	24.3
5301	27.93	24.41
5302	n/a	n/a
531A	n/a	n/a
531B	n/a	n/a
5303	n/a	n/a
6303	n/a	n/a
5304	n/a	n/a
6304	n/a	n/a
63BF	n/a	n/a
63BG	n/a	n/a
641A	n/a	n/a
5402	n/a	n/a
641B	n/a	n/a
64DA	n/a	n/a
64CH	n/a	n/a
64CA	n/a	n/a
64EG	n/a	n/a
64CG	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level

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Asset Location Search Sewer Map - ALS/ALS Standard/2017_3571474	TQ2983NW

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Manhole Reference	Manhole Cover Level	Manhole Invert Level
49DG	n/a	n/a
49AJ	n/a	n/a
49CD	n/a	n/a
49CC	n/a	n/a
49CB	n/a	n/a
49DI	n/a	n/a
49DF	n/a	n/a
4614	n/a	n/a
4602	n/a	n/a
4701	23.71	13.66
4721	23.86	n/a
471A	n/a	n/a
3814	23.94	n/a
4802	21.26	17.29
4901B	21.24	19.17
491A	n/a	n/a
4902A	n/a	n/a
0503	n/a	n/a
05FD	n/a	n/a
05FE	n/a	n/a
25CB	n/a	n/a
25CI	n/a	n/a
25DD	n/a	n/a
25CA	n/a	n/a
35CB	n/a	n/a
25CH	n/a	n/a
25DC	n/a	n/a
25BJ	n/a	n/a
25BI	n/a	n/a
25CG	n/a	n/a
2901	n/a	n/a
2930	24.89	18.08
2903	n/a	n/a
2929	25.02	22.03
2928	25.09	20.58
3901	25.29	18.49
2902	n/a	n/a
25AJ	n/a	n/a
25BH	n/a	n/a
25CF	n/a	n/a
3501	22.84	8.17
25CJ	n/a	n/a
25BE	n/a	n/a
1536	n/a	n/a
25BF	n/a	n/a
2506	24	19.2
2504	n/a	n/a
15GH	n/a	n/a
15GI	n/a	n/a
2505	23.98	14.23
35BG	n/a	n/a
36EB	n/a	n/a
16BC	n/a	n/a
36DJ	n/a	n/a
2601	23.84	20.37
16BD	n/a	n/a
36DI	n/a	n/a
3633	n/a	n/a
16BJ	n/a	n/a
3601	n/a	n/a
3701	24.89	21.41
2701	25.41	9.46
2703	25.97	22.3
3702	24.74	19.9
37JE	n/a	n/a
371A	n/a	n/a
37JH	n/a	n/a
1704	27.73	23.22
1703	27.45	22.73
3703	n/a	n/a
37AH	n/a	n/a
38CI	n/a	n/a
1802	26.8	21.57
38CA	n/a	n/a
38EI	n/a	n/a
181B	n/a	n/a
38DF	n/a	n/a
181A	n/a	n/a
38FD	n/a	n/a
38FE	n/a	n/a
38DI	n/a	n/a
1805	26.63	n/a
181C	n/a	n/a
3802	n/a	n/a
38GA	n/a	n/a
2803	n/a	n/a
1808	26.21	22.82
1810	26.13	n/a
1811	26.09	21.32
1901	25.96	10.77
1902	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
051B	n/a	n/a
051D	n/a	n/a
051A	n/a	n/a
051C	n/a	n/a
05CJ	n/a	n/a
05CI	n/a	n/a
06EC	n/a	n/a
06EB	n/a	n/a
0504	n/a	22.1
05CD	n/a	n/a
05DA	n/a	n/a
05CA	n/a	n/a
15FF	n/a	n/a
15FE	n/a	n/a
15FC	n/a	n/a
16BI	n/a	n/a
05FJ	n/a	n/a
15EA	n/a	n/a
05FB	n/a	n/a
0501	n/a	23.16
05FF	n/a	n/a
15DJ	n/a	n/a
15DI	n/a	n/a
15EE	n/a	n/a
15EB	n/a	n/a
15EC	n/a	n/a
0502	24.67	20.08
1501	n/a	n/a
15ED	n/a	n/a
05FA	n/a	n/a
2503	24.03	18.91
05GA	n/a	n/a
25DB	n/a	n/a
05EJ	n/a	n/a
05EB	n/a	n/a
05EA	n/a	n/a
05EI	n/a	n/a
25DA	n/a	n/a
05EE	n/a	n/a
05EF	n/a	n/a
05FI	n/a	n/a
05EG	n/a	n/a
0601	n/a	n/a
05EH	n/a	n/a
06FA	n/a	n/a
0602	n/a	n/a
061B	n/a	n/a
051F	n/a	n/a
051E	n/a	n/a
09DB	n/a	n/a
1904	n/a	n/a
19IA	n/a	n/a
19GE	n/a	n/a
19II	n/a	n/a
19GF	n/a	n/a
19FC	n/a	n/a
19IH	n/a	n/a
19FE	n/a	n/a
19EH	n/a	n/a
19EI	n/a	n/a
19FA	n/a	n/a
19ED	n/a	n/a
19BG	n/a	n/a
19BC	n/a	n/a
0702	27.97	23.66
071D	n/a	n/a
071E	n/a	n/a
071C	n/a	n/a
071B	n/a	n/a
071A	n/a	n/a
0703	27.59	23.06
0801	n/a	n/a
1804	27.28	22.18
0804	27.71	25.24
0805	26.34	24.87
1806	26.3	21.78
08EH	n/a	n/a
08EI	n/a	n/a
08GF	n/a	n/a
08GE	n/a	n/a
08GH	n/a	n/a
08EJ	n/a	n/a
18CI	n/a	n/a
08GI	n/a	n/a
18CJ	n/a	n/a
08GJ	n/a	n/a
18DA	n/a	n/a
0901	n/a	n/a
0605	n/a	n/a
07BE	n/a	n/a
06HA	n/a	n/a
07AF	n/a	n/a
0603	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
07CB	n/a	n/a
07CC	n/a	n/a
061A	n/a	n/a
07CD	n/a	n/a
07BH	n/a	n/a
06FF	n/a	n/a
07BI	n/a	n/a
16DB	n/a	n/a
1701	27.65	23.85
1602	n/a	22.3
16DC	n/a	n/a
171A	n/a	n/a
1603	n/a	n/a
16CB	n/a	n/a
171B	n/a	n/a
16CD	n/a	n/a

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

ALS Sewer Map Key

Public Sewer Types (Operated & Maintained by Thames Water)

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

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

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

Trunk Surface Water

Trunk Foul

Storm Relief

Trunk Combined

Vent Pipe

Bio-solids (Sludge)

Proposed Thames Surface Water Sewer

Proposed Thames Water Foul Sewer

Gallery

Foul Rising Main

Surface Water Rising Main

Combined Rising Main

Sludge Rising Main

Proposed Thames Water Rising Main

Vacuum

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.

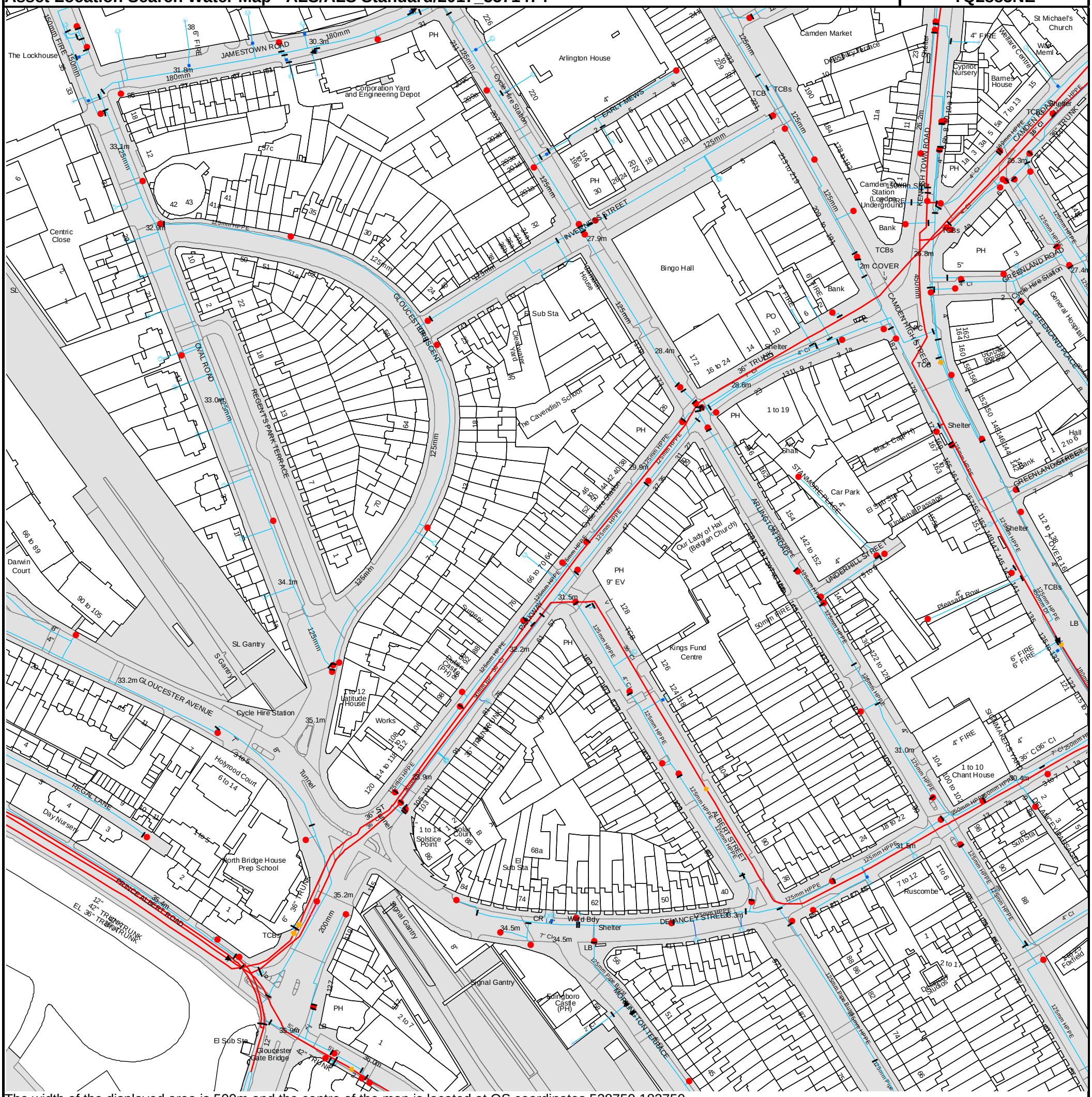
4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.

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/2017_3571474

TQ2883NE



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 528750,183750

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.

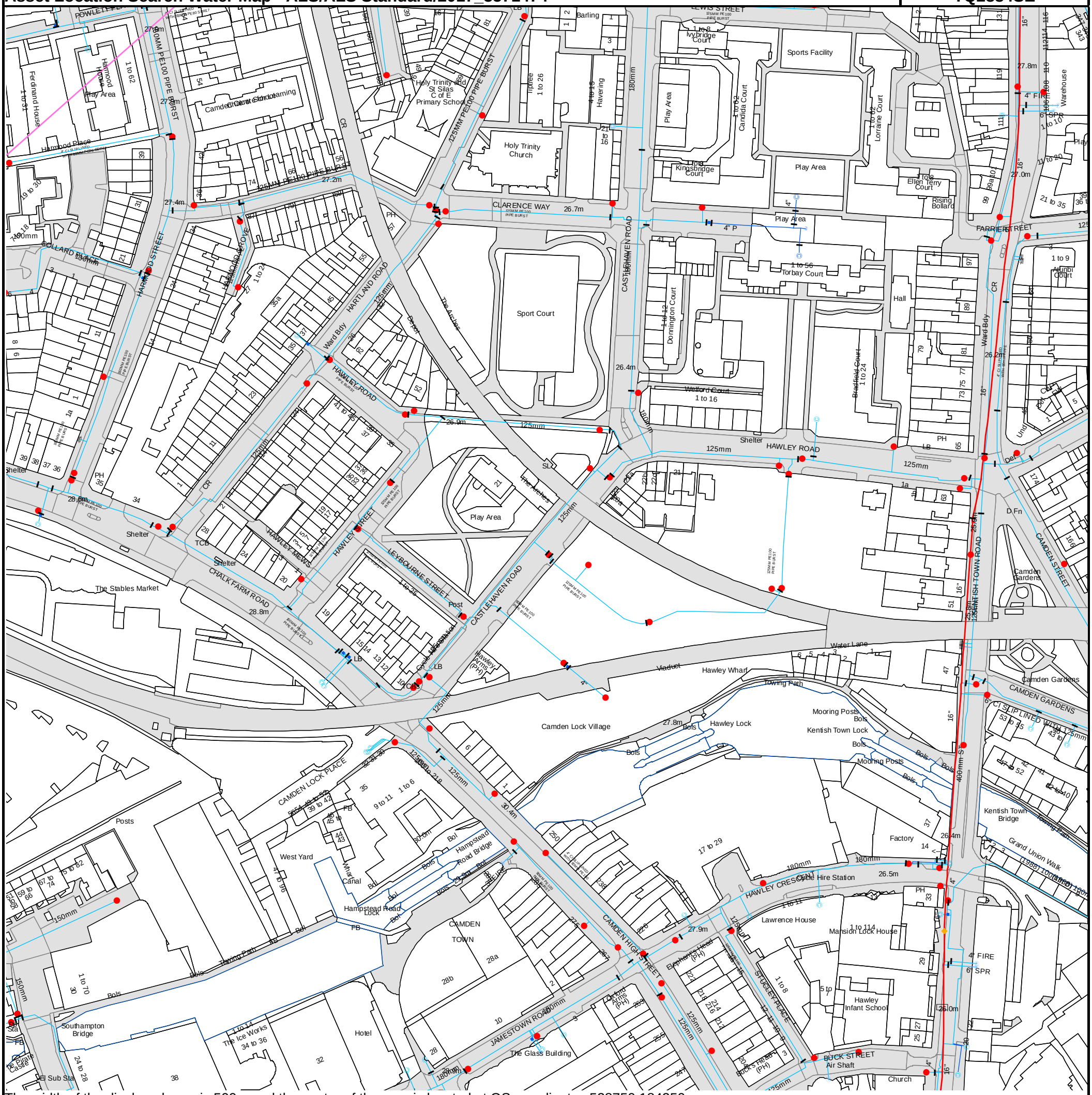
Asset Location Search Water Map - ALS/ALS Standard/2017_3571474 | **TQ2984SW**

The width of the displayed area is 500m and the centre of the map is located at OS coordinates 529250,184250

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.

Asset Location Search Water Map - ALS/ALS Standard/2017_3571474

TQ2884SE



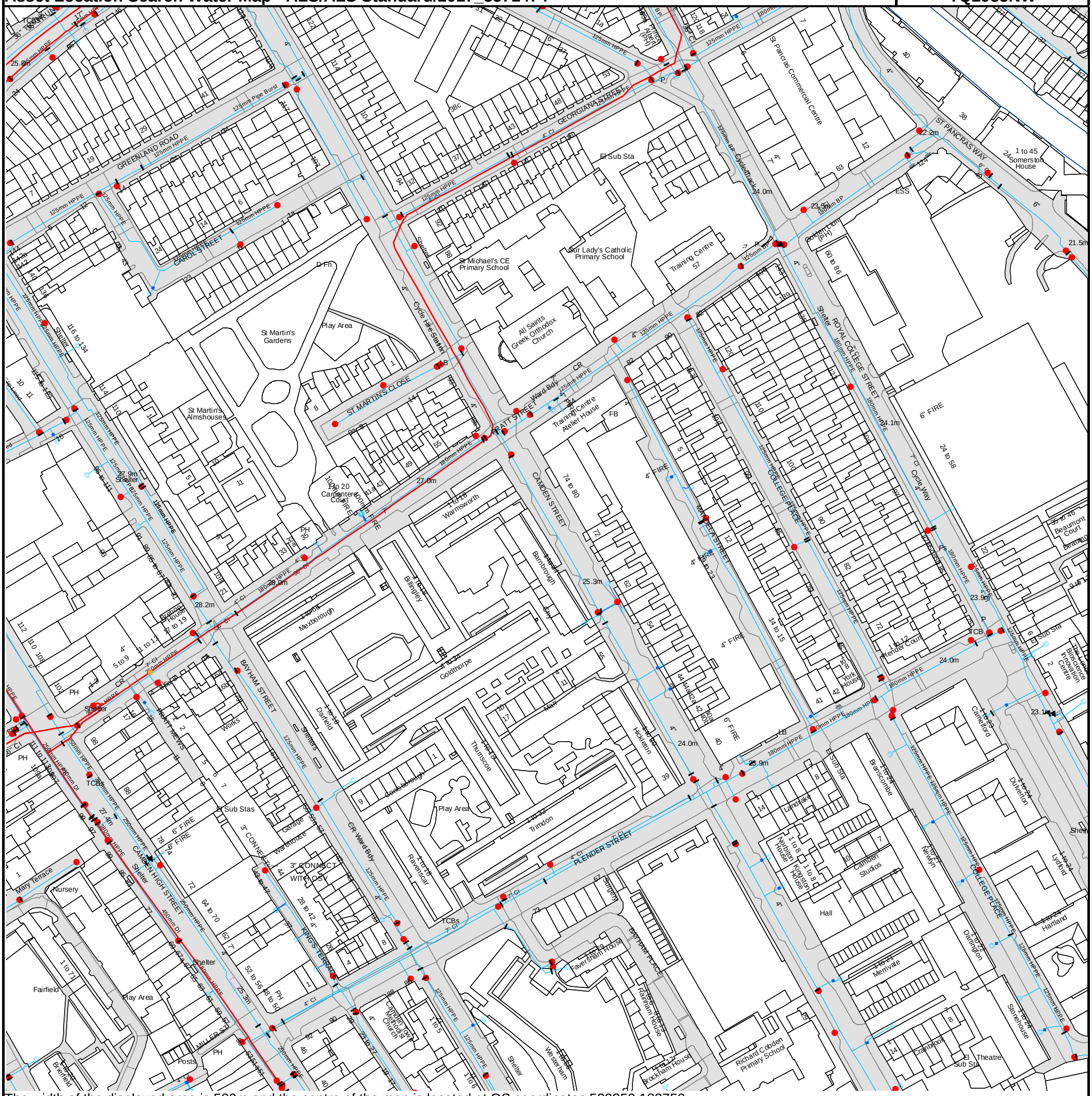
The width of the displayed area is 500m and the centre of the map is located at OS coordinates 528750,184250

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.

Asset Location Search Water Map - ALS/ALS Standard/2017_3571474

TQ2983NW



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 529250,183750

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

ALS 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.

Appendix D

LEAD LOCAL FLOOD AUTHORITY DATA AND CORRESPONDENCE

NORTH

0 1

KILOMETRES

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- London Borough Camden Boundary
- LBC Historic GW Flooding Record
  No. Properties affected
  - 1
  - 6
  - 7
  - 8
- Increased Susceptibility to Elevated Groundwater
- Environment Agency groundwater flood incidents

Revision Details	By / Check	Check Date	Suffix

Purpose of Issue: FINAL

Client: Camden

Project Title: LONDON BOROUGH OF CAMDEN STRATEGIC FLOOD RISK ASSESSMENT

Drawing Title: Increased Susceptibility to Elevated Groundwater

Drawn	Checked	Approved	Date
CB	JS	MT	03/07/2014

URS Internal Project No.	Scale at A3
47070547	1: 40,000

URS Infrastructure & Environment UK Limited
6 - 8 Greencoat Place
London
SW1P 1PL
Telephone +44 (0)207 7985000
Fax +44 (0)207 7985001
www.ursglobal.com

Drawing Number: FIGURE 4e

Rev: Rev 1

N:\Water\Current Projects\47070547 Camden SFRA Update (ghost)\0700 WIP\0705 GIS_Data\01-WIP\01_03-Project_Files\WORs

Camden Council Regeneration and Planning
London Borough of Camden
2nd Floor, 5 Pancras Square
c/o Town Hall, Judd Street
London
WC1H 9JE

10 October 2018

Dear Sir/Madam,

Grand Union House - Drainage

We are writing to advise you of the proposed surface water drainage strategy in respect of Grand Union House (GUH), and would appreciate if this could be reviewed by the appropriate officers at Camden.

DRAINAGE STRATEGY

The proposed scheme utilises the existing concrete structure from the foundations to level one. This is due to Sainsbury's having an operational customer car park at basement level below GUH which needs to remain in operation both during construction stage and in the future. Accordingly, and in order to maximise the building envelope in response to comments from officers we undertook a structural analysis to investigate how many new storeys can be added above this to provide the maximum floorspace on the Site.

This analysis showed that adding green roof/blue roof attenuation would not be possible as it would require strengthening works to be undertaken to the internal columns between basement and ground level. These works would be disruptive and would render the scheme undeliverable due to the impact on the basement operation.

There is no scope within the existing structure to incorporate any surface water attenuation, and due to lease restrictions regarding access under the ground as set out above, providing attenuation within the new build area is also restricted. Therefore, it is proposed that the development will mimic existing discharge rates with no formal attenuation proposed.

Surface water will discharge as the same rate as existing as there is currently no scope to incorporate attenuation within the plot.

Please note that foul and surface water from the site, will discharge to the local Thames Water (TW) combined sewer which sits within Kentish Town Road.

We are keen to understand if this surface water drainage approach is acceptable to Camden as the Lead Local Flood Authority (LLFA). We look forward to discussing this matter further with Camden officers.

Yours faithfully

Gurdeep Bansal
Associate

DD: 0203 057 2172
E: gurdeep.bansal@wsp.com

WSP House
70 Chancery Lane
London
WC2A 1AF
Tel: +44 20 7314 5000
Tel: +44 20 7314 5111
wsp.com

Appendix E

ENVIRONMENT AGENCY DATA AND CORRESPONDENCE

Carroll, Daniel

From:	NET Enquiries <HNLenquiries@environment-agency.gov.uk>
Sent:	06 September 2018 12:19
To:	Tribe, Phoebe
Subject:	RE: HNL98606NR - Grand Union House - EA Consultation
Attachments:	Grand Union House Existing Site Plan.pdf; HNL98606NR Groundwater Contours mAOD.pdf; HNL98606NR DRN.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Phoebe

Thank you for your request dated 21/08/2018 to use Environment Agency data.

The information on Flood Zones in the area relating to Grand Union House, Kentish Town Road, Camden Town, London NW1 9NX is as follows:

The property is in an area located within Flood Zone 1 shown on our Flood Map for Planning (Rivers and Sea).

Note - This information relates to the area that the above named site is in and is not specific to the property/proposed development itself.

Because this site does not fall within an area at risk of flooding from rivers or the sea, we do not hold any detailed flood modelling data. As such we are unable to provide a flood risk product.

We do not hold records of historic flood events from rivers and/or the sea affecting the area local to this site. However, please be aware that this does not necessarily mean that flooding has not occurred here in the past, as our records are not comprehensive.

Since this site is classed as being “very low risk” from fluvial or tidal flooding we have no plans to carry out any works which would reduce flood risk.

If you have requested this information to help inform a development proposal, then you should note the information on GOV.UK on the use of Environment Agency Information for Flood Risk Assessments

https://www.gov.uk/planning-applications-assessing-flood-risk
https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion

You can view and download flood risk maps from our website at:
http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?topic=floodmap#x=357683&y=355134&scale=2

This address is within 20m of an area at high risk of surface water flooding.
Following the Flood and Water Management Act 2010, Lead Local Flood Authorities are responsible for the management of groundwater and surface water flooding. They also maintain a register of property flooding incidents. You may want to seek further advice from the the London Borough of Camden.

You can also view and print surface water flood maps online at:

http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?topic=ufmfsw#x=357683&y=355134&scale=2

This information is provided subject to the Open Government Licence, which you should read.

- The site is located within defended Flood Zone 1?

See above

- Please provide Product 4 data, including relevant Breach scenario's and surface water flooding maps, if applicable for the site.

See above

- We would also welcome any information that the EA may hold on any flooding issues locally in the area, or any other information that would aim in the production of the FRA?;

See above. For more information you can also visit this link
https://www.gov.uk/government/collections/groundwater-current-status-and-flood-risk

- Could you please (if available) supply a map showing historical rivers which are now lost in the area, if available? Is the EA aware of any culverted watercourses/main rivers in the area?

The subterranean or underground rivers of London are tributaries of the River Thames and River Lee that were built over during the development of London. These rivers now flow through underground culverts.
Thames Water owns these rivers and we suggest you contact them for further information.
Please find attached the detailed river network map. There are no main rivers in your area.
You can have a look at this website: https://www.gov.uk/guidance/owning-a-watercourse

- Are there any water quality issues/requirements for the watercourses / groundwater on site or downstream that we need to take into account?

For Water Framework Directive waterbody classifications, you can have a look at our Catchment Data Explorer at http://environment.data.gov.uk/catchment-planning/

- We would be interested in any information in your possession on groundwater (e.g. groundwater level) and the potential for groundwater flooding within the area. This includes if the site is located within a source protection zone and whether infiltration would be an appropriate means of disposing of surface water.

The site is not in a source protection zone.

We monitor groundwater levels in Principal Aquifers, which have water resource significance. In your area, the Principal Aquifer is the Chalk. Measured levels are dependent on a variety of factors, including aquifer properties, local geological and terrain conditions, time of measurement, seasonal variations, as well as abstraction/discharge activities nearby.

The chalk groundwater contour map shows indicative groundwater elevation during high groundwater conditions, and is not based on real-time data. It is recorded as metres above ordnance datum (mAOD), and is intended as a guidance only.

We respond to requests for recorded information that we hold under the Freedom of Information Act 2000 (FOIA) and the associated Environmental Information Regulations 2004 (EIR).

I hope that we have correctly interpreted your request. If you are not satisfied with our response to your request for information you can contact us within 2 calendar months to ask for our decision to be reviewed.

Kind regards,

Naoimh Richardson
Customers and Engagement Officer

☎ 0203 0257507 HNLenquiries@environment-agency.gov.uk
✉ **Environment Agency, Hertfordshire and North London**
Alchemy, Bessemer Road, Welwyn Garden City, Hertfordshire, AL7 1HE

Working days: Monday to Friday 7am – 3pm

Creating a better place for people and wildlife

From: Enquiries, Unit
Sent: 23 August 2018 14:53
To: 'phoebe.tribe@wsp.com' <phoebe.tribe@wsp.com>
Subject: Received on 21/08, Due on 19/09 | FW: Grand Union House - EA Consultation

Dear Phoebe

I have passed your e-mail to the local customer team who will deal with your request.

The Freedom of Information Act and Environmental Information Regulations state that a public authority must respond to requests for information within 20 working days, but we aim to respond to all enquiries as quickly as we can.

You can find more information about our service commitment by clicking on the link below:

https://www.gov.uk/government/publications/environment-agency-customer-service-commitment

You can contact our customer team directly on the contact details below, or call the National Customer Contact Centre on 03708 506506 who will transfer you to the area team.

Please quote your enquiry reference 180823/ER15 in any correspondence with us regarding this matter.

Customers and Engagement
Environment Agency
Hertfordshire and North London Area
Alchemy
Bessemer Road
Welwyn Garden City
Hertfordshire
AL7 1HE

Kind regards

Eileen Roffe
Customer Service Advisor
National Customer Contact Centre - (Part of National Operations)

Mail to: enquiries@environment-agency.gov.uk
Tel: 03708 506 506
Fax 01709 312820
Website: www.gov.uk/environment-agency

So how did we do...?

Our National Customer Contact Centre relies on customer feedback, so we really value your thoughts on how we are doing. We will always make changes where we can to improve our service. This will only take three minutes to complete:

http://www.smartsurvey.co.uk/s/NCCCcustomer/

From: Tribe, Phoebe [mailto:phoebe.tribe@wsp.com]
Sent: 21 August 2018 14:58
To: Enquiries, Unit <enquiries@environment-agency.gov.uk>
Cc: Bansal, Gurdeep <Gurdeep.Bansal@wsp.com>
Subject: Grand Union House - EA Consultation

Dear Sir/Madam

Grand Union House, Kentish Town Rd, Camden Town, London NW1 9NX - Flood Risk Consultation

We are in the process of undertaking a Flood Risk Assessment (FRA) and Drainage Strategy for the site in question in order to support a planning application .

The site is located on within Flood Zone 1 according to the Environment Agency online Flood Maps, and has an area of 0.159 ha however the site is located within Camden Critical Drainage Area ref: CDA3_003, with risk of flooding from surface water. We will therefore be undertaking an FRA on the management of surface water for this site and liaise with London Borough of Camden (LBC) and Thames Water (TW).

We would however seek EA confirmation of the following:

- The site is located within defended Flood Zone 1?
- Please provide Product 4 data, including relevant Breach scenario's and surface water flooding maps, if applicable for the site.
- We would also welcome any information that the EA may hold on any flooding issues locally in the area, or any other information that would aim in the production of the FRA?;
- Could you please (if available) supply a map showing historical rivers which are now lost in the area, if available? Is the EA aware of any culverted watercourses/main rivers in the area?
- Are there any water quality issues/requirements for the watercourses / groundwater on site or downstream that we need to take into account?
- We would be interested in any information in your possession on groundwater (e.g. groundwater level) and the potential for groundwater flooding within the area. This includes if the site is located within a source protection zone and whether infiltration would be an appropriate means of disposing of surface water.

We understand the docks are under ownership of C&RT and that any ordinary watercourses are owned by the local authority, we will contact them to discuss any local ordinary watercourses as well as surface water flooding, however are you aware of any other responsible authorities, and if so please could you supply and relevant contact details.

In addition, could you please let us know the names and contact details of the EA's Development Control Officer and Planning Liaison Officer who are responsible for the area?

We would welcome your comments on any additional issues you may have involving this site. We would appreciate an early response, therefore if you require any further information regarding the site to assist with our queries, please do not hesitate to contact me.

Kind regards,
Phoebe

Phoebe Tribe
Graduate Engineer

T +44 (0) 207 3145117

WSP House, 70 Chancery Lane
London, WC2A 1AF

wsp.com

Flood map for planning

Your reference	Location (easting/northing)	Created
GUH	**528953/184033**	**20 Nov 2018 11:06**

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

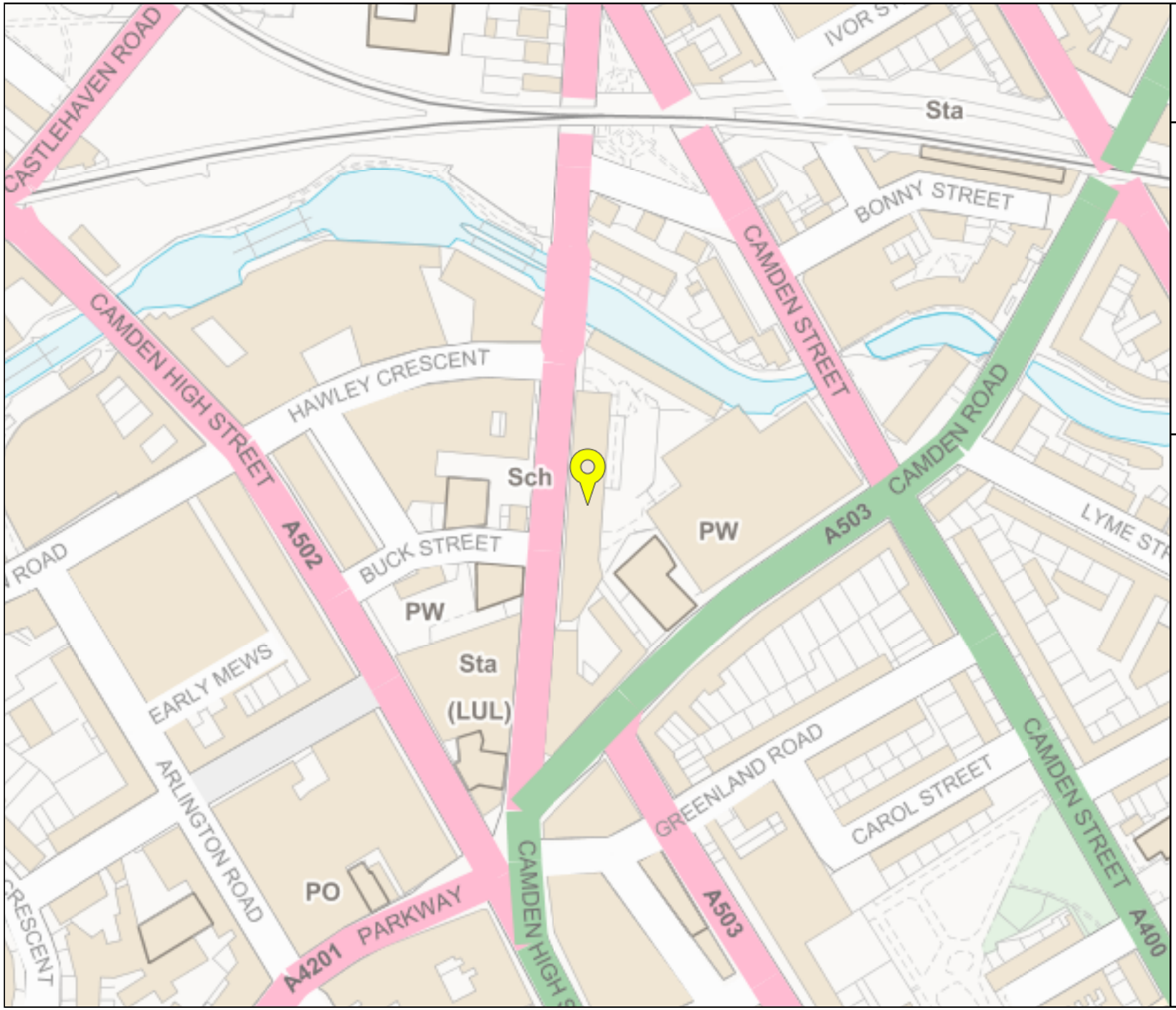
This means:

- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

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
GUH

Location (easting/northing)
528953/184033

Scale
1:2500

Created
20 Nov 2018 11:06

- Selected point
- Flood zone 3
- Flood zone 3: areas benefitting from flood defences
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Flood storage area

0 20 40 60m

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