Client:	**Christchurchgrove Ltd**
Architect / Agent:	**Alan Cox Architects**
Site:	**Land Opposite 15 Sunset View, Barnet, EN5 4LB**
Title:	**FLOOD RISK ASSESSMENT**
Report ref.:	3429_01
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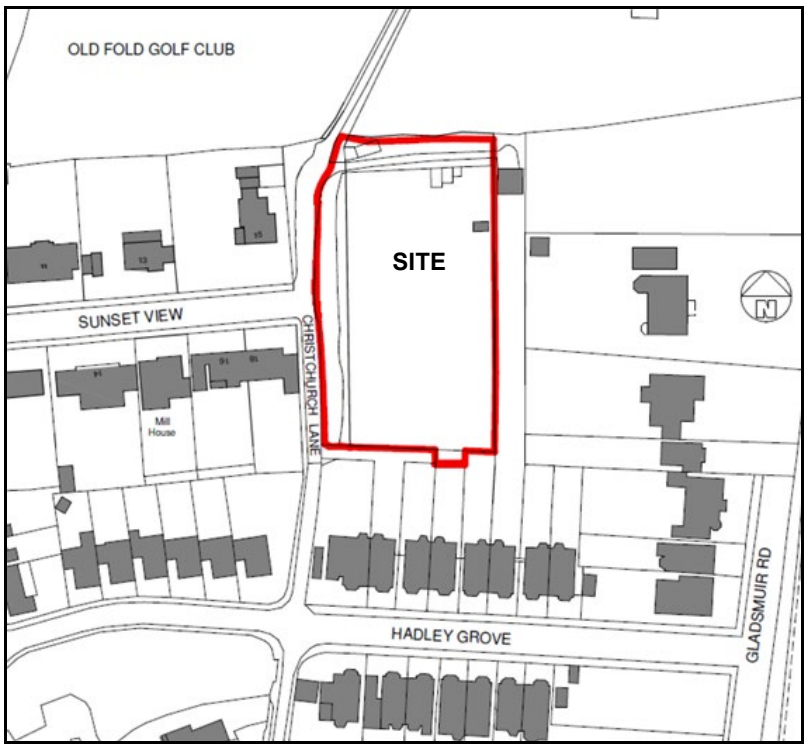

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Cover Image: Site Boundary (red line planning boundary).

Image source: Planning and Design, Statement, Alan Cox Architects, December 2025.

[1] EA = Environment Agency
[2] SFRA = Strategic Flood Risk Assessment

1 Introduction

BOLD Environmental has been commissioned by Alan Cox Architects to undertake a Flood Risk Assessment (FRA) to accompany a planning application for the 'Demolition of the existing garage and erection of a new two storey dwelling' at the site referred to as **'Land Opposite 15 Sunset View, Barnet, EN5 4LB',** (hereafter referred to as 'the site').

Detail of the proposed development (planning application ref: 26/0116/FUL) is provided in Section 2.

1.1 Site-Specific Flood Risk Assessment (FRA)

In accordance with the National Planning Policy Framework (NPPF 2024, as amended 2025) and Environment Agency Guidance, a Site Specific Flood Risk Assessment (FRA) should be both proportionate to the degree of flood risk and appropriate to the scale, nature, and location of the proposed development or land use.

As the proposed development is for a residential dwelling, the Flood Risk Vulnerability Classification for the development has been determined as 'More Vulnerable' (as defined by the NPPF).

The Environment Agency (EA) flood risk setting for the site is determined as Flood Zone 1. The site not within a Critical Drainage Area (CDA) as determined within The London Borough of Barnet Surface Water Management Plan (SWMP) volume 1 (2011) and the West London Strategic Flood Risk Assessment (SFRA, 2024). The site is also not within a Flood Zone 3a Surface Water designation as defined within the SFRA Policy Mapping.

However, The Barnet Borough Council Delegated Report on planning application 26/0116/FUL (ref: dated 6th March 2026) states "*The site is located within Flood Zone 1 and has a low probability of flooding from rivers and the sea, however it is prone to surface water flooding, therefore a site-specific FRA is required*".

In recognition of the general flood risk setting and the comments of the Delegated Report, a **Level 1 Flood Risk Assessment (FRA): Screening Study** has been duly conducted.

The FRA presented within this report therefore follows the government guidance for 'Flood risk assessment: Flood Zones 1, 2, 3 and 3b'.(https://www.gov.uk/guidance/flood-risk-assessment-flood-zones-1-2-3-and-3b).

The aim of the FRA is to provide an appraisal of the potential flood risk posed to the site from all potential sources, and equally the potential impact that the proposed development may have on flood risk to land or property external to the site. The Screening Study will specifically assess the potential flood risk from all sources and outline Mitigation Measures where appropriate.

In completing the FRA, the following data sources were referenced:

- West London Strategic Flood Risk Assessment (SFRA) (2024)
- London Borough of Barnet (LBB) Local Flood Risk Management Strategy 2023 – 2029 (LFRMS)

- Barnet Borough Council Sustainable Drainage Strategy (2023)
- LBB Surface Water Management Plan (SWMP) volume 1 (2011)
- LBB Local Plan 2021 – 2036 (2025)

The Level 1 FRA: Screening Study did not include a Site Reconnaissance.

1.2 General Site Setting

The site is located adjacent east of the junction of Sunset View and Christ Church Lane within the area of Monken Hadley, London Borough of Barnet (LBB). The rectangular site covers an area of approximately 0.3885ha (87m north to south by 48m east to west); centred at National Grid Reference TQ 24405 07210. The Great North Road lies 160m to the east and St Albans Road 175m to the west. The site is within the Monken Hadley Conservation Area.

Historically the site is a former garden plot which has been unattended for decades and now presents as a densely wooded area with a variety of mature trees (including oak, sycamore, ash, Cypress, and Elm)[3] and an understory (shrub layer) of dense foliage. A single built structure (a disused residential garage) is located close to the north-eastern corner of the site, accessed by a grassed track leading from Christ Church Lane near the north-western corner of the site.

The western aspect of the site (along Christ Church Lane) is a more developed woodland, with many mature trees with Tree Preservation Orders, whereas the eastern aspect of the site is more overgrown, still with mature trees, but some regarded as being of lower arboricultural classification[4].

The site is within a predominantly residential area, with the properties of Sunset View to the west, the rear gardens of residential properties on Hadley Grove to the south, rear gardens of properties of Gladsmuir Road to the east and Hadley Green West to the north and north-east. The Old Ford Manor Golf Club lies to the north-west.

A Site Location Map and Existing Site Plan are provided within **Appendix A.**

1.3 Site Topography

A Topographic Survey is included on the Existing Site and Location Plan within **Appendix A.**

Ground elevations across the site broadly fall gently from east to west, with approximate elevations of 130.81 to 130.91mAOD along the eastern site section, 130.64 to 130.72mAOD within the central site section, and elevations ranging from 129.95 to 130.56mAOD along the western site perimeter. There is greater fluctuation in ground elevations north to south through the western site section.

Ground elevations running north to south along Christ Church Lane adjacent west of the site approximate 0.2m lower than the adjacent western site section, with elevations falling from a high of 130.32mAOD on the lane external to the south-west corner of the site, to a low of 129.55mAOD opposite the side elevation of 15 Sunset View.

[3] Many of which are subject to Tree Preservation Orders.
[4] Refer to the following report for details: David Clarke Chartered Landscape Architect and Consultant Arboriculturist Limited (2026)

Published Ordnance Survey mapping indicates a gentle fall in elevation east to west in the vicinity of the site, with the 30mAOD ground contour passing broadly north to south through the western site section.

1.4 Surface Water Bodies / Features

There are no surface watercourses or significant surface water features within the curtilage of the site or within a radial distance of 100m.

The closest water features are open surface water drains approximately 110m east of the site on open ground between Gladsmuir Road and The Great North Road (at a similar elevation to the subject site). Drains are also indicated within the grounds of The Old Ford Manor Golf Club, approximately 100m to the north-west (down gradient of the site). Spring / issues are shown 250m west of the site, close to St Albans Road at a down gradient elevation of 120mAOD. The springs are the start of a surface water course which flows due north-west into The Shire London Golf (away from the site).

Surface Water Features are illustrated on mapping within **Appendix A.**

1.5 Geology and Ground Permeability

Published British Geological Survey (BGS) records indicate bedrock beneath the site to be the London Clay Formation (comprising clay, silt, and sand).

Bedrock is overlain by Superficial Deposits of the Stanmore Gravel Formation (comprising sand and gravel).

There are no published BGS records within the curtilage of the site or within a 250m radius.

The closest BGS records are a series of 8 boreholes 280m to the south / south-east. The boreholes were advanced to 5m below ground level (mbgl) and are collectively referenced 'TTQ29NW50 BARNET TTSA[5] BH1-8' (*date unconfirmed*) grid reference 524500 196900. The boreholes all recorded up to 1m Topsoil over up to 3m of Sand and Gravel, over London Clay, with groundwater encountered at approximately 2mbgl within 7 of the 8 boreholes (within the sand and gravel sequence). The ground elevation approximates 131.4mAOD (which is slightly elevated compared to the site). A similar geological sequence is likely to be replicated at the subject site.

The Environment Agency classification of the London Clay Formation is an Unproductive Strata. The Stanmore Gravel Formation is classification is Secondary A Aquifer (comprising permeable layers that can support local water supplies and may form an important source base flow to rivers).

The site is located within an Environment Agency Source Protection Zone - Inner SPZ1.

[5] Tank Transporter Staging Area (now Army Reserve Centre, St Albans Road).

2 Development Proposal

At the time of preparing this Flood Risk Assessment (FRA), the proposed development at **'Land Opposite 15 Sunset View, Barnet, EN5 4LB**' is as follows: '*Demolition of the existing garage and erection of a new two storey dwelling with rooms in the roof space. Associated landscaping, off street parking and refuse/recycling storage*'. The key elements of the proposed development are as follows:

- **Demolition a single unused residential garage:** Within the north-eastern corner of the site.
- **Construction of a large 2 storey 5 bedroom Detached Residential Dwelling:** With additional rooms within the roof space, an integrated garage and swimming pool. (Located within the eastern aspect of the site and positioned to avoid Tree Preservation Orders).
- **New Gravel Driveway**: A driveway is proposed extending south between the existing unmade track with the northern perimeter to the new house location. The driveway is to be constructed with permeable 'grasscrete'[6] paving. The driveway section adjacent to the house (which includes parking provision) is to comprise gravel.
- **Patios to side and rear of the dwelling:** Constructed of sawn sandstone paving.
- **Pedestrian Pathway:** Linking the house to Christ Church Lane (towards the south-west of the site). Proposed to be constructed using permeable surfacing.
- **Landscaping:** Seeded rear lawns, planted borders, and tree planting adjacent to drive and eastern perimeter (adjacent to house). New 'Green Hedge' to be planted along the northern, western, and southern perimeters.

Vehicular access to the dwelling would be via the existing grassed track which extends into the site from Christ Church Lane (entering at the site's north-western corner). The track will be retained.

It is understood that trees identified for felling to make way for the dwelling would be of 'low grade', which refers to both tree health and arboricultural importance. Refer to Arboricultural report for detail (David Clarke, 2026).

The Western boundary of established woodland trees and foliage would remain, so too the treed areas of the site outside of the proposed house / garden / driveway footprint.

The following drawings are presented within **Appendix B:**

- Proposed Site Plan Showing Areas (Drawing no. 509721-053, rev B, dated 06/25)
- Proposed Plans (Drawing no. 509721-054, rev B, dated 06/25)
- Proposed Site Sections (Drawing no. 509721-057, rev B, dated 06/25)

[6] A permeable rubber or concrete cellular structure which enables grass to grow through open grid sections whilst maintaining a load bearing surface.

- Landscaping Proposal: Proposed new home set within woodland (dated 19/12/25)
- Landscaping Proposal: Hard Landscaping Materials (dated 19/12/25). The drawing illustrates the total hard standing proposed (**bordered in red**).

2.1 Vulnerability Classification of the Development

As the proposed development is for a residential dwelling, the Flood Risk Vulnerability Classification is “More Vulnerable” (as defined by NPPF).

2.2 Proposed Finished Floor Levels

A proposed Finished Floor Level (FFL) is not indicated on application drawings.

FFLs are discussed within Section 4.2 Mitigation Measures.

2.3 Proposed Site Drainage

A Drainage Strategy for the site is yet to be determined.

2.3.1 Surface Water Drainage

The management of surface water drainage would need to accord fully with the Barnet Sustainable Drainage Strategy v4.0 (2023, updated 2024) and the National Standards for sustainable drainage systems (SuDS) (updated 2025)[7].

The surface water drainage strategy will also need to take full consideration of Tree Preservation Orders (TPOs) and Root Protection Areas (RPAs) as detailed within the Aboricultural Report prepared in relation to this planning application (David Clarke, 2026).

The proposed Drainage Strategy should aim to reduce local flood risk where possible through the implementation of selected SuDS measures to achieve greenfield runoff rates; and provide management and attenuation features to ensure surface water runoff is managed as close to the source as possible.

It is noted that the proposed hard standing across the site would be as follows:

- Total Hardstanding (New dwelling Ground Floor (including patio areas) = 103m^2
- Total site area = 3,885m^2

(The driveway and pedestrian pathway would be permeable and not included as hard standing).

2.3.2 Foul Water Drainage

Foul drainage would be connected to existing external Thames Water infrastructure.

Mitigation Measures and further comment regarding Surface Water Drainage is discussed within Section 4.2.

[7] https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems/national-standards-for-sustainable-drainage-systems-suds

3 Flood Hazard and Probability

3.1 Flood Zone Classification

Flood Zone classifications are defined within the National Planning Policy Framework (NPPF) as follows; and relate to the potential risk from flooding by river or sea:

Flood Zone 1 - land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%).

Flood Zone 2 - land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year.

Flood Zone 3 - land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year. Flood Zone 3 is further classified into Flood Zone 3a (high probability) and 3b (the functional floodplain, comprising land where water has to flow or be stored in times of flood).

Environment Agency flood zone mapping indicates the site to be entirely within Flood Zone 1 for both the present day, and with the inclusion of a Climate Change Allowance (Map – Flood map for planning – GOV.UK).

The closest Flood Zone 2/3 delineation is 300m to the west (and down gradient) of the site.

EA Flood Zone mapping is presented within **Appendix C.**[8]

The EA Risk of Flooding from Rivers and the Sea (RoFRS) shows the chance of flooding from rivers and the sea taking into account the presence and condition of flood defences (https://environment.data.gov.uk/explore/96ab4342-82c1-4095-87f1-0082e8d84ef1?download=true). The mapping includes the likelihood of exceeding the following depth bands: 0.2m, 0.3m, 0.6m, 0.9m and 1.2m. **The RoFRS Flood Rating for the site indicates 'No risk' for all depth bands.**

The EA on-line Long Term Flood Risk mapping for Rivers and the Sea (https://flood-warning-information.service.gov.uk/long-term-flood-risk/) confirms **'No risk'** across the site for the present day and future period 2036 to 2069.

3.2 Flood Storage Areas

There are no flood storage areas in close proximity to the site.

3.3 Flood Defences

Flood defence details were referenced from the following EA on-line dataset: AIMS Spatial Flood Defences (inc. standardised attributes) (data.gov.uk). There are no flood defences in proximity to the site.

3.4 Historic Flooding.

The EA on-line historic flood map dataset (Historic Flood Map) indicates no events in proximity to the site.

[8] Open Government Licence

Mapping within the West London SFRA (2024) indicates no flood events in proximity to the site; and confirms that Barnet has not published any specific Flood Investigation Reports regarding historic flood events.

The Barnet Local Flood Risk Management Strategy (LFRMS) contains a link to the Barnet.gov Mapping Tool which illustrates flooding hotspots where flooding has reoccurred between 2011 and 2020. The majority of which resulted from surface water flooding (https://maps.barnet.gov.uk/WebMap/Map.aspx?mapName=LocalFloodRiskManagement). There are no Historic Incidents in proximity to the site.

There are no published records of flood events at the site or in close proximity.

Local unreported events may have occurred.

It is understood that standing water has been evidenced within the rear gardens of properties at 12 Hadley Grove and 16 Sunset View, and within Christ Church Lane. The precise source of such events is unknown (i.e. due to rainfall / surface water accumulation, or groundwater flooding).

Surface Water Flooding and Groundwater Flooding are discussed within Sections 3.5 and 3.7 respectively.

3.5 Surface Water (Pluvial) Flooding

Surface water (pluvial) flooding is rainfall generated overland flow prior to runoff entering a watercourse or sewer. Actual flooding may be a result of either overwhelming of sewerage and drainage systems during extreme events, or less extreme rainfall events over lower permeability ground. In such circumstances, overland flow and ponding may occur in topographic depressions.

The West London Strategic Flood Risk Assessment (SFRA) confirms the site is not within a '**Flood Zone 3a Surface Water'** designation. A map extract of the extent of Flood Zone 3a Surface Water designation is presented within **Appendix D.**

The Environment Agency on-line Long Term Flood Risk mapping (https://www.gov.uk/check-long-term-flood-risk) provides surface water flood risk mapping extents for the yearly chance of flooding for both the present day and the future timeframe 2040 – 2060; together with the potential depth of flooding. The potential surface water flood risk is as follows:

On site

- **For the present day the yearly chance of surface water flooding is indicated as 'No risk' across the site**. **The only exception is a spatially limited area of 'Low Risk'** close to the western site perimeter adjacent to Christ Church Lane, adjacent north of the junction with Sunset View.
- **The future yearly chance of flooding between 2040 and 2060 has an identical risk classification.**

The rating of 'Low' represents between 0.1% and 1% chance of a flood each year.

Mapping indicates the chance of flooding to 20cm depth (or above) to be 'Very Low' for the present day and future years (2040 to 2060).

There is 'No risk' of flooding indicated across the area of the site proposed for the new residential dwelling for either the present day or the future period 2040 – 2060.

External to the site

For the present day, there is a 'Low Risk' of flooding at the following locations:

- Along Christ Church Lane adjacent west of the site, in particular to the south-west of the site, and the section adjacent to 15 Sunset View. Both locations are topographically slightly lower than the site (by approximately 0.1m)[9]
- Within the rear gardens of properties on Sunset View and Hadley Grove, west and south of the site respectively
- Adjacent to the north-east corner of the site (adjacent to a neighbouring garage)
- The future yearly chance of flooding between 2040 and 2060 indicates a 'Medium Risk' to the south-west of the site and the section of Christ Church Lane adjacent to 15 Sunset View.

The rating of 'Medium' represents between 1% and 3.3% chance of a flood each year.

Extracts from the EA Surface Water Flood Mapping database are provided in **Appendix D.**

The EA Risk of Flooding from Surface Water (RoFSW) database mapping shows where flooding is likely to occur as a result of rainfall with a 'High' more than 3.3% (1 in 30), 'Medium' between 1% (1 in 100) and 3.3% (1 in 30) and 'Low' between 0.1% (1 in 1,000) and 1% (1 in 100) chance of happening in any given year. Mapping is included for flooding extents and depths. The maps are available for the Present Day and with the addition of a Climate Change Allowance based on the latest UK Climate Projections (UKCP18)[10]. These estimates are based on projections for the middle of the century.

The RoFSW mapping is reproduced within the West London SFRA (2024) and shows the same flood extent outcome as the mapping shown on the EA Long Term Flood Risk mapping.

RoFSW Mapping indicates the chance of flooding to 20cm depth (or above) to be 'No Risk' across the site for the present day and with the addition of a Climate Change Allowance. 'No Risk' is indicated across the area proposed for redevelopment.

External to the site, for the present day a 'Low Risk' is indicated along spatially limited points along Christ Church Lane (in particular to the south-west of the site and the section adjacent to 15 Sunset View), and within rear gardens on Sunset View and Hadley Grove. This increases to a 'Medium Risk' for the future years 2040 to 2060. The risk of flooding up to 20cm remains a 'Low Risk'.

Extracts from the SFRA RoFSW Mapping are provided in **Appendix D.**

[9] Based on the Topographic Survey detailed on the Existing Site and Location Plan in Appendix A.
[10] Data is sourced from the Met Office. The maps use a mid-range allowance for Representative Concentration Pathways (emissions scenarios that describe potential future greenhouse gas emissions based on assumptions regarding human activity).

Overall, there is 'No Risk' of Surface Water (Pluvial) Flooding for the area proposed for redevelopment, for either the present day or with the addition of climate change.

A 'Low to Medium Risk' of Surface Water Flood Risk is however indicated external to the site.

Surface water flood risk is addressed further within Section 4.2 Mitigation Measures.

3.6 Sewer Flooding

The West London SFRA (2018) presents data collected from Thames Water Utilities Ltd (Thames Water) based on a 4-digit postcode. SFRA mapping indicates the site to be within an area with zero sewer flood incidents based on Thames Water records (2017).

The Barnet.gov.uk website linked to the Local Flood Risk Management Strategy (LFRMS) (Cadcorp SIS WebMap 9 - LocalFloodRiskManagement) indicates the site to be within an area with 1 - 24 sewer flood incidents based on Thames Water records (2017). This is the lowest category.

The Barnet Surface Water Management Plan (SWMP) (2011) indicates the number of recorded incidents by postcode (also based on Thames Water records). The postcode 'EN5 4' is not listed in the table of collated incidents.

Overall, there is no reason to suspect Sewer Flooding would be an issue at the site.

3.7 Groundwater Flooding

The Environment Agency Long Term Risk of Flooding website (https://check-long-term-flood-risk.service.gov.uk/ground-water) states that the site is outside of a groundwater flood alert area; which means that groundwater is not monitored within this area. Although groundwater is not monitored, it does not mean there is no risk of groundwater flooding.

The West London SFRA (2024) references the EA 'Areas Susceptible to Groundwater Flooding' dataset (AStGWF), which indicates areas of potential groundwater emergence due to geological or hydrogeological factors. The AStGWF dataset indicates susceptibility to groundwater flooding as a percentage of a 1km square where groundwater may emerge. The site is within a square with no classification. The closest areas indicated with a susceptibility to groundwater flooding are all areas with a <25% susceptibility.

The SFRA also indicates the site is not within an area with increased potential for elevated groundwater.

The geological sequence of high permeability sand and gravel over lower permeability London Clay would however suggest that groundwater levels may be relatively high at this locality, as can be inferred from BGS borehole records 280m to the south / south-east of the site[11] which encountered groundwater at approximately 2mbgl within the sand and gravel sequence (refer to Section 1.6).

The site and immediate vicinity could therefore be prone to potential groundwater flooding due to saturation of the sand and gravel layer following significant rainfall events. There are however no published flood event records attributed to groundwater flooding at this locality.

[11] Within the curtilage of the Army Reserve Centre, St Albans Road.

In terms of the proposed development, the design does incorporate an indoor swimming pool. Although depth of construction is not included on plans, it is unlikely that the excavated base would reach much beyond 2mbgl (the inferred groundwater elevation)[12]. It is considered unlikely that the construction would have a significant impact on the groundwater flow trajectory.

The Barnet Surface Water Management Plan (SWMP, 2011) does not contain site specific details of historic flood events attributed to groundwater.

Overall, the potential risk of Groundwater Flooding is considered to be 'Low Risk'.

3.8 Flooding from Artificial Sources

The EA Long Term Risk of Flooding website (https://check-long-term-flood-risk.service.gov.uk/map?easting=527934&northing=185568&map=Reservoirs) states that risk of flooding from reservoirs is 'Unlikely'.

3.9 Critical Drainage Areas

Critical Drainage Areas (CDAs) are 'discrete geographical areas where multiple and interlinked sources of flood risk (surface water, groundwater, sewer, main river and/or tidal) cause flooding in one or more Local Flood Risk Zones (LFRZs) during severe weather, which can impact people property or local infrastructure.'

There are 33 CDAs identified across the London Borough of Barnet.

The Barnet.gov.uk website linked to the Local Flood Risk Management Strategy (LFRMS) (2017) indicates that the site is not within a CDA (Cadcorp SIS WebMap 9 - LocalFloodRiskManagement) and not within a 'Flood Zone 3a Surface Water' designation.

3.10 Climate Change

Climate Change will potentially increase both the frequency and intensity of localised storms, which could heighten localised drainage problems. In general, the impacts of climate change should be assessed over the lifetime of a proposed development; and calculated in accordance with the National Planning Policy Framework (NPPF).

On 20th July 2021, the Environment Agency published Climate Change Allowance changes for the assessment of flood risk. The new CCAs for use in flood risk assessment are based on 'Management Catchments' (*replacing the former use of larger river basin districts*). The updated text in the NPPF states that: "All plans should apply 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." The guidance was further updated in May 2022 to address changes to the requirements for peak rainfall allowances.

Climate change has been considered within the databases referenced within Section 3 of this report, notably the EA Long Term Risk of Flooding dataset.

[12] As recorded within boreholes at the Army Reserve Centre, St Albans Road.

4 Summary and Conclusion

4.1 FRA Summary Points

- Environment Agency flood zone mapping indicates **'Land Opposite 15 Sunset View, Barnet, EN5 4LB'** ('the site') to be in **Flood Zone 1**.

- The site is not located within either a Critical Drainage Area (CDA) or a Barnet 'Flood Zone 3a Surface Water' designation.

- In recognition of the flood risk setting, a **Level 1 Flood Risk Assessment (FRA): Screening Study** was conducted.

- **The RoFRS Flood Rating for the site indicates 'No Risk' of fluvial flooding across the site (less than 1 in 1,000 [0.1%] in any given year).**

- There are no surface water features or watercourses in proximity to the site.

- **Historical Flooding:** The site has not been impacted by flooding from any source.

- Topographic elevations: Ground elevations across the site broadly fall gently from east to west (in line with published OS Mapping). External ground elevations running north to south along Christ Church Lane adjacent west of the site approximate 0.2m lower than the adjacent western site section, with elevations falling from a high of 130.32mAOD on the lane external to the south-west corner of the site, to a low of 129.55mAOD opposite the side elevation of 15 Sunset View.

- Published British Geological Survey (BGS) records indicate that bedrock beneath the site is the London Clay Formation (comprising clay, silt, and sand), an Unproductive Strata. Bedrock is overlain by Superficial Deposits of the Stanmore Gravel Formation (comprising sand and gravel) a Secondary A Aquifer.

- **Surface Water Flood Risk:** EA on-line Long Term Flood Risk mapping

  <u>On site</u>

  For the present day the yearly chance of surface water flooding is indicated as 'No risk' across the site. **The only exception is a spatially limited area of 'Low Risk'** close to the western site perimeter adjacent to Christ Church Lane, adjacent north of the junction with Sunset View.

  The future yearly chance of flooding between 2040 and 2060 has an identical risk classification.

  The rating of 'Low' represents between 0.1% and 1% chance of a flood each year.

  Mapping indicates the chance of flooding to 20cm depth (or above) to be 'Very Low' for the present day and future years (2040 to 2060).

  There is 'No risk' of flooding indicated across the area of the site proposed for the new residential dwelling for either the present day or the future period 2040 – 2060.

External to the site

For the present day, there is a 'Low Risk' of flooding at the following locations:

- Along Christ Church Lane adjacent west of the site, in particular to the south-west of the site, and the section adjacent to 15 Sunset View. Both locations are topographically slightly lower than the site (by approximately 0.1m)
- Within the rear gardens of properties on Sunset View and Hadley Grove, west and south of the site respectively
- Adjacent to the north-east corner of the site (adjacent to a neighbouring garage)

The future yearly chance of flooding between 2040 and 2060 indicates a 'Medium Risk' to the south-west of the site and the section of Christ Church Lane adjacent to 15 Sunset View.

- **Surface Water Flood Risk:** EA Risk of Flooding from Surface Water (RoFSW)

  The chance of flooding to 20cm depth (or above) is 'No Risk' across the site for the present day and with the addition of a Climate Change Allowance. 'No Risk' is indicated across the area proposed for redevelopment.

  External to the site, for the present day a 'Low Risk' is indicated along spatially limited points along Christ Church Lane (in particular to the south-west of the site and the section adjacent to 15 Sunset View), and within rear gardens on Sunset View and Hadley Grove. This increases to a 'Medium Risk' for the future years 2040 to 2060. The risk of flooding up to 20cm remains a 'Low Risk'.

  Overall, there is 'No Risk' of Surface Water (Pluvial) Flooding for the area proposed for redevelopment, for either the present day or with the addition of climate change.

  A 'Low to Medium Risk' of Surface Water Flood Risk is however indicated external to the site.

- The site is considered to be at 'Low Risk' of Groundwater Flooding.
- The risk of flooding from reservoir failure is 'Unlikely'.
- **Proposed Development:** At the time of preparing this Flood Risk Assessment (FRA), the proposed development comprised the following key elements:
  - **Demolition a single unused garage**
  - **Construction of a large 2 storey 5 bedroom Detached Residential Dwelling**
  - **New Gravel Driveway**
  - **Patios to side and rear of the dwelling**
  - **Pedestrian Pathway:** Linking the house to Christ Church Lane

- **Landscaping:** Seeded rear lawns, planted borders, and tree planting adjacent to the drive. New 'Green Hedge' to be planted along the northern, western, and southern perimeters.

4.2 Mitigation Measures

In considering flood Mitigation Measures appropriate to the site and the proposed development; the following key flood risk factors have been taken into consideration:

- The site is within Flood Zone 1 and at 'No Risk' of fluvial flooding.
- The site is at 'No Risk' of Surface Water Flooding.
- The site is at a 'Low Risk' of Groundwater Flooding; 'Unlikely' to be impacted by reservoir flooding; and has not been impacted by historic flooding from any source.

There are no significant sources of flooding likely to impact the site or the area proposed for redevelopment. The only potential risk is a 'Low' risk of groundwater flooding. It is therefore advised that the development should avoid basement levels. The current design does not include a basement level.

The following comments are put forward regarding Mitigation Measures for the house construction:

- **Finished Floor Level (FFL): In the absence of a significant on-site flood risk, a nominal FFL for the house could be considered.**
- **In the absence of a significant on-site flood risk, no additional flood resistance or resilience measures are considered necessary within the structure of the house.**

Although there is negligible risk of flooding across the actual site, it is noted that off-site areas to the west and south-west are prone to a 'Low to Medium Risk' of surface water flooding. As the site is slightly elevated from the areas west and south, the overall development should be designed and constructed so as not to increase the potential risk of off-site flooding during both its construction and future use (in accordance with the principals of the NPPF).

The principal Flood Mitigation Measure for this development as a whole is the appropriate Management of Surface Water Drainage. Refer to Section 4.2.1.

When considering suitable mitigation measures, reference has been made to the NPPF (2025) paragraph 175; Barnet's Local Plan 2021 - 2036 (2025) Policy ECCO2 Environmental Considerations section 10.13 Flood and Water Management; the application of the National Standards for sustainable drainage systems (SUDS); and GOV.UK Preparing a flood risk assessment: standing advice.

4.2.1 Surface Water Management

A Surface Water Drainage Strategy (SWDS) is required for this development and is to be provided under separate cover.

In accordance with the LBB Local Plan, the SWDS should aim to meet greenfield run-off rates (via the use of SuDS) and ensure that surface water management is as close to source

as possible. The following comments are recommended for consideration with a SWDS, and are referenced to the current plans:

SuDS Measures

- Use of water butts for retain rainwater for irrigation and green roofs to attenuate water at source.
- Use of 'Rain Gardens' for the proposed planted zones adjacent to the patio hard standing. These will slow infiltration and with the use of perforated pipes radiate surface water runoff across a wider area of the seeded lawn.
- Maximise Permeable Surfaces: This has been proposed through the use of 'Grasscrete' and gravel sections along the proposed driveway (and potentially the pedestrian pathway to Christ Church Lane).
- Underground Cellular Tanks: These could be introduced for the management of surface water runoff as storage for excess rainwater from the house roofs and subsequent slow release via infiltration. If used, care would need to be taken during installation with respect to Root Protection Areas (RPAs).

  The superficial geology beneath the site is topsoil over sand and gravel. Infiltration techniques as suggested above are therefore likely to be viable (subject to Infiltration [Soakaway] Testing in accordance with BRE Digest 365).

Surface Water / Groundwater Management (Wider Site)

- Tree Felling: It is understood that a number of trees would be felled to make way for this development. This has the potential to reduce the overall water uptake across the site and could increase the potential for off-site runoff / groundwater seepage. However, it is noted that trees with preservation orders (TPOs) will be retained, which tend to be more mature trees, typically with greater water uptake and more expansive root systems. In flood risk terms, the intended felling of smaller trees and removal of some scrub vegetation with lower water demand is unlikely to give rise to noticeable excess water and increased off-site flood risk. Related to this point, it is noted that the western woodland section of the site would be retained, which has the most significance in terms of water retention.
- The proposed planting of a new boundary hedgerow along the northern, western, and southern perimeters would be beneficial with regard to water retention within the site.
- The proposed Management Plan for the green / woodland aspects of the site would indirectly aid in the future management of water uptake across the site through arboricultural management of trees to ensure their health and longevity.

4.2.2 Flood Warnings and Alerts

Not applicable. The site is not considered to be at any significant risk of flooding.

4.2.3 Access and Evacuation

Not applicable. The site is not considered to be at any significant risk of flooding.

4.3 Concluding Comments

- The site is within Fluvial Flood Zone 1, but *not* within a Flood Zone 3A Surface Water designation or a Critical Drainage Area.
- There are no significant risks of flooding within the site.
- An off-site surface water flood risk has been identified within neighbouring streets.
- The principal Mitigation Measure for this site is the Management of Surface Water; in particular the attenuation of surface water infiltration to manage and reduce potential off-site water migration and off-site flood risk.
- In the absence of any significant flood risk either on-site or to neighbouring properties, it is anticipated that a detailed site-specific Surface Water Drainage Strategy could be submitted by way of a pre-commencement condition.
- *This FRA should be reviewed if Development Plans are changed.*

5 Closure

The conclusions and recommendations made in this report are limited to those that can be made on the basis of the research conducted. The results of the research should be viewed in the context of the work that has been conducted, and no liability can be accepted for matters outside the stated scope of the research. Any comments made on the basis of information obtained from third parties are given in good faith on the assumption that the information is accurate. No independent validation of third party information has been made by BOLD Environmental Ltd.

The ‘vicinity’ of the site for the purposes of the report, is defined as locations situated within an approximate 250m radius of the site, although certain sources of contamination and/or sensitive targets further than 250m of site have also been included. Advice provided within this report is based on current guidelines available at the time of writing. This report is subject to amendment in light of additional information becoming available or statutory consultee review, including the Environment Agency and Local Council.

This report is written in the context of an agreed scope of work between BOLD Environmental Ltd and the Client and should only be used in this specific context. Re-interpretation of this report in whole or part may become necessary if additional information becomes available or practices or legislation changes.

BOLD Environmental Ltd does not provide legal advice; the advice of the Client’s legal advisors may also be required. BOLD Environmental Ltd Terms and Conditions apply.

6 References

Barnet Borough Council Sustainable Drainage Strategy 2023

Barnet.gov.uk website linked to the Local Flood Risk Management Strategy (LFRMS)

Barnet Local Plan 2021 – 2036 (2025) March 2025 Version 1

Brown & Co (2025) Preliminary Ecological Appraisal Land Opposite 15 Sunset View, High Barnet (December 2025)

David Clarke Chartered Landscape Architect and Consultant Arboriculturist Limited (2026) Arboricultural Report, Land Opposite 15 Sunset View, Barnet, EN5 4LB (Jan. 2026)

Department for Levelling Up, Housing & Communities and Ministry of Housing, Communities and Local Government (2016) Planning practice guidance (updated February 2024)

GOV.UK Flood risk assessment: Flood Zones 1, 2, 3 and 3b

London Borough of Barnet Local Flood Risk Management Strategy 2023 – 2029 (LFRMS)

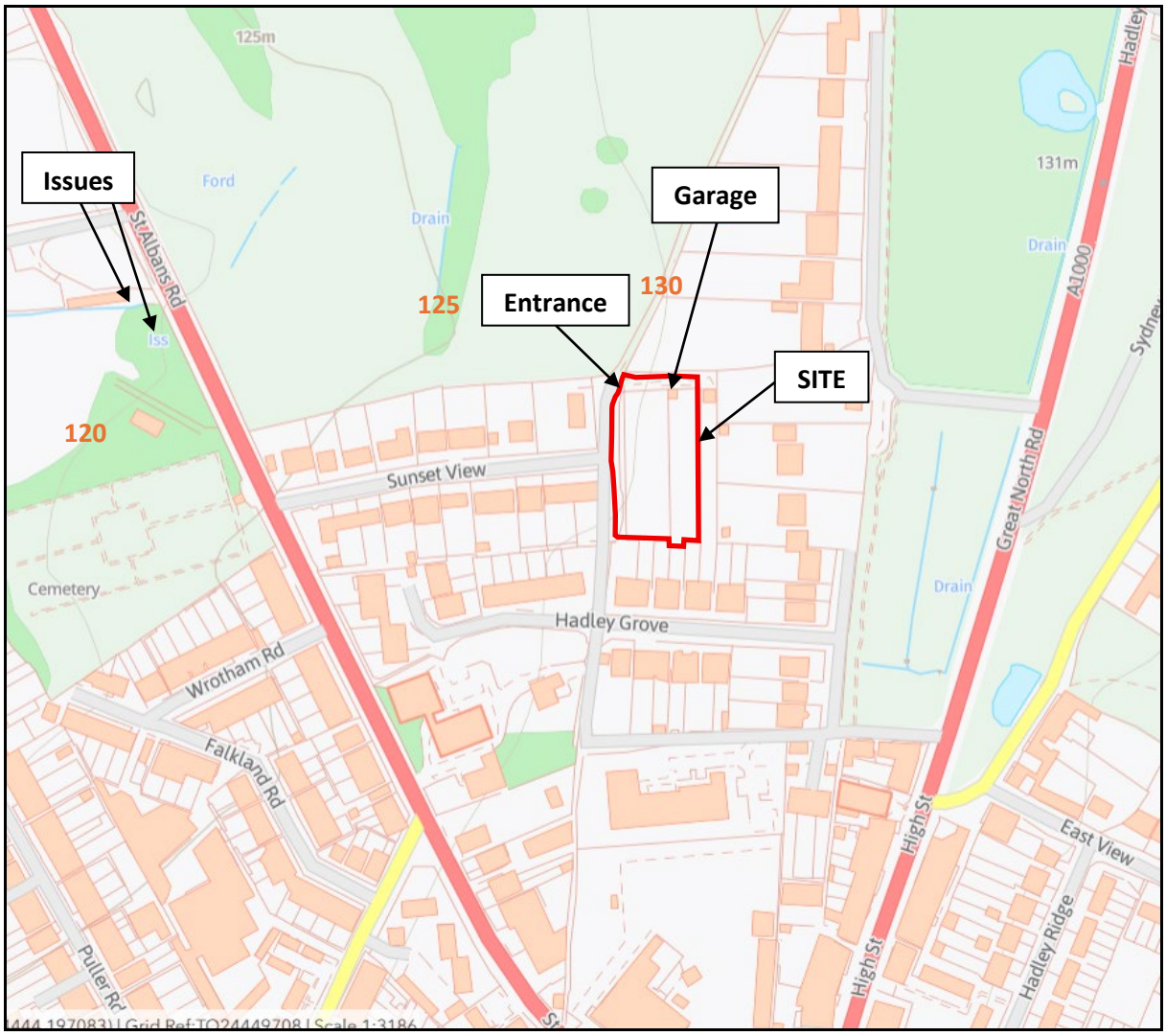
London Borough of Barnet Surface Water Management Plan (SWMP) volume 1 (2011)

Ministry of Housing, Communities and Local Government (2024) National Planning Policy Framework (NPPF) December 2024 as amended 2025

West London Strategic Flood Risk Assessment (SFRA) (2024)

APPENDIX A Site Location Map and Current Site Layout

SITE LOCATION: **LAND OPPOSITE 15 SUNSET VIEW, BARNET**



THE SITE = Land Opposite 15 Sunset View, Barnet, EN5 4LB

Key:

130 **= Ordnance Survey Contour (mAOD)**

AERIAL VIEW: **LAND OPPOSITE 15 SUNSET VIEW, BARNET**

THE SITE = Land Opposite 15 Sunset View, Barnet, EN5 4LB

LOCATION PLAN 1.1250

PLANNING

RIBA CHARTERED PRACTICE

KEY

2 20
SCALE AT 1.200

12.5 125
SCALE AT 1.1250

No.	Date	By	Contents

Revisions

Site Address
LAND OPPOSITE 15 SUNSET VIEW
BARNET
EN5 4LB

Job Title
ERECTION OF DETACHED HOUSE

Drawing Title
EXISTING SITE AND LOCATION PLAN

Scale	Date	Drawn by
1.200@A1	8/24	SJL

Alan Cox Architects
Architectural & Planning Consultants
TEL : 020 - 8440 - 7777
Web: coxassociates.co.uk

Drg.No.	Rev.
509721-051	B

APPENDIX B Development Plans

LOCATION PLAN (1.1250)

PLANNING

RIBA CHARTERED PRACTICE

2 20

SCALE AT 1.200

No.	Date	By	Contents

Revisions

Site Address

LAND OPPOSITE 15 SUNSET VIEW
BARNET
EN5 4LB

Job Title

ERECTION OF DETACHED HOUSE

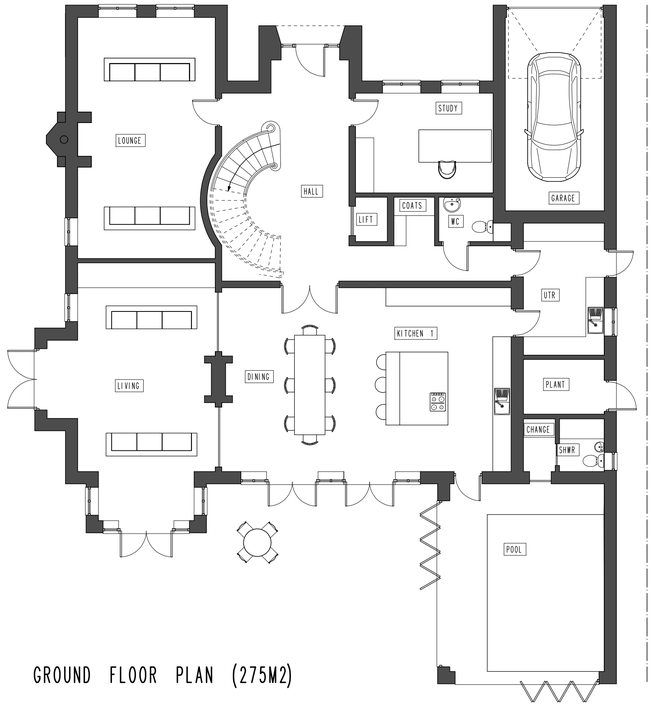
Drawing Title

PROPOSED SITE PLAN
SHOWING AREAS

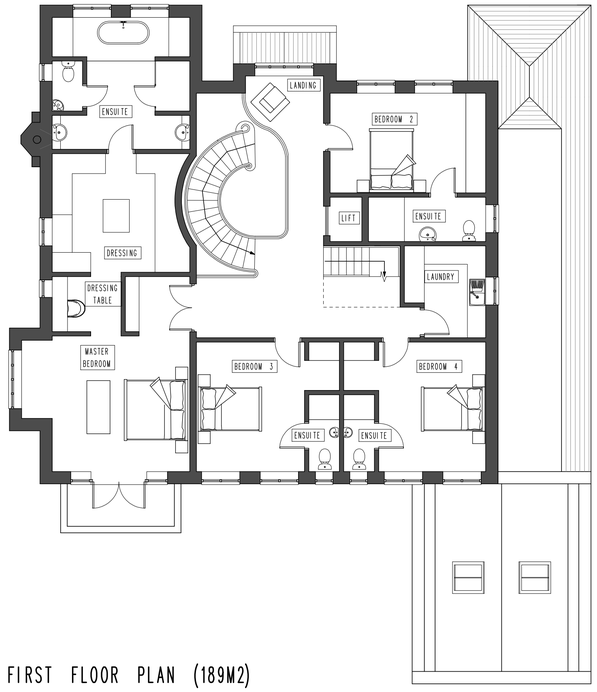
Scale	Date	Drawn by
1.200@A1	06/25	SJL

Alan Cox Architects
Architectural & Planning Consultants
TEL : 020 - 8440 - 7777
Web: coxassociates.co.uk

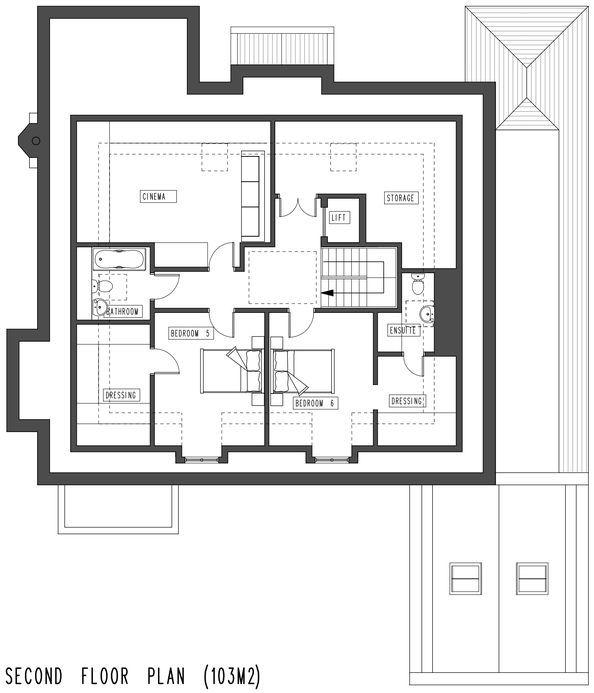
Drg.No.	Rev.
509721-053	B



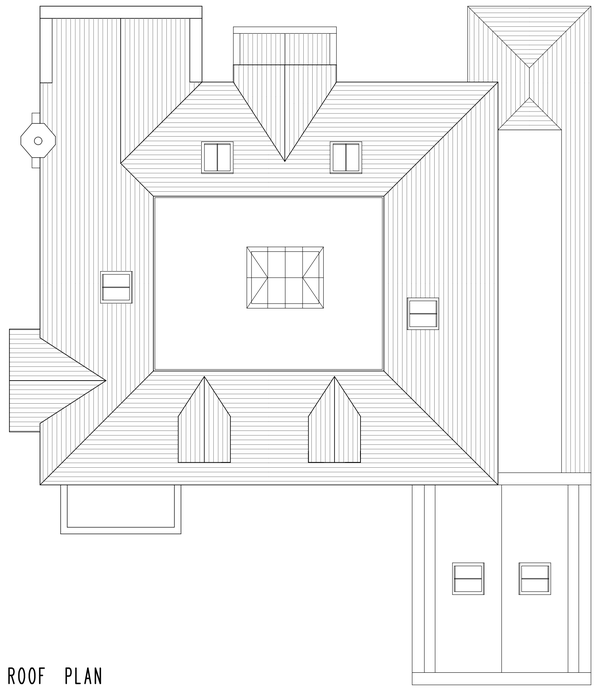
GROUND FLOOR PLAN (275M2)



FIRST FLOOR PLAN (189M2)



SECOND FLOOR PLAN (103M2)



ROOF PLAN

PLANNING

RIBA CHARTERED PRACTICE

GIFA: 567M2

1 10

SCALE AT 1.50

No.	Date	By	Contents

Revisions

Site Address

LAND OPPOSITE 15 SUNSET VIEW
BARNET
EN5 4LB

Job Title

ERECTION OF DETACHED HOUSE

Drawing Title

PROPOSED PLANS

Scale	Date	Drawn by
1.100 @A1	06/25	SJL

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Architectural & Planning Consultants
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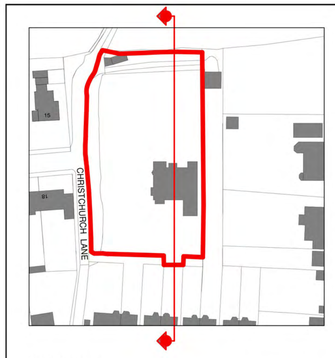
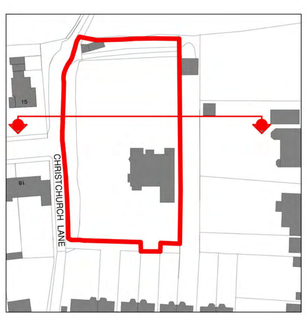
Drg.No.	Rev.
509721-054	B



SECTION AA

SECTION BB

SECTION CC



SECTION DD

PLANNING

RIBA CHARTERED PRACTICE

2 20
SCALE AT 1.200

No.	Date	By	Contents

Revisions

Site Address

LAND OPPOSITE 15 SUNSET VIEW
BARNET
EN5 4LB

Job Title

ERECTION OF DETACHED HOUSE

Drawing Title

PROPOSED SITE SECTIONS

Scale	Date	Drawn by
1.200@A1	8/24	SJL

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Architectural & Planning Consultants
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Web: coxassociates.co.uk

Drg.No.	Rev.
509721-057	B

Christchurch Lane
proposed new detached Home
set within Woodland,

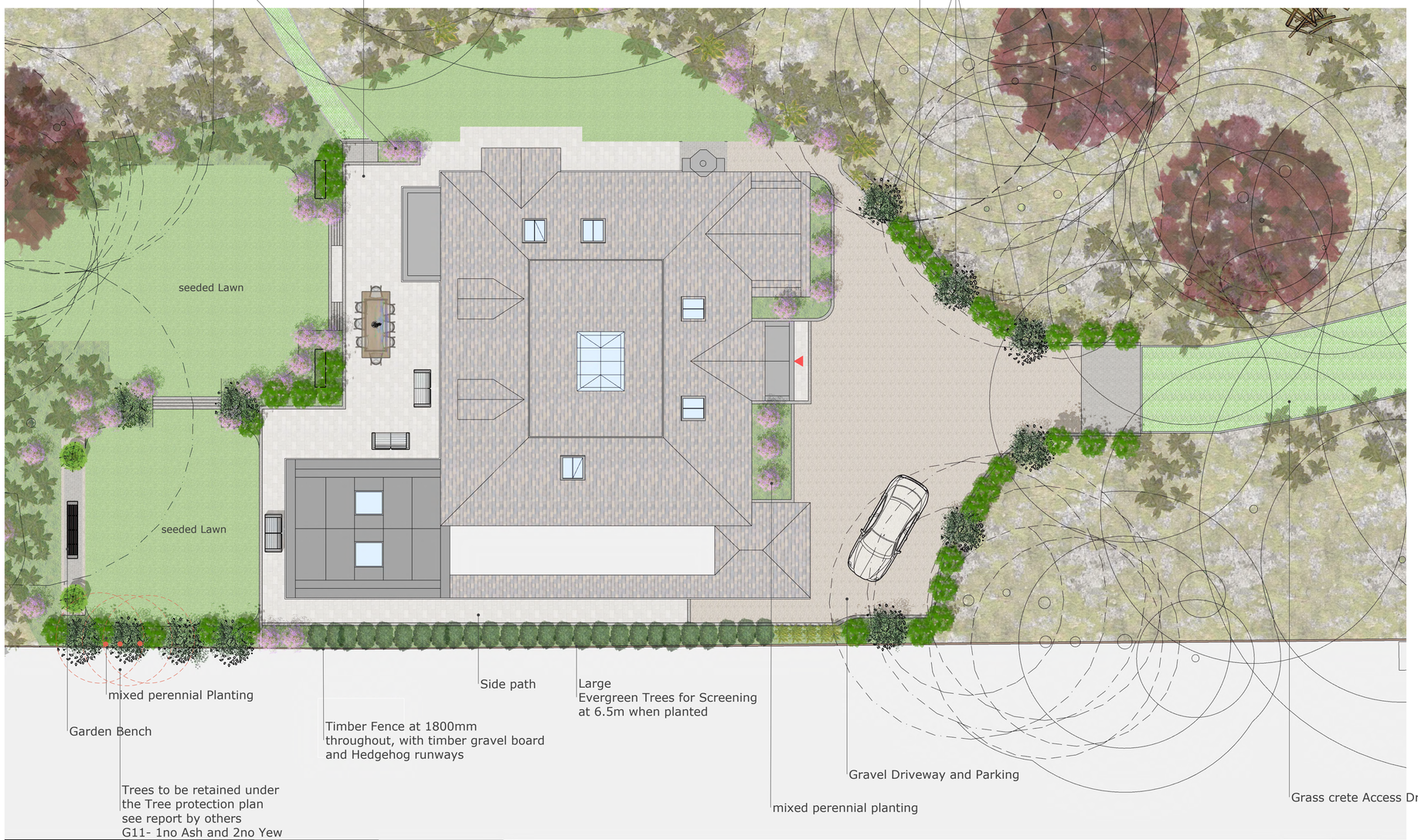
Land Opposite 15 Sunset View,
Barnet
EN5 4LB

Helene Landscape and Garden Design
Proposed new Detached House
and Garden,
scale 1:100 on A1

scale 1:100 on A1

0 1 2 3 4 5 10

N



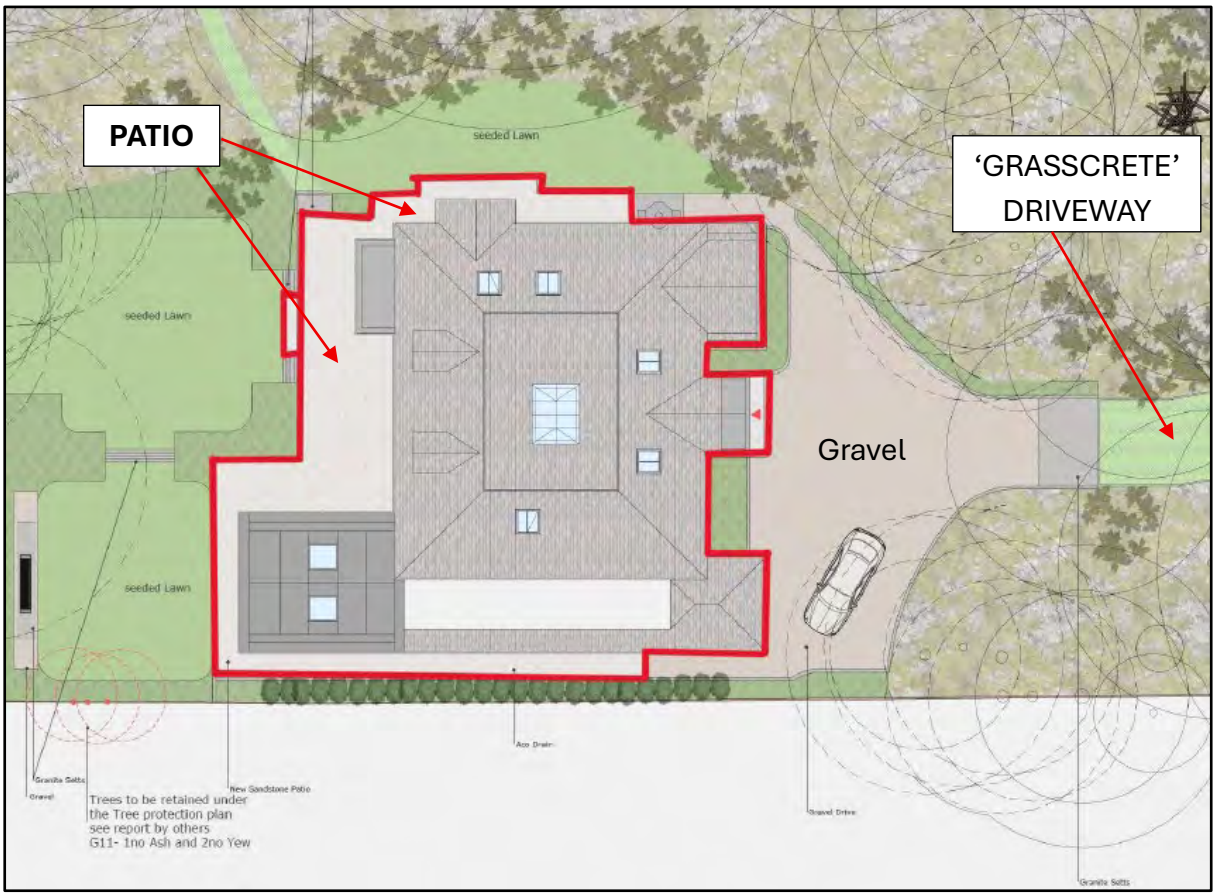
Notes

Planting
Detailed planting plan on separate page, existing planting to remain where possible, only remove diseased or damaged plants

BRANCH REMOVAL:
Cut branches sufficiently far from the main stem to leave the branch bark ridge intact. Avoid moisture traps and horizontal
surfaces. Remove heavy branches in sections. Remove dead or damaged wood whether or not specifically listed.
C625 LIFTING THE CROWN:
Remove branches from the main trunk or from main vertical branches so that the space below the canopy is clear up to the specified height.
C630 REDUCING, THINNING AND SHAPING:
Carefully select and remove branches and prune subsidiary branches so that the height and/or spread are reduced or the crown thinned to the specified dimensions or percentages without destroying the shape and character of the individual tree or the species.

New planting to be in consideration of surrounding, native species where possible to attract wildlife and enhance biodiversity

LANDSCAPING PROPOSAL: HARD STANDING MATERIALS



Source Drawing: Landscaping Proposal: Hard Landscaping Materials (dated 19/12/25).

The drawing illustrates the **total hard standing** proposed (**bordered in red**). This comprises the house and surrounding patio.

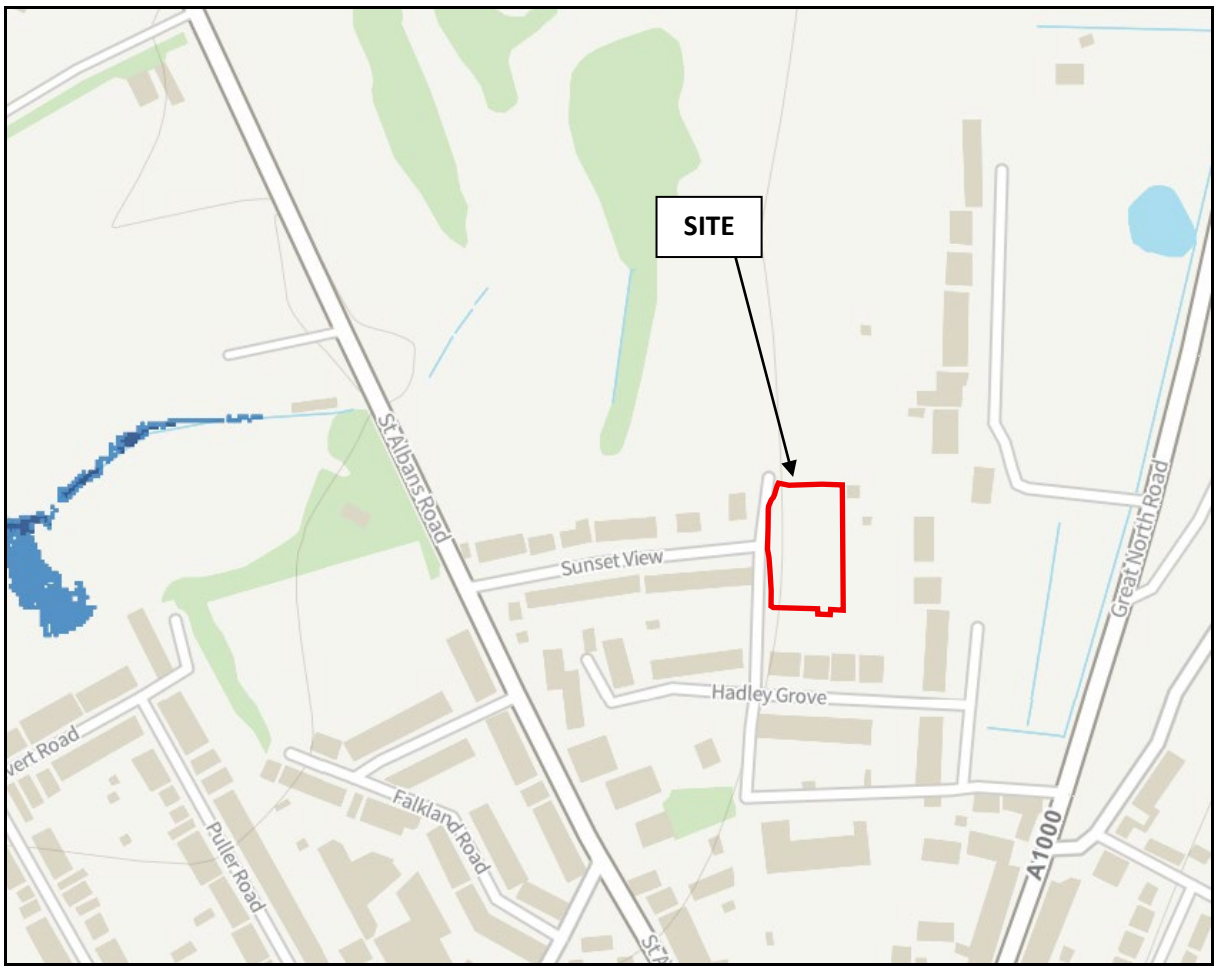
The driveway comprises permeable 'grasscrete' and gravel.

APPENDIX C Flood Zone Mapping (EA map extract)

FLOOD MAP FOR PLANNING

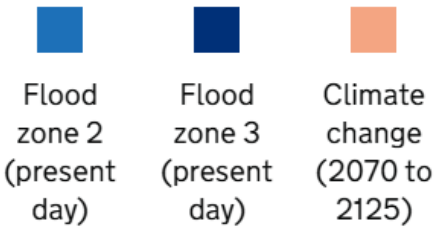
Environment Agency flood zone mapping indicates the site to be entirely in **Flood Zone 1.** Map – Flood map for planning – GOV.UK. Flood Zones 2 and 3 are located 300m east (and down gradient) of the site.

Flood Zone 1 - land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%).



THE SITE = Land opposite 15 Sunset View, Barnet, EN5 4LB

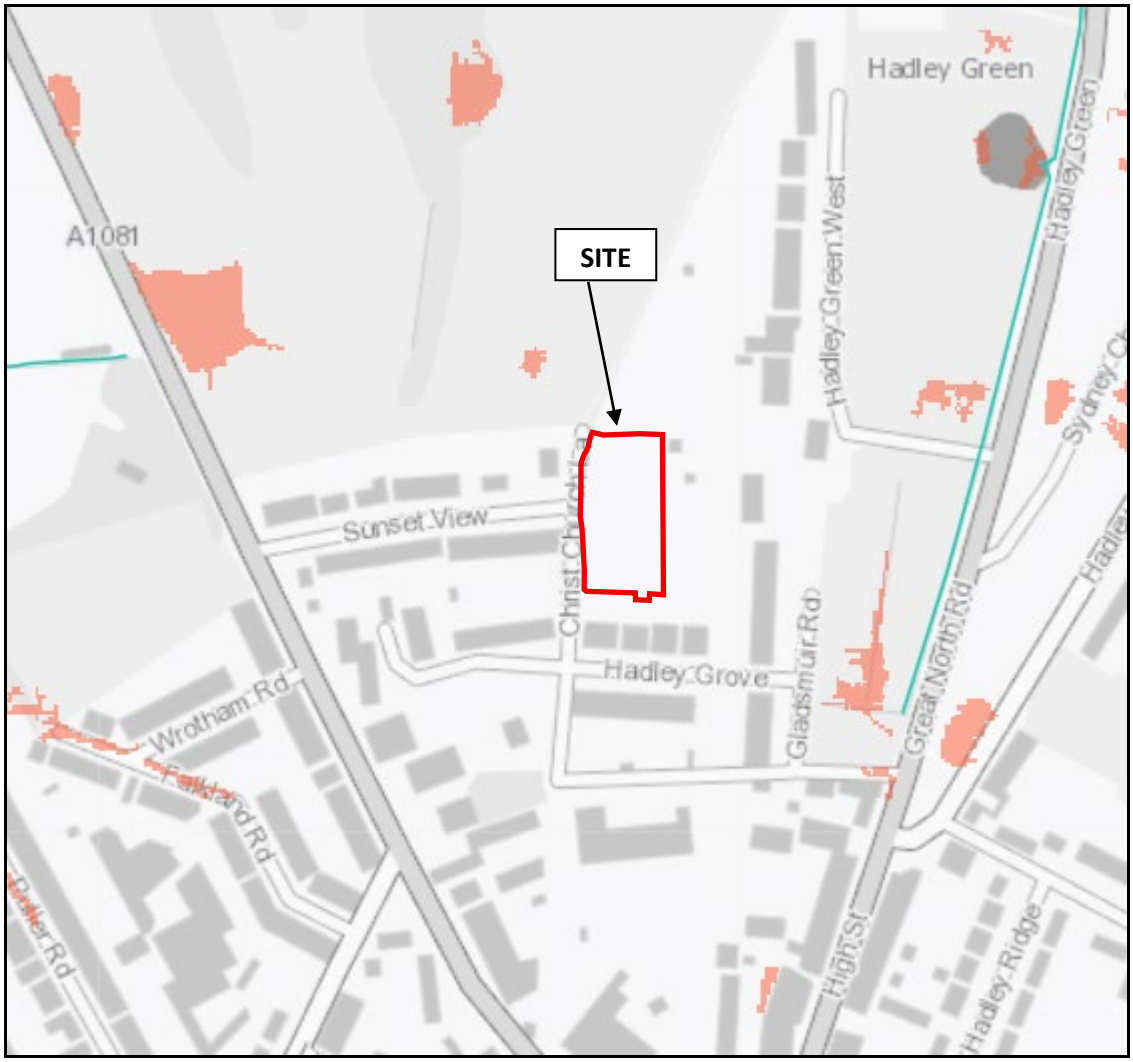
Key:



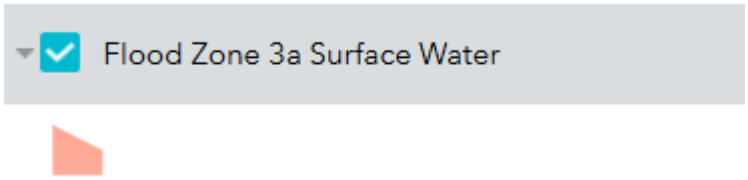
APPENDIX D Surface Water (Pluvial) Flooding (SFRA and EA map extracts)

FLOOD ZONE CLASSIFICATION - SURFACE WATER

The West London Strategic Flood Risk Assessment (SFRA) confirms the site is not within a '**Flood Zone 3a Surface Water'** designation. A map extract of the extent of Flood Zone 3a Surface Water designation is presented below:



THE SITE = Land Opposite 15 Sunset View, Barnet, EN5 4LB



Source: West London Strategic Flood Risk Assessment (SFRA) (2024)

EA SURFACE WATER FLOOD RISK

The Environment Agency on-line Long Term Flood Risk mapping (https://www.gov.uk/check-long-term-flood-risk) provides surface water flood risk mapping extents for the yearly chance of flooding for both the present day and the future timeframe 2040 – 2060; together with the potential depth of flooding. The potential surface water flood risk is as follows:

On site

- **For the present day the yearly chance of surface water flooding is indicated as 'No risk' across the site**. **The only exception is a spatially limited area of 'Low Risk'** close to the western site perimeter adjacent to Christ Church Lane, adjacent north of the junction with Sunset View.

- **The future yearly chance of flooding between 2040 and 2060 has an identical risk classification.**

The rating of 'Low' represents between 0.1% and 1% chance of a flood each year.

Mapping indicates the chance of flooding to 20cm depth (or above) to be 'Very Low' for the present day and future years (2040 to 2060).

There is 'No risk' of flooding indicated across the area of the site proposed for the new residential dwelling for either the present day or the future period 2040 – 2060.

External to the site

For the present day, there is a 'Low Risk' of flooding at the following locations:

- Along Christ Church Lane adjacent west of the site, in particular to the south-west of the site, and the section adjacent to 15 Sunset View. Both locations are topographically slightly lower than the site (by approximately 0.1m)[1].

- Within the rear gardens of properties on Sunset View and Hadley Grove, west and south of the site respectively.

- Adjacent to the north-east corner of the site (adjacent to a neighbouring garage).

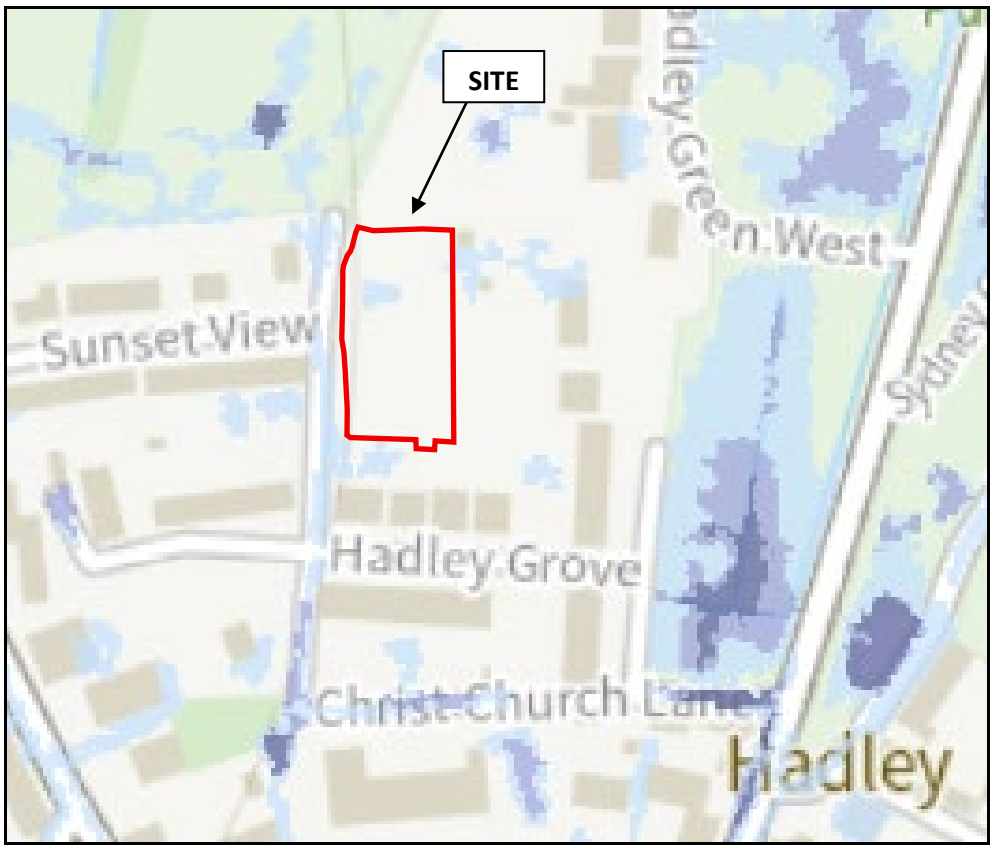
- The future yearly chance of flooding between 2040 and 2060 indicates a 'Medium Risk' to the south-west of the site and the section of Christ Church Lane adjacent to 15 Sunset View.

The rating of 'Medium' represents between 1% and 3.3% chance of a flood each year.

Extracts from the EA Surface Water Flood Mapping database are provided on the following pages.

[1] Based on the Topographic Survey detailed on the Existing Site and Location Plan in Appendix A.

The Present Day Yearly Chance of Surface Water Flooding:

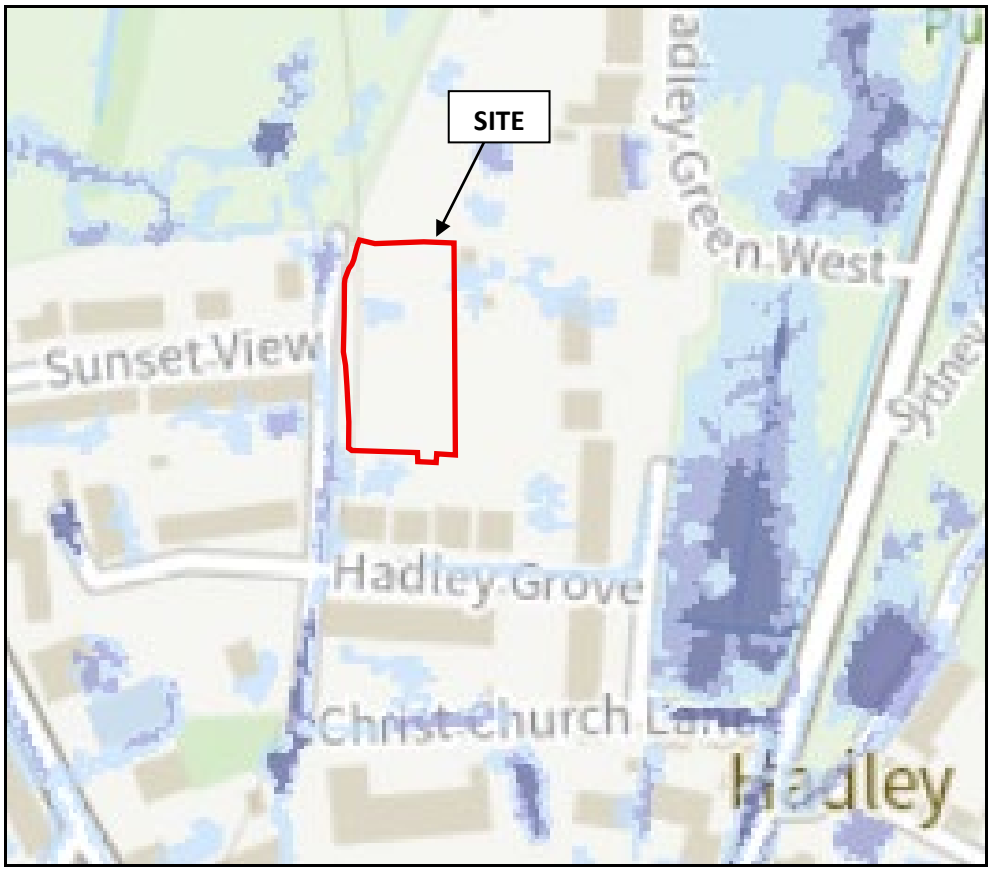


THE SITE = Land Opposite 15 Sunset View, Barnet, EN5 4LB

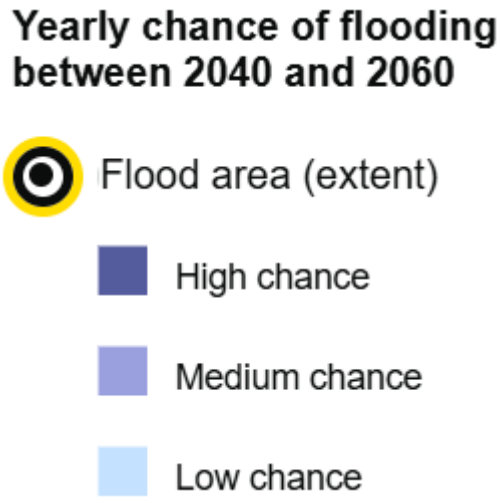
Yearly chance of flooding

- Flood area (extent)
  - High chance
  - Medium chance
  - Low chance

The Yearly Chance of Flooding between 2040 and 2060:



THE SITE = Land Opposite 15 Sunset View, Barnet, EN5 4LB



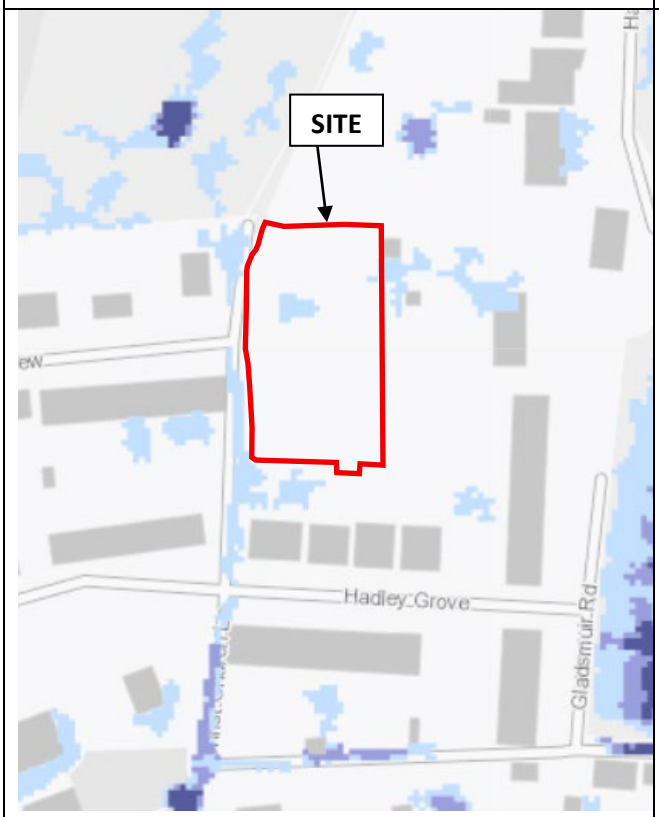
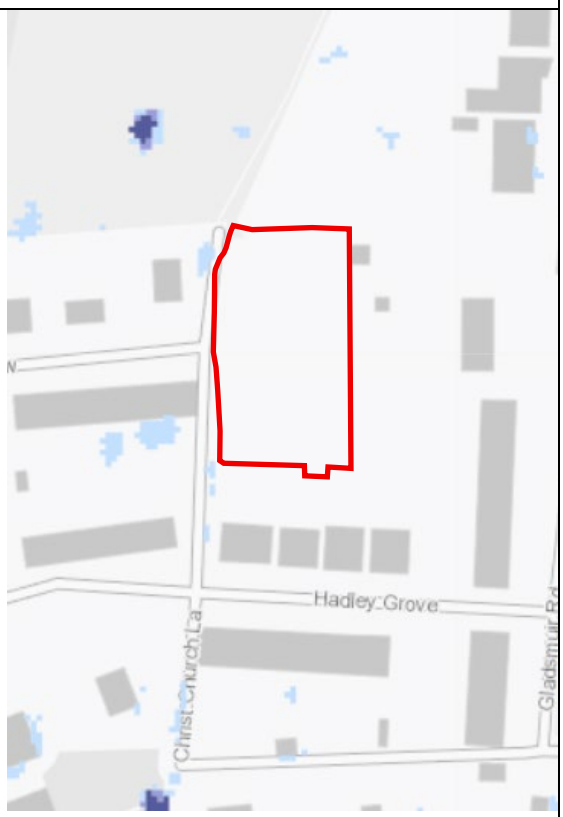
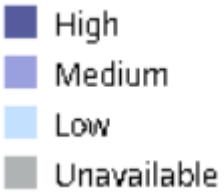
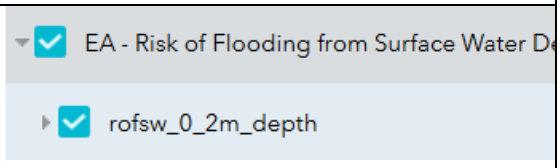
SFRA MAPPING: RISK OF FLOODING FROM SURFACE WATER (RoFSW)

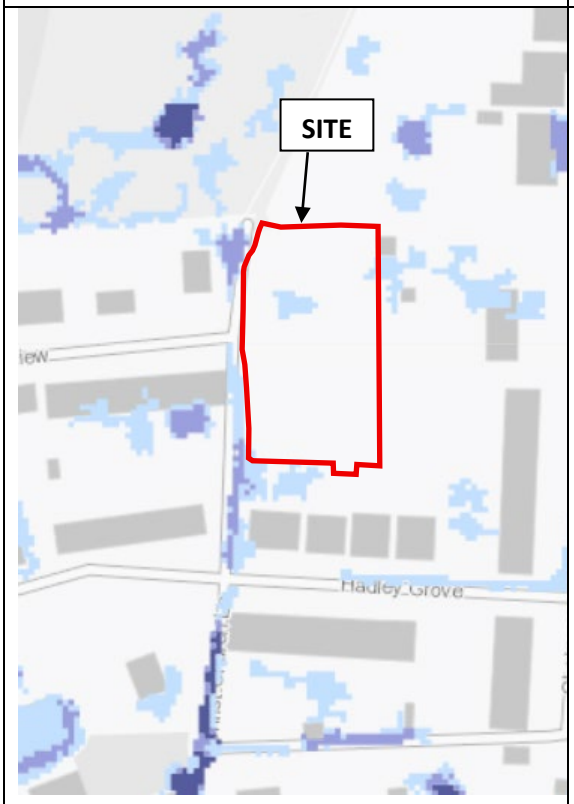
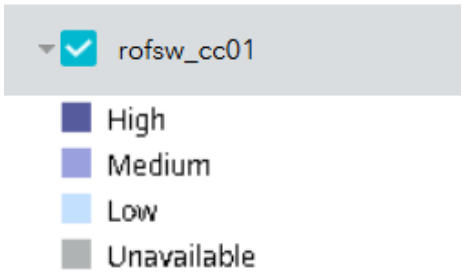
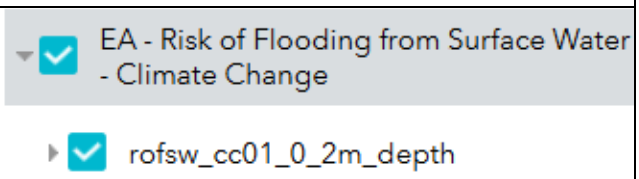
The West London Level 1 SFRA (2024) presents the following maps using the EA Risk of Flooding from Surface Water (RoFSW) mapping:

- Risk of Flooding from Surface Water Extent
- Risk of Flooding from Surface Water Depth
- Risk of Flooding from Surface Water Extent + Climate Change
- Risk of Flooding from Surface Water Depth + Climate Change

Mapping shows where flooding is likely to occur as a result of rainfall with a 'High' 3.3% (1 in 30), 'Medium' 1% (1 in 100) and 'Low' 0.1% (1 in 1000) chance of happening in any given year.

Extracts from the SFRA RoFSW mapping are presented below:

Risk of Flooding from Surface Water - EXTENT	**Risk of Flooding from Surface Water – DEPTH** **Depths 0 to 0.2m shown**
	
	

Risk of Flooding from Surface Water – EXTENT +CLIMATE CHANGE	Risk of Flooding from Surface Water – DEPTH +CLIMATE CHANGE
	
	

THE SITE = Land Opposite 15 Sunset View, Barnet, EN5 4LB

Base map source: West London Strategic Flood Risk Assessment (SFRA) (2024)