



David Lloyd Clubs
David Lloyd Hampton, Padel Courts
Flood Risk Assessment

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Project Details

Project David Lloyd Hampton, Padel Courts
Location David Lloyd Hampton., Staines Road, Twickenham, TW2 5JD.

Project Team

Client David Lloyd Clubs <https://www.davidlloyd.co.uk/>
Architect Hadfield Cawkwell Davidson <https://www.hcd.co.uk/>
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Document Revision History

Revision	Reason for Issue	Date of Issue	Prepared by	Approved
A	For Planning	10/12/2024	Tim Fairlie	Rob Hazell

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EXECUTIVE SUMMARY

This report has been prepared for David Lloyd Clubs and assesses the level of Flood Risk to and resulting from the proposed re-development of three existing external Tennis Courts at their existing Hampton Club site to provide 6 no. Padel Courts, 3 no. of which will be provided with a Padel Court Cover.

The report has demonstrated that the site is in Fluvial Flood Zone 1 (Low Risk), and that the Flood Risk to the site from other potential sources is also Low. The proposals for the site therefore meet the Sequential Test for Flood Risk and no specific mitigation measures are required.

It has also been demonstrated that the development will not cause any increase in flood risk either within the site itself or to adjacent properties.

In addition, a copy of the London Borough of Richmond's Flood Risk Assessment Checklist has been completed and is provided alongside this report.

1 INTRODUCTION

1.1 Appointment

Willis Hazell Engineers Limited (Willis Hazell) has been appointed by David Lloyd Clubs to provide a Flood Risk Assessment in support of a planning application for their proposed Padel Courts development at their existing Hampton Club.

1.2 Description of the Project

The project proposes the replacement of three existing external tennis courts with 6 no. padel courts, of which 3 no. will have a padel court cover. The three existing tennis courts are located towards the south-west of the site, to the south of the main club building.

1.3 Purpose of Report

This report has been prepared for David Lloyd Clubs and reviews the level of Flood Risk to the proposed development in line with guidance set out in national and local planning policy.

The aim of this report is to define the following to a suitable level of detail to obtain planning approval for the development:

- Site's characteristics (topography, soil geology, existing drainage features).
- Details of the proposed development.
- A summary of the existing level of flood risk to the site, based on the Environment Agency and London Borough of Richmond upon Thames online Flood Maps, the local Strategic Flood Risk Assessment, and Thames Water sewer records.
- Details of existing / proposed site levels in relation to the flood extents and overland flow paths indicated by the information described above.
- Appropriateness of the development given the identified level of Flood Risk.
- An assessment of whether the development will increase flood risk elsewhere, including details of existing surface water drainage provision and proposed amendments to the existing surface water drainage regime.

In addition, a copy of the London Borough of Richmond's Flood Risk Assessment Checklist has been completed and is provided alongside this report.

1.4 Limitations

This report has been produced exclusively for the use of David Lloyd Clubs. Any other party seeking to rely on this report should seek written permission from Willis Hazell. This report has been produced for the proposed Padel Courts development as currently shown on the architect's drawings submitted in support of the Planning Application. If the proposals change, then findings of this report should be reviewed accordingly.

In preparing this report, we have relied on information provided by third parties, and as such, Willis Hazell cannot accept responsibility for the accuracy of the information received.

2 SITE DESCRIPTION

2.1 Site Location and Existing Site Usage

The existing David Lloyd Club site is located to the south of the A305 Staines Road / Twickenham Road, and to the north of the A312 Hampton Road East / Uxbridge Road. The site is bordered by a mix of residential and commercial development adjacent to the A305 and A312, and by Fulwell Golf Club and Hampton Heath parkland to the east and south respectively. The site location is indicated on Figure 1 below, and a more detailed Site Location Plan can be found in Appendix A.

The area of the site where the proposed development is situated is indicated in red on Figure 1 below, and currently comprises 3 no. external tennis courts. These courts are located to the south of the main club building and outdoor swimming pool, with additional tennis courts (which are to remain as existing) situated to the east and south. The remainder of the site currently comprises car parking, and soft and hard landscaping.

Figure 1: Aerial Photography indicating Site Location



2.2 Site Topography

LIDAR data for the site and surrounding area has been obtained from the Environment Agency's online National LIDAR data set, which gives elevation data at a 1m spatial resolution. This shows that the site is generally flat at a consistent level of approximately 20.0m AoD. Immediately south of the proposed Padel Courts, there is an apparent pond, where the levels are lower, at approximately 19.0m AoD.

An overlay of the LIDAR levels contours with aerial photography can be found in Appendix B.

2.3 Ground Conditions

British Geological Society (BGS) online mapping shows that the general geology in the area comprises superficial deposits of Taplow Gravel Member (gravels and sands), with an average depth of 5m. These superficial deposits are shown to be overlying London Clay Formation bedrock (clays and silts).

The BGS website also contains historical borehole records, and although no records were available for the David Lloyd site itself, borehole records available on nearby sites indicated ground conditions largely in line with those suggested by the mapping, with gravels extending to between 4.0 and 4.5m below ground level, underlain by London Clay.

The site is not situated within 1km of any Designated Aquifers or Groundwater Source Protection Zones (SPZ).

2.4 Existing Watercourses

The closest watercourses to the site, as shown on Ordnance Survey mapping, are the River Longford, which flows in a south-easterly direction approximately 250m to the south, and the River Crane, which flows in an easterly direction approximately 800m to the north of the site. The River Crane is a designated Main River, whereas the River Longford is classed as an Ordinary Watercourse. Drainage ditches are also believed to exist within the Fulwell Golf Club site to the south-east of the site.

2.5 Existing Site Drainage and Public Sewers

Thames Water sewer record plans for the area surrounding the site have been obtained, and a copy of these plans can be found in Appendix C. The record plans show that there are foul and surface water sewer networks present within the public highway network surrounding the site. To the north of the site, a 225mm diameter surface water sewer runs in an easterly direction within Staines Road / Twickenham Road. The depth of this sewer run as it runs past the site is shown as being approximately 1.7m, at an invert level of approximately 18.6m AoD.

To the south of the site, a 225mm diameter surface water sewer runs in a south-easterly direction under Hampton Road East / Uxbridge Road. An additional surface water sewer run is shown to the north of the carriageway of Hampton Road East / Uxbridge Road, the diameter of which is not indicated. The depth of this sewer run as it runs past the site is shown as being approximately 1.7m, at an invert level of approximately 17.9m AoD.

The existing surface water drainage system within the David Lloyd Club site has not been traced, however it is presumed given the ground conditions that runoff is likely to be conveyed to one or more points of connection to the surrounding Thames Water surface water sewer network. Immediately south of the proposed Padel Courts, the aerial photography and LIDAR data indicates what appears to be a pond, which is presumed to be a SuDS feature providing attenuation of runoff from the site prior to discharge to the sewer system. Outdoor tennis courts on David Lloyd Club sites are typically constructed to drain either to underlying porous sub-bases, and/or to surrounding filter drains, with a positive discharge to the main club site's drainage system, and it is presumed this type of arrangement exists here.

3 PROPOSED DEVELOPMENT

The project proposes the replacement of three existing external tennis courts with 6 no. padel courts, of which 3 no. will have a padel court cover. These padel courts will feature a pillar type structure, with anti-injury mesh infill panels to the sides of the courts and 10mm approved glass to either end of the courts. A typical padel court arrangement is shown in Figure 2 below.

Figure 2: 3D Image showing Typical Padel Court



The covered courts will have a lightweight canopy over them, the canopy comprising a lightweight polycarbonate roof covering which will have a footprint only slightly bigger than the padel court. A typical padel court canopy is shown in Figure 3 below.

Figure 3: 3D Image showing Typical Padel Court Canopy



A proposed Site Plan drawing can be found in Appendix D.

4 PLANNING POLICY REQUIREMENTS

4.1 NPPF and Planning Practice Guidance

The National Planning Policy Framework (NPPF) was first published in March 2012 and was most recently updated in December 2023. Paragraphs 165 to 175 set out the principle aims of the NPPF relating to planning and flood risk, ensuring that flood risk is considered at all stages of the planning process.

Paragraph 165 states that *“Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere”*.

Paragraph 167 sets out *“.....a sequential, risk-based approach to the location of development, taking into account all sources of flood risk and the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property.....by:*

- (a) Applying the sequential test, and then, if necessary, the exception test;*
- (b) Safeguarding land from development that is required, or likely to be required, for current and future flood management;*
- (c) Using opportunities provided by new development and improvements in green and other infrastructure to reduce the causes and impacts of flooding, (making as much use as possible of natural flood management techniques as part of an integrated approach to flood risk management); and*
- (d) Where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to relocate development, including housing, to more sustainable locations.”*

The NPPF also states the *“A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use”*.

4.2 London Borough of Richmond upon Thames Strategic Flood Risk Assessment

The London Borough of Richmond upon Thames published a Level 1 Strategic Flood Risk Assessment in March 2020, which was most recently updated in March 2021. In addition to the main body of the report, interactive online flood risk mapping has been developed for the borough, showing the level of flood risk across the borough from the following potential sources of flood risk:

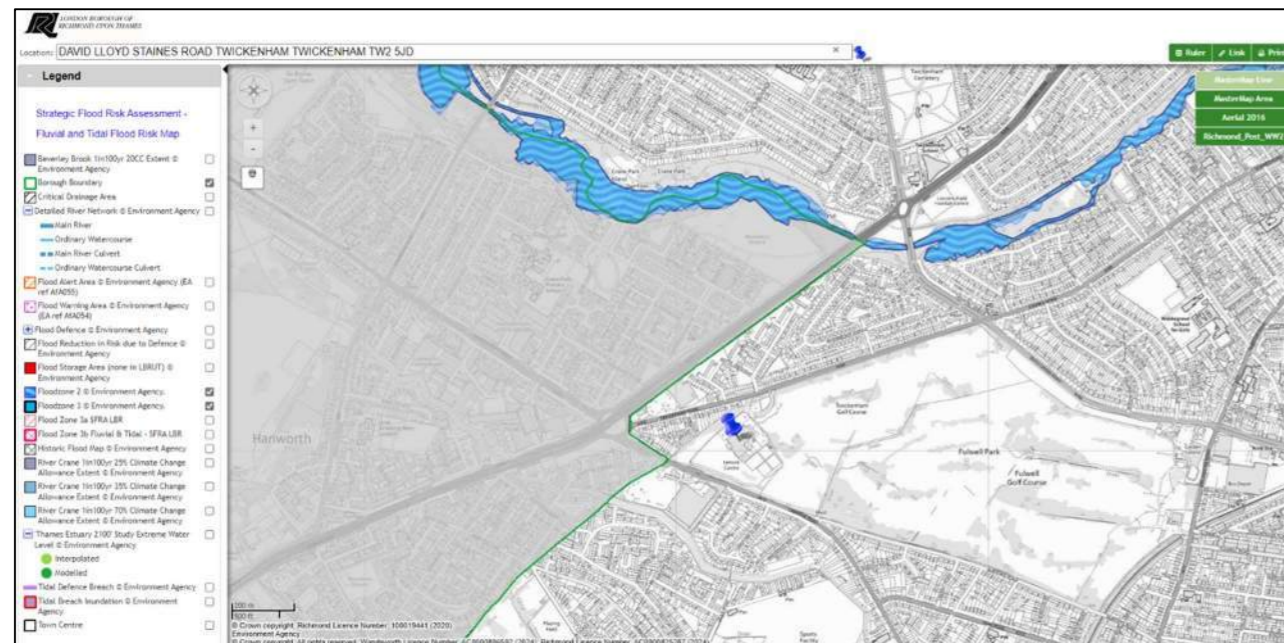
- (a) Fluvial and Tidal Flood Risk
- (b) Surface Water Flood Risk
- (c) Groundwater, Sewer and Artificial Flood Risk.

5 FLOOD RISK ASSESSMENT

5.1 EA Fluvial Flood Zone and Sequential Test

The site is shown by the London Borough of Richmond upon Thames Fluvial and Tidal Flood Risk Map to be located within Flood Zone 1, Low Risk, land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%). An extract of this mapping is shown below in Figure 4, and a larger scale version of this mapping can be found in Appendix E. Areas at Medium and High Risk of flooding (Flood Zones 2 and 3) are shown in blue, with the nearest areas of Medium and High Risk being situated approximately 800m to the north, associated with the River Crane.

Figure 4: Extract from London Borough of Richmond upon Thames Fluvial and Tidal Flood Risk Map



The NPPF states that the suitability of all new development in relation to flood risk should be assessed by applying the Sequential Test to demonstrate that there are no reasonably available sites in areas with a lower probability of flooding that would be appropriate to the type of development proposed. As the site is in Flood Zone 1 (Low Risk), the site can be considered appropriate on flood risk grounds, and the development proposals therefore pass the Sequential Test, meaning that the Exception Test is not required. The remainder of this section of the report provides an assessment of flood risk from other potential sources of flooding, in line with the requirements of the NPPF and the London Borough of Richmond upon Thames SFRA.

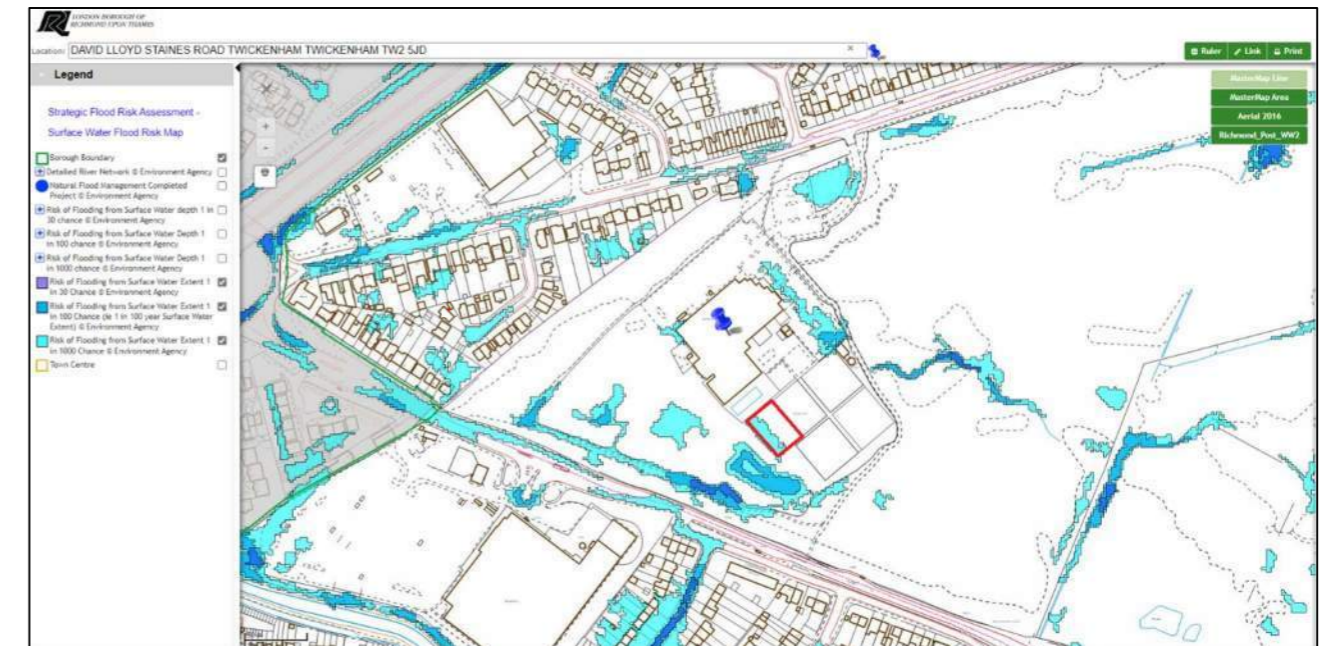
5.2 Surface Water Flood Risk

The London Borough of Richmond upon Thames Surface Water Flood Risk Mapping defines areas at risk of surface water flooding at 1:30-year, 1:100-year, and 1:1000-year return periods, with the mapping highlighting these areas in different shades of blue, with the darkest blue shading representing the area at risk at 1:30-year return period event, and the lightest shade of blue representing the area at risk at a 1:1000-year return period event.

The mapping shows that none of the site of the proposed padel courts is at risk of surface water flooding at either the 1:30-year or 1:100-year flood events, but that part of the site is at risk of surface water flooding at the 1:1000-year return period event. This is defined as Low Risk. An extract of this mapping is shown

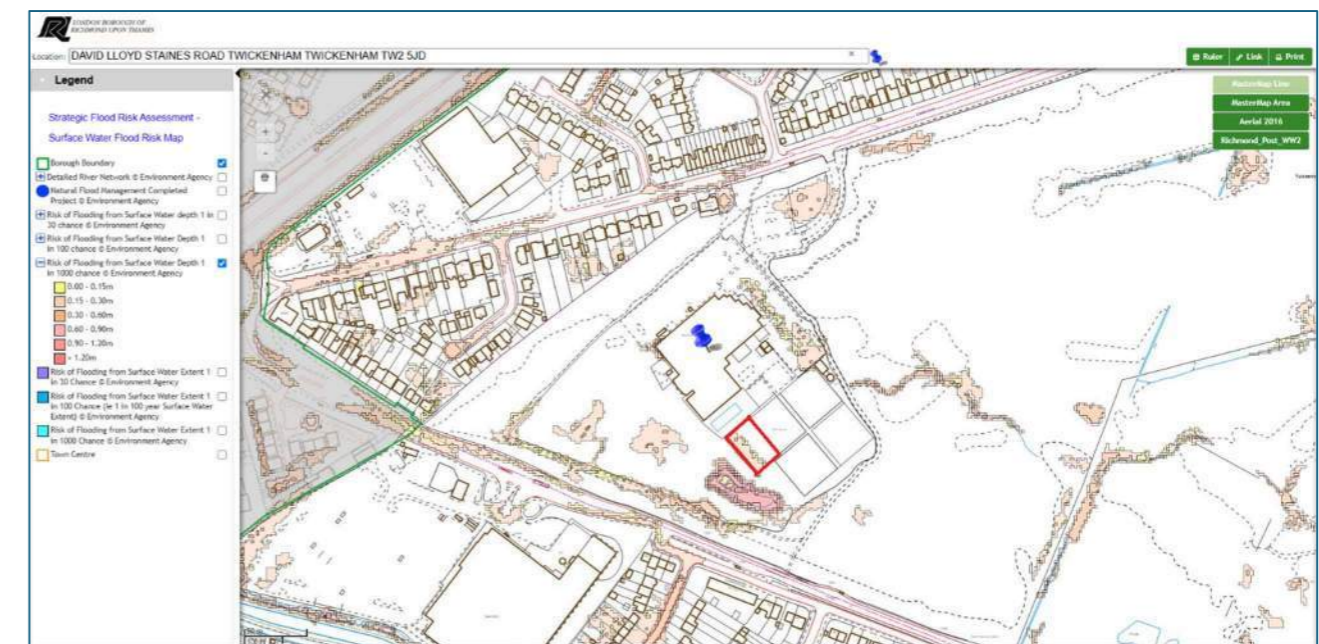
below in Figure 5, and a larger scale version of this mapping can be found in Appendix F. Areas of Medium and High Risk are shown located further south beyond the built extents of the David Lloyd Club.

Figure 5: Extract from London Borough of Richmond upon Thames Surface Water Flood Risk Map (Risk of Flooding)



In addition to the mapping defining areas at risk of flooding during different return period events, the London Borough of Richmond upon Thames mapping also indicates the depth of surface water flooding predicted at each return period event. Figure 6 below shows an extract of this surface water flood depth mapping for the 1:1000-year return period event, with the depth of flooding within the site of the proposed padel courts shown as being between 0.00-0.30m. A larger scale version of this mapping can be found in Appendix G.

Figure 6: Extract from London Borough of Richmond upon Thames Surface Water Flood Depth Map



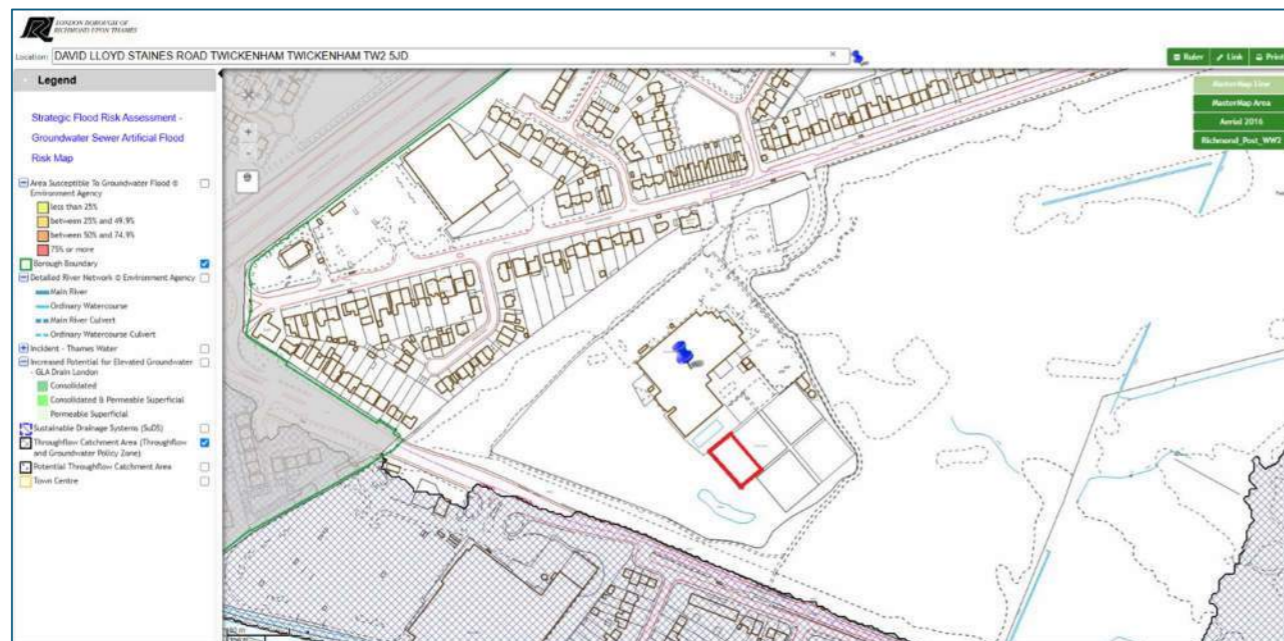
Paragraph 6.3.2 of the London Borough of Richmond upon Thames Strategic Flood Risk Assessment states that site specific flood risk assessments must be carried out for developments within the 1 in 100-year surface water flood extents. The mapping clearly demonstrates that this is not the case in this instance, and that even the 1:1000-year flood extents reach a maximum depth of no greater than 300mm. Therefore, it is concluded that the level of surface water flood risk to the development is low. In the event of shallow surface water flooding of the proposed padel courts during an extreme surface water flood event, the mapping indicates other immediately adjacent areas of the David Lloyd Club site are beyond the extents of any such flooding and will therefore offer a means of escape.

5.3 Groundwater Flood Risk

As described in Section 2.3 of this report, the general Ground Conditions around the site comprise superficial deposits of Taplow Gravel Member (gravels and sands), typically extending to approximately 4.0-5.0m below ground level, underlain by London Clay. Groundwater would typically be expected to travel downstream through the layer of permeable superficial deposits from the top of the catchment. The London Borough of Richmond upon Thames Strategic Flood Risk Assessment and accompanying online mapping defines areas of throughflow, within which specific policies relating to groundwater apply, in particular in relation to below ground (basement) developments.

An extract of the London Borough of Richmond upon Thames Throughflow Catchment Area (Throughflow and Groundwater Policy Zone) Mapping is shown below in Figure 7, and a larger scale version of this mapping can be found in Appendix H. This shows that there is a Throughflow Catchment Area to the south of the site, which is understood to be referred to as the Strawberry Hill (Twickenham) Catchment Area in the SFRA. However, this Throughflow Catchment Area does not extend within the David Lloyd site, with the closest point to the site being approximately 100m further south covering Uxbridge Road and existing development on the opposite side of this road.

Figure 7: Extract from London Borough of Richmond upon Thames Groundwater Throughflow Catchment Area Map



An additional set of data on the London Borough of Richmond upon Thames mapping shows areas identified as having Increased Potential for Elevated Groundwater. The closest area to the site shown on this mapping is an area showing as having increased potential for elevated groundwater (within permeable

superficial deposits) is within the far side of the Fulwell Golf Course to the east of the site, nearly 1.0km from the site itself. An extract of this mapping is shown below in Figure 8, and a larger scale version of this mapping can be found in Appendix I.

Figure 8: Extract from London Borough of Richmond upon Thames Increased Potential for Elevated Groundwater Map



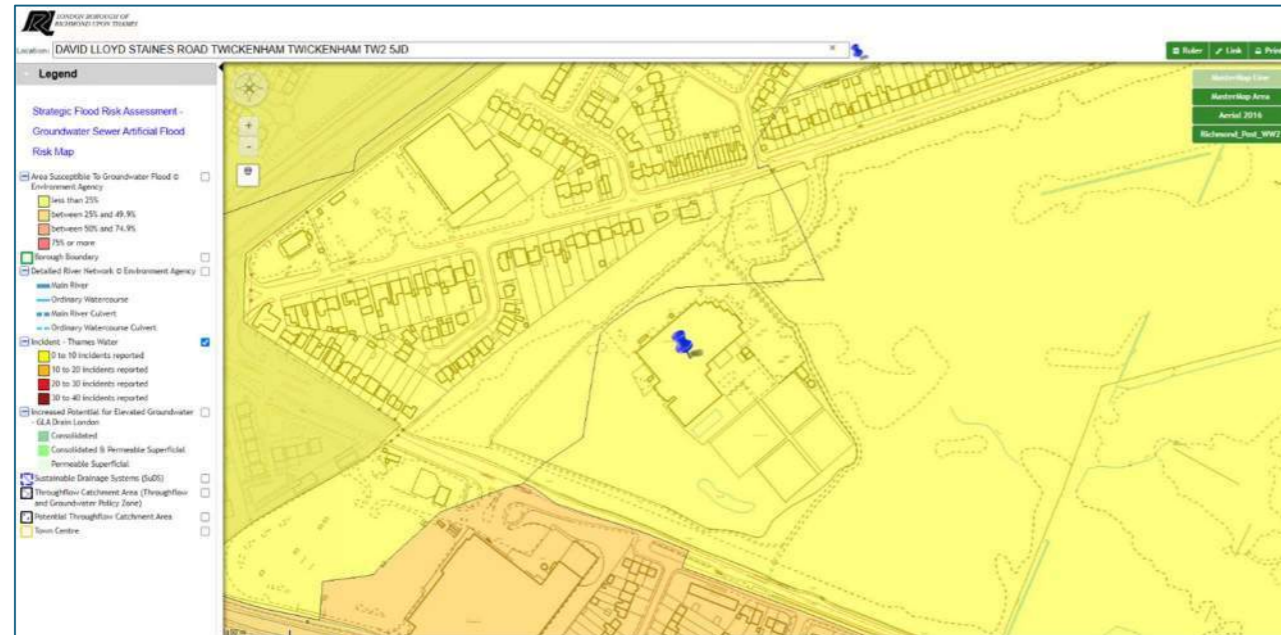
Based on the mapping described above and given that the proposed development does not include any basement structures, which would generally be at higher risk from elevated groundwater levels, it is concluded that the risk to the site from Groundwater flooding is low.

5.4 Flood Risk from Sewers

The London Borough of Richmond upon Thames online mapping identifies the number of flooding incidents reported by Thames Water in specific areas using a partial postcode format, therefore the dataset does not specify where the flooding is occurring at property level. An extract of this Sewer Flooding Incidents Mapping is shown in Figure 9 on the following page, and a larger scale version of this mapping can be found in Appendix J.

A sewer flooding enquiry was submitted to Thames Water, which showed that their flooding records indicated that there have been no incidents of flooding at the David Lloyd Hampton site because of surcharging of public sewers. A copy of this correspondence can be found in Appendix K. Therefore, it is concluded that the level of flood risk to the site from sewer flooding is low.

Figure 9: Extract from London Borough of Richmond upon Thames Sewer Flooding Incidents Map



5.5 Flood Risk from Reservoirs, Canals and other Artificial Sources

A search on the Environment Agency website shows that flooding from reservoirs is unlikely in this area. There are also no canals or other artificial waterbodies in the immediate vicinity of the site.

5.6 Summary of Flood Risk to the Development

The NPPF identifies several categories of land use vulnerability characteristics in terms of their vulnerability to flooding and therefore the compatibility of these different land uses within areas of elevated flood risk. Outdoor sports and recreation facilities such as the proposed padel courts are categorised as “water compatible”.

Based on the above and the assessments in this chapter, the level of flood risk to the development from various potential sources of flooding is summarised in Table 1 below.

Table 1: Summary of Flood Risk to the Development

Potential Source of Flooding	Likelihood (L)	Vulnerability (V)	Risk (L x V)	Consequence
Fluvial / Tidal	Low	Low	Low	The site is in Flood Zone 1 (Low Risk), therefore passes the sequential test. No specific mitigation required.
Surface Water	Low	Low	Low	No specific mitigation required.
Groundwater	Low	Low	Low	No specific mitigation required.
Sewers	Low	Low	Low	No specific mitigation required.
Artificial Sources	Low	Low	Low	No specific mitigation required.

6 SURFACE WATER MANAGEMENT STRATEGY

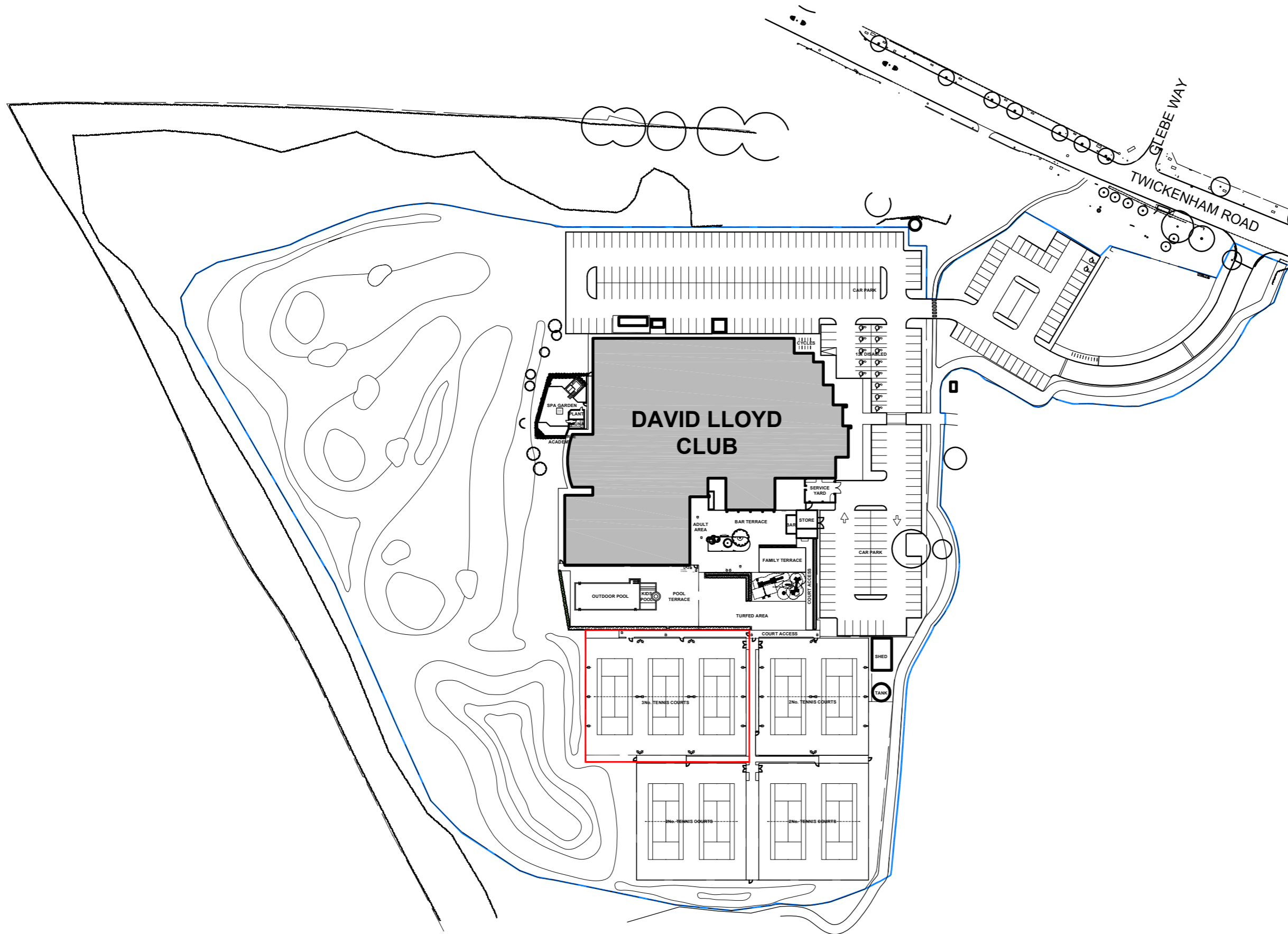
6.1 General Drainage Design Principles

The proposed development will not make any changes to the site levels or drained area on the site, and as such it is not proposed to make any changes to the existing site drainage system(s), as it would be impractical for such a minor development.

As discussed in Section 2.5 of this report, the existing surface water regime on the site has not been fully identified, but outdoor tennis courts on David Lloyd Club sites are typically constructed to drain either to underlying porous sub-bases, and/or to surrounding filter drains, with a positive discharge to the main club site's drainage system, and it is presumed this type of arrangement exists here. The proposed works will not involve any notable amendments to such an arrangement, therefore this existing arrangement will remain in place to manage surface water runoff from the development.

The development will therefore not cause any increase in flood risk either within the site itself or to adjacent properties.

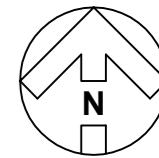
APPENDIX A – SITE LOCATION PLAN



NOTES:

0m 25 50
1:1250

KEY
 Ownership Boundary
 Application Boundary:



REVISION: P01 BY: HP CHECKED: MPB DATE: 18/10/2024
 PRE-APP ISSUE

STATUS

S4a | FOR PLANNING

CLIENT



PROJECT

**HAMPTON
 PROPOSED PADEL COURTS**

TITLE

LOCATION PLAN

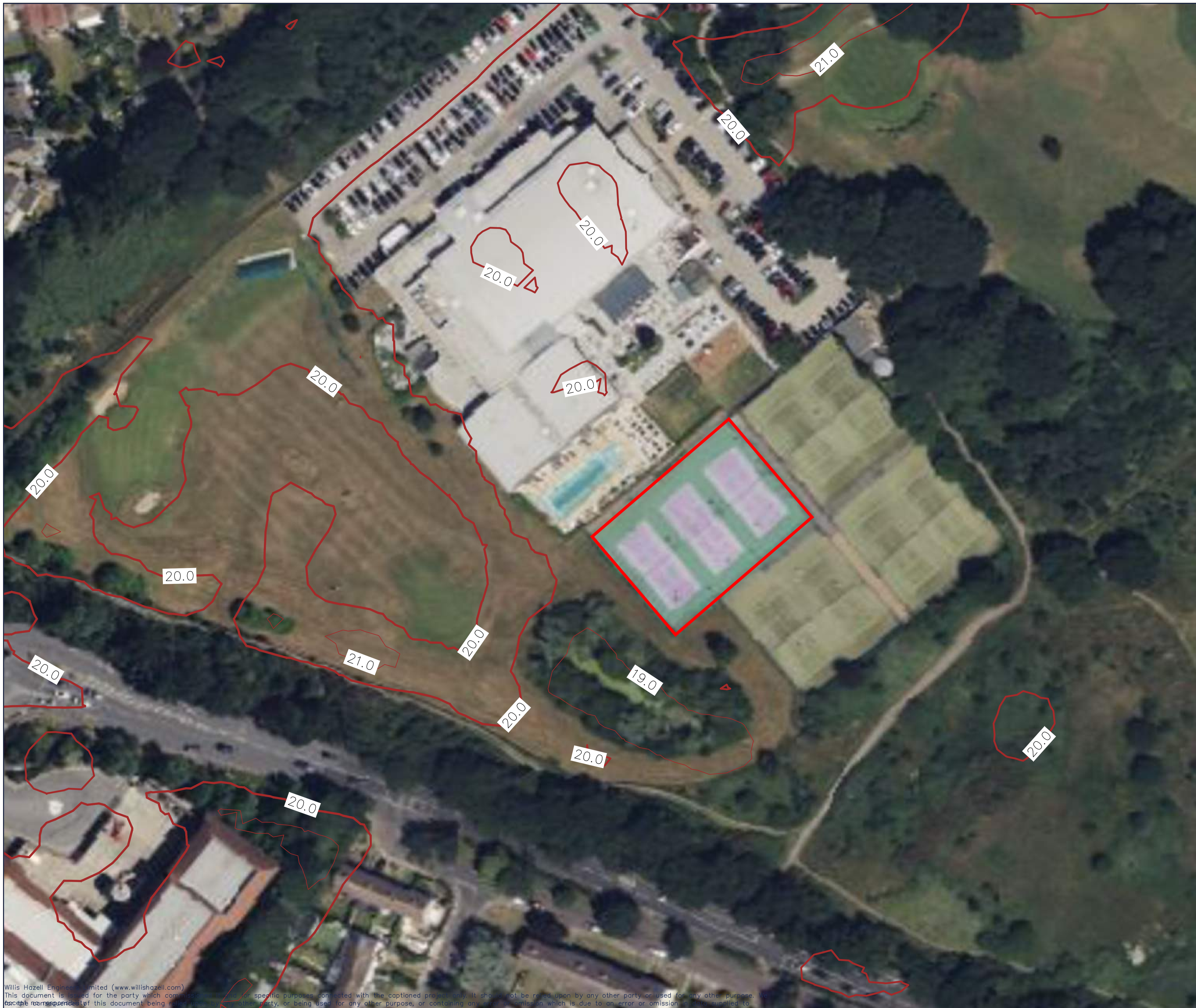
Hadfield Cawkwell Davidson

Broomgrove Lodge, 13 Broomgrove Rd, Sheffield, S10 2LZ T 0114 266 8181 www.hcd.co.uk

HCD PROJECT NO. 2023-154	SCALE 1:1250 @ A3	REV. P01
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PROJECT NO. 23154	ORIGINATOR HCD	VOLUME ZZ	LEVEL 00	TYPE DR	ROLE + NUMBER A-PL-001
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APPENDIX B – AERIAL PHOTOGRPAHY & LIDAR OVERLAY



Notes					
1. Do not scale from this drawing.					
2. Levels contours shown have been obtained from the Environment Agency's National LIDAR Programme 2022 LIDAR Composite Digital Terrain Model.					
Legend: -					
		Site Boundary			
		Major Contour Line (5m intervals)			
		Minor Contour Line (1m intervals)			
P01	09.12.2024	TF	ISSUED FOR PLANNING	RH	RH
Rev	Date	Drawn	Description	Chk'd	App'd
Status FOR INFORMATION					
Client David Lloyd — CLUBS —					
Contractor					
Structural Engineer Willis Hazell ENGINEERS					
Project Title David Lloyd Hampton Padel Courts					
Drawing Title Site Contours from LIDAR data (1m Spatial Resolution) Overlaid With Aerial Photography					
Suitability Status S2 - For Information					
WHE Project Number	Scale @				Rev
1035	A0	1:500			P01
Drawing Number DLCHN-WHE-XX-XX-DR-C-00001					

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 The user of this document is responsible for ensuring that it is not used for any other purpose, or containing any error or omission which is due to an error or omission of data supplied to the user.

APPENDIX C – THAMES WATER SEWER RECORDS



Willis Hazell Engineers
40

BRISTOL
BS8 1HP

Search address supplied Saks Hair
David Lloyd Leisure
Staines Road
Twickenham
TW2 5JD

Your reference David Lloyd Hampton

Our reference ALS/ALS Standard/2024_5089270

Search date 2 December 2024

Notification of Price Changes

From 1st April 2024 Thames Water Property Searches will be increasing the prices of its CON29DW Residential and Commercial searches along with the Asset Location Search. Costs will rise in line with RPI as per previous years, which is set at 6%.

Customers will be emailed with the new prices by February 28th 2024.

Any orders received with a higher payment prior to the 1st April 2024 will be non-refundable. For further details on the price increase please visit our website at www.thameswater-propertysearches.co.uk.



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



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



0800 009 4540

Search address supplied: Saks Hair, David Lloyd Leisure, Staines Road, Twickenham, TW2 5JD

Dear Sir / Madam

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

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

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

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

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

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

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0800 009 4540, or use the address below:

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

Email: searches@thameswater.co.uk

Web: www.thameswater-propertysearches.co.uk

Waste Water Services

Please provide a copy extract from the public sewer map.

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

TQ1371NE
TQ1372SW
TQ1371NW
TQ1271NE

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

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

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

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

For your guidance:

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

Clean Water Services

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

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



TQ1371NE
TQ1372SW
TQ1371NW
TQ1271NE

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

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

For your guidance:

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

Payment for this Search

A charge will be added to your suppliers account.

Further contacts:

Waste Water queries

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

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

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

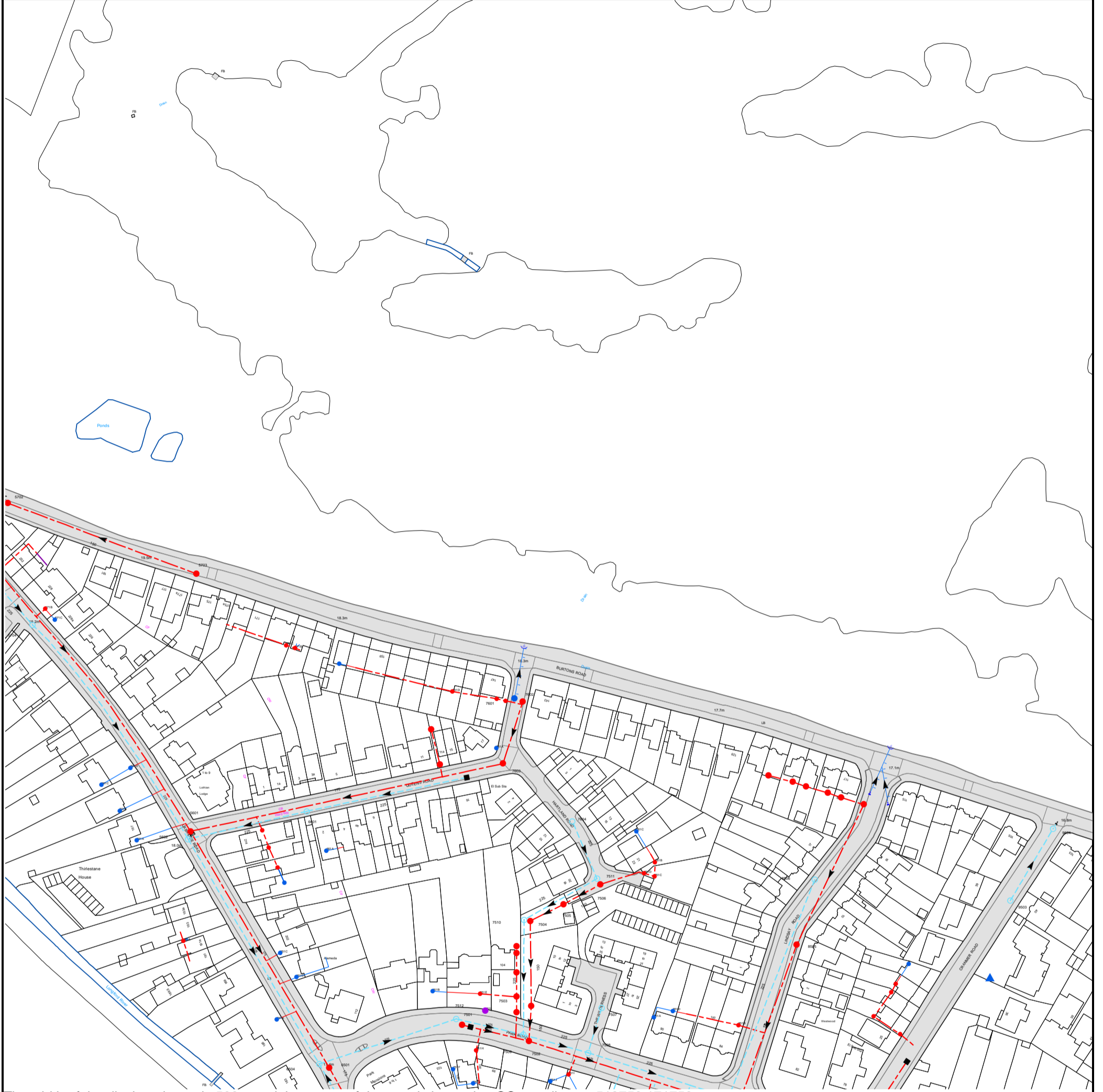
Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Clean Water queries

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

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

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 513750,171750

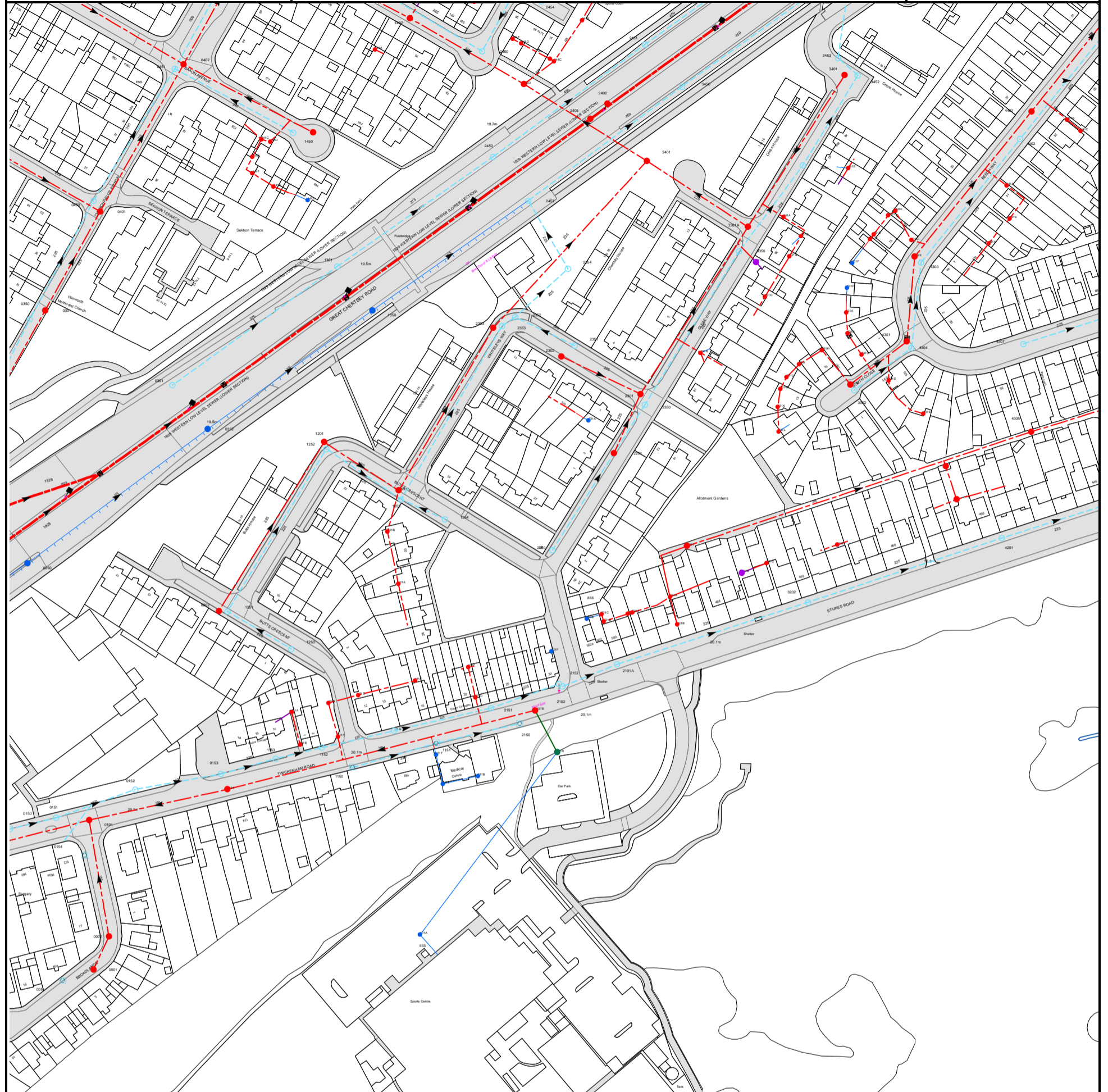
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual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

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

Manhole Reference	Manhole Cover Level	Manhole Invert Level
751G	n/a	n/a
751J	n/a	n/a
751I	n/a	n/a
751F	n/a	n/a
6501	17.46	13.95
6504	17.4	15.91
751H	n/a	n/a
7502	17.39	15.38
7509	17.45	15.6
7501	n/a	n/a
651A	n/a	n/a
7512	17.3	15.63
752T	n/a	n/a
7503	17.41	15.89
752V	n/a	n/a
751E	n/a	n/a
651B	n/a	n/a
75ZW	n/a	n/a
75ZX	n/a	n/a
651C	n/a	n/a
75ZY	n/a	n/a
551A	n/a	n/a
7504	17.49	16.22
7510	17.48	15.91
7505	17.41	16.34
652V	n/a	n/a
662Q	n/a	n/a
661A	n/a	n/a
5702	19.13	17.39
5704	19.11	16.6
571B	n/a	n/a
571C	n/a	n/a
561B	n/a	n/a
561A	n/a	n/a
5602	18.13	16.22
5601	18.14	14.49
5703	19.07	18.06
66YZ	n/a	n/a
662P	n/a	n/a
671C	n/a	n/a
671B	n/a	490
6601	17.82	15.56
662T	n/a	n/a
66ZY	n/a	n/a
66ZX	n/a	n/a
761D	n/a	n/a
761A	n/a	n/a
76ZY	n/a	n/a
7603	17.97	16.36
762Q	n/a	n/a
7601	n/a	n/a
7602	n/a	n/a
86ZX	n/a	n/a
8505	17.06	15.54
86ZW	n/a	n/a
8506	16.91	16.13
86ZV	n/a	n/a
862T	n/a	n/a
8601	17.07	15.72
85ZX	n/a	n/a
95ZW	n/a	n/a
95ZX	n/a	n/a
95ZV	n/a	n/a
95ZY	n/a	n/a
9503	16.92	16.31
9604	16.69	15.85
7604	17.29	16.49
7508	17.49	15.42
7511	16.96	16.27
7506	17.51	16.94
7507	17.3	16.1
761C	n/a	n/a
751D	n/a	n/a
751A	n/a	n/a
751C	n/a	n/a
761B	n/a	n/a
851D	n/a	n/a
851B	n/a	n/a
86ZY	n/a	n/a
751L	4	n/a
651D	n/a	n/a
561C	n/a	n/a
561D	n/a	n/a

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The width of the displayed area is 500m and the centre of the map is located at OS coordinates 513250,172250

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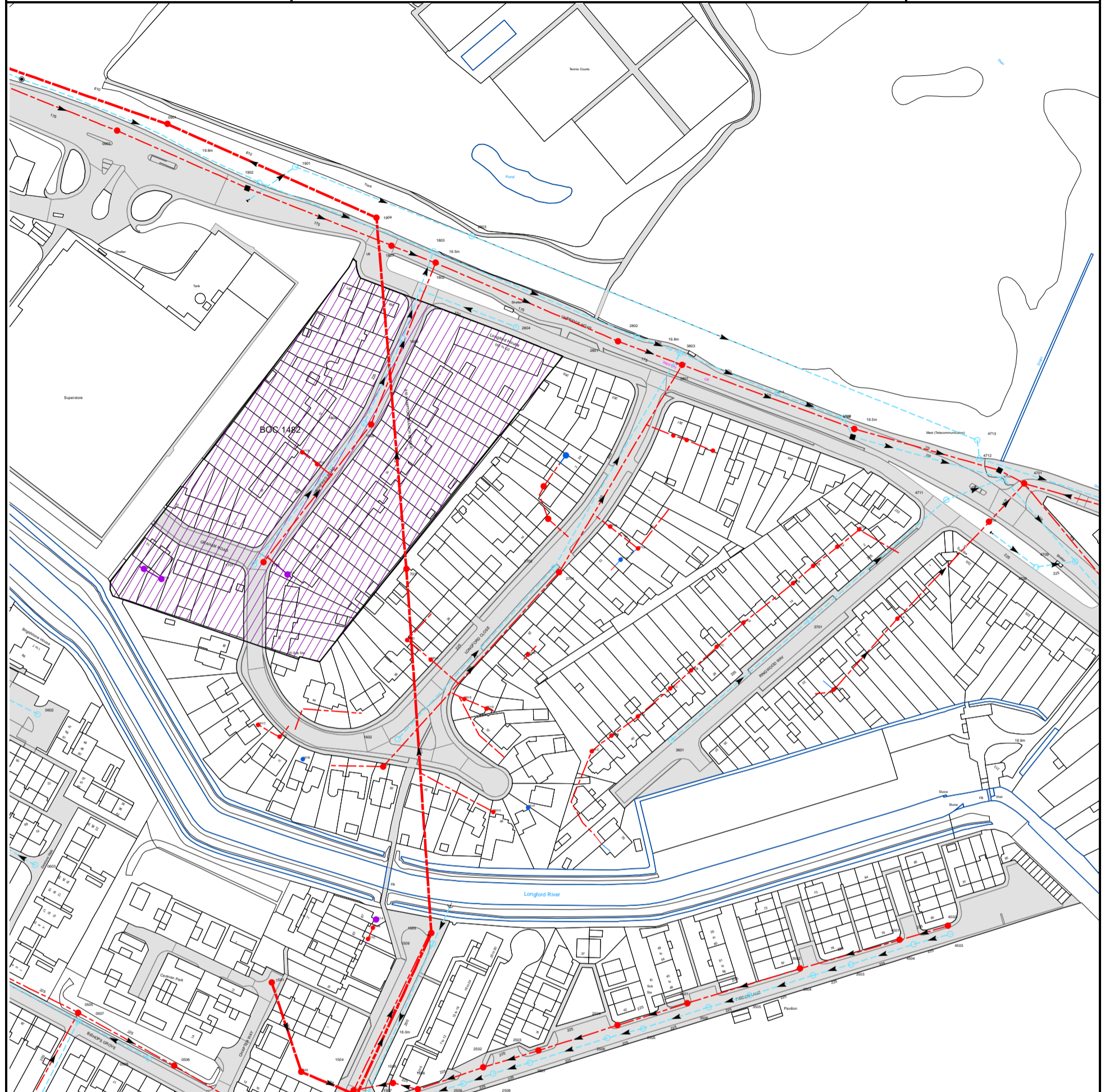
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NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
4305	n/a	n/a
4307	n/a	n/a
441C	n/a	n/a
441B	n/a	n/a
4401	n/a	n/a
441F	n/a	n/a
3202	n/a	n/a
321C	n/a	n/a
321E	n/a	n/a
4201	n/a	n/a
42ZX	n/a	n/a
42ZW	n/a	n/a
331L	n/a	n/a
431E	n/a	n/a
331K	n/a	n/a
3302	n/a	n/a
331M	n/a	n/a
3301B	n/a	n/a
431D	n/a	n/a
331J	n/a	n/a
331I	n/a	n/a
331C	n/a	n/a
331H	n/a	n/a
4304	n/a	n/a
4301	n/a	n/a
331B	n/a	n/a
331A	n/a	n/a
331O	n/a	n/a
331P	n/a	n/a
331F	n/a	n/a
4303	n/a	n/a
4302	n/a	n/a
331Q	n/a	n/a
431A	n/a	n/a
241B	n/a	n/a
2405	19.02	-6.09
2402	18.99	n/a
2451	18.54	15.36
2401	18.94	16.74
3450	18.55	15.34
3301A	18.68	17.01
341A	n/a	n/a
331G	n/a	n/a
3451	18.48	16.88
3453	18.31	16.41
3401	18.37	17.3
341B	n/a	n/a
3452	18.35	16.55
331D	n/a	n/a
331E	n/a	n/a
441D	n/a	n/a
441E	n/a	n/a
431C	n/a	n/a
441A	n/a	n/a
431B	n/a	n/a
4402	n/a	n/a
1151	n/a	19.24
111E	n/a	n/a
211C	n/a	n/a
211D	n/a	n/a
211B	n/a	n/a
2151	20	18.64
2150	n/a	n/a
221F	n/a	n/a
211A	n/a	n/a
2152	20.13	18.64
2102	n/a	n/a
221B	n/a	n/a
221C	n/a	n/a
221D	n/a	n/a
2101A	n/a	n/a
221E	n/a	n/a
221A	n/a	n/a
321A	n/a	n/a
321B	n/a	n/a
141B	n/a	n/a
141F	n/a	n/a
141C	n/a	n/a
141D	n/a	n/a
141G	n/a	n/a
1450	18.79	17.05
141E	n/a	n/a
1401	18.9	16.78
141A	n/a	n/a
1402	16.55	15.76
241E	n/a	n/a
2450	18.7	16.15
2452	18.92	15.65
241F	n/a	n/a
241D	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
2403	18.8	15.95
2453	18.91	15.69
2454	18.05	16.8
241C	n/a	n/a
0202	19.94	18
0153	20.29	18.84
1251	19.94	18.49
1153	20.25	18.76
1250	20.15	18.84
111A	n/a	n/a
111B	n/a	n/a
1152	20.09	18.68
111E	n/a	n/a
111F	n/a	n/a
1150	n/a	19.41
111D	n/a	n/a
111G	n/a	n/a
111C	n/a	n/a
111F	n/a	n/a
0352	19.18	16.43
1201	19.91	17.64
1252	19.89	18.04
1351	19.14	16.02
1350	19.15	16.09
121B	n/a	n/a
121A	n/a	n/a
1202	19.76	17.42
1253	19.75	17.88
1254	19.8	18.13
2303	19.32	18.06
2353	19.32	17.55
2352	19.22	17.29
2250	19.98	18.38
2302	19.1	17.73
2354	19.16	16.46
2351	19.15	17.64
231A	n/a	n/a
2201	19.54	17.59
2301	19.22	17.41
2350	19.24	17.87
3201	n/a	n/a
331R	n/a	n/a
3350	18.83	17.38
321D	n/a	n/a
331N	n/a	n/a
0451	18.6	16.57
0402	18.62	15.86
0351	19.16	16.45
0350	19.16	17.21
0301	19.13	16.62
0401	18.92	16.32
0450	18.91	16.9
0154	n/a	n/a
0150	20.16	18.89
0151	20.25	18.91
0152	20.26	18.84
0250	19.31	16.86
0051	n/a	n/a
0001	20.1	18.95
0002	20.24	18.79
101A	n/a	n/a
0101	20.17	18.25
1101	20.26	18.52
2101B	20.18	19.01

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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
4710	n/a	n/a
4701	19.31	15.35
4708	19.29	17.49
4709	n/a	n/a
361B	n/a	n/a
3506	17.93	n/a
37ZY	n/a	n/a
371C	n/a	n/a
371D	n/a	n/a
3505	n/a	n/a
381A	n/a	n/a
371B	n/a	n/a
3502	18.07	n/a
3701	19.44	17.69
3504	17.97	n/a
371E	n/a	n/a
361A	n/a	n/a
371F	n/a	n/a
381B	n/a	n/a
3503	18	n/a
3802	n/a	n/a
371A	n/a	n/a
471A	n/a	n/a
4501	18.27	n/a
4504	18.03	n/a
4711	19.46	17.18
4502	n/a	n/a
4503	18.04	n/a
4713	n/a	n/a
4712	19.33	15.46
4702	19.44	16.19
1509	18.04	n/a
1503	19.22	-.66
261H	n/a	n/a
261F	n/a	n/a
261C	n/a	n/a
3601	19.42	18.4
261B	n/a	n/a
261A	n/a	n/a
261D	n/a	n/a
261E	n/a	n/a
361C	n/a	n/a
271D	n/a	n/a
2701	19.17	16.79
2702	19.14	17.52
271C	n/a	n/a
271A	n/a	n/a
271B	n/a	n/a
27ZT	n/a	n/a
1501	18.36	17.13
151C	n/a	n/a
151B	n/a	n/a
151A	n/a	n/a
1601	n/a	n/a
161B	n/a	n/a
1602	n/a	n/a
161D	n/a	n/a
161C	n/a	n/a
161A	n/a	n/a
171D	n/a	n/a
071B	n/a	n/a
171A	n/a	n/a
071A	n/a	n/a
703	19.29	-1.19
1701	19.15	18.34
1702	19.19	17.41
1403	17.87	14.01
1507	n/a	n/a
1504	17.83	n/a
1506	18.06	n/a
2509	n/a	n/a
1505	18.08	n/a
2508	n/a	n/a
1502	17.6	15.97
2502	17.88	n/a
0506	18.05	14.72
2507	17.93	n/a
0508	18.13	17.09
2503	18.09	n/a
2506	n/a	n/a
2505	17.99	n/a
2504	17.96	n/a
0507	18.2	16.67
0505	18.19	14.91
3501	17.99	n/a
27ZW	n/a	n/a
171C	n/a	n/a
27ZY	n/a	n/a
171B	n/a	n/a
37ZX	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
38ZY	n/a	n/a
1806	19.06	16.99
1804	19.11	18.08
3801	19.77	16.3
3803	19.86	17.29
2801	19.87	16.23
1805	19.15	17.98
2802	19.86	17.5
2804	19.56	18.8
1802	19.54	16.59
1803	19.67	17.84
1807	19.48	16.66
2803	n/a	n/a
1904	19.37	-1.72
1902	19.68	17.01
1901	19.64	17.97
0903	19.76	17.39
0901	19.61	-2.39
0603	n/a	n/a
0602	18.99	17.84

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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

- 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.

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

- 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.

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

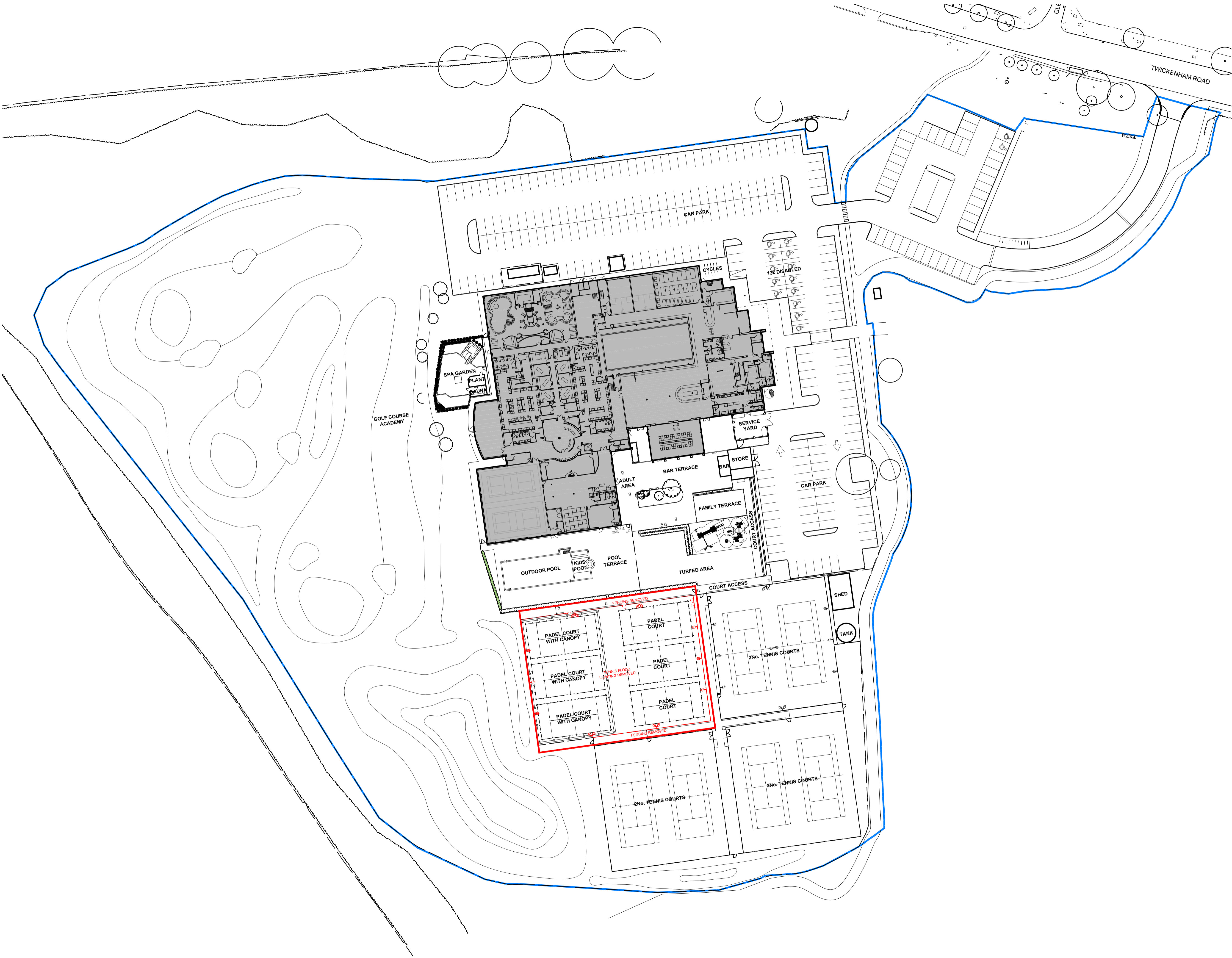
Lines denoting areas of underground surveys, etc.

- Agreement
- Chamber
- Operational Site

Ducts or Crossings

- Casement
 - Conduit Bridge
 - Subway
 - Tunnel
- Ducts may contain high voltage cables. Please check with Thames Water.

APPENDIX D – PROPOSED SITE PLAN



NOTES

0m 10 20 30 40 50
1:500

KEY
 Ownership Boundary
 Application Boundary: 2234 sqm / 0.52 acres

ISSUED: P01 BY: HP CHECKED: MPB DATE: 18/10/2024
 PRE-APP ISSUE

STATUS
S4a | FOR PLANNING

CLIENT
**David Lloyd
 CLUBS**

PROJECT
**HAMPTON
 PROPOSED PADEL COURTS**

TITLE
PROPOSED SITE PLAN

Hadfield Cawkwell Davidson
 Broomgrove Lodge, 13 Broomgrove Rd, Sheffield, S10 2LZ T 0114 266 8181 www.hcd.co.uk

HCD PROJECT NO. 2023-154	SCALE 1:500 @ A1	REV P01
PROJECT NO. 23154	ORIGINATOR HCD	VOLUME A0
LEVEL 00	TYPE DR	ROLE - NUMBER A-PL-003

APPENDIX E – FLUVIAL AND TIDAL FLOOD RISK MAPPING EXTRACT

Legend

Strategic Flood Risk Assessment - Fluvial and Tidal Flood Risk Map

- Beverley Brook 1in100yr 20CC Extent © Environment Agency
- Borough Boundary
- Critical Drainage Area
- Detailed River Network © Environment Agency
 - Main River
 - Ordinary Watercourse
 - Main River Culvert
 - Ordinary Watercourse Culvert
- Flood Alert Area © Environment Agency (EA ref Afa055)
- Flood Warning Area © Environment Agency (EA ref Afa054)
- Flood Defence © Environment Agency
- Flood Reduction in Risk due to Defence © Environment Agency
- Flood Storage Area (none in LBRUT) © Environment Agency
- Floodzone 2 © Environment Agency
- Floodzone 3 © Environment Agency
- Flood Zone 3a SFRA LBR
- Flood Zone 3b Fluvial & Tidal - SFRA LBR
- Historic Flood Map © Environment Agency
- River Crane 1in100yr 25% Climate Change Allowance Extent © Environment Agency
- River Crane 1in100yr 35% Climate Change Allowance Extent © Environment Agency
- River Crane 1in100yr 70% Climate Change Allowance Extent © Environment Agency
- Thames Estuary 2100' Study Extreme Water Level © Environment Agency
- Interpolated
- Modelled
- Tidal Defence Breach © Environment Agency
- Tidal Breach Inundation © Environment Agency
- Town Centre



- MasterMap Line
- MasterMap Area
- Aerial 2016
- Richmond_Post_WW2

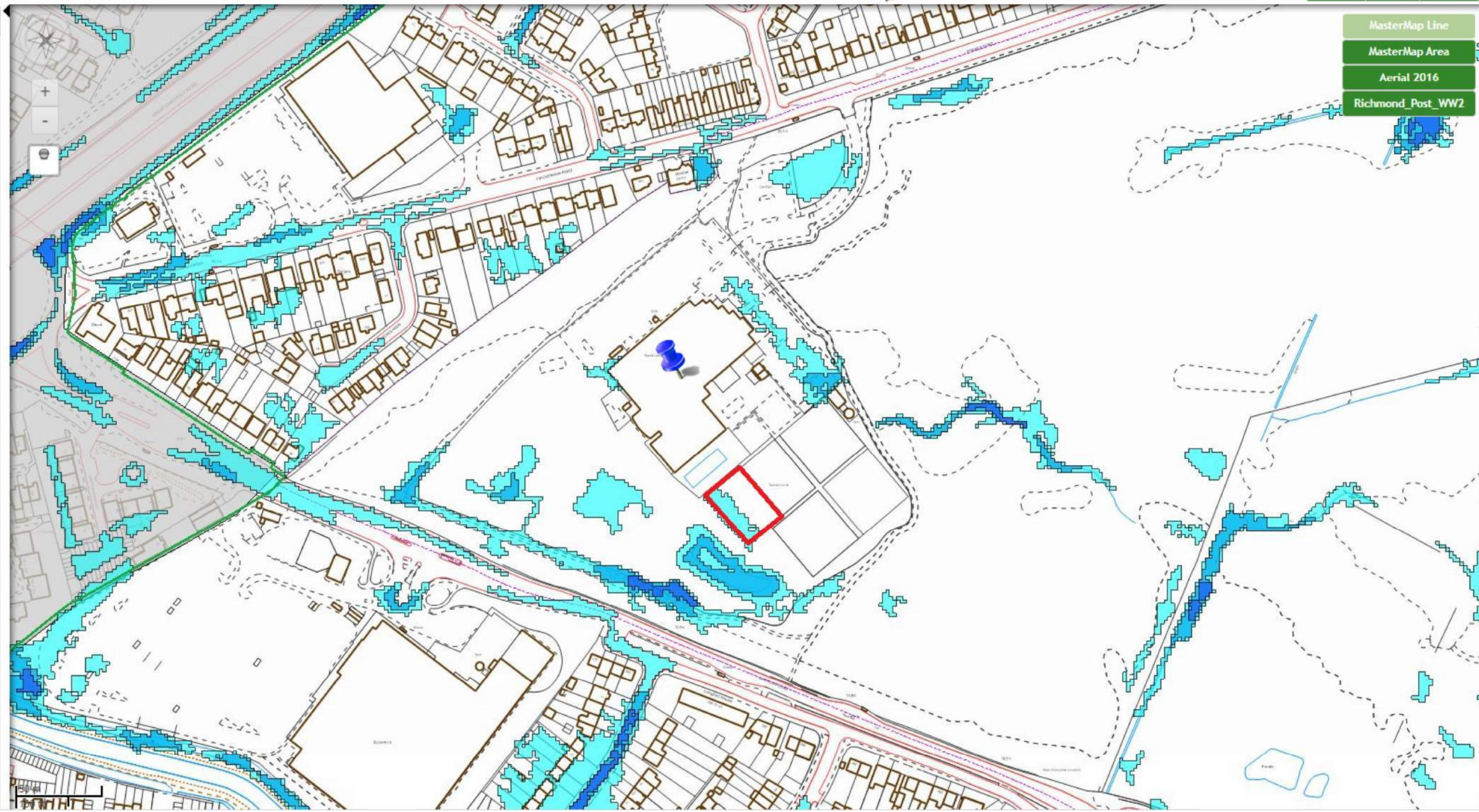
APPENDIX F – SURFACE WATER FLOOD RISK MAPPING EXTRACT (RISK OF FLOODING)

Legend

Strategic Flood Risk Assessment -
Surface Water Flood Risk Map

- Borough Boundary
- Detailed River Network @ Environment Agency
- Natural Flood Management Completed Project @ Environment Agency
- Risk of Flooding from Surface Water depth 1 in 30 chance @ Environment Agency
- Risk of Flooding from Surface Water Depth 1 in 100 chance @ Environment Agency
- Risk of Flooding from Surface Water Depth 1 in 1000 chance @ Environment Agency
- Risk of Flooding from Surface Water Extent 1 in 30 Chance @ Environment Agency
- Risk of Flooding from Surface Water Extent 1 in 100 Chance (ie 1 in 100 year Surface Water Extent) @ Environment Agency
- Risk of Flooding from Surface Water Extent 1 in 1000 Chance @ Environment Agency
- Town Centre

- [MasterMap Line](#)
- [MasterMap Area](#)
- [Aerial 2016](#)
- [Richmond_Post_WW2](#)



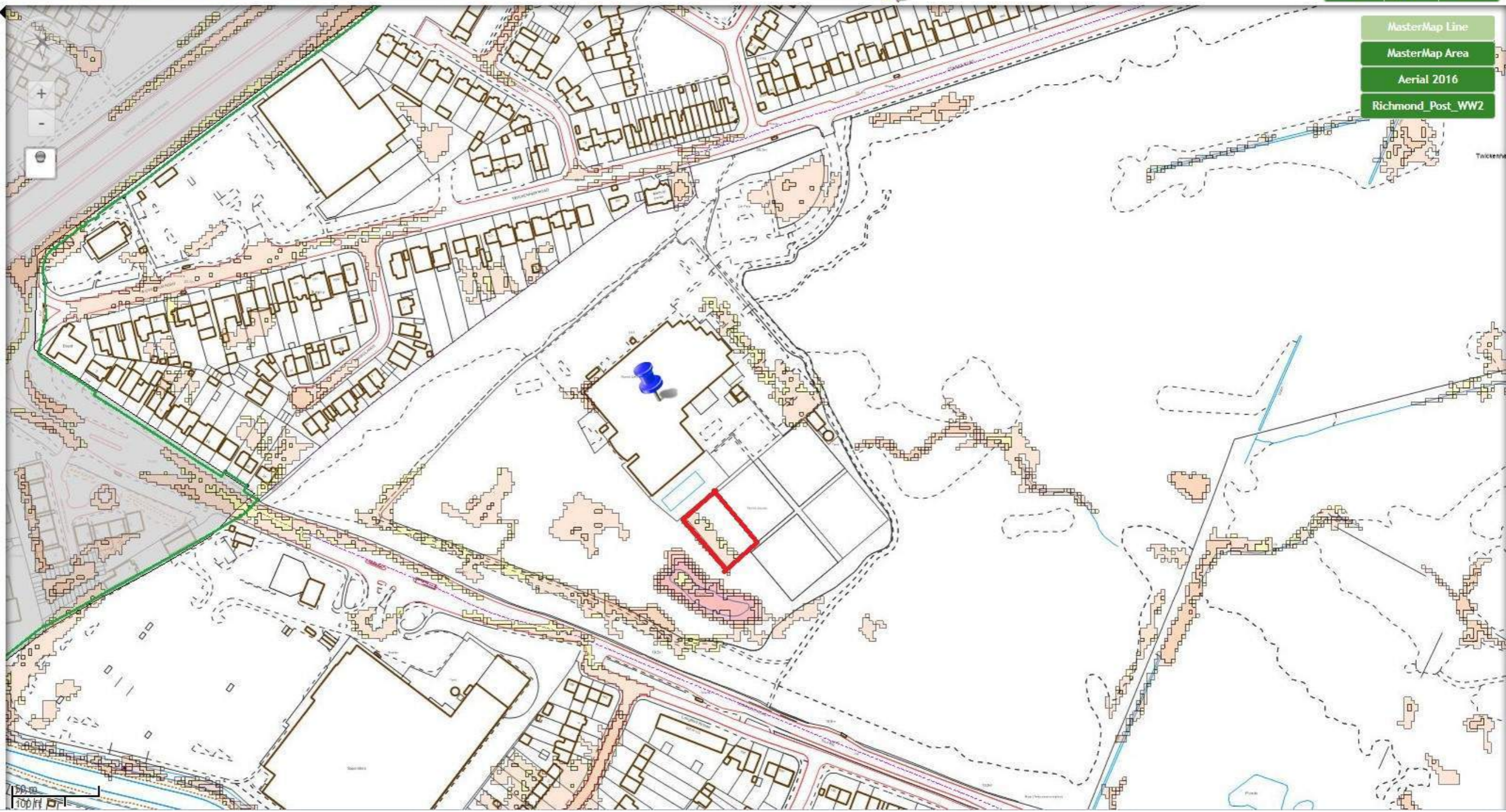
APPENDIX G – SURFACE WATER FLOOD DEPTH MAPPING EXTRACT

Legend

Strategic Flood Risk Assessment -
Surface Water Flood Risk Map

- Borough Boundary
 - Detailed River Network © Environment Agency
 - Natural Flood Management Completed Project © Environment Agency
 - Risk of Flooding from Surface Water depth 1 in 30 chance © Environment Agency
 - Risk of Flooding from Surface Water Depth 1 in 100 chance © Environment Agency
 - Risk of Flooding from Surface Water Depth 1 in 1000 chance © Environment Agency
 - Risk of Flooding from Surface Water Extent 1 in 30 Chance © Environment Agency
 - Risk of Flooding from Surface Water Extent 1 in 100 Chance (ie 1 in 100 year Surface Water Extent) © Environment Agency
 - Risk of Flooding from Surface Water Extent 1 in 1000 Chance © Environment Agency
 - Town Centre
- 0.00 - 0.15m
- 0.15 - 0.30m
- 0.30 - 0.60m
- 0.60 - 0.90m
- 0.90 - 1.20m
- > 1.20m

- MasterMap Line
- MasterMap Area
- Aerial 2016
- Richmond_Post_WW2

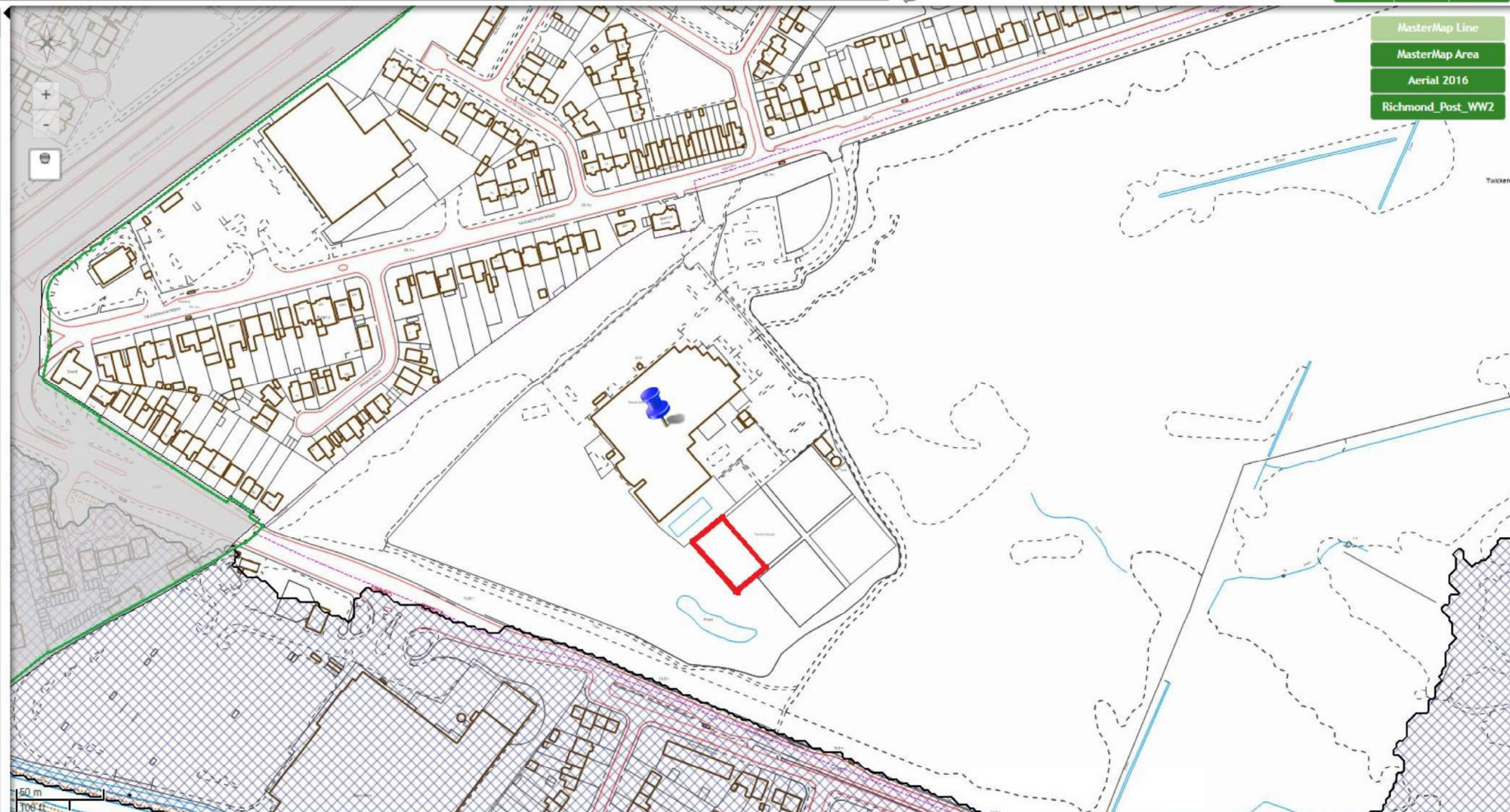


APPENDIX H – THROUGHFLOW CATCHMENT AREA MAPPING EXTRACT

Legend

Strategic Flood Risk Assessment - Groundwater Sewer Artificial Flood Risk Map

- Area Susceptible To Groundwater Flood © Environment Agency
 - less than 25%
 - between 25% and 49.9%
 - between 50% and 74.9%
 - 75% or more
- Borough Boundary
- Detailed River Network © Environment Agency
 - Main River
 - Ordinary Watercourse
 - Main River Culvert
 - Ordinary Watercourse Culvert
- Incident - Thames Water
- Increased Potential for Elevated Groundwater - GLA Drain London
 - Consolidated
 - Consolidated & Permeable Superficial
 - Permeable Superficial
- Sustainable Drainage Systems (SuDS)
- Throughflow Catchment Area (Throughflow and Groundwater Policy Zone)
- Potential Throughflow Catchment Area
- Town Centre



- MasterMap Line
- MasterMap Area
- Aerial 2016
- Richmond_Post_WW2

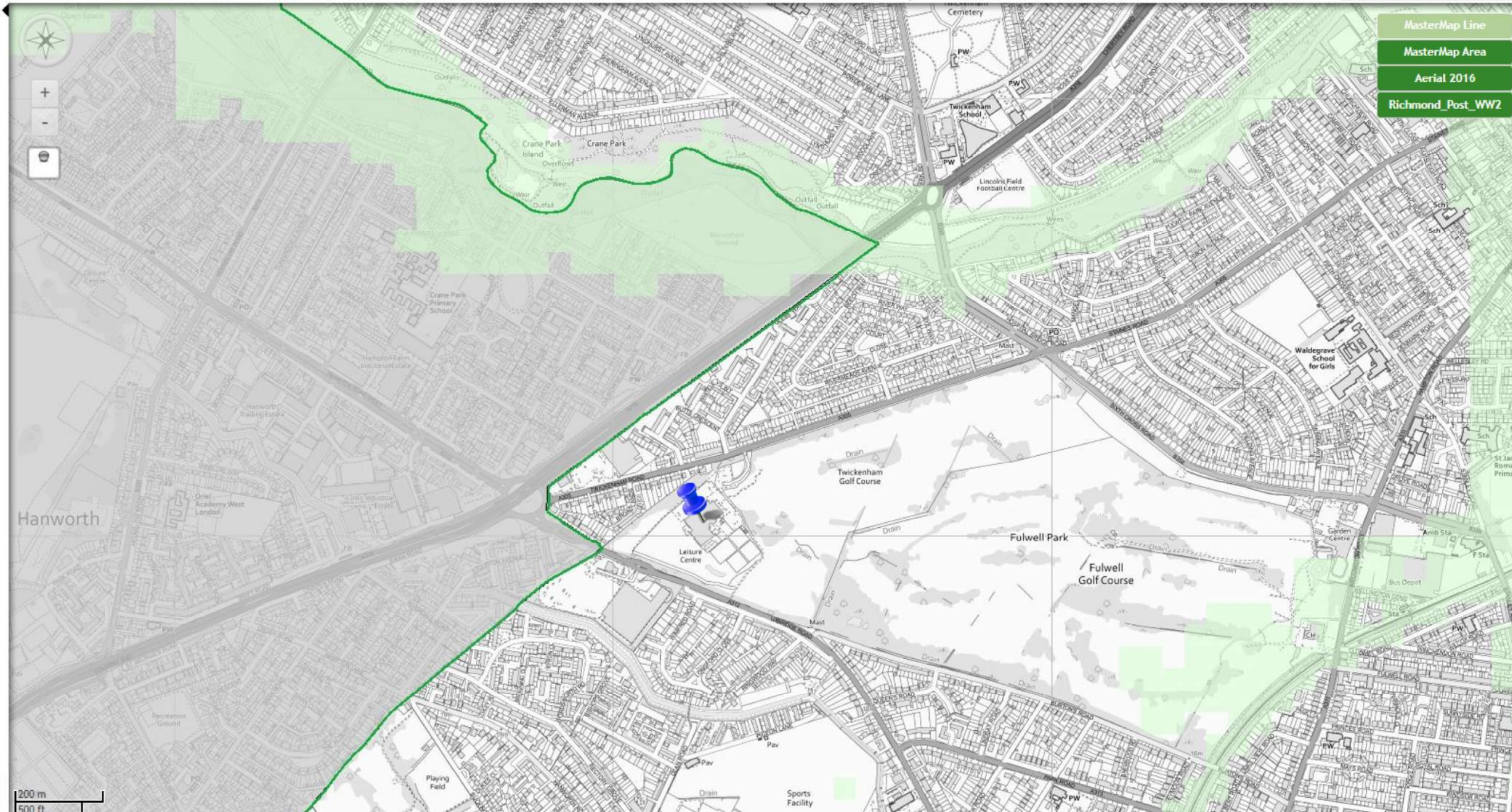
50 m
100 ft

APPENDIX I – INCREASED RISK OF ELEVATED GROUNDWATER MAPPING EXTRACT

Legend

Strategic Flood Risk Assessment - Groundwater Sewer Artificial Flood Risk Map

- Area Susceptible To Groundwater Flood © Environment Agency
 - less than 25%
 - between 25% and 49.9%
 - between 50% and 74.9%
 - 75% or more
- Borough Boundary
- Detailed River Network © Environment Agency
 - Main River
 - Ordinary Watercourse
 - Main River Culvert
 - Ordinary Watercourse Culvert
- Incident - Thames Water
- Increased Potential for Elevated Groundwater - GLA Drain London
 - Consolidated
 - Consolidated & Permeable Superficial
 - Permeable Superficial
- Sustainable Drainage Systems (SuDS)
- Throughflow Catchment Area (Throughflow and Groundwater Policy Zone)
- Potential Throughflow Catchment Area
- Town Centre



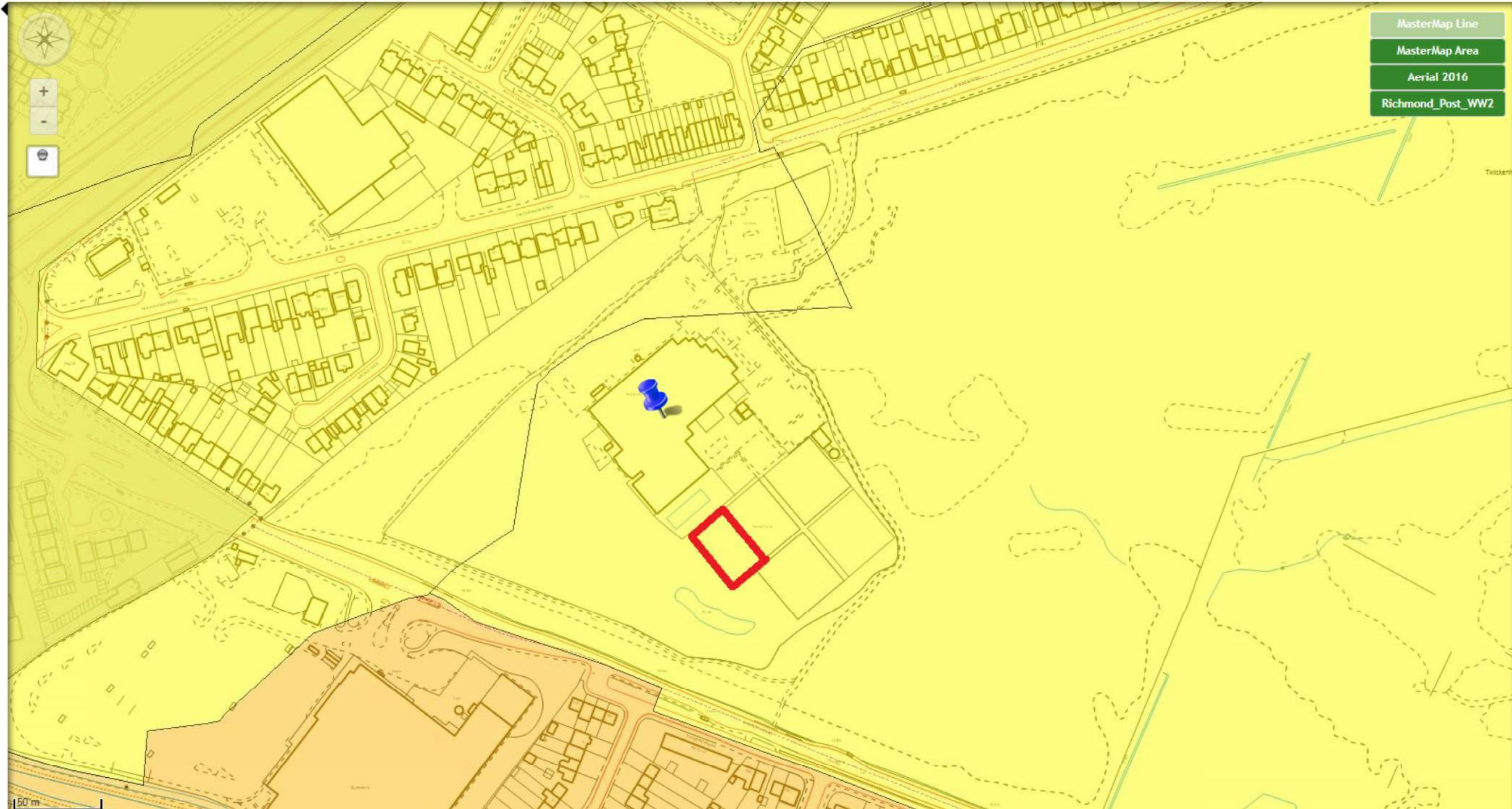
200 m
500 ft

APPENDIX J – SEWER FLOODING INCIDENTS MAPPING EXTRACT

Legend

Strategic Flood Risk Assessment -
Groundwater Sewer Artificial Flood
Risk Map

- Area Susceptible To Groundwater Flood © Environment Agency
 - less than 25%
 - between 25% and 49.9%
 - between 50% and 74.9%
 - 75% or more
- Borough Boundary
- Detailed River Network © Environment Agency
 - Main River
 - Ordinary Watercourse
 - Main River Culvert
 - Ordinary Watercourse Culvert
- Incident - Thames Water
 - 0 to 10 incidents reported
 - 10 to 20 incidents reported
 - 20 to 30 incidents reported
 - 30 to 40 incidents reported
- Increased Potential for Elevated Groundwater - GLA Drain London
 - Consolidated
 - Consolidated & Permeable Superficial
 - Permeable Superficial
- Sustainable Drainage Systems (SuDS)
- Throughflow Catchment Area (Throughflow and Groundwater Policy Zone)
- Potential Throughflow Catchment Area
- Town Centre



- MasterMap Line
- MasterMap Area
- Aerial 2016
- Richmond_Post_WW2

APPENDIX K – THAMES WATER SEWER FLOODING HISTORY ENQUIRY

Sewer Flooding

History Enquiry



Property Searches

Willis Hazell Engineers

Search address supplied Saks Hair
David Lloyd Leisure
Staines Road
Twickenham
TW2 5JD

Your reference David Lloyd Hampton

Our reference SFH/SFH Standard/2024_5089272

Received date 2 December 2024

Search date 2 December 2024



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



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



0800 009 4540

Sewer Flooding

History Enquiry



Search address supplied: Saks Hair, David Lloyd Leisure, Staines Road, Twickenham, TW2 5JD

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



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0800 009 4540

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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