

Flood Risk Assessment

December 2019

The logo consists of a dark blue square with the letters 'EAS' in white, bold, sans-serif font.

EAS

Allport House, Cowley Business Park, High Street, Cowley

Kings Oak Brunel LLP

Document History

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B	Final	ML	SA	SA	18/12/2019
C					
D					
E					

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1 Introduction

- 1.1 This Flood Risk Assessment (FRA) has been prepared in support of an application by Kings Oak Brunel LLP for a proposed development at Allport House, Cowley Business Park, High Street, Cowley, UB8 2AD. A location plan is included in **Appendix A**.
- 1.2 The main existing office building already has permission to be converted to create 28 self-contained residential units comprised of:
- 10 x 1-bedroom units
 - 12 x 2-bedroom units
 - 6 x studio flats
- 1.3 The proposed development consists of a replacement/rebuild of the roof to create a new second floor mezzanine to create 9 further residential units over two floors comprised of:
- 6 x 3-bedroom units
 - 3 x 2-bedroom units
- 1.4 The contents of this FRA are based on the advice set out in The National Planning Policy Framework (NPPF) and the Technical Guidance to the NPPF revised in July 2018 and updated February 2019.
- 1.5 This document includes:
- Section 2 - describes relevant policy;
- Section 3 - site description, including site levels, proximity to watercourses etc.;
- Section 4 - outline potential sources of flooding and any mitigation measures required;
- Section 5 - describes the existing site hydrology and outlines a surface water drainage strategy;
- Section 6 - provides a summary and conclusions.

2 Policy Context

Introduction

2.1 This section sets out the policy context. The contents of this FRA are based on the advice set out in The National Planning Policy Framework (NPPF) published in March 2012, revised in July 2018 and updated February 2019, and the Planning Practice Guidance (PPG) published March 2014, which is updated on an ad hoc basis.

2.2 Paragraph 164 footnote 50 of the NPPF states:

“A site-specific flood risk assessment should be provided for all developments 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.”

2.3 The flood risk zones are defined as:

- Flood Zone 1- This zone comprises land assessed as having a less than 1 in 1,000 annual probability of river flooding (<0.1%)
- Flood Zone 2- This zone comprises land assessed as having between a 1 in a 100 and 1 in 1,000 annual probability of river flooding.
- Flood Zone 3a- This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), and for tidal flooding at least a 0.5% annual probability of flooding from tidal sources.
- Flood Zone 3b- This zone comprises land where water has to flow or be stored in times of flood.

2.4 Paragraph 155 discusses the suitability of development location, particularly with regard to future risks induced by climate change:

“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”.

2.5 Paragraph 156 of the National Planning Policy Framework (NPPF) states:

“Strategic policies should be informed by a strategic flood risk assessment, and should manage flood risk from all sources. They should consider cumulative impacts in, or affecting, local areas susceptible to flooding, and take account of advice from the Environment Agency and other relevant flood risk management authorities, such as lead local flood authorities and internal drainage boards”.

2.6 The Flood Map for Planning shows the site to be located in Flood Zone 1, at ‘low’ risk of flooding from fluvial sources. This is considered to be an area with less than 1 in 1000 annual chance of flooding. All flood water is contained within the banks of the Fray’s River however, as there is a bridge directly over the river the mapping doesn’t differentiate

between the bridge over the river and the river bed itself. The EA Flood Map has been enclosed in **Appendix B**.

- 2.7 It should be noted that within the PPG office use buildings are deemed to be a “less vulnerable” land use in terms of flood risk.

Local Policy

- 2.8 The Local Plan Part 2 is yet to be formally adopted by the London Borough of Hillingdon Council but once adopted will provide a development strategy for the borough up until 2026.
- 2.9 The Development Management Policies should be given significant weight following the Inspector’s report and required main modifications in October 2019.
- 2.10 Policy DMEI 9 ‘Management of Flood Risk’ sets out the requirements for a development within Flood Zone 2 and 3. However, as the development is wholly within Flood Zone 1 it is considered that the development meets the requirements of DMEI 9.
- 2.11 As the proposals include additional dwellings within the roof there are no changes proposed to the existing drainage.

West London Strategic Flood Risk Assessment (SFRA) 2018

- 2.12 The West London SFRA was published in 2018 with the overarching aim “to provide the evidence base for ensuring development is steered away from areas identified most at risk from various flood sources, reducing the risk of flooding to its residents and buildings.”
- 2.13 The most relevant part of the SFRA for this report is Section 4 specifically 4.2.3. Part of which can be seen below.
- 2.14 The first paragraph of 4.2.3 relating to Site-Specific Flood Risk Assessments (FRA) states:
- “Site-specific FRAs should be proportionate to the degree of flood risk, making the best use of available information. They should also be appropriate to the scale, nature and location of the development. For example, developments such as single house extensions would generally require a less detailed assessment as they tend not to significantly increase the number of people present in an area at risk of flooding. Conversely, new developments comprising of multiple houses in a similar location would generally require FRAs with greater detail.”*
- 2.15 This site-specific FRA has been produced to provide an assessment which is proportionate to the degree of the flood risk.

London Borough of Hillingdon Surface Water Management Plan (SWMP) (2013)

- 2.16 The London Borough of Hillingdon SWMP was published in 2013 as part of the Drain London Project. The document outlines the preferred surface water management strategy in Hillingdon and considers flooding from sewers, drains, groundwater and runoff from land and identifies Critical Drainage Areas (CDA).
- 2.17 This site was not identified as being within a CDA within the SWMP.

The London Plan 2016

- 2.18 Chapter Five of the London Plan provides “London’s response to climate change” including the key policy for this report which is Policy 5.12 Flood Risk Management.
- 2.19 Policy 5.12 Flood Risk Management

“Strategic

A) The Mayor will work with all relevant agencies including the Environment Agency to address current and future flood issues and minimise risks in a sustainable and cost effective way.

Planning decisions

B) Development proposals must comply with the flood risk assessment and management requirements set out in the NPPF and the associated technical Guidance on flood risk over the lifetime of the development and have regard to measures proposed in Thames Estuary 2100 (TE2100 – see paragraph 5.55) and Catchment Flood Management Plans.

C) Developments which are required to pass the Exceptions Test set out in the NPPF and the Technical Guidance will need to address flood resilient design and emergency planning by demonstrating that: a the development will remain safe and operational under flood conditions b a strategy of either safe evacuation and/or safely remaining in the building is followed under flood conditions c key services including electricity, water etc will continue to be provided under flood conditions d buildings are designed for quick recovery following a flood.

D) Development adjacent to flood defences will be required to protect the integrity of existing flood defences and wherever possible should aim to be set back from the banks of watercourses and those defences to allow their management, maintenance and upgrading to be undertaken in a sustainable and cost effective way.”

The Draft New London Plan

- 2.20 Whilst the plan is yet to be adopted some weight must be given to the new policies. The draft new London Plan changes the policy numbers for Flood Risk Management to SI12 but the content is very similar.
- 2.21 As the site is at very low risk of flooding but is in close proximity to Fray’s River, part C of SI12 states:

“Development proposals should ensure that flood risk is minimised and mitigated and that residual risk is addressed. This should include, where possible, making space for water and aiming for development to be set back from the banks of watercourses.”

As the proposals are to provide additional dwellings within a replacement roof of the existing office building this does not reduce the existing buffer between the building and the Fray’s River.

3 Existing Site Assessment

Site Description

- 3.1 The development site is at Allport House, Cowley Business Park, High Street, Cowley, UB8 2AD. It is almost completely impermeable, consisting mainly of former agricultural buildings as well as two residential buildings with associated concrete hardstanding and some grassed areas. For the purposes of this assessment the site has been considered as brownfield.
- 3.2 The site is on the south side of Cowley Business Park Road and to the west of Cowley Road with residential areas to the north and south and the business park to the west. A location plan is contained in **Appendix A**.
- 3.3 The proposed development will include an additional 9 residential units to the previously approved 28 unit residential conversion of Allport House. The new 9 units will be accommodated within the replacement roof with a new second floor mezzanine. The proposed development plans are included at **Appendix B**.

Local Watercourses

- 3.4 The Fray's River is located along the western boundary of the site. There is an existing area of parking which extends directly over the river in the form of a bridge. This area of parking is proposed to become bicycle storage as part of this development but will not require any changes that will impact the river.

Site Levels

- 3.5 A topographical survey enclosed in **Appendix D** shows the site generally falls from east to west and south to north. The bridge over the Fray's River is approximately 180mm higher than surrounding areas. The south western boundary is as high as 10.16m AOD and the entrance gates on the north western boundary are the lowest on the site at 8.65m AOD.

Sewer Records

- 3.6 The Thames Water sewer records enclosed at **Appendix G** show that the nearest foul sewer is to the south of the site in Barchester Close.
- 3.7 A CCTV survey confirms that foul drainage from the site currently discharges to the south of the site towards Barchester Close a copy of the drawing from the CCTV survey has been included in **Appendix H**.

Geology

- 3.8 With reference to the British Geological Survey online mapping, the site is located within an area with a bedrock of London Clay Formation - Clay, Silt And Sand with Langley Silt Member – Clay and Silt superficial deposits recorded.

4 Potential Sources of Flooding

Fluvial

- 4.1 A copy of the Environment Agency's Flood Map is enclosed in **Appendix C**. The mapping shows the majority of the site to be located in Flood Zone 1, at 'Low' risk of flooding from fluvial or tidal sources. Areas in Flood Zone 1 have a less than 1 in 1000 probability of flooding each year.
- 4.2 The flood map shows that all flood water is contained within the banks of the river adjacent to the site. However, as the map cannot differentiate between the river and the bridge above it, it appears that the bridge is at risk of flooding. However, the topographical survey in **Appendix D** shows that the bridge is raised at least 180mm above surrounding ground areas within the car park which are all shown to be within Flood Zone 1 therefore it can be confirmed that the bridge is also in Flood Zone 1.
- 4.3 The Environment Agency (EA) were contacted for flood levels to prove above reasonable doubt that the bridge is within Flood Zone 1 with modelled flood levels however, the EA do not hold any records for this section of the Fray's River. A copy of the Environment Agency's response is included within **Appendix E**.
- 4.4 The risk from fluvial flooding is therefore deemed low.

Surface Water

- 4.5 Surface water flooding refers to flooding caused when the intensity of rainfall, particularly in urban areas, can create runoff which temporarily overwhelms the capacity of the local drainage systems including sewers, rivers and watercourses or does not infiltrate into the ground. The water ponds on the ground and flows towards low-lying land. This source of flood risk is also known as 'pluvial'.
- 4.6 A high-risk scenario indicates a greater than 1 in 30 probability of surface water flooding each year, i.e. the most frequently occurring scenario. In a high-risk scenario, there is very low flood risk shown on the site.
- 4.7 A medium risk scenario indicates a probability of surface water flooding between 1 in 30 and 1 in 100 each year. In a medium risk scenario, there is very low risk flood risk shown on the site.
- 4.8 A low risk scenario indicates a probability of surface water flooding between 1 in 100 and 1 in 1000 each year (i.e. the least frequent but worst-case scenario). In a low risk scenario, there is a small surface water flow path which comes directly off of Cowley Business Park Road. The flow path comes south down Cowley Road and West on Cowley Business Park Road towards Fray's River and in to the site entrance which is slightly lower than the Business Park Road.
- 4.9 The EA's surface water flood risk map can be seen in **Appendix F**.
- 4.10 As such the risk of surface water flooding to the site is deemed to be low.

Groundwater

- 4.11 The West London SFRA mapping shows that the site has less than 25% susceptibility to groundwater flooding.
- 4.12 As the finished floor levels of the building are higher than surrounding ground levels and the SWMP confirms that there are no recorded flooding incidents within Cowley, the risk of groundwater flooding to the site is considered to be low.

Artificial

- 4.13 The EA Flood Map for Planning shows the site is not at risk of flooding from artificial sources therefore the risk from artificial sources can be deemed low.

Sewer Flooding

- 4.14 Sewer flooding generally results from localised short-term intense rainfall events overloading the capacity of the private and public drainage or due to failures within the public sewer.
- 4.15 The SFRA mapping shows that there have been no instances of sewer flooding at this location.
- 4.16 Therefore, due to the lack of recorded instances of sewer flooding within the area the risk from sewer flooding is low.

5 Drainage Strategy

- 5.1 A CCTV survey has been completed on site to confirm the condition and location of the foul and surface water drainage. A plan from the survey has been included in **Appendix H**.
- 5.2 The foul drainage connects to the foul sewer in Barchester Close and the surface water drainage connects directly in to the Fray's River.
- 5.3 No changes to the existing drainage system are proposed. The existing rainwater downpipes will simply be extended to serve the additional floor.
- 5.4 There is to be no increase in building roof area or hardstandings and thus no increase in runoff from the site. Therefore, no amendments to the existing below ground surface water drainage layout are required.

6 Conclusions

- 6.1 The site currently consists of an office block which already has permission to convert the offices to create 28 self-contained residential units. The main existing office building already has permission to be converted to create 28 self-contained residential units.
- 6.2 The site is located within Flood Zone 1 on the EA flood map, which indicates a 'low' risk of flooding from fluvial and tidal sources. 'Low' risk areas have an annual probability of flooding of less than 0.1% (or 1 in 1000 years).
- 6.3 The existing bridge which is directly over Fray's River is at least 180mm above surrounding ground levels and therefore is confirmed to be within Flood Zone 1.
- 6.4 The EA Flood Risk from Surface Water map included shows that the majority of the site is within an area at very low risk of surface water flooding. However, there is a small flowpath which could create pooling on site during extreme events.
- 6.5 The area at risk of surface water flooding is low risk between 0.1-1% annual probability of occurring and low depth (less than 300mm). This is a localised low spot between the Cowley Business Park Road and the car park on site which can be seen in the topographical survey in **Appendix D**.
- 6.6 There is to be no increase in building roof area or hardstandings and therefore no amendments to the existing below ground surface water drainage layout are required.
- 6.7 Overall, the site is at low risk of flooding from all sources of flood risk.

7 Appendices

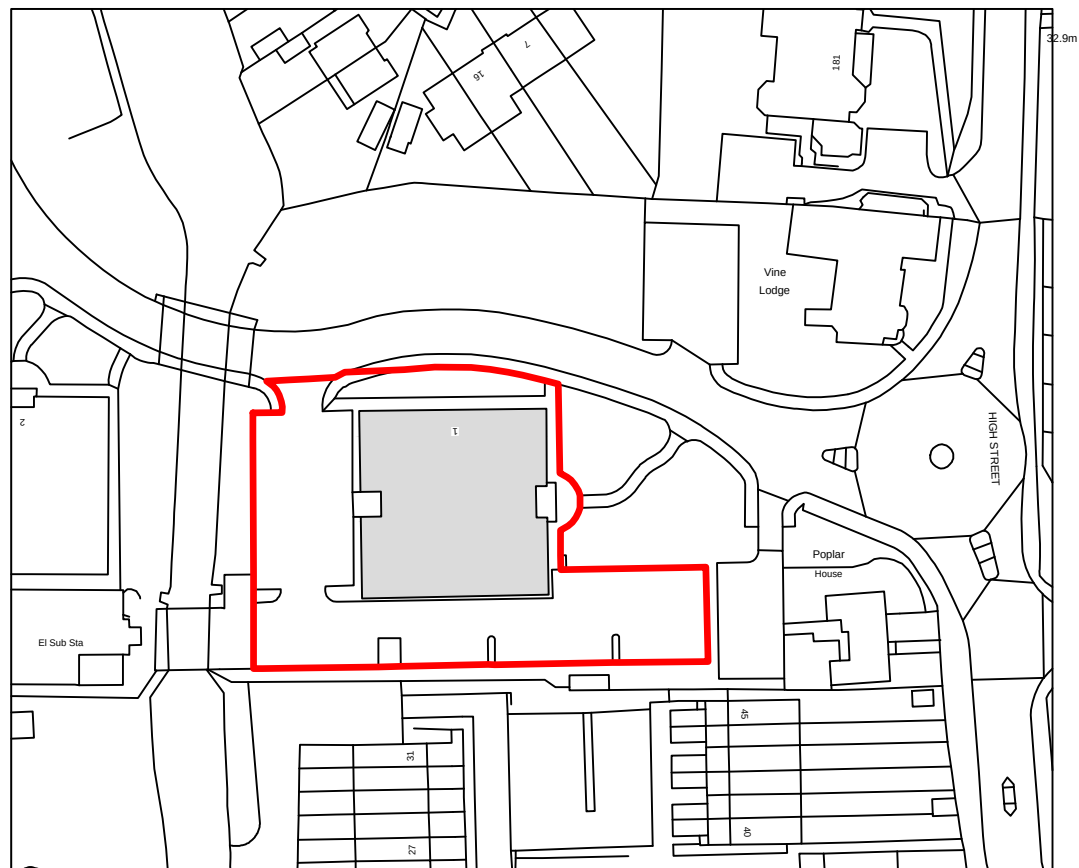
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Appendix: A – Location Plan



20 metres 40 metres 60 metres 80 metres 100 metres

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ALLPORT HOUSE
COWLEY, UXBRIDGE, UB8 2AD

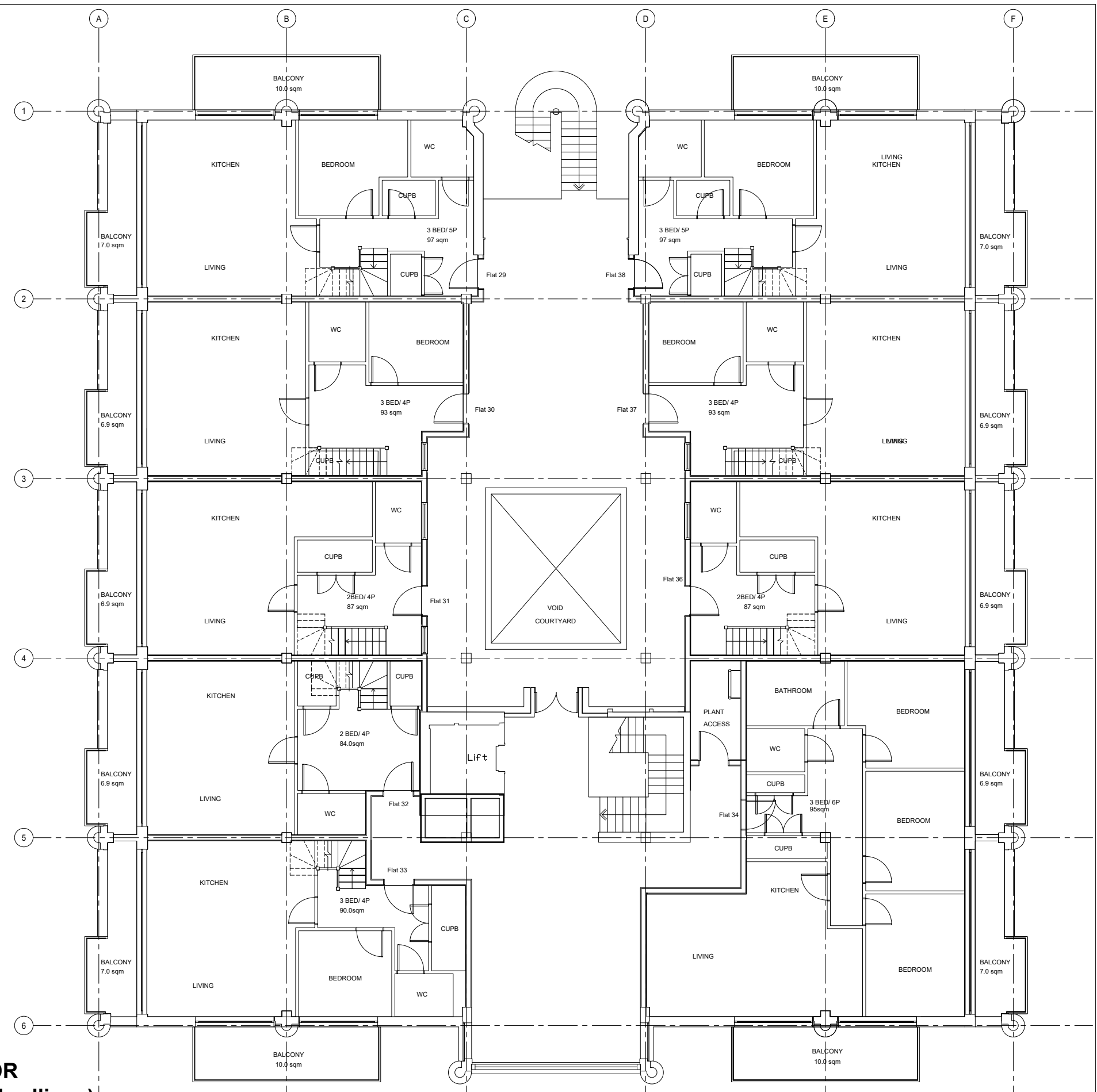
Drawing Title: EXISTING LOCATION PLAN
Scale: 1:1250 @ A4
Date: JULY 2019
Drawing Number: 4D_1920_PL_002

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Appendix: B – Proposed Development Plans

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PROPOSED SECOND FLOOR
9 DWELLINGS (8x2 storey dwellings)

ALLPORT HOUSE
UXBRIDGE, LONDON UB8 2AS

PRELIMINARY

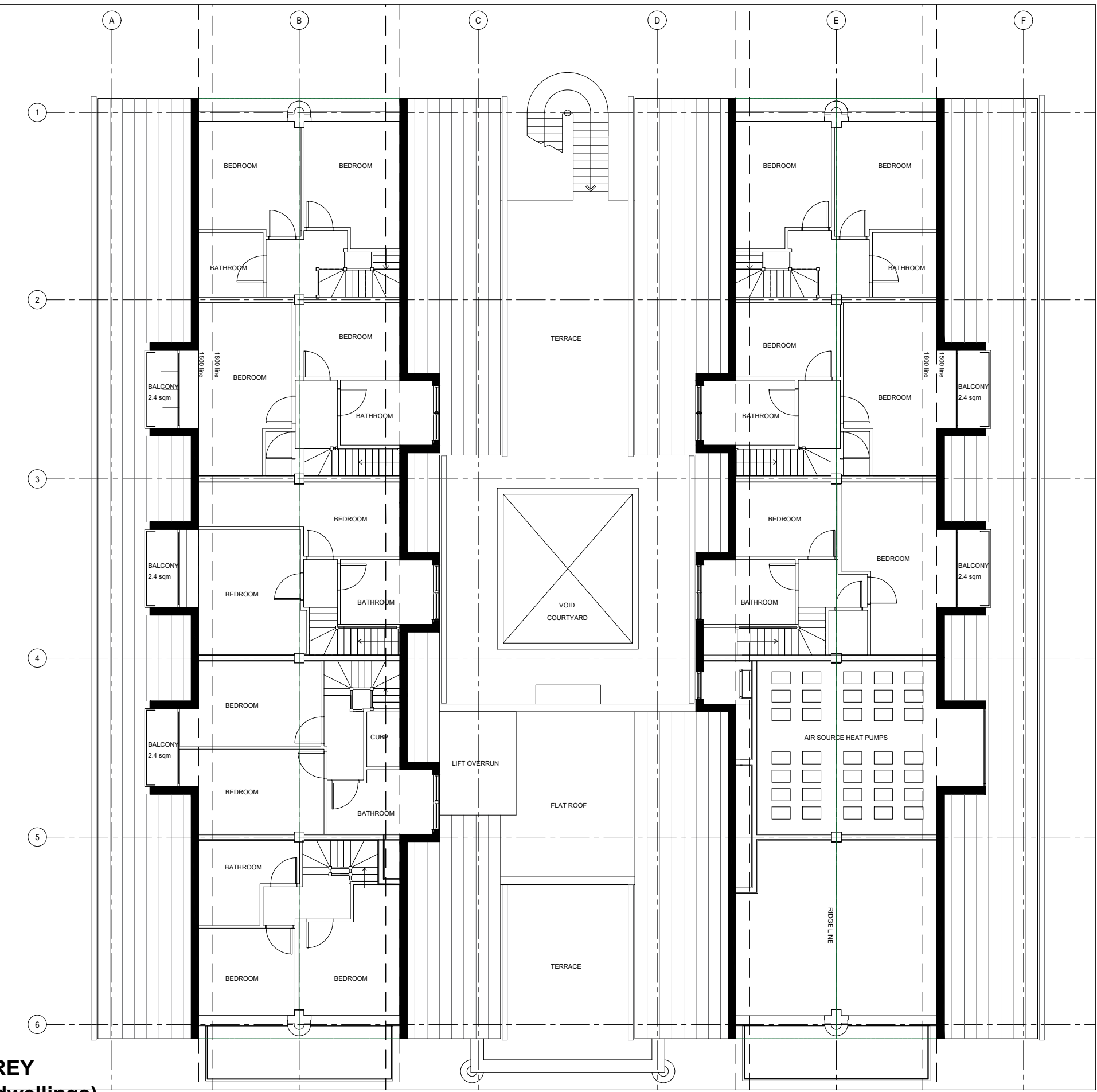
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9 DWELLINGS (8x2 storey dwellings)
Scale: 1:100 @ A2
Date: NOVEMBER. 2019
Drawing Number: 4D_1920_SK_1000

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**PROPOSED SECOND STOREY
9 DWELLINGS (8x2 storey dwellings)**

ALLPORT HOUSE
UXBRIDGE, LONDON UB8 2AS

PRELIMINARY

Drawing Title: PROPOSED SECOND STOREY
9 DWELLINGS (8x2 storey dwellings)
Scale: 1:100 @ A2
Date: NOVEMBER. 2019
Drawing Number: 4D_1920_SK_1001

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Appendix: C – EA Flood Map for Planning



Flood map for planning

Your reference

Allport House

Location (easting/northing)

505251/182560

Scale

1:2500

Created

16 Dec 2019 11:38

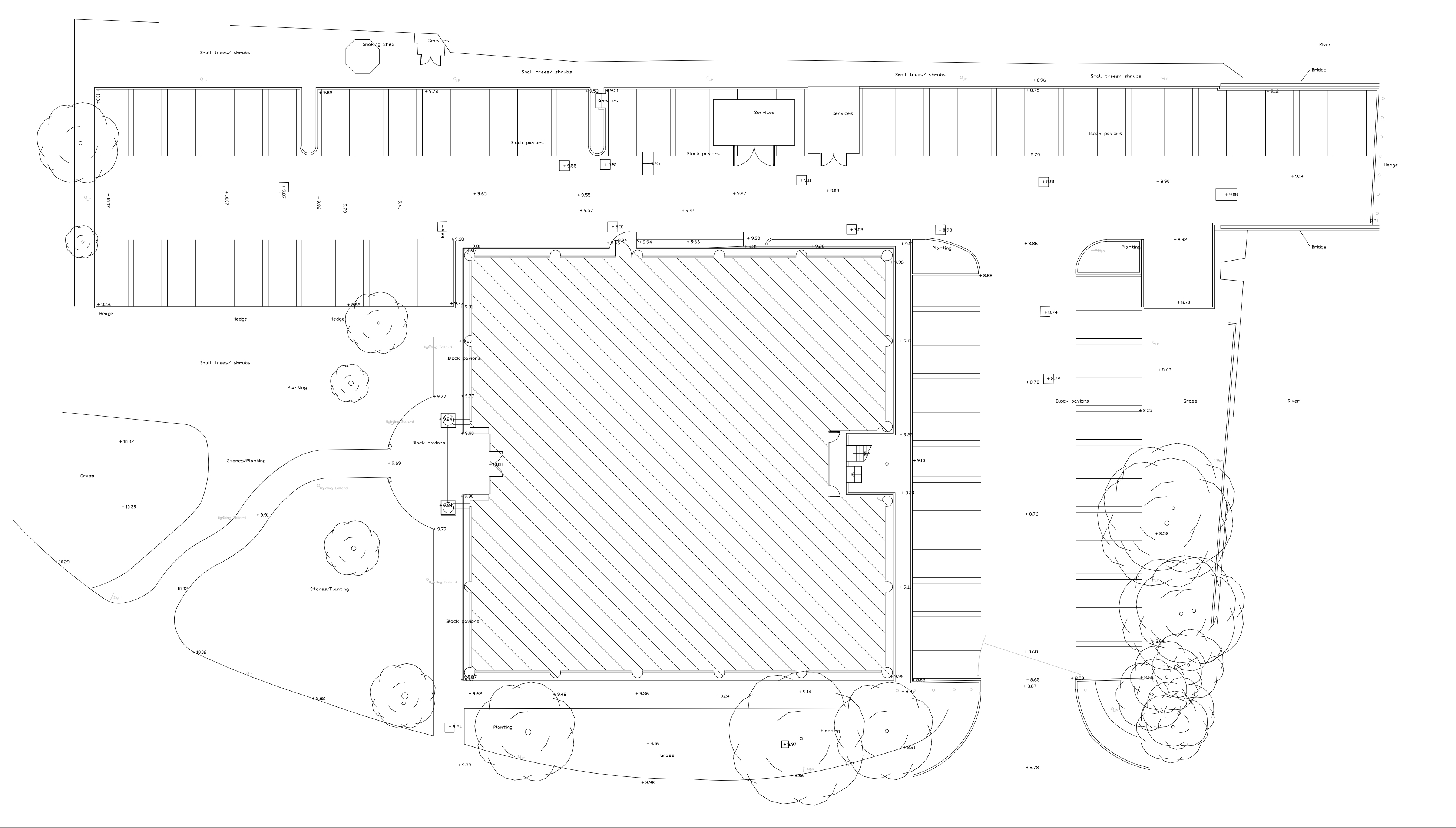
-  Selected point
-  Flood zone 3
-  Flood zone 3: areas benefiting from flood defences
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Flood storage area

0 20 40 60m

Appendix: D – Topographical Survey

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**EXISTING CAR
PARKING PLAN**

ALLPORT HOUSE
UXBRIDGE, LONDON UB8 2AS

PLANNING

Drawing Title: EXISTING CAR PARKING PLAN

Scale: 1:200 @ A2

Date: JULY. 2019

Drawing Number: 4D_1920_PL_103

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Appendix: E – Environment Agency Correspondence

Dear Rose

Thank you for your request dated 28 November 2019 to produce a Product 4 with Environment Agency data.

The information on Flood Zones in the area relating to Allport House, Cowley Business Park, High Street Cowley, UB8 2AD is as follows:

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

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

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

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

This address is in an area at Low risk of surface water flooding.

Following the Flood and Water Management Act 2010, Lead Local Flood Authorities are responsible for the management of groundwater and surface water flooding. They also maintain a register of property flooding incidents. You may want to seek further advice from the London Borough of Hillingdon who may have further information.

You can view groundwater flooding issues here <https://www.gov.uk/government/collections/groundwater-current-status-and-flood-risk>

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

<https://www.gov.uk/planning-applications-assessing-flood-risk>

<https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion>

You can also view and print surface water flood maps online at: <http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?topic=ufmfs#x=357683&y=355134&scale=2>

This information is provided subject to the [Open Government Licence](#), which you should read.

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

Data Available Online

Many of our flood datasets are available online:

- **You can view and download flood risk maps from our website at:** <http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?topic=floodmap#x=357683&y=355134&scale=2>
- **Flood Map For Planning** ([Flood Zone 2](#), [Flood Zone 3](#), [Flood Storage Areas](#), [Flood Defences, Areas Benefiting from Defences](#))
- [Risk of Flooding from Rivers and Sea](#)
- [Historic Flood Map](#)

- [Current Flood Warnings](#)
- [Open data](#)

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

Kind regards

Chloe Byrne

Customers and Engagement Officer

Environment Agency, Hertfordshire and North London

Alchemy, Bessemer Road, Welwyn Garden City, Hertfordshire, AL7 1HE

Direct dial 0203 025 9210

Direct email HNL enquiries@environment-agency.gov.uk

Pronouns: she/her ([why is this here?](#))

Water pollution incidents

Sign up to email alerts of incidents affecting your local watercourse

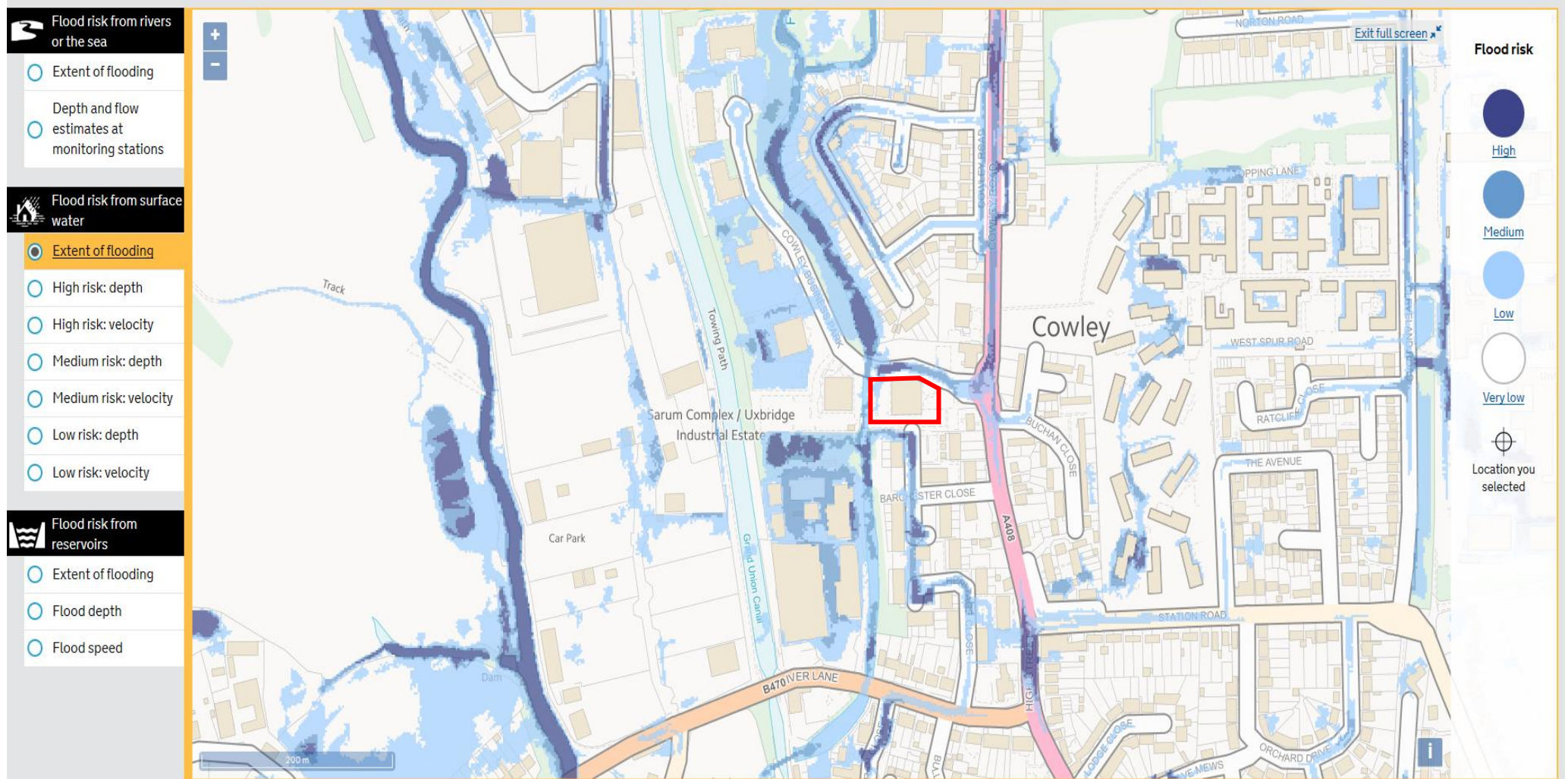
bit.ly/HNLwaterincidents



Did you know that the Environment Agency publishes most of its data via www.data.gov.uk? Using this site you can search for our data alongside other environmental data providers from the Defra Network and local authorities.

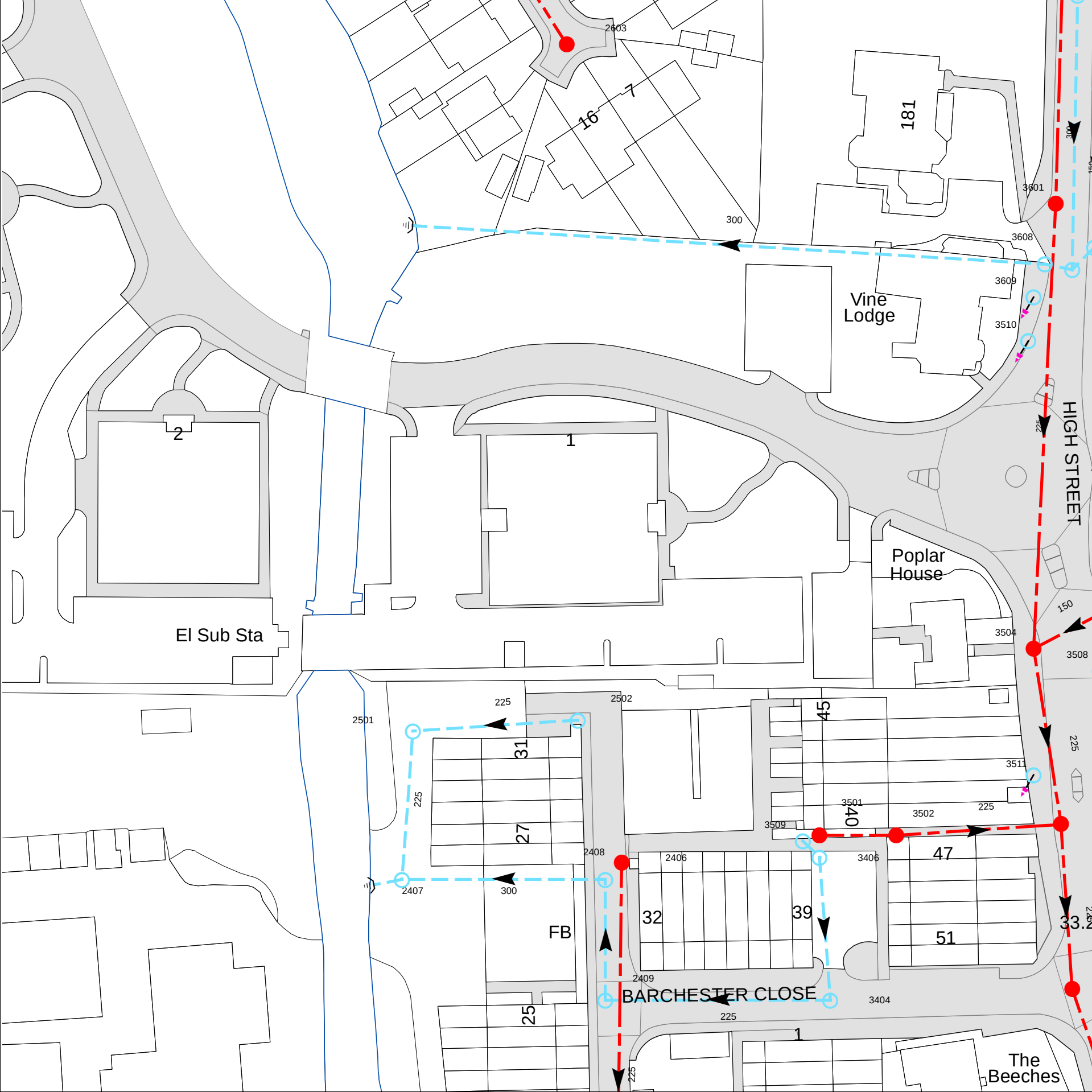
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Appendix: F – EA Surface Water Flood Map



Source: EA Long Term Flood Risk Map (<https://flood-warning-information.service.gov.uk/long-term-flood-risk/map>)

Appendix G: - Thames Water Sewer Mapping



The width of the displayed area is 200m

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

Based on the Ordnance Survey Map with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

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

Manhole Reference	Manhole Cover Level	Manhole Invert Level
3604	33.04	31.61
2603	30.92	29.41
3605	32.95	31.54
2407	30.5	29.56
2406	30.29	29.41
3406	31.78	30.85
3509	31.74	31.03
3501	31.81	30.8
3502	32.49	30.66
3503	33.17	29.82
3511	33.15	32.48
2501	30.32	29.64
2502	30.28	29.68
3508	32.81	31.75
3504	33.06	29.91
3510	32.83	31.43
3609	32.6	31.87
3602	n/a	n/a
3608	n/a	n/a
3603	32.97	31.28
3601	n/a	n/a
3404	32.08	30.61
2409	n/a	n/a
3401	33.35	29.65
2408	n/a	n/a

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



Sewer Key - Commercial Drainage and Water Enquiry

Public Sewer Types (Operated & Maintained by Thames Water)

	Foul: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.
	Surface Water: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.
	Combined: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
	Trunk Surface Water
	Trunk Foul
	Storm Relief
	Trunk Combined
	Vent Pipe
	Bio-solids (Sludge)
	Proposed Thames Surface Water Sewer
	Proposed Thames Water Foul Sewer
	Gallery
	Foul Rising Main
	Surface Water Rising Main
	Combined Rising Main
	Sludge Rising Main
	Proposed Thames Water Rising Main
	Vacuum

Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plans are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
- 5) 'na' or '0' on a manhole level indicates that data is unavailable.

Sewer Fittings

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

	Air Valve
	Dam Chase
	Fitting
	Meter
	Vent Column

Operational Controls

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

	Control Valve
	Drop Pipe
	Ancillary
	Weir

End Items

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

	Outfall
	Undefined End
	Inlet

Other Symbols

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

	Public/Private Pumping Station
	Change of characteristic indicator (C.O.C.I.)
	Invert Level
	Summit

Areas

Lines denoting areas of underground surveys, etc.

	Agreement
	Operational Site
	Chamber
	Tunnel
	Conduit Bridge

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

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

Appendix H: - CCTV Survey Drawing

