St. Andrew's Gate, Town Centre Extension, Uxbridge
Hybrid Planning Application

Flood Risk Assessment

ST. ANDREW'S PARK
UXBRIDGE

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St. Andrew's Gate, Town Centre Extension, Uxbridge

Flood Risk Assessment

Ref: 220131/M Quant
Approved By: J Courtney
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Version: P02

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Table of Contents

1.0 INTRODUCTION

Conisbee have been appointed by Vinci St Modwen to undertake a Flood Risk Assessment (FRA) and for the proposed development at St. Andrew's Gate, Town Centre Extension (TCE), Uxbridge, in the London Borough of Hillingdon (LBH). The site located in Flood Zone 1 of the Environment Agency maps.

The purpose of this flood risk assessment is to demonstrate compliance with relevant national and local planning requirements. It is submitted in support of the Hybrid Planning Application for the site (both outline and full elements) which comprises:

In outline:

- Creation of up to no. 356 residential dwellings (Class C3) within three new build blocks, of up to 10 storeys;
- Up to 660sqm GIA of flexible commercial space (Use Classes E(a), E(b), E(c), E(e), E(g)(i) and E(g)(ii)) at ground floor level in Building Zones B and C, and up to 440sqm fixed as a convenience store (Use Class E(a)) (GIA) located in Building Zone C; and
- Associated car parking and hard and soft landscaping.

In full:

- Reinstate of the gym use (E(d)) in the Main Hall and change of use of former squash courts to a café (E(b));
- Associated car parking and hard and soft landscaping and access alterations;
- External alterations to the building

2.0 BACKGROUND

This flood risk assessment refers to the following documents:

2.1 National Legislation and Documentation

2.1.1 National Planning Policy Framework (Department for Levelling Up, Housing & Communities, December 2023) & Planning Practice Guidance (PPG) - Flood Risk and Coastal Change (Department for Levelling Up, Housing & Communities, August 2022)

The NPPF and PPG set out government policy on development and flood risk. The aim is to ensure that flood risk is taken into account at all stages of the planning process and that inappropriate development is not undertaken within areas of flood risk.

2.1.2 Flood and Water Management Act (2010)

The Act sets out the responsibilities for statutory authorities involved in Flood Risk Management. The Act requires that the relevant Lead Local Flood Authority (LLFA) be responsible for co-ordinating surface water flood risk in the area. The LLFA is a statutory consultee in planning for all major development in relation to the management of surface water drainage.

2.1.3 Non-statutory technical standards for sustainable drainage systems (2015)

The Flood and Water Management Act sets out the government shall publish national standards, for the consideration of the approving body. The current national standards are “Non-statutory technical standards for sustainable drainage systems”, 2015.

2.2 Strategic planning policy

2.2.1 The London Plan (Mayor of London, March 2021)

This SPG document provides detailed guidance for local authorities and developers on how to meet the objectives of the London Plan Policies relating to sustainable design and construction. This includes Policy SI 12 – Flood Risk Management and SI 13 – Sustainable Drainage.

Local planning policy

2.2.2 The London Borough of Hillingdon Local Plan (2012)

'Policy EM6 – Flood Risk Management" sets out local requirements for sustainable flood and water management for new development in LBH. This policy requires "all developments across the borough to use sustainable urban drainage systems (SUDS) unless demonstrated that it is not viable".

2.3 Relevant Local Flood Risk information

2.3.1 Strategic Flood Risk Assessment (SFRA) - Level 1 for London Boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon and Hounslow (Metis Consultants Ltd., April 2018)

The Level 1 SFRA provides a summary of the flood risk in multiple West London Boroughs from various sources (eg fluvial, tidal, reservoirs) and provides policy recommendations and guidance for the preparation of site specific Flood Risk Assessments (FRAs). The SFRA also presents the requirements for developments located in zones of flood risk such as floor levels, evacuation routes, and flood resilient construction.

2.3.2 London Borough of Hillingdon Surface Water Management Plan (SWMP) (LBH, Jan 2013)

The SWMP sets out the preferred surface water strategy in LBH. The SWMP identifies areas in the borough that have been identified as critical drainage areas with known sewer capacity issues.

The site is not located in a critical drainage area. Refer to Section 5 for a plan showing this.

2.4 Site Specific Documents

The following documents should be referred to as part of this report:

- **Appendix A:** Topographic Survey
- **Appendix B:** Proposed Scheme – outline element illustrative layout and full element proposed GA
- **Appendix C:** Thames Water Records

3.0 EXISTING SITE

3.1 Site Location

The site is located at OS grid reference 506043, 183777, taken approximately at the centre of the site. The overall area is 1.80 Ha. It is bounded by the following:

The site is located to the east of Park Road and Hillingdon Road. It is bound to the north and north-east by St. Andrew's Road, to the east by the spine road, Town Centre West (TCW) phase of development and locally listed Mons building and to the south by Burton Road. Residential development which ranges in height from 3 to 8 storeys is located between the site and Dowding Park. Dowding Park provides a significant local amenity within a large area of urban green space, including sport pitches and play space. The John Locke Primary School is located within St. Andrew's Park, to the north of Dowding Park and is within walking distance of the site.

The location of the site is shown in Figure 3.1.

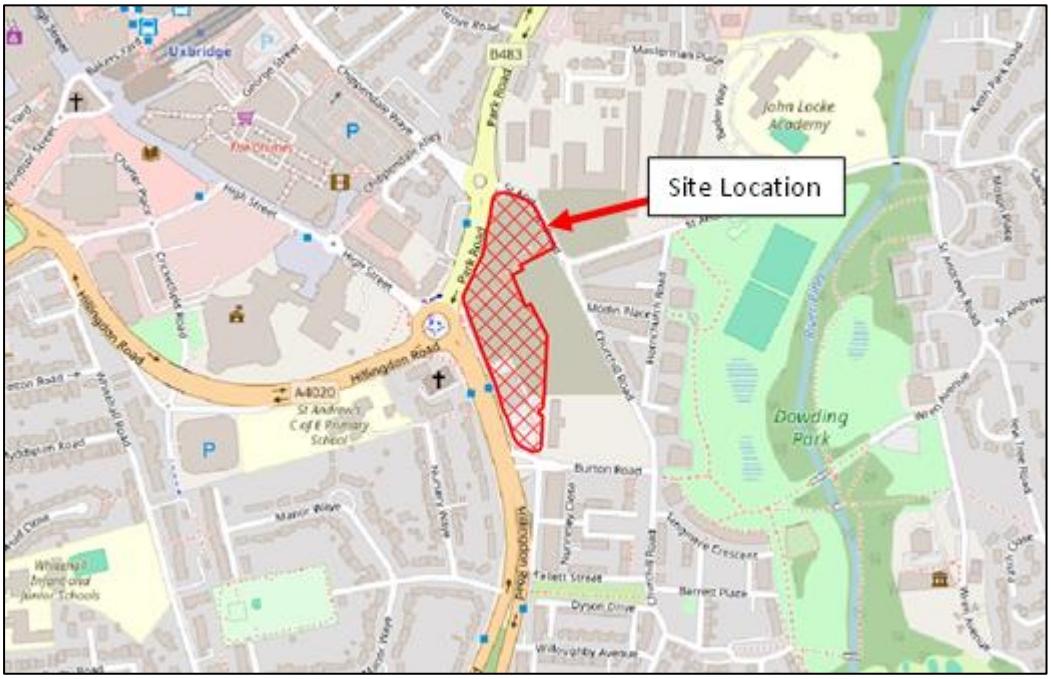

Figure 3.1 Image showing site location

3.2 Existing Site and Topography

The existing site comprises vacant brownfield land, the Grade II listed former cinema building and its associated car park and the locally listed St Andrew's Gate. The site is currently enclosed by construction hoardings and not in active use, other than a temporary public right of way (PROW) across the site linking to Hillingdon Road and the underpass.

The site slopes gently from south to north from roughly 45m OD in the south to 49m OD in the north.

3.3 Historical Use of Site

The site was previously part of RAF Uxbridge Station from 1938 – 2010 when many of the site structures were demolished.

3.4 Geology

A Ground Investigation Report which included intrusive ground investigation was carried out by Hydrock in February 2023. The ground investigation found that Made Ground is present across the site associated with historic construction and demolition activities. The Made Ground is present to depths of between 0.4m and 2.5m, with an average thickness of 1.0m. The Black Park Gravel Member is present sporadically across the site underlying the Made Ground and has both granular and cohesive components. The Black Park Gravel Member is considered to be encountered to depths of between 1.55m and 3.1m, with an average thickness of 1.45m. A large degree of mixing has occurred between these strata and the overlying Made Ground. The London Clay Formation is present across the site to depths of approximately 20m BGL comprising grey silty clay with local lenses of sand in places. The London Clay Formation is between 16.2m and 17.0m thick, with an average thickness of 16.56m. The Lambeth Group was encountered underlying the London Clay at depths greater than 20m BGL but the base of the Lambeth group was not proven.

3.5 Hydrogeology

Aquifer geology maps published by the EA show that for the proposed site:

- The London Clay Formation is classified as an unproductive stratum.
- The Black Park Gravels are classified as a Secondary A Aquifer.
- The site is not located in a Source Protection Zone, as shown in Figure 3.2.

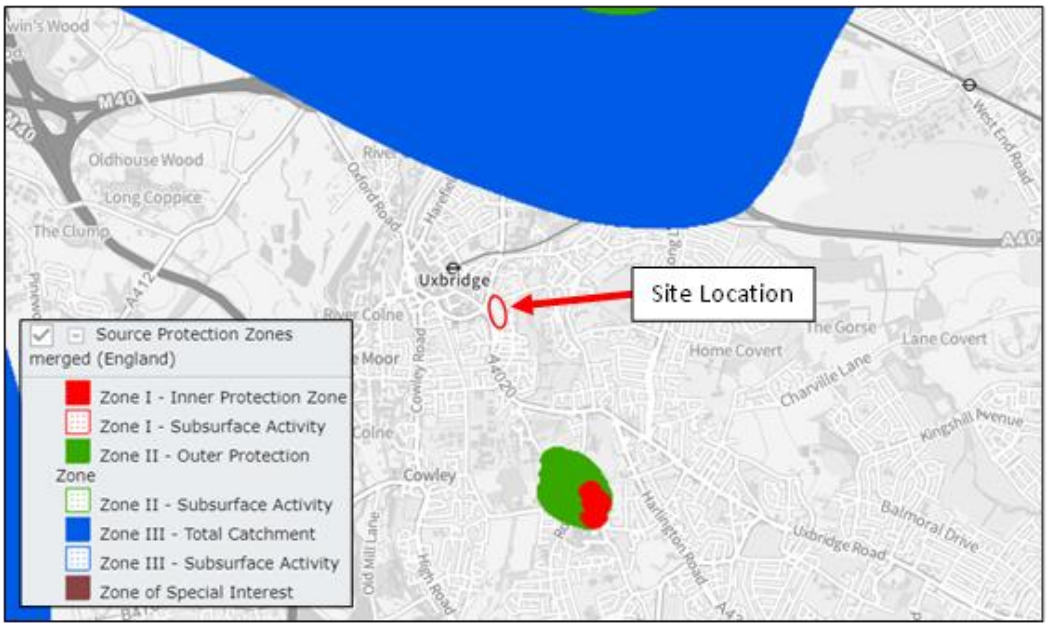

Figure 3.2 Groundwater Source Protection Zones

3.6 Groundwater

The Ground Investigation Report discussed in Section 3.4 also included groundwater monitoring which indicated that that the groundwater typically consists of perched water on top of the London Clay with some seepage encountered deeper in the London Clay.

The Ground investigation Report stated that perched water was encountered in the Made Ground and Black Park Gravel Member during the post fieldwork monitoring; however, it has been noted that the site has seen heavy snow and rainfall during the monitoring period, with rainwater pooling at the site surface. Given the locally granular nature of some shallow soils and presence of underlying London Clay, it can be expected that localised pockets of perched water exist on site.

A cable percussion borehole was undertaken in the northern area of the site in which post-fieldwork monitoring was conducted. The depth of groundwater during the post-fieldwork monitoring ranged from 13.48m – 13.60m BGL (35.48 – 35.60m OD).

3.7 Existing Site Drainage

Thames Water (TW) record drawings were received for the development in March 2023, and are included in Appendix C. They show various foul and surface water sewers around the perimeter of the site, this includes:

- A 150 mm diameter foul sewer present in Churchill Road east of the site at a depth of approximately 1.9m.

- A 225mm diameter surface water sewer present in Churchill Road which increases to 375mm diameter sewer beneath the intersection of Churchill Road and Modin Place at a depth of approximately 1.25m.
- A 225mm diameter foul sewer present in Park Road and Hillingdon Road west of the site at depth of approximately 1.5m – 2.25m.
- A 225mm diameter surface water sewer present in Hillingdon Road west of the site at a depth of approximately 0.75m.
- A 300mm diameter surface water sewer present in Park Road west of the site at a depth of approximately 2.0m.
- A 225mm surface water sewer which is not operated by Thames Water beneath the central reservation in Hillingdon Road at an unknown depth. It is believed that this is owned by the Highway Authority and serves the gullies along Hillingdon Road. This surface water sewer connects into a Thames Water surface water sewer at the intersection between Hillingdon Road and Burton Road.

4.0 FLOOD ZONE, SEQUENTIAL AND EXCEPTION TEST

4.1 Flood Zone

The EA has derived flood maps of England, from which it is possible to initially identify whether a site is located within an area that is at risk of fluvial/tidal flooding. The maps, which are available on the UK Government website, show that the site is located within Flood Zone 1, which is defined as land having less than a 1 in 1000 annual probability of river flooding or sea flooding.

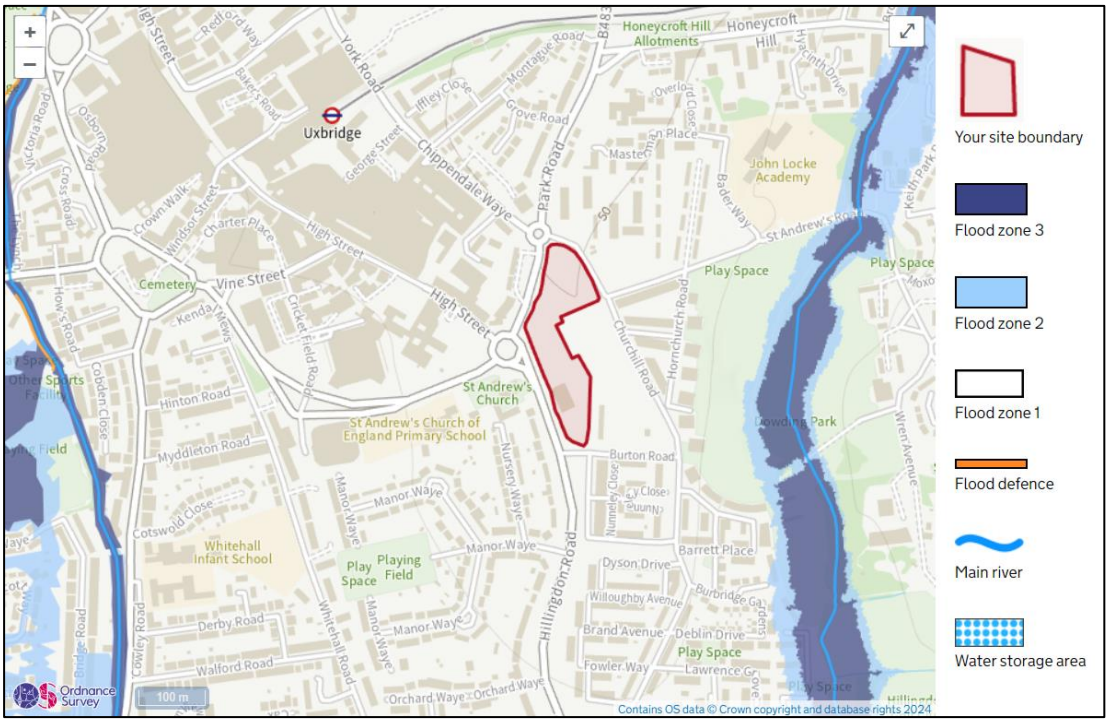

Figure 4.1 – "Flood Map for Planning" from Environment Agency

4.2 Vulnerability Classification

According to "Table 2: Flood Risk Vulnerability Classification" in the NPPF Practice Guidance (Flood Risk and Coastal Change) the intended use as residential has a Vulnerability Classification of 'More Vulnerable'.

4.3 Sequential Test

As the site is located in Flood 1, according to Table 3 of the NPPF Practice Guidance, the sequential test is passed and the exception test is not required.

Table 4.1 Flood Risk Vulnerability Classification (after Table 3 NPPF Practice Guide Flood Risk and Coastal Change)

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	✗	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	✗	✗	✗	✓*

5.0 DEFINITION OF THE FLOOD HAZARD

5.1 Sources of Flooding

The London Borough of Hillingdon Strategic Flood Risk Assessment summarises the risk the risk of flooding from the following sources;

- Fluvial
- Tidal
- Surface Water / Overland Flow
- Sewers
- Groundwater
- Artificial Sources

These sources of flooding, and how they relate to the site, are discussed below.

5.1.1 Fluvial Flooding

The EA flood maps confirmed that the site is located within Flood Zone 1, as shown in Figure 4.1.

It is concluded that the site is not at risk of flooding from fluvial or tidal sources.

5.1.2 Surface Water and Overland Flooding

Surface Water flooding occurs when high intensity rainfall overwhelms man made drainage systems or cannot soak into the ground. Man-made drainage systems / sewers can fail for a number of reasons, such as when the rainfall event exceeds the capacity of the sewer system / drainage system, the drainage system (including surface level drainage) becomes blocked by debris or sediment, or because the system surcharges due to high water levels in receiving (downstream) watercourses.

This results in surface water falling on impermeable areas being unable to enter the drainage system through surface drainage features such as road gullies. This is known as surface water or overland flooding and discussed in this section.

The LBH SWMP confirms that the site is not located in a Critical Drainage Area. A map showing the location of the site in relation to the critical drainage areas is shown in Figure 5.1 below.

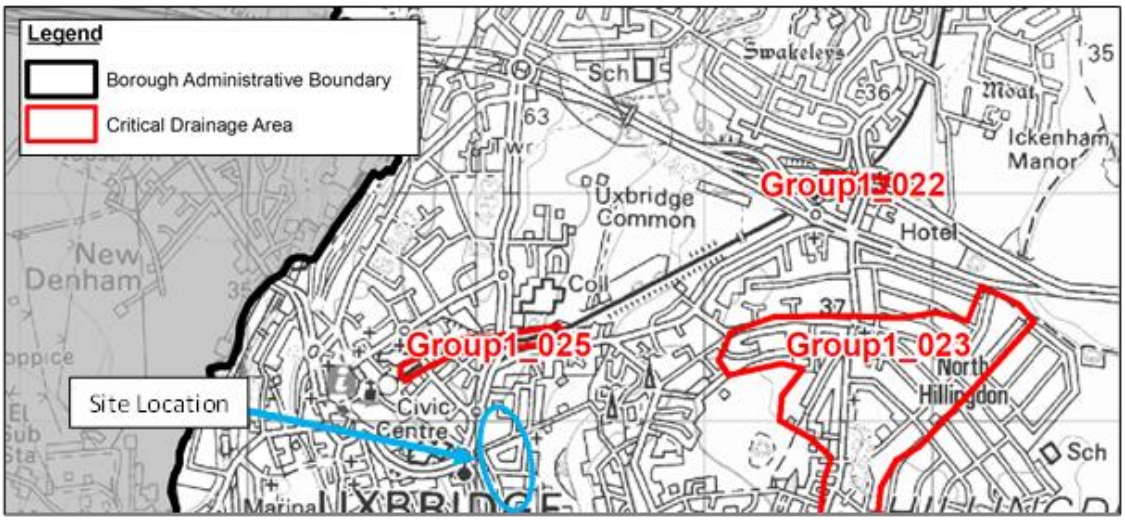

Figure 5.1 Critical Drainage Areas Plan from SWMP

The Environment Agency publishes and maintains the national Risk of Flooding from Surface Water (RoFSW). This aims to represent flooding caused by surface runoff from precipitation and is based on a high resolution ground model and simulated rainfall for return periods up to the 1 in 1000 year event. The model picks up depressions in the surface where flooding would occur and identifies the overland flood flow paths. The EA model typically does not account for flow within sewers and the linked nature of surface water and sewer flooding during a severe rain storm.

The RoFSW relevant to the site with the site location is shown in Figure 5.1 and 5.2 below and shows that the site is at a low risk of being affected by surface water flooding and this is only shown to be the case along the north and south entrance roads.

In addition, the proposed drainage strategy results in surface water flows generated by the site being reduced significantly.

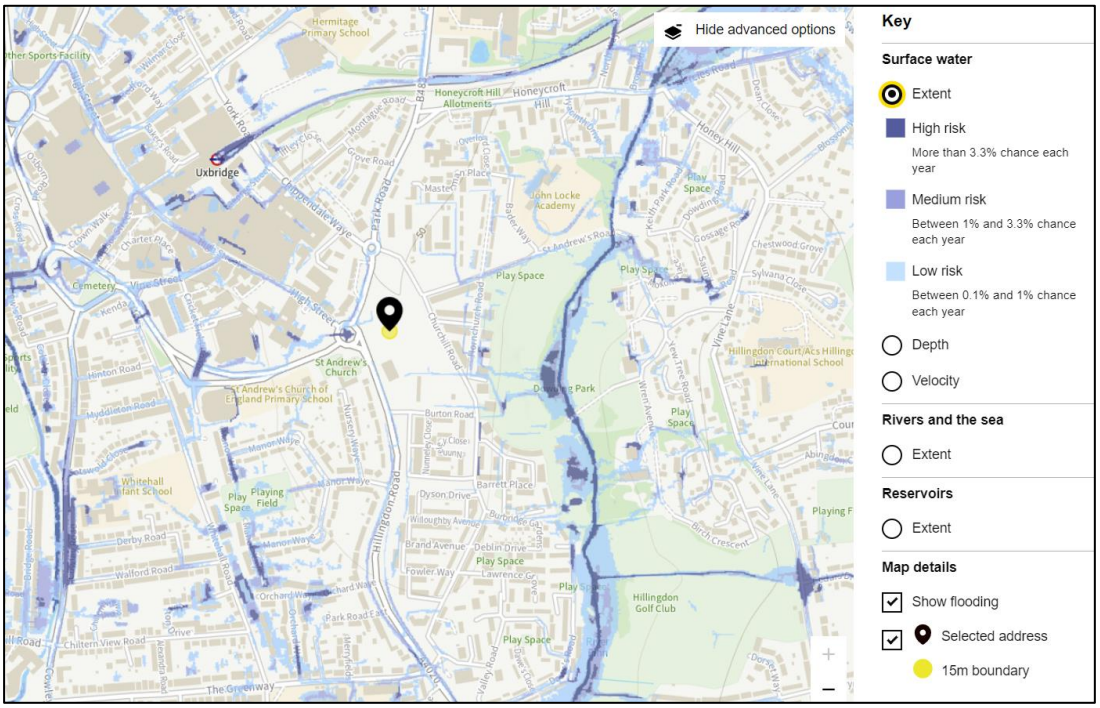

Figure 5.2 - EA RoFSW "Extent of Flooding" Map

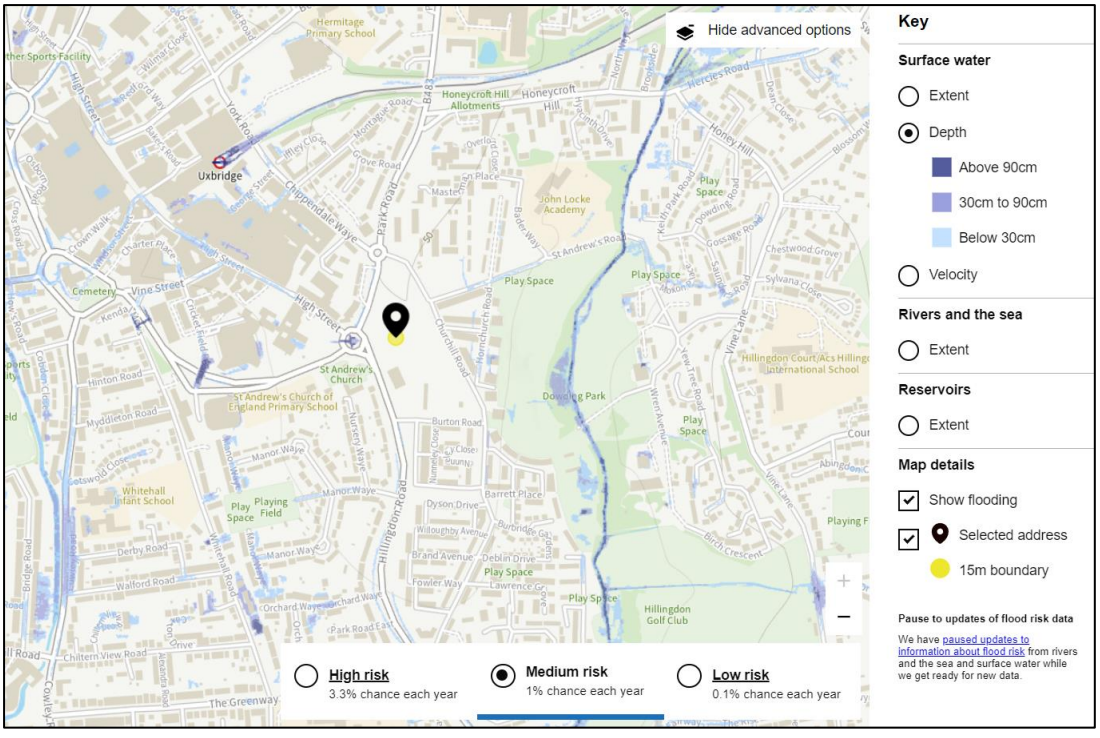

Figure 5.3 - EA RoFSW 100-year Surface Water Flood depth

The site is considered to be at a very low risk of flooding from surface water or overland flows.

5.1.3 Sewer Flooding

Since the late 1970s, and with the publication of Sewers for Adoption in 1980, sewer networks are designed to cope with storm events up to and including the 1 in 30 year storm event. If this storm event is exceeded then surface water flooding is likely to occur.

The Level 1 SFRA for London Boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon and Hounslow produced various interactive Web Maps which use ArcGIS to show various flood maps and other data collected by the individual boroughs and the EA. These Web Maps are said to be updated regularly with the most recent data. Figure 5.4 shows the Sewer, Groundwater & Artificial Flood Risk Web Map which has the "Sewer Flooding Records" layer turned on; this layer shows the number of Sewer flooding incidents which occurred within each postcode. This shows that, according to the Web Map, there was not a single instance of sewer flooding within the postcode associated to the site.

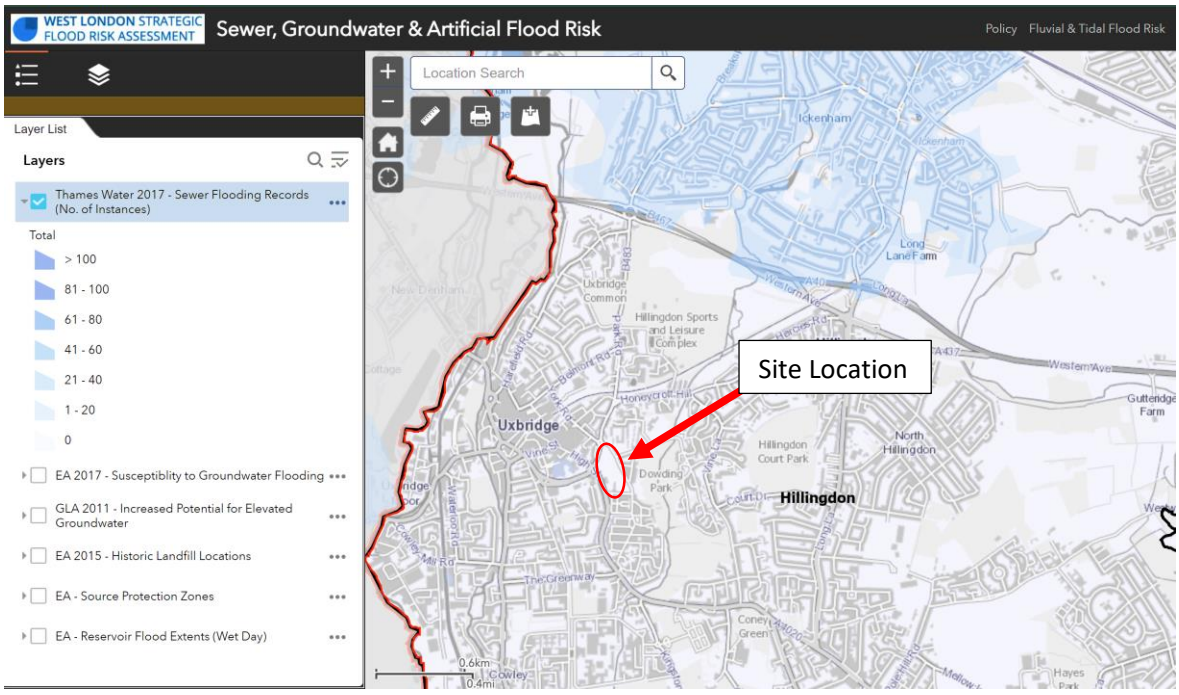

Figure 5.4 – Historical Sewer Flooding Incidents from Interactive Web Maps produced by the Level 1 SFRA for London Boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon and Hounslow.

The site is considered to be at a very low risk from sewer flooding.

5.1.4 Groundwater Flooding

Groundwater flooding occurs when the water table rises above ground level and flows over land. It can also occur where building floors, such as basements, are lower than the surrounding ground.

Using the web map within the SFRA mentioned previously and with the “Susceptibility to Groundwater Flooding” layer turned on, it can be seen that the site is located within the “<25%” category. It should, however, be remembered that this map shows susceptibly based on underlying geology rather than actual risk. The proposed development does not contain any basement buildings that would be particularly susceptible to groundwater flooding, and the general risk of groundwater flooding is not considered to be greater than surface water flooding and can be mitigated by the same measures proposed to reduce the risk of surface water flooding.

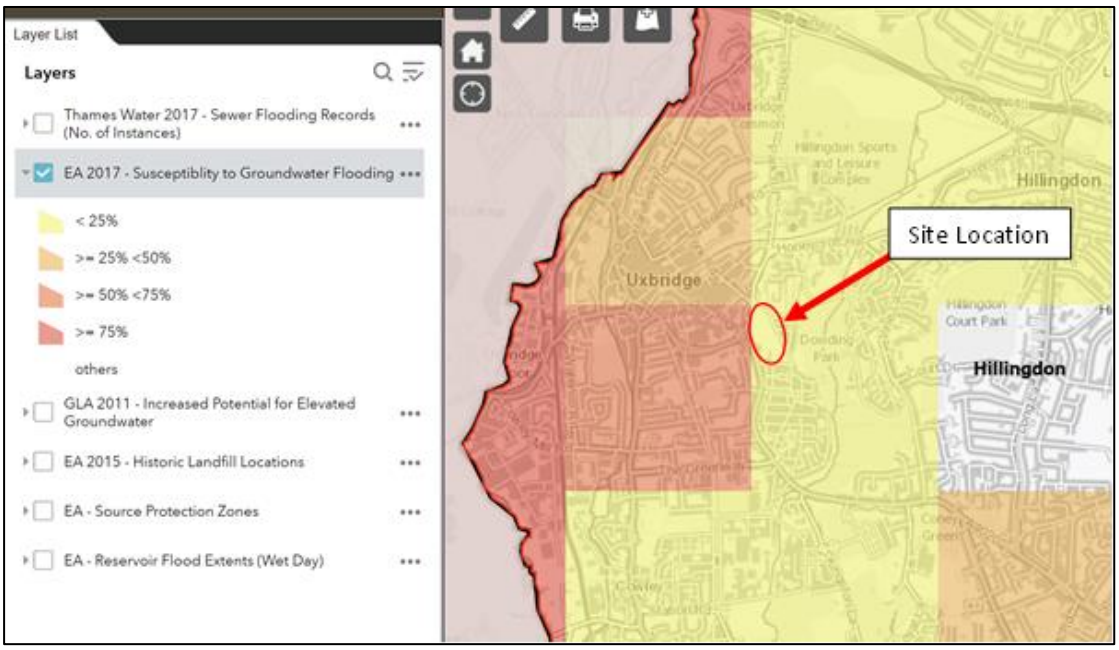

Figure 5.5 – Susceptibility to Groundwater Flooding from the Interactive Web Maps produced by the Level 1 SFRA London Boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon and Hounslow.

The site is considered to be at a very low risk of flooding from groundwater.

5.1.5 Flooding from Artificial Sources

Artificial water bodies, such as reservoirs, canals, etc. could pose a flood risk in the event of a structural failure such as a breached reservoir dam.

The Environment Agency Maps show that the site is located a significant distance away from any extent of flooding from reservoirs.

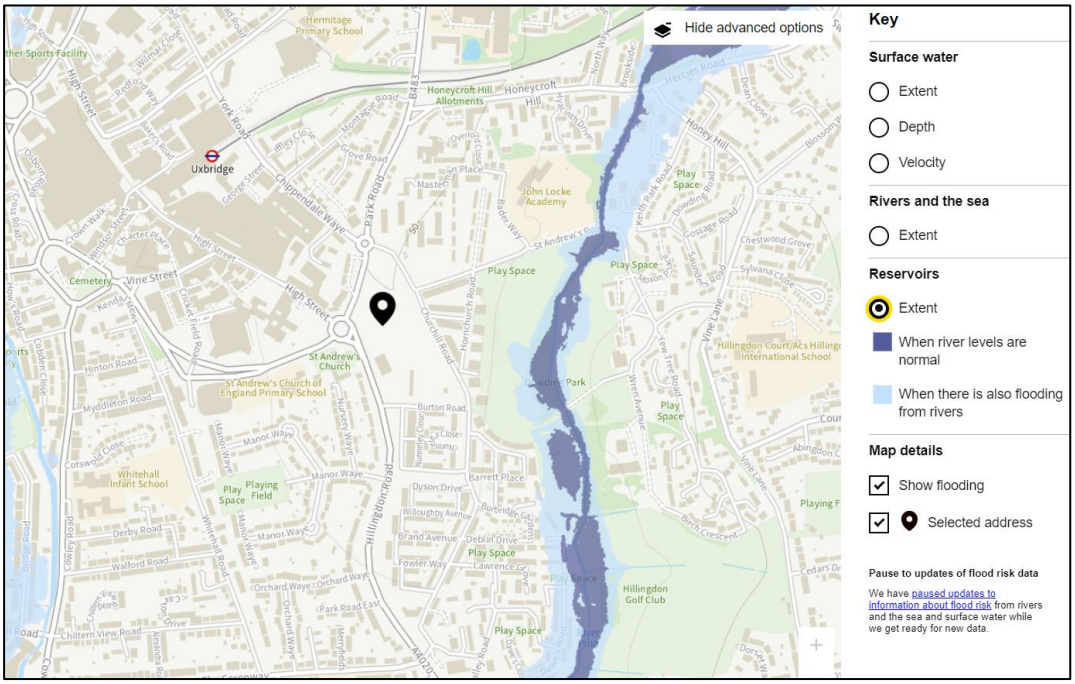

Figure 6.5 – EA Map of Risk of flooding from artificial sources.

The site is not considered to be at risk of flooding from artificial sources.

5.2 Probability of Flooding

Overall the probability of the site flooding from the sources described above is very low.

5.3 Flood Risk due to Climate Change

The effect of climate change will be to increase the intensity and duration of rainfall events, thus increasing the likelihood of localised flooding. In accordance with the National Planning Policy Framework (NPPF) practice guidance an additional 40% has been added to rainfall profiles during design to accommodate future increases due to Climate Change.

5.4 Off Site Impacts

The proposed drainage for the development should be designed to ensure that future discharge rates from the site are limited to match the current or pre-development discharge, this will ensure that the proposed development does not increase the offsite flood risk for the surrounding areas.

6.0 CONCLUSIONS

This report has considered the flood risk to the proposed development from a variety of sources, an assessment has been made of the potential flood risk to the site from each source based on information from the Environment Agency, Hillingdon Strategic Flood Risk Assessment and Hillingdon Surface Water Management Plan, as well as site specific documents, where appropriate this assessment has included an allowance for increase flood risk due to climate change. This assessment has shown that the site is at a very low risk of flooding from all identified sources. A recommendation is made to restrict discharge rates from the site to ensure the proposed development will not increase flood risk elsewhere. This recommendation is reflected in the Drainage Strategy submitted in support of the Hybrid Planning Application.

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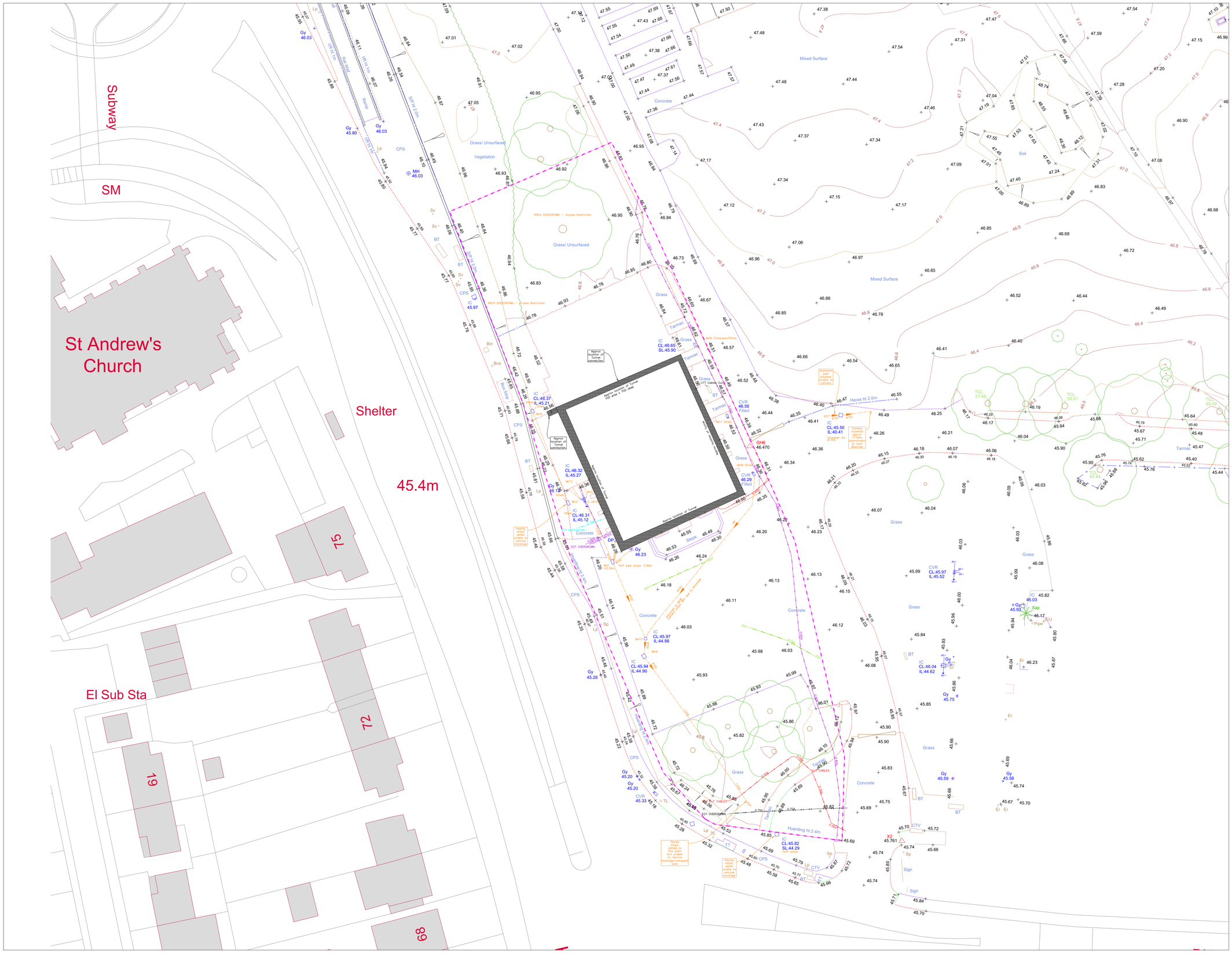
APPENDIX A: TOPOGRAPHIC SURVEY



SITE SPECIFIC NOTES

1. Drainage pipe sizes & invert levels have been determined without man entry into chambers. Every effort has been made to correctly obtain this information, however, accuracy is dependent on visibility from the surface at time of survey.

UTILITY NOTES

This drawing and information contained within is issued in confidence and is the copyright of Land Utility Group Ltd. If the topographical information or base mapping has been supplied by a Third Party, Land Utility Group Ltd is not liable for any inaccuracies contained therein. If inaccuracies to supplied mapping have been identified (and Land Utility Group Ltd. have not been commissioned to rectify these inaccuracies) these will be highlighted in the accompanying report. Disclosure of this information to Third Parties and unauthorised copying or replication of this data without approval is forbidden.

The data presented in this drawing have been collected using a combination of the following: consultation of utility asset information, visual survey & inspection of manholes and inspection chambers; electromagnetic location techniques; ground penetrating radar, and, where applicable, trial hole excavations. These techniques have been deployed in accordance with the BSI PAS128 Specification for Underground Utility Detection, Verification and Location using the search methodologies indicated below and described in the accompanying report. This drawing should be used in conjunction with the accompanying report which details the limitations of these techniques and any hindering factors encountered during this survey.

Unless otherwise stated, all utilities shown on this plan have been surveyed using approved detectors and the connections between inspection chambers, if unable to be detected, are generally assumed to be direct unless there are indications to the contrary. The detection confidence for each utility segment is depicted in line with the PAS128 scheme outlined below. Information depicted as QL-C or QL-D cannot be guaranteed as it is based on historic utility records which can be inaccurate and incomplete.

The utility routes depicted may reflect the routes of multiple cables or pipes. It is not always possible to differentiate between buried construction features, utilities and other subsurface linear features therefore it is possible that some features shown are not utility related, and due to the limitations of electromagnetic techniques all utility identifications should be treated with caution and verified prior to use during design/building works.

If the location or depth of utilities and features is of particular importance to a project then it is recommended that discussions are held with Land Utility Group Ltd. regarding any possible limitations or anomalies.

Please note that not all buried pipes, cables and ducts can be detected and mapped in consideration of their depth, location, material type, geology and proximity to other utilities. Even an appropriate and professionally executed survey may not be able to achieve a 100% detection rate. Where an area of utilities is likely to affect client project requirements, it is strongly recommended that a PAS128 Quality Level A verification survey is carried out

No utility mapping survey can be considered a 100% accurate depiction of the sub-surface environment, and the use of these drawings does not remove the requirement for the use of safe digging techniques at all times, in line with the requirements of HSG47 and current CDM regulations.

UTILITY CONFIDENCE LEVELS (Listed from High to Low)

(A)	HORIZONTAL AND VERTICAL POSITION VERIFIED VISUALLY (Accuracy: Horizontal (±25mm) Vertical(±50mm)
(B1P)	HORIZONTAL AND VERTICAL POSITION DETECTED BY MULTIPLE METHODS WITH POST PROCESSING OF GPR DATA (Estimated Accuracy: ±150mm OR ±15% of detected depth)
(B1)	HORIZONTAL AND VERTICAL POSITION DETECTED BY MULTIPLE METHODS (Estimated Accuracy: ±150mm OR ±15% of detected depth)
(B2P) GPR	HORIZONTAL AND VERTICAL POSITION DETECTED VIA POST-PROCESSED (Estimated Accuracy: ±250mm OR ±40% of detected depth)
(B2)	HORIZONTAL AND VERTICAL POSITION DETECTED BY A SINGLE METHOD (Estimated Accuracy: ±250mm OR ±40% of detected depth)
(B3P)	HORIZONTAL POSITION DETECTED VIA POST-PROCESSED GPR (Estimated Accuracy: ±500mm in the Horizontal - Depth is undefined)
(B3)	HORIZONTAL POSITION DETECTED BY A SINGLE METHOD (Estimated Accuracy: ±500mm in the Horizontal - Depth is undefined)
(C)	ROUTE TRANSCRIBED FROM UTILITY ASSET PLANS AND CORRELATED TO VISUAL INDICATORS AND SURFACE FEATURES (Accuracy Undefined)
(D)	ROUTE TRANSCRIBED FROM UTILITY ASSET PLANS (Accuracy Undefined)

UTILITY LINETYPE MENU & KEY

HV – B1 — HV – B1	HIGH VOLTAGE CABLE
LV – B1 — LV – B1	LOW VOLTAGE CABLE
VM – B1 — VM – B1	VIRGIN MEDIA
FO – B1 — FO – B1	COMMS
BT – B1 — BT – B1	BT CABLE
GPR – B2 — GPR – B2	RADAR TRACE
G – B1 — G – B1	GAS PIPE
W – B1 — W – B1	WATER MAIN
U – B1 — U – B1	UNIDENTIFIED SERVICE
——►——	COMBINED DRAINAGE
——►——	FOUL DRAINAGE

MEASURED DEPTH BGL TO PIPE/CABLE/DUCT	0.65d
INVERT LEVEL OF PIPE/DUCT/CABLE	IL 12.34
SOFFIT LEVEL OF PIPE/DUCT/CABLE	SL 45.67
COVER LEVEL OF INSPECTION CHAMBER	CL 78.90
DIAMETER OF PIPE/DUCT IN MILLIMETERS	150Ø
NUMBER OF DUCTS	2W

REVISIONS DATE

N
INDICATIVE ONLY

SCALE: TO FIT@A1
DATE: MAY 23
DRAWN: RA

TITLE:
LOCATED UTILITIES

JOB:
ST ANDREWS PARK, UXBRIDGE

CLIENT:
BTP GROUP

DWG. No: LUG22/005/04H

LAND UTILITY GROUP LTD.

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EPPING
ESSEX
CM16 6TH

T: 01992 566698
M: 07977 112286
M: 07977 111935

Station Information:

Station	Easting (m)	Northing (m)	Level (m)
GH3	506021.302	184024.081	49.790
GH5	506011.137	183872.842	47.548
GH6	506058.362	183763.556	46.470
X2	506083.102	183699.263	45.760

OS Note:

Some services may have been omitted due to parked vehicles. The Ordnance Survey tile is to be used as a guide only.

OS Buildings | *Surveyed Buildings*

This survey has been orientated to the Ordnance Survey (O.S) National Grid (OSGB36) via Global Navigational Satellite Systems (GNSS) and the O.S. Active Network (OS Net).

A true OSGB36 coordinate has been established near to the site centre via a transformation using the OSTN02 & OSGM02 transformation models.
The survey has been correlated to this point and a further one or more OSGB36 points established to create a true O.S. bearing for angle orientation.

No scale factor has been applied to the survey therefore the coordinates shown are arbitrary & not true O.S. Coordinates which have a scale factor applied.

Please refer to Survey Station Table to enable establishment of the on-site grid and datum.

Legend:

Rev	Date	Description	Drawn	Q. Ref

greenhatch group

Topographical Surveys
Site Engineering
Utility / CCTV Surveys
Measured Building Surveys
3D Laser Scanning
Revit & BIM Models

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CLIENT

St Modwen

PROJECT

The Dice
Churchill Road, Uxbridge
UB10 0RX

TITLE

Topographical Survey

SCALE	DATE
A0@ 1: 500	10.05.21
DRAWN	QUALITY REF
SA	GH10477

Level datum	See note
Grid orientation	See note
Job number	22994B

Drawing No.	Rev.
22994B_T	0

Comments

This plan should only be used for its original purpose. Greenhatch Group accepts no responsibility for this plan if supplied to any party other than the original client.

All dimensions should be checked on site prior to design and construction.

Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only.

Notes:

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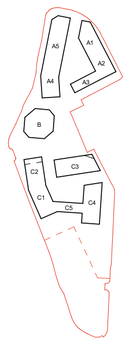
APPENDIX B: PROPOSED SCHEME – OUTLINE ELEMENT ILLUSTRATIVE LAYOUT AND FULL ELEMENT PROPOSED GA

KEY

- Site boundary for hybrid planning application
- Site boundary for full element of Hybrid Planning Application (the Former RAF Cinema Building)
- Foodstore
- Flexible Commercial Spaces
- Illustrative Residential Units
- Illustrative Residential Ancillary Areas / Plant
- Illustrative Parking Areas

NOTE

Please refer to the Landscape Architect's drawings for detailed landscape information



GENERAL NOTES:
This drawing is © 2019 Pollard Thomas Edwards LLP (PTE).
Use figured dimensions only. **DO NOT SCALE**.

All dimensions are in millimetres unless noted otherwise.

This drawing must be read in conjunction with all other relevant drawings and specifications from the Architect and other consultants.

If in doubt, ask.

SETTING OUT NOTES:
All setting out to be confirmed on site prior to construction - any discrepancy must be immediately reported to the Architect.

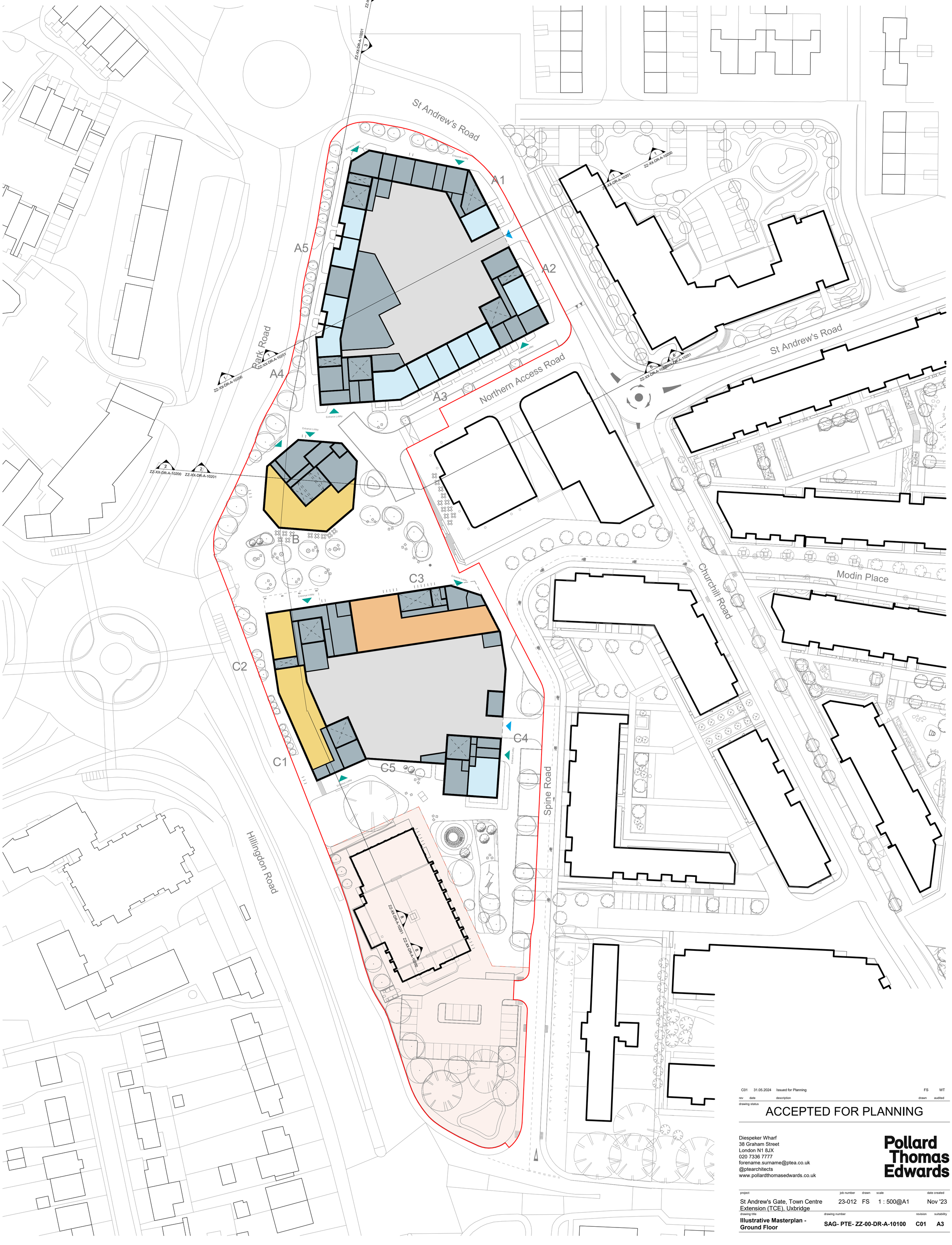
All setting out to face of structure or to grid. All partitions set out to studwork or structure.

For setting out and specification of M&E services refer to M&E Consultants documents.

For setting out and specification of structure refer to Structural Engineer's documents.

5 0 5 10 25 m
Metres 1:500

N



C01 31.05.2024 Issued for Planning — FS WT
rev date description — drawn audited

drawing status

ACCEPTED FOR PLANNING

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project	job number	drawn	scale	date created
St Andrew's Gate, Town Centre Extension (TCE), Uxbridge	23-012	FS	1 : 500@A1	Nov '23

drawing title	drawing number	revision	suitability
Illustrative Masterplan - Ground Floor	**SAG- PTE- ZZ-00-DR-A-10100**	**C01**	**A3**

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APPENDIX C: THAMES WATER RECORDS

Asset Location Search Sewer Map - ALS/ALS Standard/2023_4804990

TQ0583NE

The width of the displayed area is 500m and the centre of the map is located at OS coordinates 505750,183750

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.

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
9504	39.88	38.54
9503	41.13	39.78
9501	39.85	38.28
9502	n/a	n/a
851I	n/a	n/a
951A	n/a	n/a
851M	n/a	n/a
851L	n/a	n/a
851J	n/a	n/a
951C	n/a	n/a
851F	n/a	n/a
8501	39.69	38.68
951B	n/a	n/a
971B	n/a	n/a
991F	n/a	n/a
991E	n/a	n/a
6507	n/a	n/a
6502	n/a	n/a
6504	n/a	n/a
6509	n/a	n/a
7504	n/a	n/a
6510	n/a	n/a
6503	n/a	n/a
6501	n/a	n/a
851E	n/a	n/a
651B	n/a	n/a
651D	n/a	n/a
651A	n/a	n/a
651H	n/a	n/a
651E	n/a	n/a
6508	n/a	n/a
651G	n/a	n/a
6506	n/a	n/a
6505	n/a	n/a
851K	n/a	n/a
7503	n/a	n/a
7501	n/a	n/a
7502	38.18	36.65
861D	n/a	n/a
7603	38.61	37.51
7601	38.35	37.21
7602	38.66	36.97
551A	n/a	n/a
551B	n/a	n/a
5603	n/a	n/a
561A	n/a	n/a
571C	n/a	n/a
571A	n/a	n/a
561F	n/a	n/a
561E	n/a	n/a
561B	n/a	n/a
5602	33.1	31.85
5601	n/a	n/a
5702	36.86	35.07
561D	n/a	n/a
5704	n/a	n/a
561C	n/a	n/a
5901	36.75	35.08
5903	36.85	34.69
5902	36.85	34.8
581E	n/a	n/a
581B	n/a	n/a
581A	n/a	n/a
581F	n/a	n/a
5801	36.3	35.23
5802	36.89	32.56
581D	n/a	n/a
6908	38.76	37.35
6922	n/a	n/a
6923	38.66	36.99
6901	n/a	n/a
6902	38.51	35.93
6924	n/a	n/a
6906	40	37.72
6928	n/a	n/a
6905	n/a	n/a
6925	n/a	n/a
791B	n/a	n/a
6929	n/a	n/a
6926	n/a	n/a
7901	40.81	39.18
6927	n/a	n/a
6904	40.69	38.34
6903	40.77	38.03
991D	n/a	n/a
9902	48.05	45.93
991C	n/a	n/a
9901	48.46	46.46
791C	n/a	n/a
791D	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
791F	n/a	n/a
791E	n/a	n/a
7903	41.3	38.9
7904	41.6	40.23
791A	n/a	n/a
7902	n/a	n/a
891G	n/a	n/a
891J	n/a	n/a
891I	n/a	n/a
891D	n/a	n/a
891B	n/a	n/a
5906	n/a	n/a
5909	37.85	36.5
5904	37.23	34.93
5908	n/a	n/a
5905	37.69	35.84
571F	n/a	n/a
571I	n/a	n/a
571H	n/a	n/a
571G	n/a	n/a
571B	n/a	n/a
581C	n/a	n/a
891E	n/a	n/a
891F	n/a	n/a
8904	n/a	n/a
891A	n/a	n/a
9805	n/a	n/a
981A	n/a	n/a
991B	n/a	n/a
991A	n/a	n/a
9804	n/a	n/a
971A	n/a	n/a
9802	45.71	41.11
9903	46.32	44.12
9801	46.08	43.81
9904	46.76	45.19
9809	46.01	41.85
981B	n/a	44.58
9701	45.65	42.96
9905	47.62	45.02
9803	45.96	43.25
6604	n/a	n/a
861B	n/a	n/a
8604	39.53	38.4
861A	n/a	n/a
6603	n/a	n/a
8602	39.63	37.88
8603	39.35	38.17
6602	n/a	n/a
6601	n/a	n/a
8601	39.35	37.7
6605	n/a	n/a
5703	36.89	35.78
571E	n/a	n/a
571D	n/a	n/a
7701	n/a	n/a
6701	n/a	n/a
8701	n/a	n/a
5701	n/a	n/a
6801	n/a	n/a
6910	38.2	36.23
8902	42.3	40.3
6921	38.31	37.07
6909	38.34	36.14
8903	42.11	40.7
8901	42	39.89
8905	42.1	40.63
891K	42.27	40.12
891C	n/a	n/a
891H	n/a	n/a

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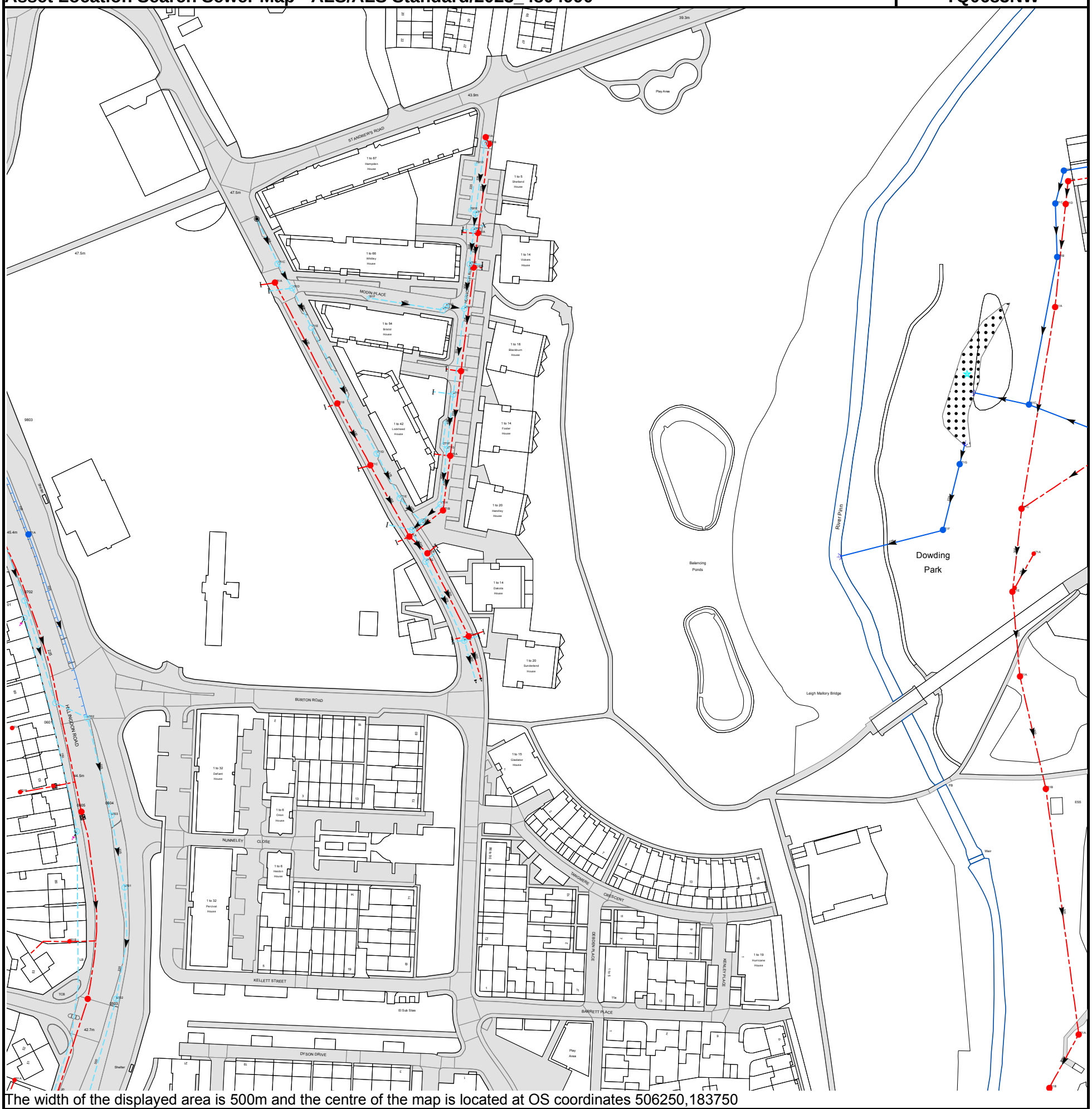
Asset Location Search Sewer Map - ALS/ALS Standard/2023_4804990

TQ0683NW



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 506250,183750

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.

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
291D	43.27	42.1
281A	43.21	40.96
291C	43.38	42.3
291A	43.46	41.63
291B	43.44	41.52
481A	37.61	35.51
491C	n/a	n/a
481B	n/a	n/a
491B	n/a	n/a
491D	37.65	35.59
491A	36.88	35.68
281I	42.77	40.59
281C	42.89	40.09
281F	43.84	41.45
281H	43.4	41.12
281G	43.75	41.43
181F	45.35	41.9
281B	43.18	40.74
281E	43.17	41.65
281D	43.16	41.81
291F	43.2	41.94
291E	43.17	41.95
271E	42.1	39.7
271C	42.09	39.23
171G	42.56	40.01
171B	42.53	39.42
171A	42.71	39.47
171F	42.66	40.1
171I	42.66	40.12
271B	42.59	39.6
171H	42.59	40.22
171E	42.94	41.51
171C	43.95	42
271A	42.68	39.83
171D	44.02	42.69
271G	42.65	40.5
271F	42.62	40.83
281J	42.68	40.97
451B	n/a	33.95
451A	n/a	n/a
461B	n/a	34.67
461A	n/a	n/a
471E	37.83	35.03
471A	n/a	n/a
471F	n/a	n/a
471C	38.2	35.19
471G	35	32.47
481C	n/a	n/a
051A	n/a	n/a
0502	43.37	41.72
0503	42.61	40.48
051B	n/a	n/a
0501	43.88	42.33
0605	44.14	42.99
0603	44.61	43.13
0604	44.07	41.95
061B	n/a	n/a
061C	n/a	n/a
061A	n/a	n/a
0602	45.03	43.53
0601	44.58	43.89
0701	45.17	44.1
0702	45.12	44.3
071A	n/a	44.15
181A	46.6	44.78
181C	46.55	45.3
181D	46.4	44.83
181E	46.32	44.55
181B	45.53	43

Asset Location Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

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

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

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

- Storm Sewer
- Sludge Sewer
- Foul Trunk Sewer
- Surface Trunk Sewer
- Combined Trunk Sewer
- Foul Rising Main
- Surface Water Rising Main
- Combined Rising Main
- Vacuum
- Thames Water Proposed
- Vent Pipe
- Gallery

Other Sewer Types (Not operated and maintained by Thames Water)

- Sewer
- Culverted Watercourse
- Proposed
- Decommissioned Sewer
- Content of this drainage network is currently unknown
- Ownership of this drainage network is currently unknown

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
- Meter
- Dam Chase
- Vent
- Fitting

Operational Controls

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

- Ancillary
- Drop Pipe
- Control Valve
- 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.

- Inlet
- Outfall
- Undefined End

Other Symbols

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

- Change of Characteristic Indicator
- Public / Private Pumping Station
- Invert Level
- Summit

Areas

Lines denoting areas of underground surveys, etc.

- Agreement
- Chamber
- Operational Site

Ducts or Crossings

- Casement

Ducts may contain high voltage cables. Please check with Thames Water.

- Conduit Bridge
- Subway
- Tunnel

Notes:

1) All levels associated with the plans are to Ordnance Datum Newlyn.
2) All measurements on the plan are metric.
3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate the 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 indicates that data is unavailable.
6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimeters. 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, please contact Property Searches on 0800 009 4540.