FLOOD RISK ASSESSMENTS & DRAINAGE STRATEGIES

Brook House, 54a Cowley Mill Road, Uxbridge, UB8 2QE

Reference: 342 FRA-v1

Sep-25

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FLOOD RISK ASSESSMENT

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Report Limitations

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All Environment Agency mapping data used under special licence. Data is current as the data on the correspondence given by the Environment Agency and is subject to change.

The information presented and conclusions drawn are based on statistical data and are for guidance purposes only.
The study provides no guarantee against flooding of the study site or elsewhere, nor of the absolute accuracy of water levels, flow rates and associated probabilities.

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Introduction 1

Purpose of this report

1.1 RIDA Reports Ltd has been appointed to undertake a Level 2 – Scoping Study Flood Risk Assessment for a development located at UB8 2QE.

Objectives

1.2 The objectives of this FRA are to demonstrate the following:

- Whether the proposed development will likely be affected by current or future flooding.
- Whether the proposed development will increase flood risk elsewhere.
- Whether the flood risks associated with the proposed development can be satisfactorily managed.
- Whether the measures proposed to deal with the flood risk are sustainable.

Documents Consulted

1.3 To achieve these objectives, the following documents have been consulted and referenced:

The National Planning Policy Framework (NPPF)
CIRIA C753 document The SuDS Manual, 2015
Local Flood Risk Management Strategy (LFRMS)
Level 1 Strategic Flood Risk Assessment (SFRA)
Aerial photographs and topographical survey of the site
British Geological Society Records
Local Council flood Maps
Environment Agency flood maps
The CIRIA publication 'C635 Designing for exceedance in urban drainage Good practice'

Development Site and Location

2.1 The site is located at Cowley Mill Rd, London. The nearest postcode is UB8 2QE. Refer to appendix A for site location plan.

2.2 The current use of the site is an office building. The current user vulnerability classification of the site is Less vulnerable. The site is located in the River Flood Zone 1. Refer to Appendix B for more details.

Development Proposals

2.3 The proposed development includes the erection of two additional floors at roof level. Refer to Appendix B for the layout of the proposed development.

2.4 The vulnerability classification of the proposed development is Less vulnerable with an estimated lifetime between 50 and 100 years.

Site Hydrology and Hydrogeology

Hydrology

2.5 The River Colne is located approximately 85 m away from the development.

Aquifer

2.6 The development is located within a secondary aquifer type A. Aquifers type A consist of permeable layers capable of supporting water supplies at a local rather than strategic scale. They are generally aquifers formerly classified as minor aquifers.

Source Protection Zone

2.7 The site is not located within a Source Protection Zone.

Groundwater Levels

2.8 The ground water levels for this site are unknown.

Site Geology

Bedrock

2.9 The British Geological Survey records of the site show that it is located within the London Clay Formation - Clay, Silt and Sand.

Superficial Deposits

2.10 The British Geological Survey records show that the superficial deposits are Alluvium - Clay, Silt, Sand and Gravel.

National Planning Policy Framework (NPPF)

3.1 The NPPF and its technical guidance is a set of planning policies with the key objective of contributing to sustainable development. As part of it, they ensure that flood risk and sustainability are considered during the planning process. This ensures that developments are not located in flood risk areas and directs developments to lower risk areas. The NPPF applies a sequential risk-based approach to determining land suitability for development in flood risk areas. The NPPF also encourages developers to seek opportunities to reduce the overall level of flood risk through the development layout and the application of Sustainable Drainage Systems (SuDS).

The Flood and Water Management Act (2010)

3.2 The Flood and Water Management Act aims to reduce the flood risk associated with extreme weather events. It provides robust flood risk management for people, homes and businesses and encourages using SuDS for developments. A robust SuDS strategy should consider the recommendations in this Flood Risk Assessment.

Strategic Flood Risk Assessment (SFRA)

3.3 Planning policy with regard to development and flood risk in the area is detailed in the West London Strategic Flood Risk Assessment (SFRA) which was published in 2024. The proposed development site is located within the administrative boundary of the London Borough of Hillingdon.

3.4 The SFRA commits to direct new development to locations at the lowest flood risk. The SFRA provides information on the levels and flood hazards that could result from flooding. The Environment Agency flood zone maps and the SFRA ignore the presence of existing flood defences when defining the potential extent of flooding.

3.5 This report follows the guidance given in the West London Strategic Flood Risk Assessment by evaluating the flood risk and providing relevant flood mitigation.

The Sequential and Exception Test 4

4.1 The NPPF guidance states that the sequential test "is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding."

Applicability of the Sequential Test

4.2 The flood risks were determined by identifying all the sources of flooding and assessing their possible impact and likelihood to development. It is confirmed that the development is:

- In Flood Zone 1, based on the Planning Flood Risk Map
- At Low risk of surface flooding
- At high risk of groundwater flooding
- Outside of a critical drainage area
- Potentially within an area of sewer flooding

4.3 This type of development is exempt from applying the sequential test as per the National Planning Policy Framework paragraph 174, footnote 60. The development has been made safe and has not increased the risk to other properties. See copy of note below "(60) This includes householder development, small non-residential extensions (with a footprint of less than 250m2) and changes of use; except for changes of use to a caravan, camping or chalet site, or to a mobile home or park home site, where the sequential and exception tests should be applied as appropriate."

Exception Test

4.4 Fluvial flood risk for this minor development was assessed using the Environment Agency Flood Zone Maps and the standing advice approach recommended in the NPPF guidelines. The standing advice considers the development's size and the flood risk vulnerability of land use.

Step 1

Flood Zone categorisation

4.5 The proposed development is less than 1 ha and falls within the Environment Agency (EA) Flood Zone 1. Therefore, this Flood Risk Assessment Level 1-Screening report should be sufficient under the NPPF. Flood Zone 1 is considered to have a low probability of flooding, with an annual probability of flooding of <0.1%. The chance of flooding is 1 in 1000 years or lower.

Step 2 4.6 The Exception Test is not required for this development.

5.1 The development has been assessed for the following potential flood risks, river and tidal flood risk, surface water flooding, flooding from groundwater, reservoir flood risk and drainage systems.

Flood Defence and Historic Flooding

5.2 The Environment Agency records show that the site does not benefit from flood defences. They also show that the area around the site has not been flooded in the past. See Appendix C for details.

Flooding from river and sea

5.3 The proposed development is less than 1 ha and falls within the Environment Agency (EA) Flood Zone 1. Therefore, this Flood Risk Assessment Level 1-Screening report should be sufficient under the NPPF. Flood Zone 1 is considered to have a low probability of flooding, with an annual probability of flooding of <0.1%. The chance of flooding is 1 in 1000 years or lower.

5.4 The climate change allowance is not applicable for this site.

5.5 The site is located in an area outside of fluvial flooding flood risk.

5.6 It is concluded that the site is not affected by fluvial/sea flood risk.

Surface water (overland flows) flood risk

5.7 The Environment Agency maps show that the flood risk from surface water is low. A residual risk of localised shallow ponding remains likely. The Environment Agency surface water flood risk maps are defined by applying a specific procedure based on digital terrain models and assumptions regarding infiltration and urban drainage losses. The surface water flood maps are determined by the Environment Agency as follows:

5.8 *"The nationally produced surface water flood mapping only indicates where surface water flooding could occur due to local rainfall. It does not fully represent flooding that occurs from:*

- Ordinary watercourses

- Drainage systems or public sewers caused by catchment-wide rainfall events

- Rivers

- Groundwater

Due to the modelling techniques, the mapping picks out depressions in the ground surface. It simulates some flow along natural drainage channels, rivers, low areas in floodplains, and flow paths between buildings. Although the maps appear to show flooding from ordinary watercourses, they should not be taken as definitive mapping of flood risk from these as the conveyance effect of ordinary watercourses or drainage channels is not explicitly modelled. Also, structures (such as bridges, culverts and weirs) and flood risk management infrastructure (such as defences) are not represented.

The nationally produced surface water flood mapping does not consider the effect of pumping stations in catchments with pumped drainage. No allowance is made for tide locking, high tidal or fluvial levels where sewers cannot discharge into rivers or the sea."

5.9 The strategic flood risk for the London Borough of Hillingdon confirms that the flood risk for the site is low. The surface water flood data has not been produced to determine the flood levels at individual properties. Therefore, the Design flood level given below is an assumption. The new development may have greater or lower surface water flood depths.

5.10 Based on the Environment Agency and the Strategic flood risk assessment's surface water mapping, together with the presence of surface water drainage systems at the site and surrounding area, it is concluded that the site is at Low risk of flooding from surface water sources. The depth of water is potentially between 300mm and 900mm. For this assessment, a depth of water of 0.2m has been taken as the most appropriate depth to the site; the value has been derived from the rofsw_cc01 dataset and includes the effects of climate change. The average ground level at the site is 30.05m AOD. The surface water flood level on this site could be in the region of 30.25m AOD.

Flooding from drainage systems in adjacent areas

5.11 The area around the development is shown as having a high level of sewer incident within the flood maps of the Strategic Flood Risk Assessment. See appendix C for details.

Reservoirs Risks

5.12 The Reservoir Flood Map (RFM) produced by the Environment Agency does not show the risk to individual properties of dam breach flooding. The maps do not indicate or relate to any particular probability of dam breach flooding. The

maps were prepared for emergency planning purposes. They can be used to help reservoir owners produce on-site plans, and the Local Resilience Forum produce off-site plans and to prioritise areas for evacuation/early warning in the event of a potential dam failure. The RFM shows that the development could be within the possible dam breach flooding path. See Appendix C.

Groundwater flood risk

5.13 The British Geological Survey's flood risk susceptibility maps show that the development has the potential for groundwater flooding above ground level. Groundwater levels vary seasonally and are influenced by ground and meteorological conditions and proximity to water features. The groundwater flooding risk for this site is considered to be high. The groundwater flood depth could potentially be 0.15m. The average external level at the site is 30m AOD. The potential groundwater flood level is 30.15m AOD. This level has been given as a precautionary measure. It is recommended that monitoring of groundwater is undertaken should this measure be reviewed. Refer to Appendix C for record drawings.

Critical Drainage Areas

5.14 The development does not fall within a critical drainage area.

6.1 The Flood hazard assessment has demonstrated that the site is:

- In Flood Zone 1, based on the Planning Flood Risk Map
- At Low risk of surface flooding
- At high risk of groundwater flooding
- Outside of a critical drainage area
- Potentially within an area of sewer flooding

6.2 Under the NPPF it is necessary to demonstrate that, for any new development on the site, it is possible to provide an adequate level of flood protection for personnel working or living at the development.

Design Flood Level

6.3 The design flood level is the maximum estimated water level during the design storm event including an allowance for climate change in line with current best practice and the national planning policy guidance.

6.4 The Design Flood Level for this development has been determined by evaluating the levels from the Fluvial/Sea, Surface Water and Groundwater flood levels.

6.5 For this site, the Design Flood Level is 30.25m AOD. This is the highest level and corresponds to the Surface Water Flood Level.

Flood Protection

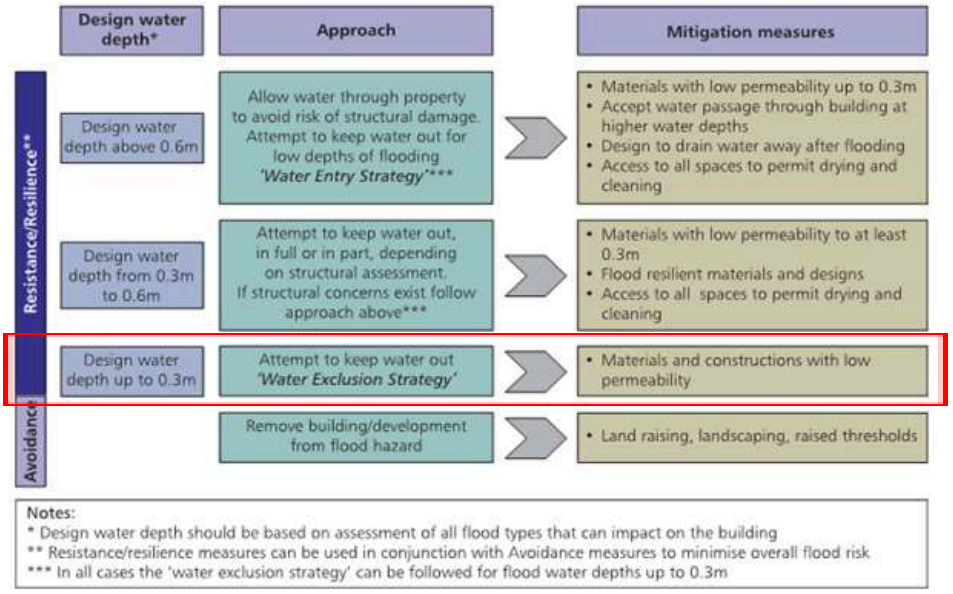
6.6 The National Planning Guidance standing advice and Environment Agency recommends that where possible, flood avoidance is provided by establishing the development's finished floor level 600mm above (freeboard) the design flood level. However, this level can be reduced if there is a high level of certainty about the estimated flood level. For this site the estimated free board has been determined to be 0.3m above the Design Flood Level due to the quality of the flood risk information available and the type of risk. The finished floor should be 30.55m AOD. The site already complies with this level as the average external level is 30.3 m AOD.

6.7 It is not possible to achieve this FFL due to access and site constraints. A level of 30.35m AOD is achieved. This level is as per the FFL of the existing building. Although the FFL is above the design flood level, the site is still affected by the 600mm freeboard for flood resilient measures. Therefore, the following flood

mitigation interventions should be provided.

6.8 The flood mitigation strategies for the development has been based on the CLG 2007 Improving the Flood Performance of New Buildings. See the figure below for the strategy highlighted in red. The strategy is based on the water level within the proximity to the building.

Rationale for flood resilient and/or resistant design strategies



6.9 The development should utilise building materials that are suitable for a 'water exclusion strategy'. Materials classified as "Good" (highlighted in red) in the Figure below shall be used for new construction up to 30.85m AOD.

Flood resilience characteristics of building materials (based on laboratory testing)

Material	Resilience characteristics*		
	Water penetration	Drying ability	Retention of pre-flood dimensions, integrity
Bricks			
Engineering bricks (Classes A and B)	Good	Good	Good
Facing bricks (pressed)	Medium	Medium	Good
Facing bricks (handmade)	Poor	Poor	Poor
Blocks			
Concrete (3.5N, 7N)	Poor	Medium	Good
Aircrete	Medium	Poor	Good
Timber board			
OSB2, 11mm thick	Medium	Poor	Poor
OSB3, 18mm thick	Medium	Poor	Poor
Gypsum plasterboard			
Gypsum Plasterboard, 9mm thick	Poor	Not assessed	Poor
Mortars			
Below d.p.c. 1:3(cement:sand)	Good	Good	Good
Above d.p.c. 1:6(cement:sand)	Good	Good	Good

*Resilience characteristics are related to the testing carried out and exclude aspects such as ability to withstand freeze/thaw cycles, cleanability and mould growth

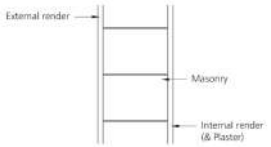
6.10 New services and fittings (communications wiring, heating systems, electrical services, water, electricity and gas meters) should be placed at above the level of 30.85m AOD. All service entries should be sealed (e.g. with expanding foam or similar closed cell material).

6.11 Closed-cell insulation should be used for pipes. Sealed PVC external framed doors or good fit and sealed wooden frames should be used. Hollow core timber internal doors should not be used unless sufficient flood warning is given, butt hinges, can be used to allow internal doors to be easily removed and stored. Carpets are to be avoided and use of tiles recommended in floor below the predicted design flood level.

6.12 Fittings should be designed to be replaced after a flood, it is advisable to specify durable fittings that are not appreciably affected by water and can be easily cleaned (e.g. use of plastic materials, or stainless steel). The cost of these units may need to be balanced against the predicted frequency of flooding. Avoid wood fiber based carcases and use easily removable solid wood doors and drawers.

6.13 Where replaced, good quality facing bricks or external renders with water-repellent properties can be used for the external face. See the examples below of external walls that can be used.

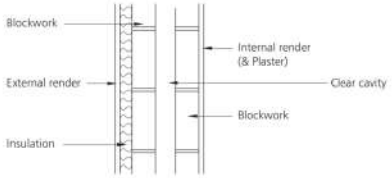
Solid External Wall



- External cement based render, preferably with lime content. Composition depends on masonry. The following mixes have good resilient properties:
  - 1 cement : 6 sand on bricks;
  - 1 cement : 4 sand: ½ lime on concrete blockwork or bricks;
  - 1 cement : 6 sand: 1 lime on Aircrete blocks.
- Masonry with minimum thickness of 300mm (thin mortar joint construction using Aircrete blocks is effective as demonstrated in laboratory tests) or alternatively reinforced concrete wall
- Internal cement-based render, preferably with lime content. Composition depends on masonry; the following mix is effective for flood resilience:
  - 1 cement : 6 sand: 1 lime on Aircrete.

  Apply external and internal renders, following good practice guidance, ensuring minimum total thickness of 20mm and at least two coats.
- Use external insulation in preference to internal insulation.

Cavity External Walls – Clear cavity

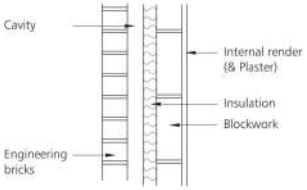


Clear cavity

- External cement based render, preferably with lime content. Composition depends on masonry; the following mixes are effective for flood resilience:
  - 1 cement: 4 sand: ½ lime on concrete blockwork (or bricks);
  - 1 cement: 6 sand; 1 lime on Aircrete.

  Apply render following good practice guidance, ensuring minimum total thickness of 20mm and two coats.
- Internal cement based render, preferably with lime content. Composition depends on masonry. The following mix works well:
  - 1 cement: 6 sand: 1 lime on Aircrete.
- Stainless steel wall ties should be used to minimise corrosion and consequent staining.

Cavity External Walls- Part fill Option A

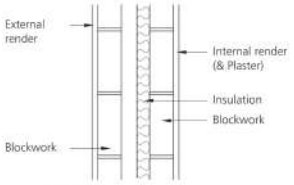


Option A Part-filled cavity

Part-filled cavity – Option A

- External face consisting of engineering bricks up to required level for flood protection (up to 0.6m maximum above floor level plus one course). Other external facing materials can be used above this level, but ensure interface is watertight.
- Rigid insulation.
- Internal face consisting of blocks.
- Internal cement based render, preferably with lime content. Composition depends on masonry; the following mix is effective:
  - 1 cement : 6 sand: 1 lime on Aircrete.
- Ensure stainless steel wall ties are used to minimise corrosion and consequent staining.
- Sacrificial plasterboard can be used, but it needs to be removed between ground floor and flood level. The board should be fitted horizontally to make removal easier. In some cases a dado rail can be used to cover the joints.

Cavity External Walls- Part fill Option B



Option B

Part-filled cavity – Option B

- External cement based render, preferably with lime content. Composition depends on masonry; the following mixes are effective:
  - 1 cement : 4 sand: ½ lime on concrete blockwork
  - 1 cement : 6 sand: 1 lime on Aircrete.
- External face consisting of blocks.
- Rigid insulation.
- Internal face consisting of blocks.
- Internal cement based render, preferably with lime content. Composition depends on masonry; the following mix is effective for flood resilience:
  - 1 cement : 6 sand: 1 lime on Aircrete.
- Ensure stainless steel wall ties are used to minimise corrosion and consequent staining.

6.14 The site is within an area of sewer flooding. The following recommendation should be followed:

- All new connections to the sewer network should have non-return valves.

7.1 The NPPF specifically stipulates that consideration should be given to potential off-site flood impacts of any proposed development. These off-site impacts are in relation to the following:

- Surface water management
- Flood flow conveyance, storage and climate change

Surface Water Management

7.2 The development is not increasing the surface water run-off as no extensions or changes to the external areas are proposed. It is concluded that the proposed development does not increase the off-site impact.

Flood Flow conveyance and storage

7.3 As the extension is happening above the design flood level, there's no reduction in available floodplain storage.

7.4 The development does not increase flood risk elsewhere.

8.1 This flood risk assessment has identified the potential flooding mechanisms that could affect the site. As part of this, the following residual risks have been evaluated.

Public safety and Site Access

8.2 This assessment has demonstrated that the proposed development will have no adverse impact on flood risk in the area surrounding the site. Available evidence indicates that the development would not change surface water generation. Therefore, there is no basis to indicate that, with respect to flood risk, the proposed development would adversely impact public safety.

8.3 It will be necessary to ensure that all building users are fully informed of procedures to be implemented during the threat of imminent flooding.

Flood Warning and evacuation

8.4 The site is located within an area covered by the Environment Agency Flood Alert service. It is recommended that the users of the proposed development are registered with this service to receive early warning of imminent flooding.

8.5 The occupants of the site are encouraged to sign up for the alerts. An appropriate Flood Management and Evacuation Plan tailored to the use of the site should be in place before the site occupation. Table 4 below shows the actions that will be taken for each flood warning.

8.6 Action to be taken in the event of an Alarm being Raised or a Flood Warning Received:

a. Raise the alarm and evacuate the site following the established Fire Drill procedures. The main assembly is as per the main house fire drill assembly point.

b. Contact Emergency Fire Services (999) if necessary and Environment Agency Floodline: (0845 988 1188) if the event is unexpected.

c. If safe to do so, locate and turn off critical services, e.g. water, gas & electricity.

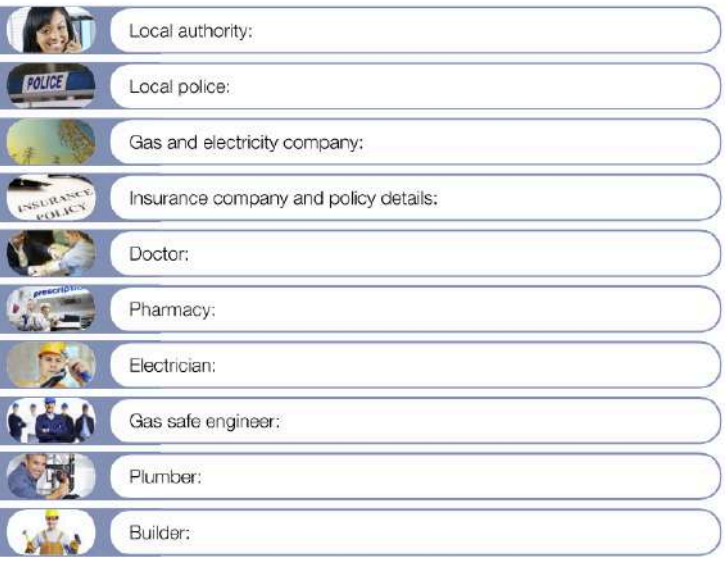
d. Follow the routes below to evacuate the site altogether.

Actions that will be taken for each flood warning

Warning	Message	Timing	Action
FLOOD ALERT	Flooding is possible. Be prepared.	2 hours to 2 days in advance of flooding.	- Be prepared for flooding. - Prepare a flood kit.
FLOOD WARNING	Flooding is expected. Immediate action required.	Half an hour to 1 day in advance of flooding.	- Act now to protect your property. - Block doors with flood boards or sandbags and cover airbricks and other ventilation holes. - Move pets and valuables to a safe place. - Keep a flood kit ready. - Move any critical equipment and information to a safe location
SEVERE FLOOD WARNING	Severe flooding. Danger to life.	When flooding poses a significant threat to life and different actions are required.	- Be ready should you need to evacuate from the property. - Co-operate with the emergency services and call 999 if you are in immediate danger.
Warning Removed	No further flooding is currently expected for your area.	Issued when a flood warning is no longer in force.	- Flood water may still be around and could be contaminated. - If you've been flooded, ring your buildings and contents insurance company as soon as possible.

Useful local phone numbers

Please write your local phone numbers in the space provided below.
Make sure they are easy to find in the event of a flood.



Conclusions 9

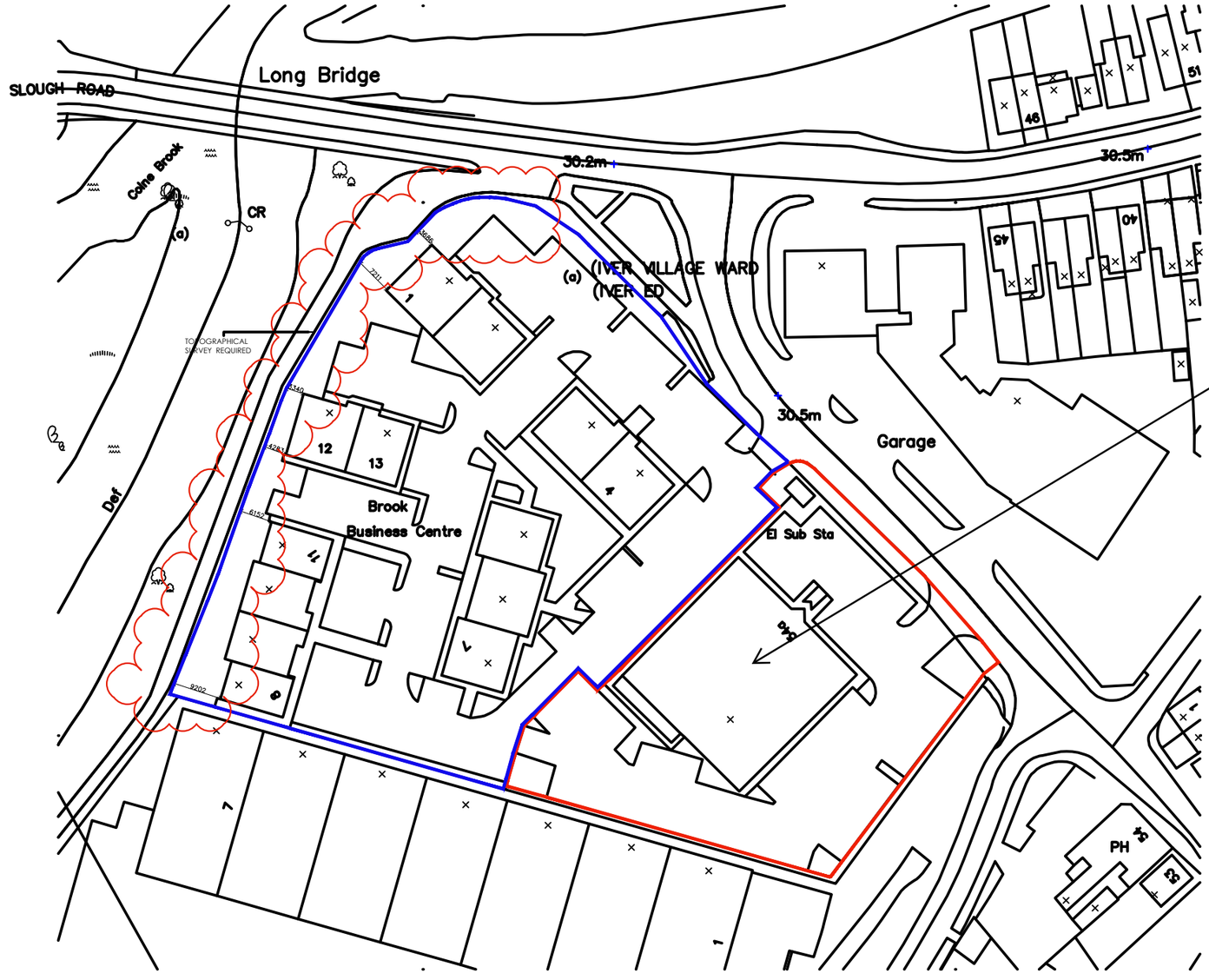
9.1 It is concluded that subject to the proposed mitigation measures, the site can be developed in accordance with the provisions of the NPPF and the requirements of the Environment Agency and the local planning authority.

9.2 This report demonstrates that the proposal will be safe, in terms of flood risk, for its design life and will not increase the flood risk elsewhere.

Appendix A

FOR CONSTRUCTION PURPOSES DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS TO BE CHECKED ON SITE. ANY DISCREPANCIES MUST BE REPORTED TO THE ARCHITECT FOR VERIFICATION PRIOR TO COMMENCEMENT OF THE EFFECTED WORKS. IF IN DOUBT ASK. THIS DRAWING IS COPYRIGHT.

Rev No	Date	Revision note
P1	03.09.2010	Planning issue.
P2	16.09.2014	Survey dimension included on Brook Business Centre River Colne side boundary.
P3	25.09.2014	River Colne side boundary highlighted for topo. survey.



504660 , 183415

Red line area = 3724m²

SCALE – METRES
0 10 20 30 40 50 60 70
0 50 100 150 200 250
SCALE – FEET

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JOB TITLE
BROOK HOUSE
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UXBRIDGE MIDDLESEX
UB8 2QE

DRG TITLE
SITE LOCATION PLAN

SCALE @ A3	DATE
1:1000 @ A3	AUG 2010

JOB NO.	DRG NO.	REV
10401	100	P3

Appendix B

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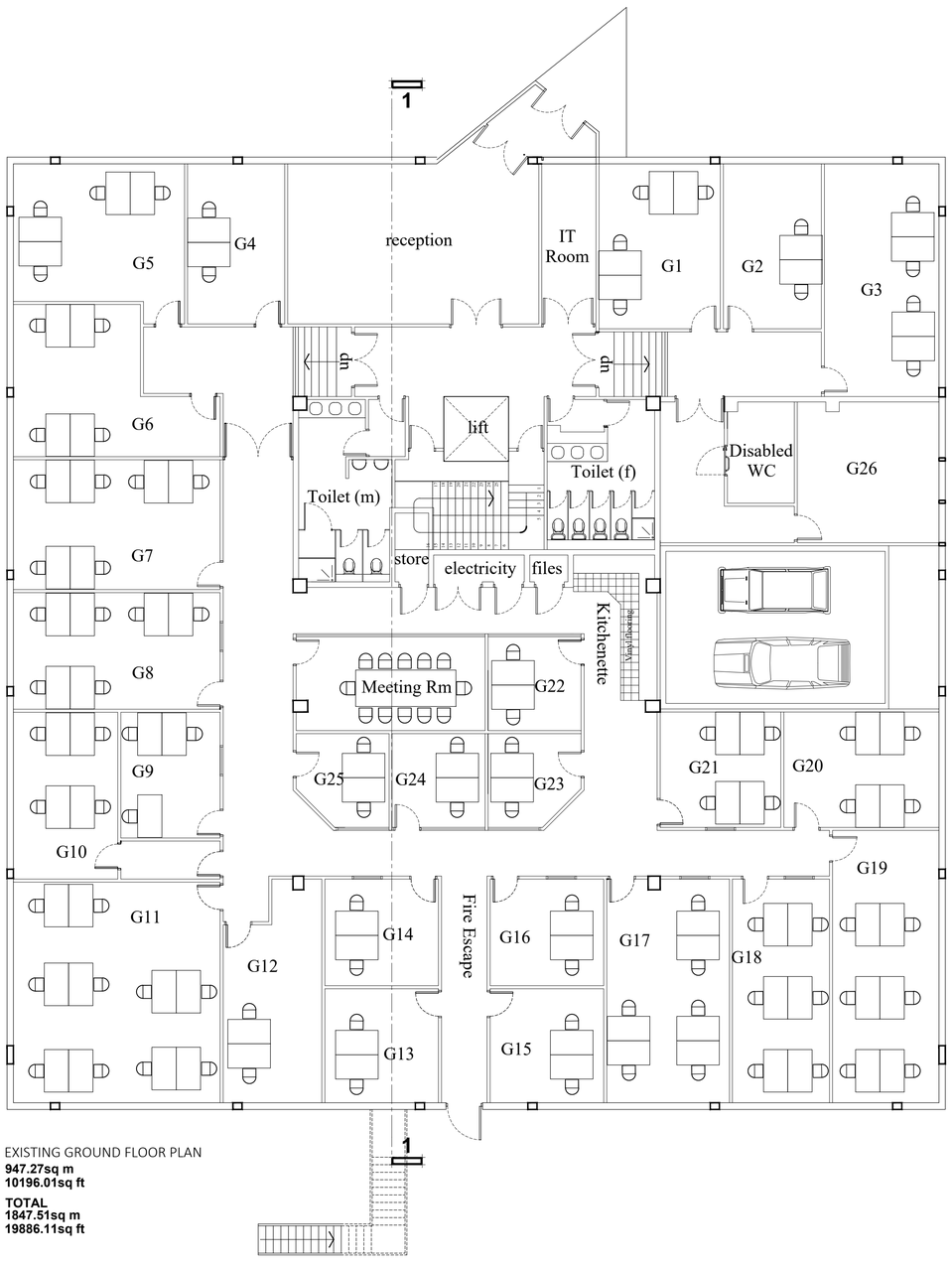
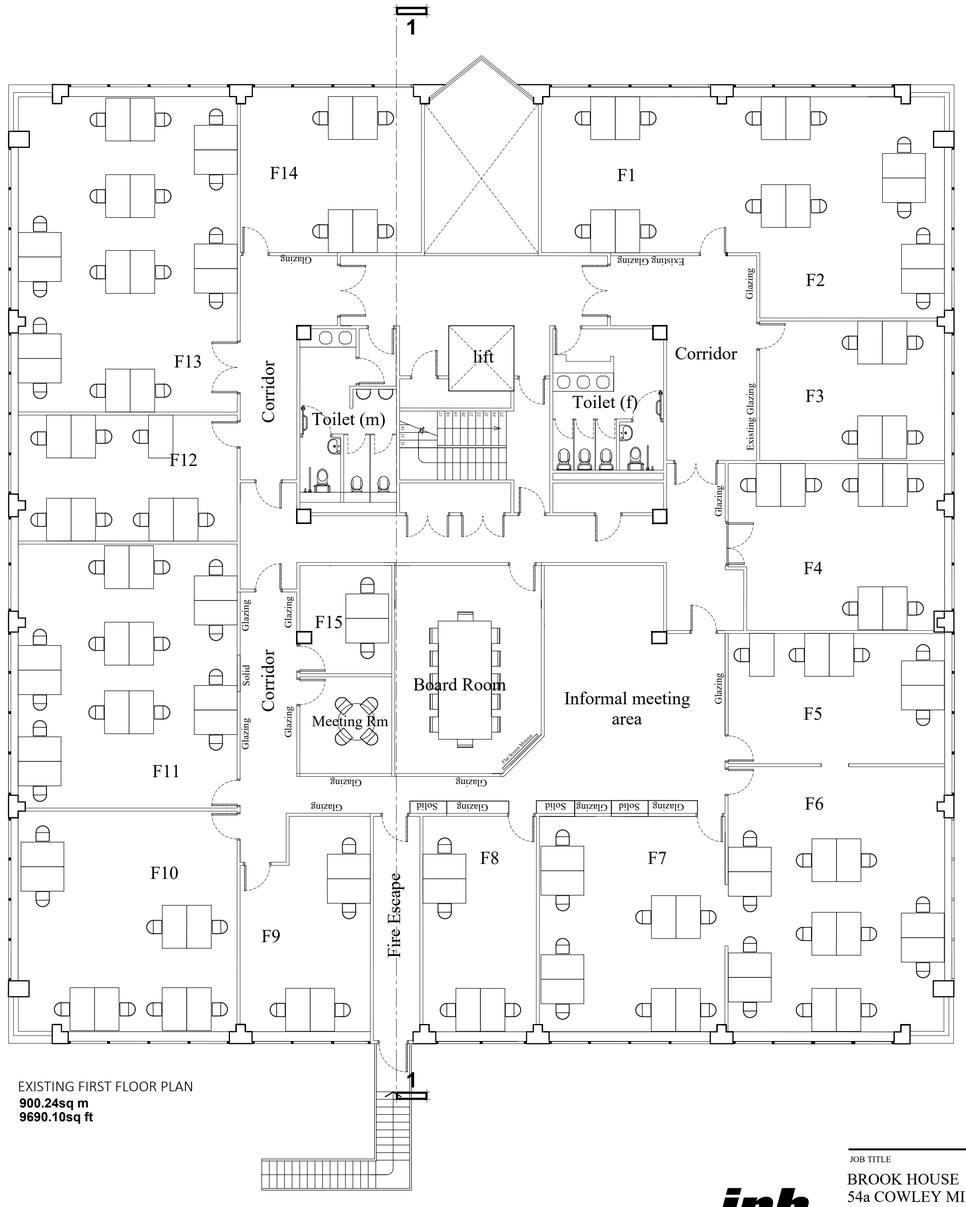
RevNo	Date	Revision note
P1	07th June '22	Preliminary Issue
P2	23rd Sept '22	Internal areas added
P3	02nd Dec '22	Section reference added



EXISTING GROUND FLOOR PLAN
947.27sq m
10196.01sq ft

TOTAL
1847.51sq m
19886.11sq ft



EXISTING FIRST FLOOR PLAN
900.24sq m
9690.10sq ft

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SCALE – METRES
0 1 2 3 4 5 6
SCALE – FEET
0 5 10 15 20

JOB TITLE
BROOK HOUSE
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DRG TITLE
Existing Ground and First Floor Plans

SCALE @ A1	DATE
1:100 @ A1	Jan '22

JOB NO.	DRG NO.	REV
10401	705	P3

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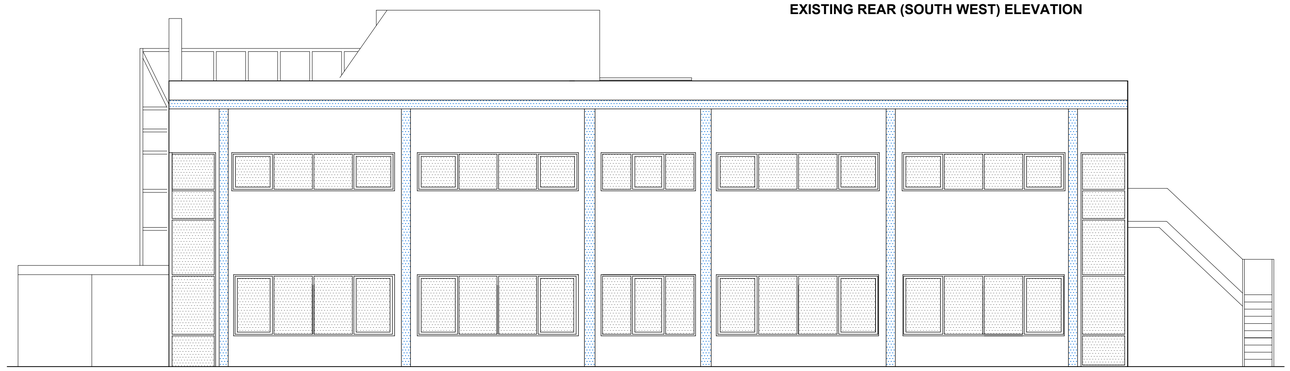
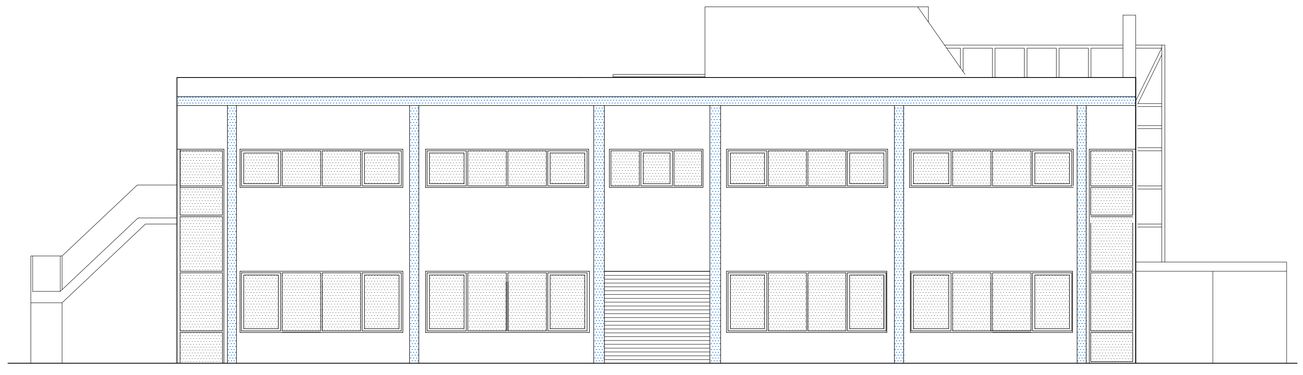
RevNo	Date	Revision note
P1	07th June '22	Preliminary Issue
P2	02nd Dec '22	Elevations revised, existing section added

EXISTING FRONT (NORTH EAST) ELEVATION

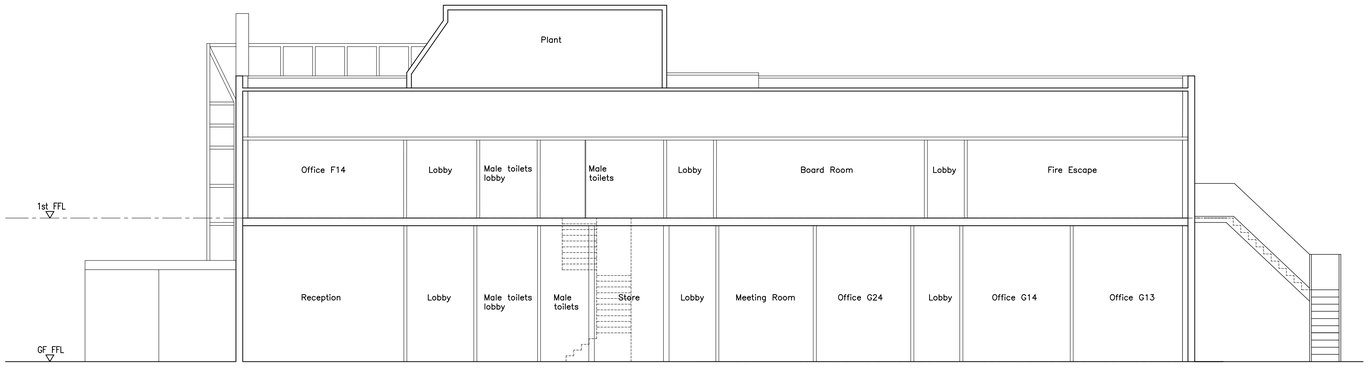
EXISTING REAR (SOUTH WEST) ELEVATION



EXISTING RIGHT SIDE (NORTH WEST) ELEVATION



EXISTING LEFT SIDE (SOUTH EAST) ELEVATION



Section 1-1

SCALE – METRES
0 1 2 3 4 5 6
SCALE – FEET
0 5 10 15 20

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JOB TITLE
BROOK HOUSE
54a COWLEY MILL ROAD
UXBRIDGE UB8 2FX

DRG TITLE
Existing Elevations

SCALE @ A1	DATE
1:100 @ A1	Jan '22

JOB NO.	DRG NO.	REV
10401	710	P2

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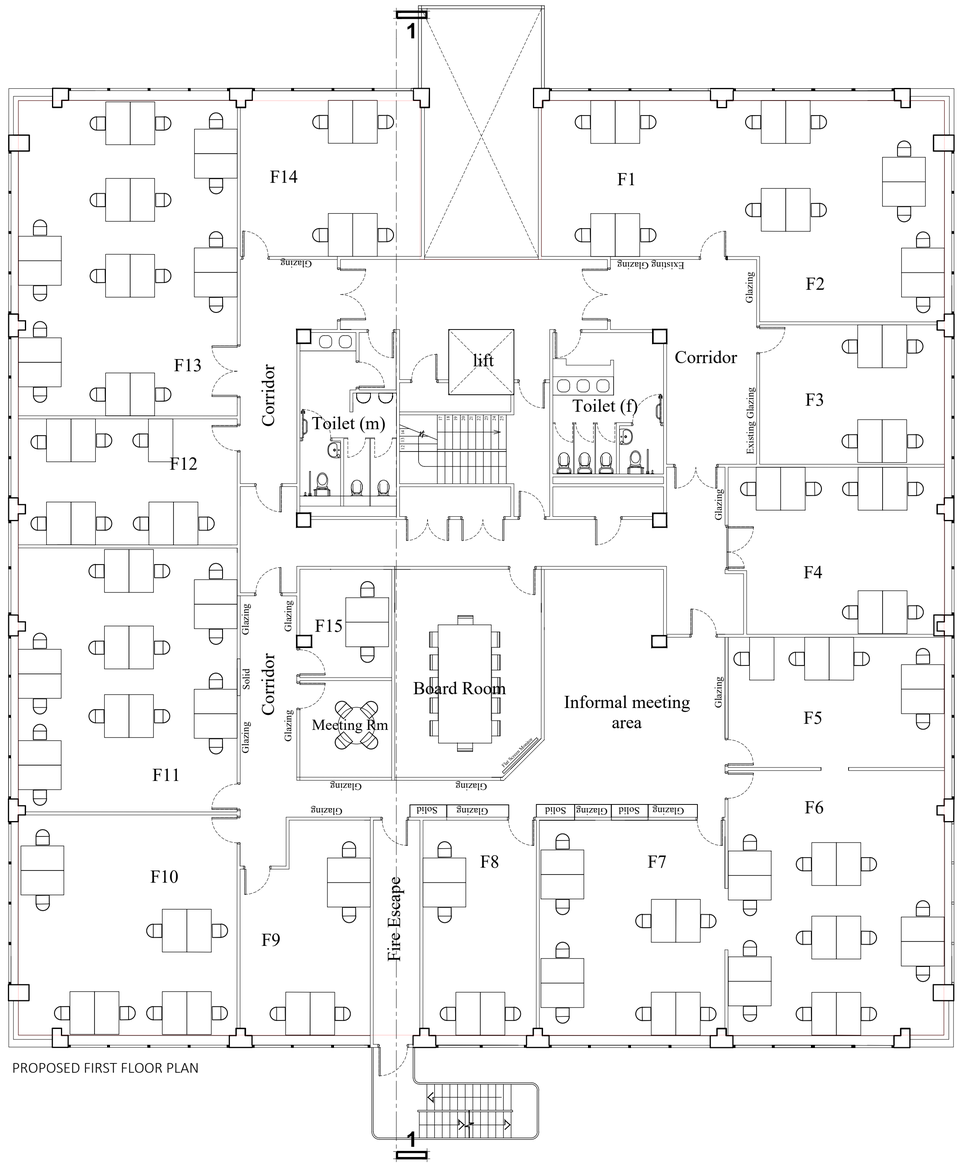
RevNo	Date	Revision note
P1	07th June '22	Preliminary Issue
P2	27th June '22	Extension proposal amended
P3	08th Sept '22	Proposed internal areas added
P4	30th Sept '22	Stairwell door location revised
P5	02nd Dec '22	Section reference added, ground floor support to cantilever over revised
P6	15th Mar '23	Ground floor layout and rear staircase proposal revised
P7	16th June '23	Ground floor layout and rear staircase proposal revised

PROPOSED GROUND FLOOR PLAN



PROPOSED FIRST FLOOR PLAN

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SCALE – METRES
0 1 2 3 4 5 6
SCALE – FEET
0 5 10 15 20

JOB TITLE
BROOK HOUSE
54a COWLEY MILL ROAD
UXBRIDGE UB8 2FX

DRG TITLE
Proposed Ground and First Floor Plans

SCALE @ A1	DATE
1:100 @ A1	Jan '22

JOB NO.	DRG NO.	REV
10401	815	P7

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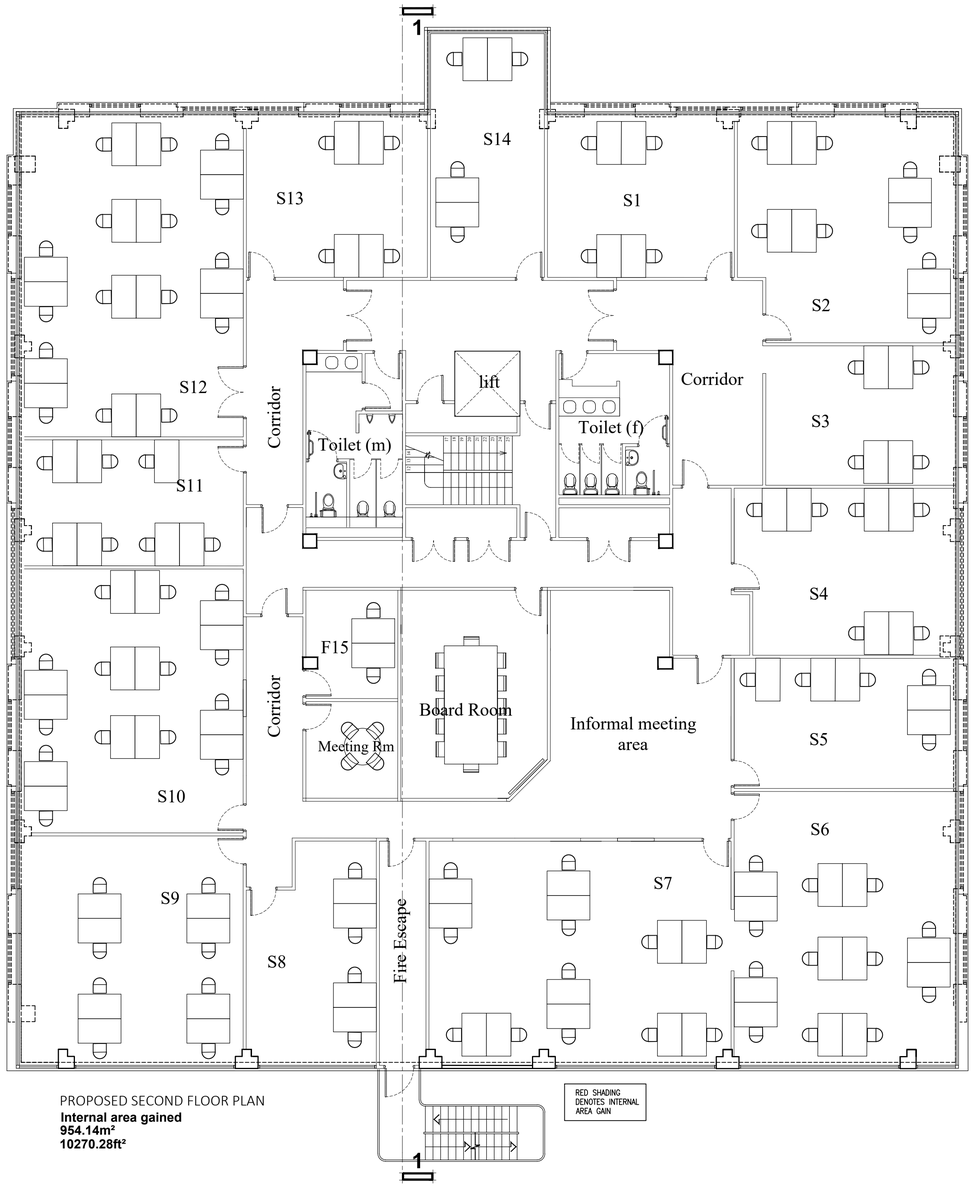
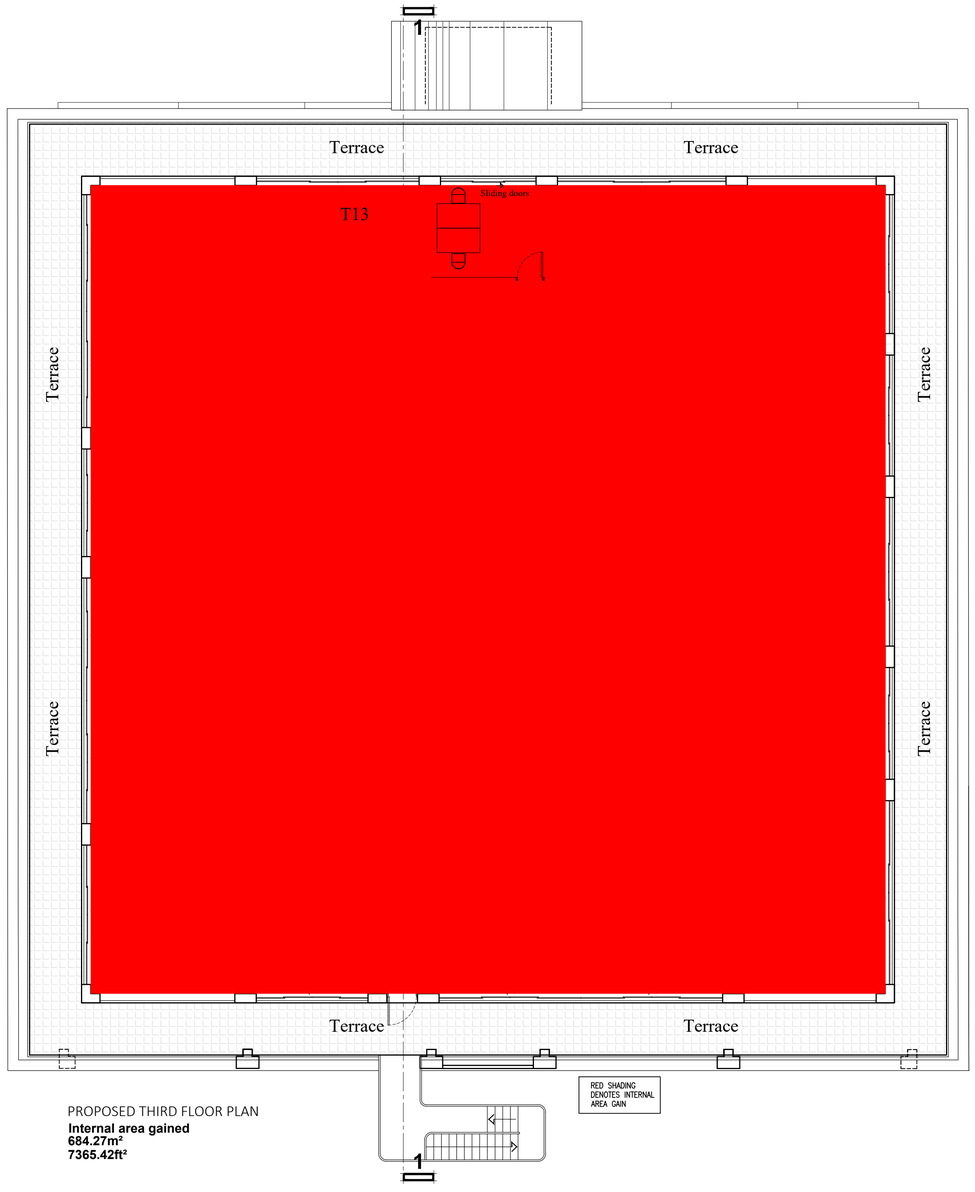
RevNo	Date	Revision note
P1	07th June '22	Preliminary Issue
P2	27th June '22	Second floor revised
P3	08th Sept '22	Proposed internal areas added
P4	02nd Dec '22	Section reference added
P5	15th Mar '23	Rear staircase proposal revised
P6	16th June '23	Rear staircase proposal revised



PROPOSED SECOND FLOOR PLAN
Internal area gained
954.14m²
10270.28ft²



PROPOSED THIRD FLOOR PLAN
Internal area gained
684.27m²
7365.42ft²

SCALE – METRES
0 1 2 3 4 5 6
0 5 10 15 20
SCALE – FEET

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JOB TITLE
BROOK HOUSE
54a COWLEY MILL ROAD
UXBRIDGE UB8 2FX

DRG TITLE
Proposed Second and Third Floor Plans

SCALE @ A1		DATE
1:100 @ A1		Jan '22
JOB NO.	DRG NO.	REV
10401	816	P6

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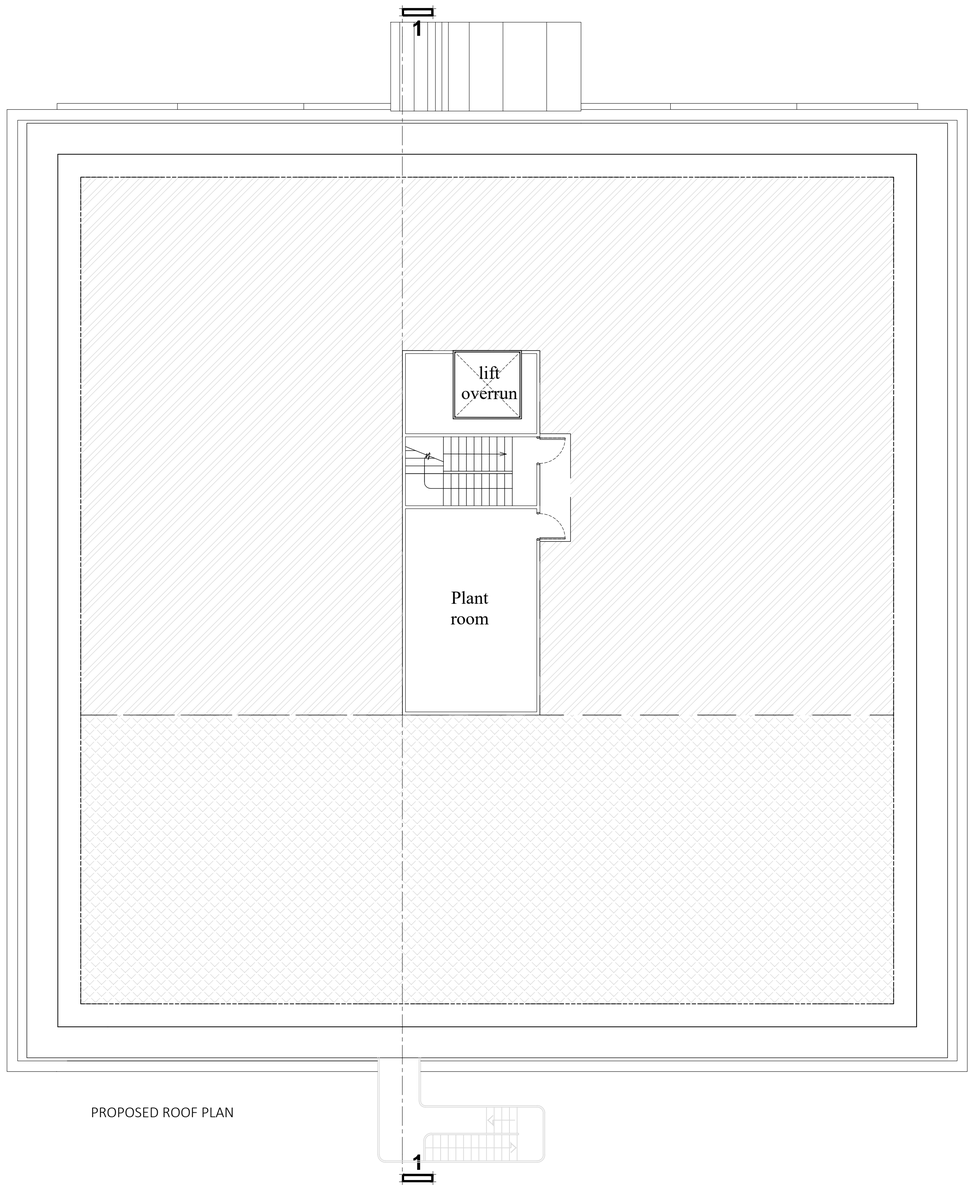
RevNo	Date	Revision note
P1	07th June '22	Preliminary Issue
P2	27th June '22	Plan revised
P3	08th Sept '22	Area for PV panels shown
P4	02nd Dec '22	Section reference added
P5	15th Mar '23	Rear staircase proposal revised
P6	16th June '23	Rear staircase proposal revised



PROPOSED ROOF PLAN

DENOTES 409m² AREA DEDICATED FOR GREEN ROOF

DENOTES 250m² AREA DEDICATED FOR PV PANELS

SCALE – METRES
0 1 2 3 4 5 6
SCALE – FEET
0 5 10 15 20

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JOB TITLE
BROOK HOUSE
54a COWLEY MILL ROAD
UXBRIDGE UB8 2FX

DRG TITLE
Proposed Roof Plan

SCALE @ A1		DATE
1:100 @ A1		Jan '22
JOB NO.	DRG NO.	REV
10401	817	P6

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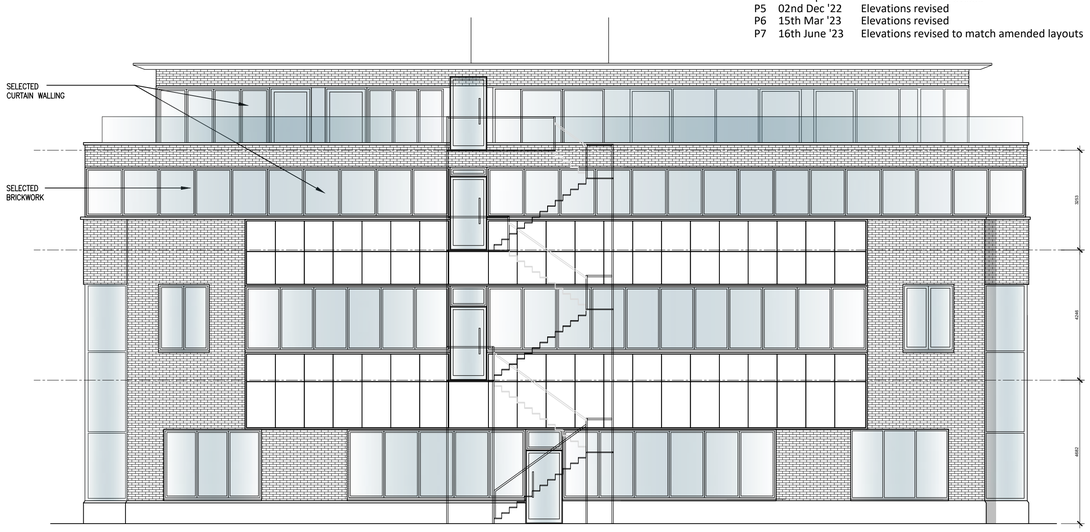
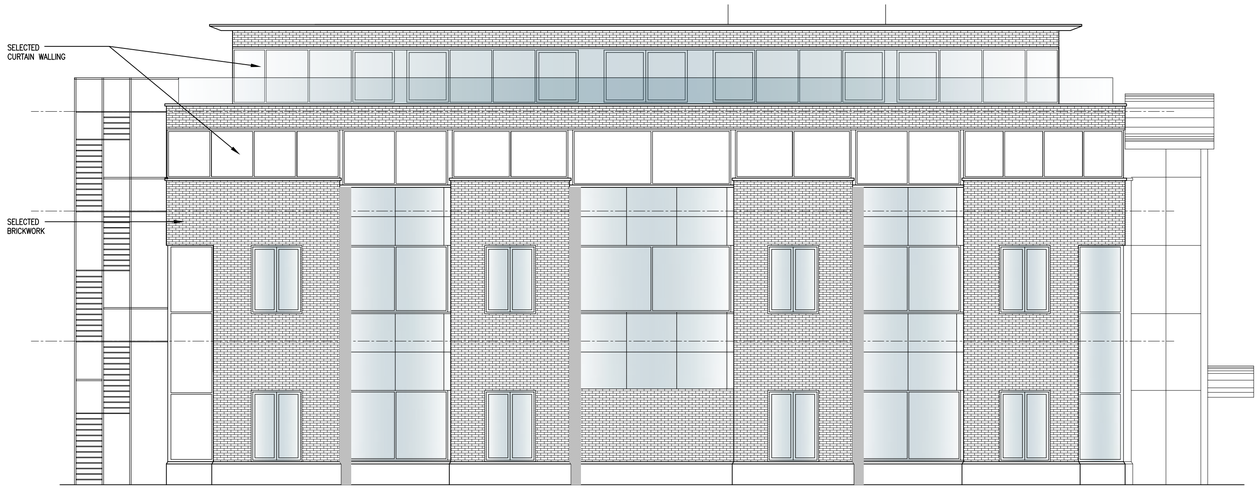
RevNo	Date	Revision note
P1	07th June '22	Preliminary Issue
P2	27th June '22	Elevations revised
P3	28th Sept '22	Proposed material annotated
P4	30th Sept '22	Stairwell location revised
P5	02nd Dec '22	Elevations revised
P6	15th Mar '23	Elevations revised
P7	16th June '23	Elevations revised to match amended layouts

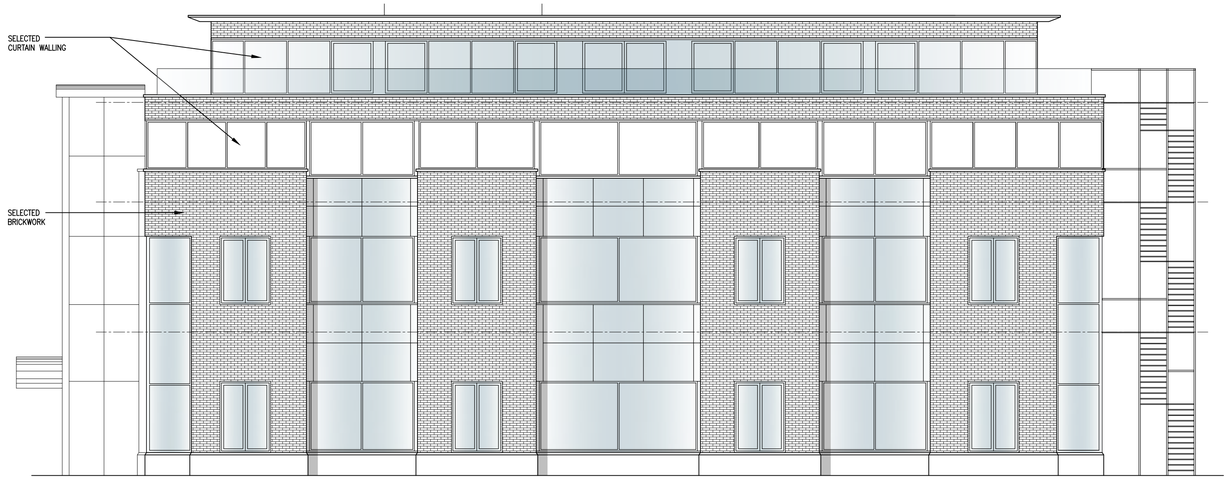
PROPOSED FRONT (NORTH EAST) ELEVATION



PROPOSED REAR (SOUTH WEST) ELEVATION



PROPOSED LEFT SIDE (SOUTH EAST) ELEVATION



PROPOSED RIGHT SIDE (NORTH WEST) ELEVATION

SCALE – METRES
0 1 2 3 4 5 6
0 5 10 15 20
SCALE – FEET

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JOB TITLE
BROOK HOUSE
54a COWLEY MILL ROAD
UXBRIDGE UB8 2FX

DRG TITLE
Proposed Elevations

SCALE @ A1	DATE
1:100 @ A1	Jan '22

JOB NO.	DRG NO.	REV
10401	820	P7

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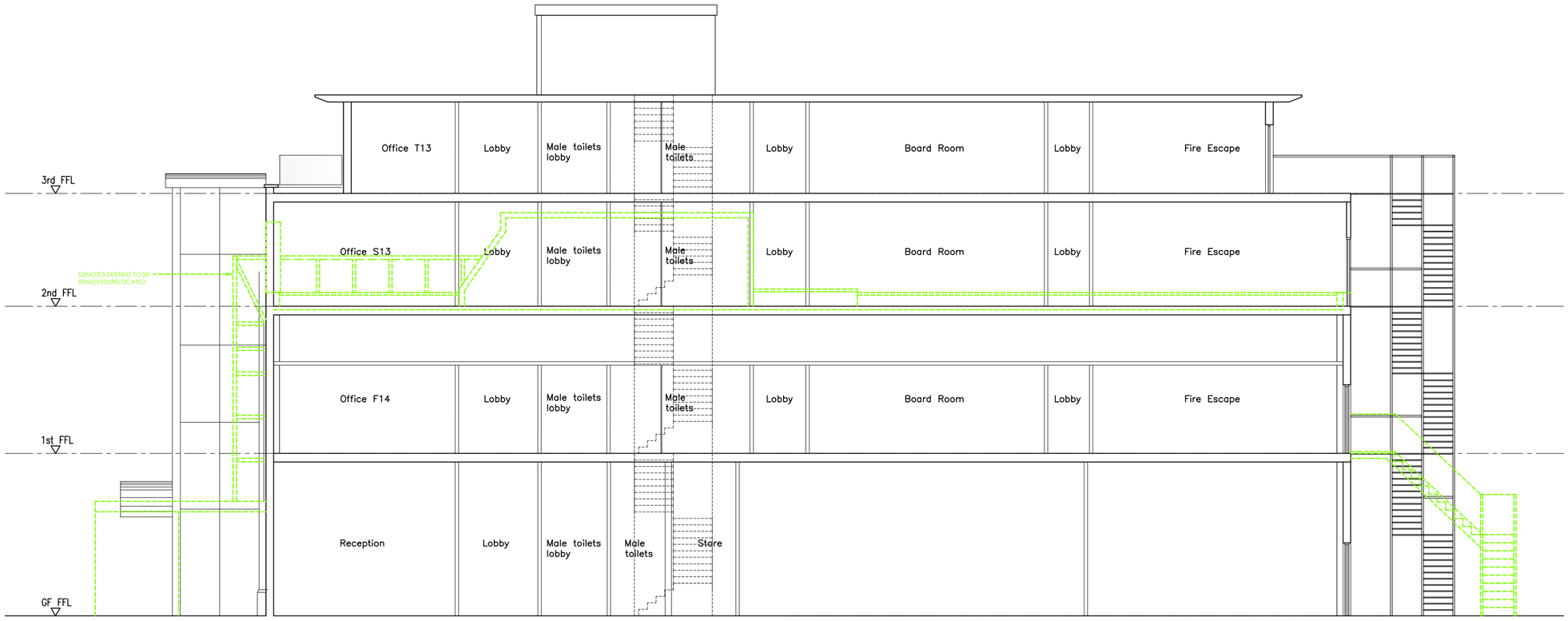
Date	RevNo	Revision note
P1	07th June '22	Preliminary Issue
P2	15th Mar '23	Section amended
P3	16th June '23	Section amended to match amended layouts



SCALE – METRES
0 1 2 3 4 5 6
0 5 10 15 20
SCALE – FEET

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JOB TITLE
Brook House
54a Cowley Mill Road
Uxbridge UB8 2FX

DRG TITLE
Proposed Section

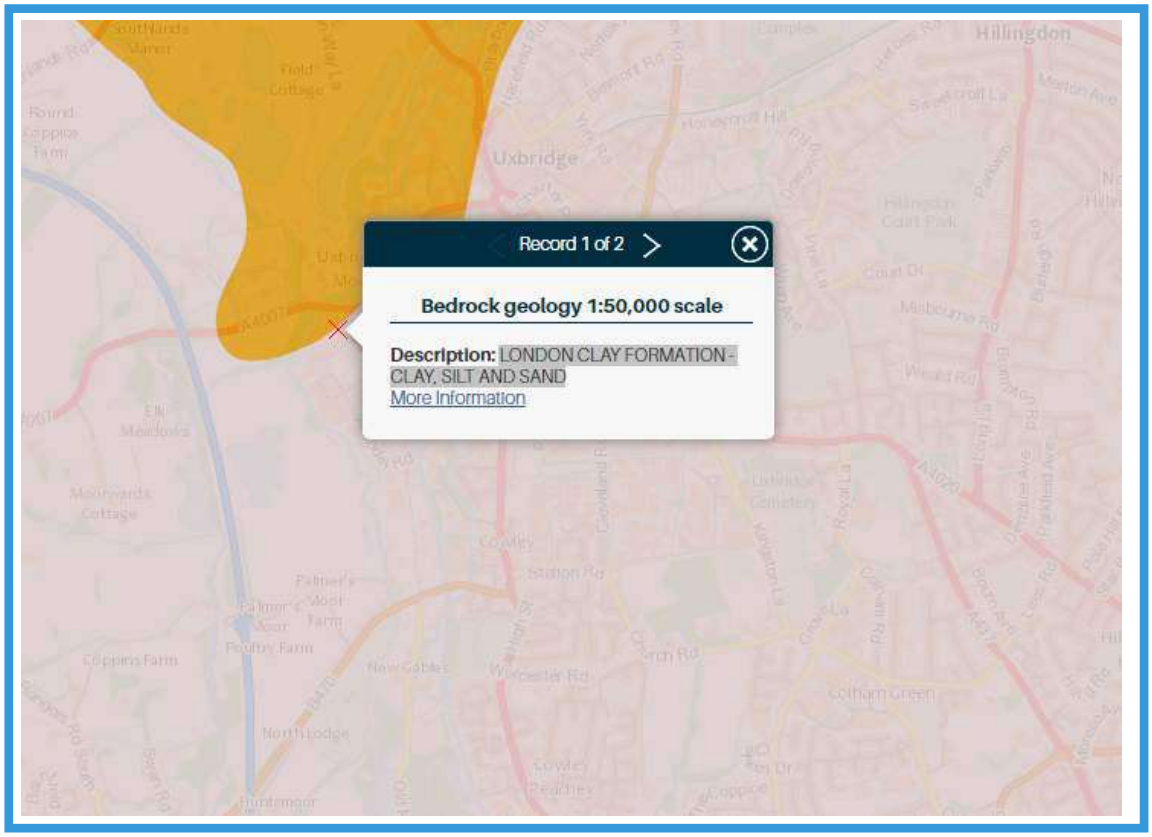
SCALE @ A2		DATE
1:100 @ A2		Dec '22
JOB NO.	DRG NO.	REV
10401	821	P3

Appendix C

SITE GEOLOGY

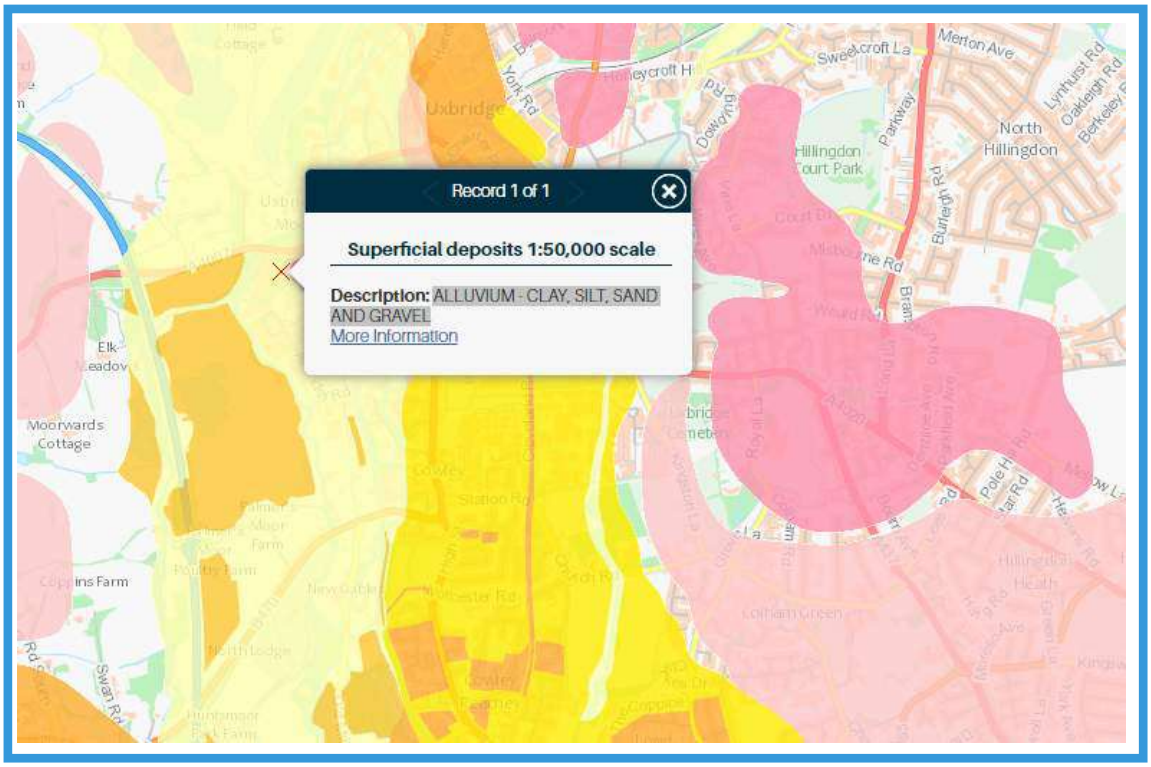
GEOINDEX ONSHORE

GEOLOGY - BEDROCK - LONDON CLAY FORMATION - CLAY, SILT AND SAND



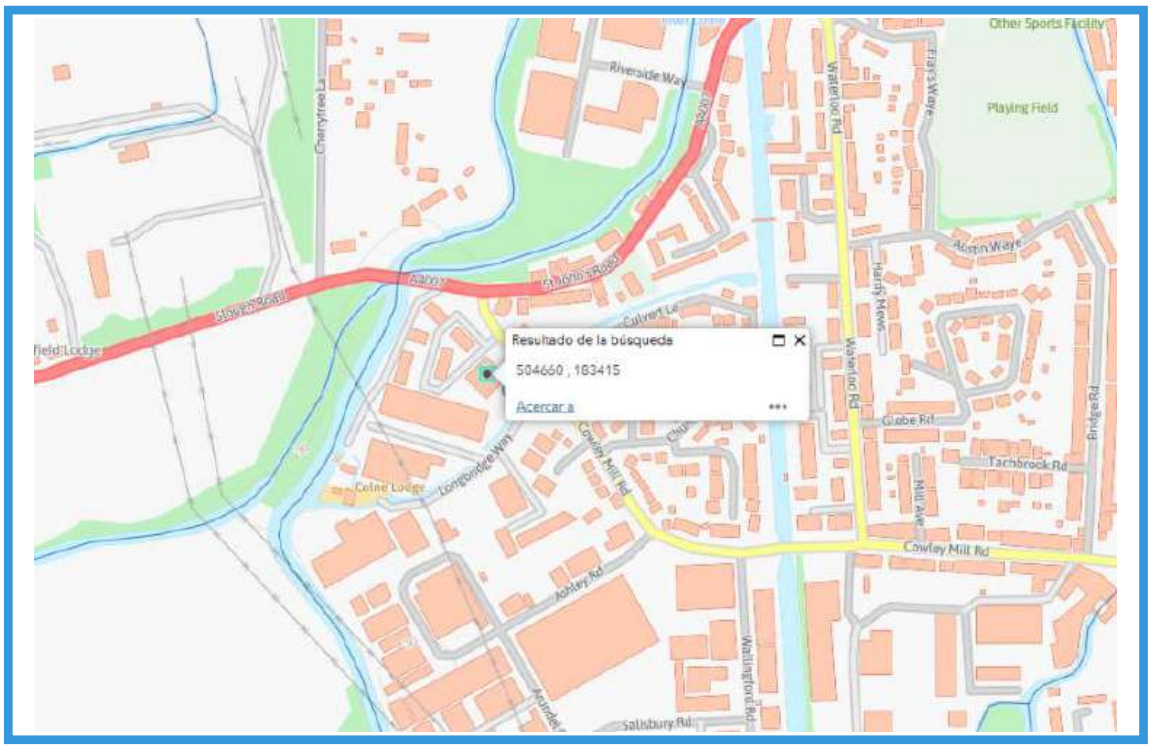
GEOINDEX ONSHORE

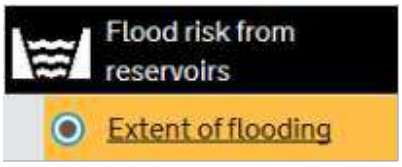
GEOLOGY - SUPERFICIAL DEPOSITS - ALLUVIUM - CLAY, SILT, SAND AND GRAVEL

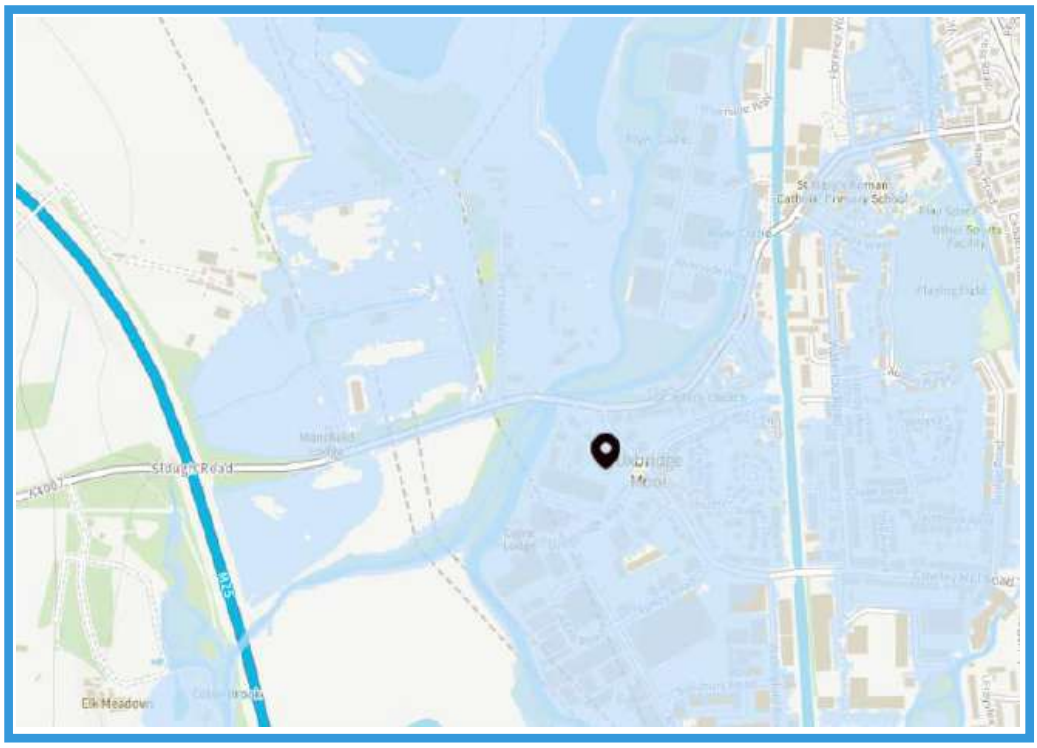


SITE HYDROGEOLOGY

Main River Map



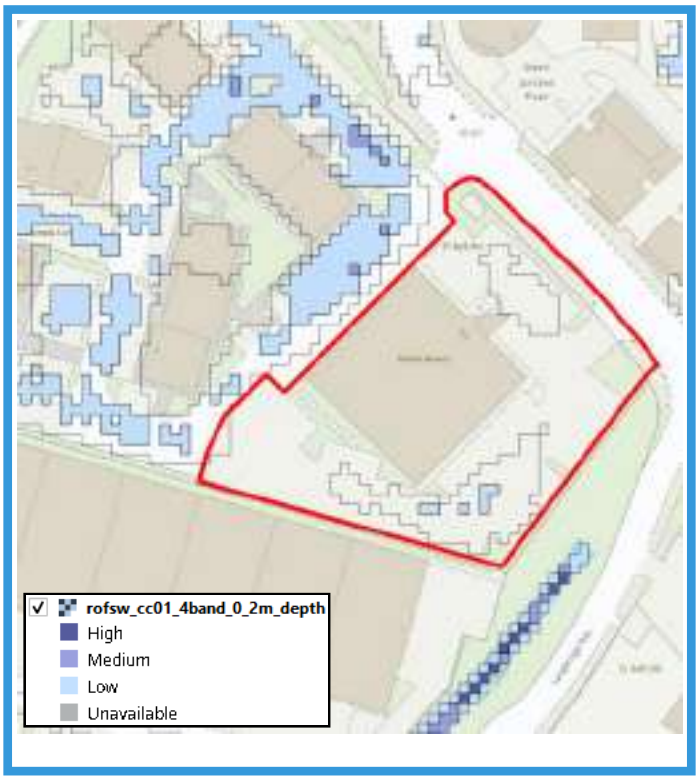


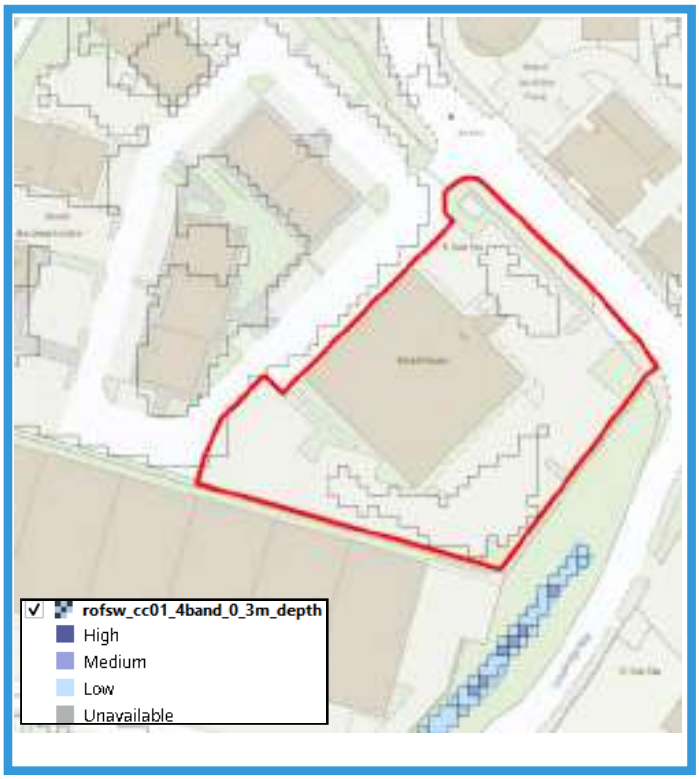


SITE SURFACE WATER FLOOD RISK

High risk means a chance of flooding greater than 3.3% (1:30)
Medium risk means a chance of flooding of btw 1% (1:100) and 3.3%
Low risk means a chance of flooding of btw 0.1% (1:1000) and 1%
Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding

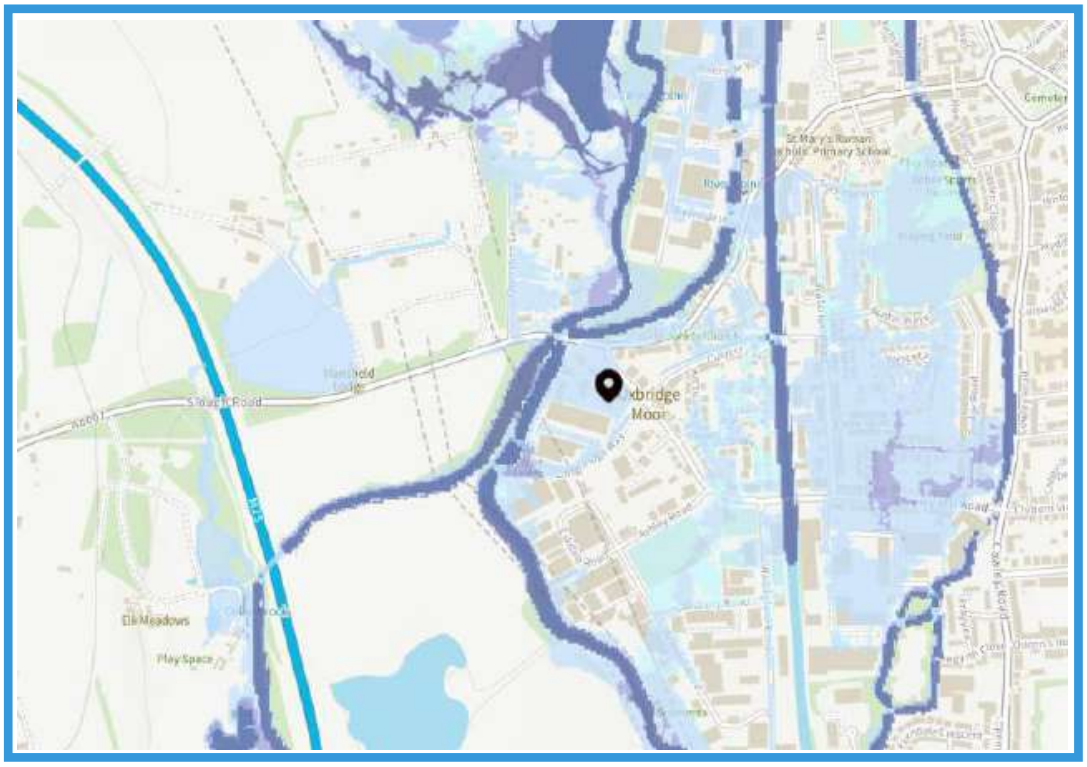
DEPTH





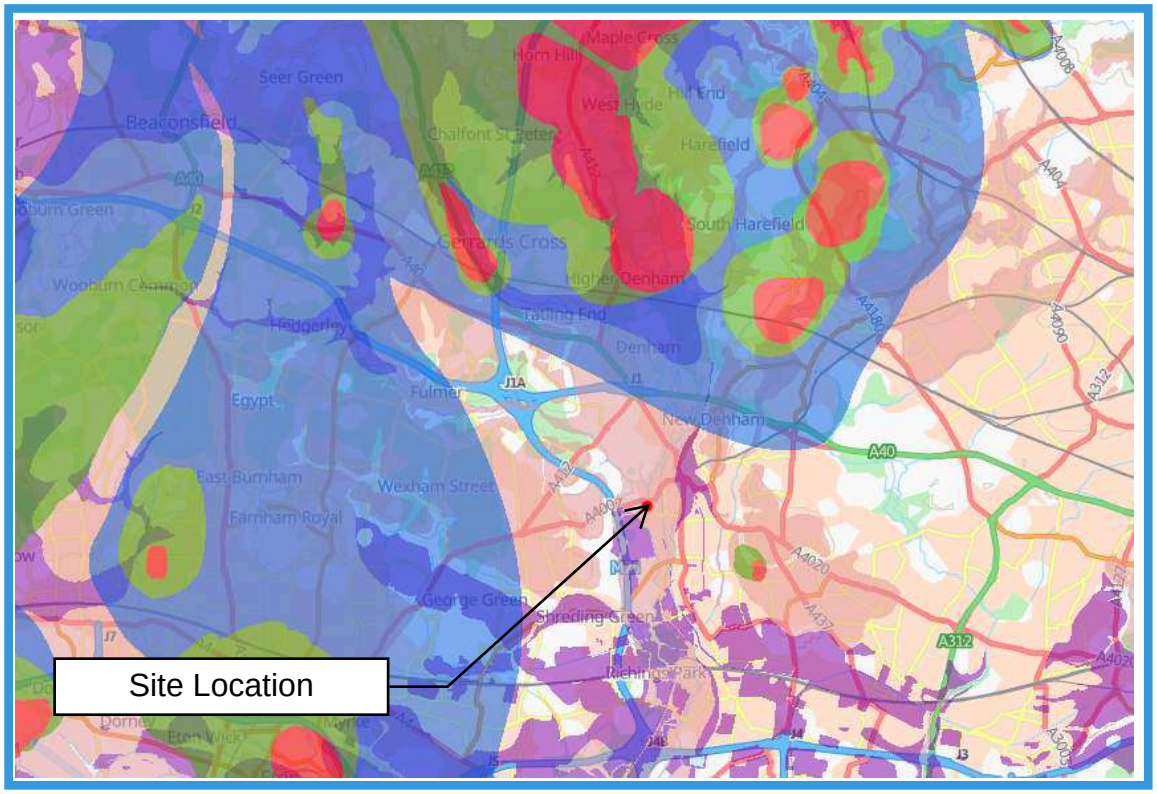
RIVER AND SEA FLOOD RISK MAP

- High - greater than or equal to 1 in 30 (3.3%) chance of flooding in any year
- Medium –Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) chance of flooding in any given year
- Low –Less than 1 in 100 (1%) but greater than or equal to 1 in 1000 (0.1%) chance of flooding in any given year
- Very low –less than 1 in 1000 (0.1%) chance of flooding in any given year



DEPTH

MAGIC RESULTS



Site Check Results

Site Check Report generated on Wed Sep 03 2025

The following features have been found in your search area:

You selected the location: Centroid Grid Ref: TQ04668341

Aquifer Designation Map (Superficial Drift) (England)

TYPOLOGY	Secondary A

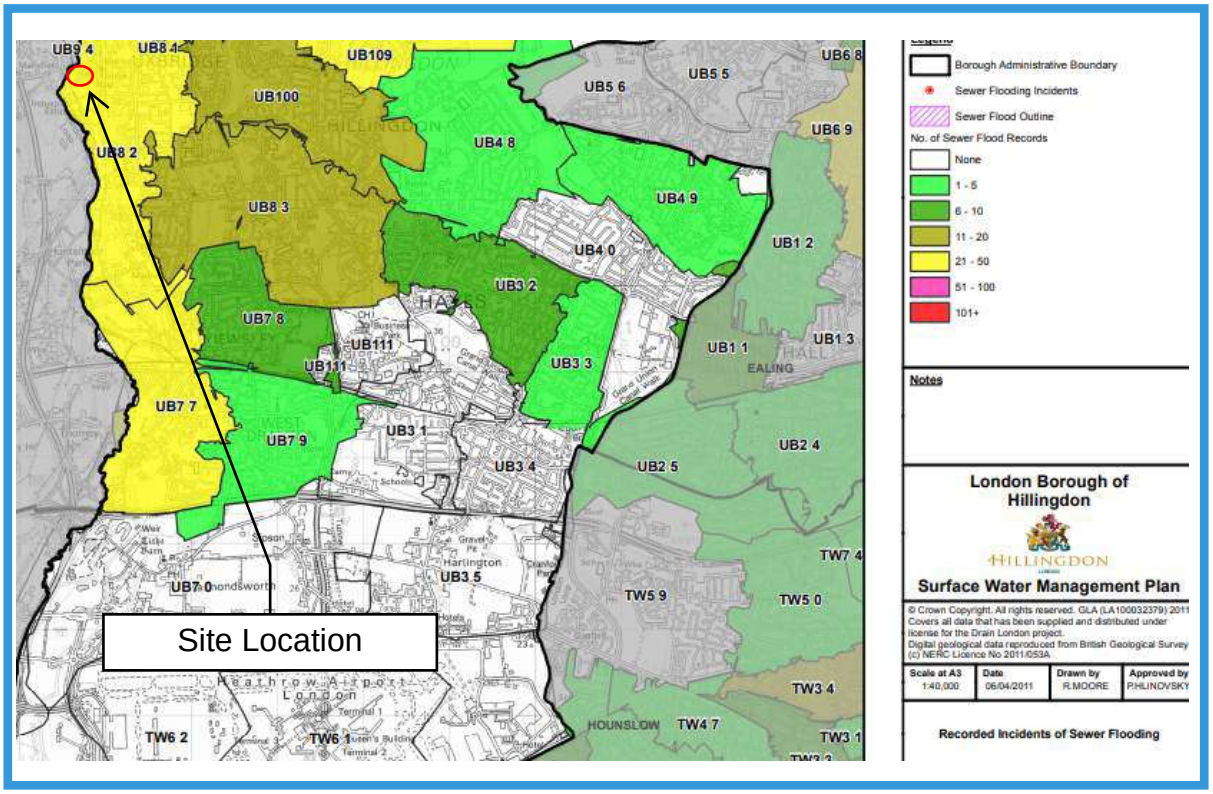
Aquifer Designation Map (Bedrock) (England)

TYPOLOGY	Secondary A
TYPOLOGY	Unproductive

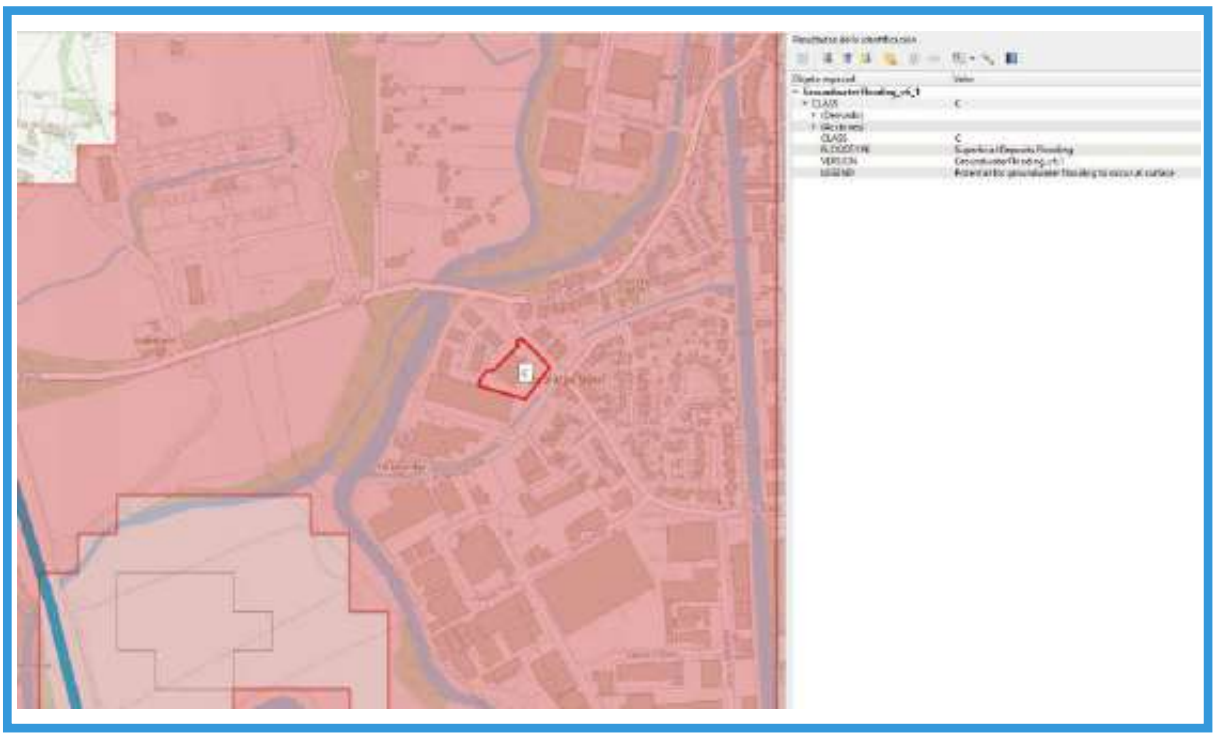
Source Protection Zones merged (England)

No Features found

SITE SEWER FLOODING



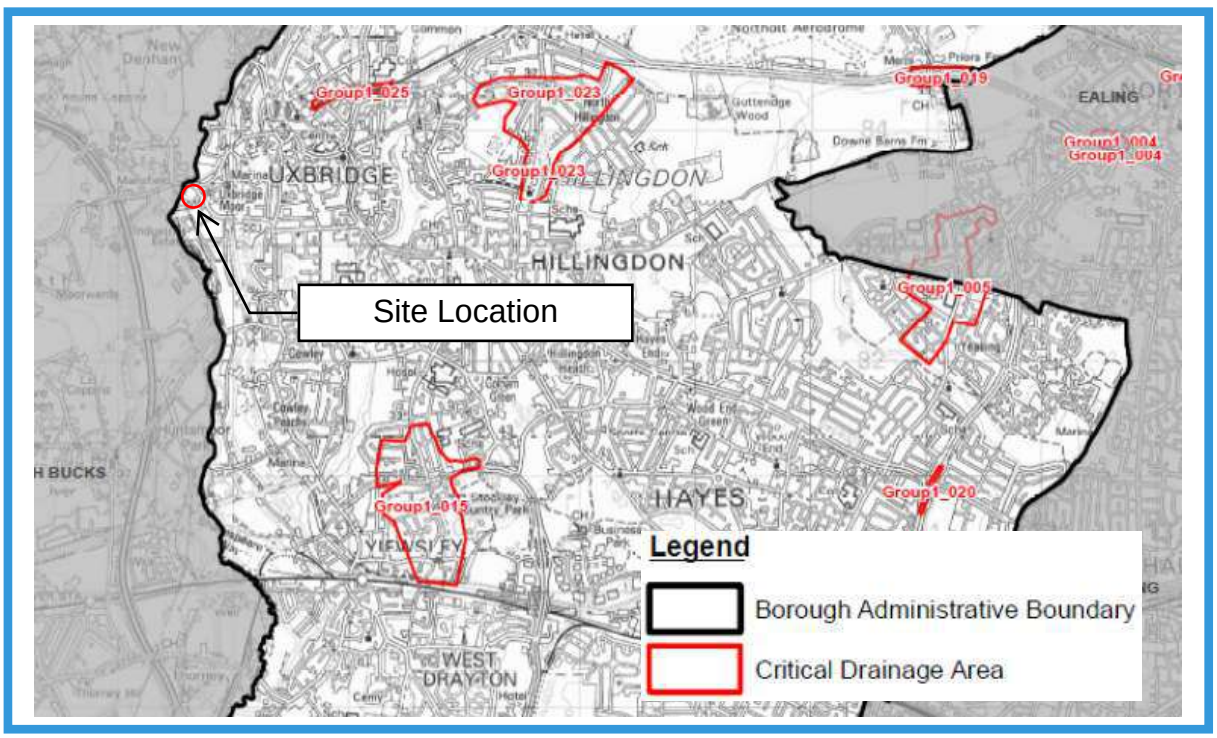
GROUND WATER FLOOD RISK



FLOOD WARNING AREA

Flood Warning areas

CRITICAL DRAINAGE AREA



HISTORIC FLOOD MAP

Historic Flood Outline

Flood map for planning

Your reference	Location (easting/northing)	Created
Unspecified	**504665/183407**	**3 September 2025 14:38**

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

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

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

Notes

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

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

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2025 AC0000807064. https://flood-map-for-planning.service.gov.uk/os-terms

Environment Agency

Flood map for planning

Your reference
Unspecified

Location (easting/northing)
504665/183407

Scale
1:2,500

Created
3 Sep 2025 14:38

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

0 20 40 60 m

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