

Elm Court, Cholmeley Park, London

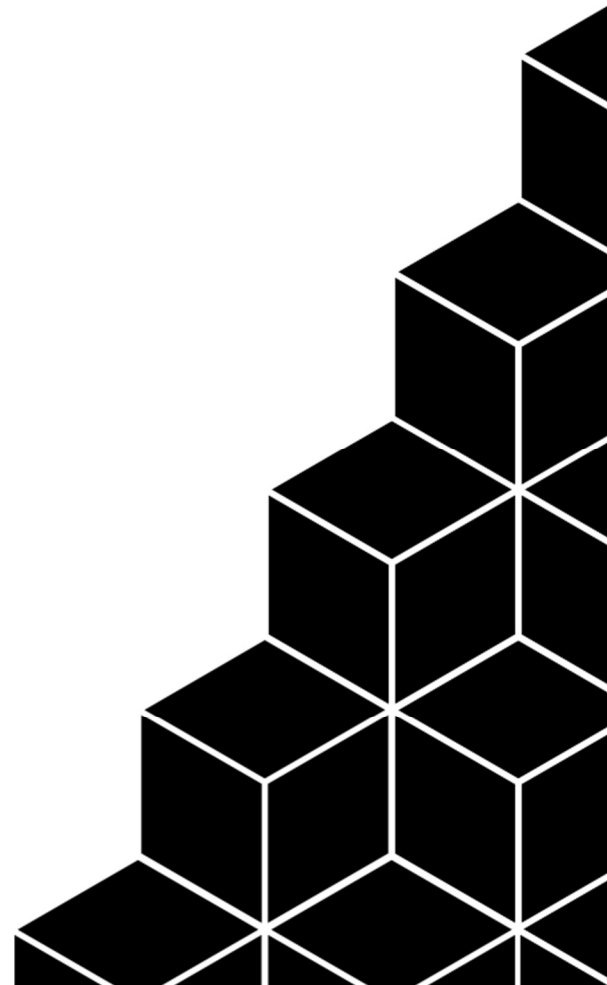
Flood Risk Assessment

Project No.: 1334

Document Ref: 1334-C-RP-0002

Issue: P03

Date: 22/12/2025



Elm Court, Cholmeley Park, London

Flood Risk Assessment

QUALITY CONTROL

ISSUE:	DATE:	PREPARED:	CHECKED:	APPROVED:	COMMENTS:
P01	28/11/25	AP	CR	CR	
P02	05/12/25	AP	CR	CR	
P03	22/12/25	AP	CR	CR	

CONTENTS

Quality Control	1
Contents	2
Executive Summary.....	3
Planning Policy and Relevant Guidance	4
Introduction	4
National Planning Policy Framework	4
Technical Guidance to the NPPF	4
Sequential Test	5
Exception Test.....	5
Strategic Flood Risk Assessment	6
Climate Change Impacts	6
Site Description and Context.....	7
Site Location	7
Hydrological Setting	8
Hydrogeological Setting.....	9
Flood Risk Analysis.....	12
Flood Risk Sources.....	12
Development Proposals	12
Tidal and Fluvial.....	12
Surface Water Flooding.....	13
Reservoir Flood Risk.....	14
Groundwater Flood Risk	15
Sewers Flood Risk	15
Impact on Local Flooding Regime	16
Application of National Planning Policy	16
Flood Risk Summary.....	17
Flood Risk Management Recommendations	17
On Site Flood Management.....	17
Off Site Flood Management.....	17
Surface and Ground Water Pollution during Construction	17
Overland flow/Exceedance	17

EXECUTIVE SUMMARY

This report compiles and analyses information from numerous sources including flood risk maps and historical flood records to assess the risk that flooding poses to the proposed development and then suggests methods to mitigate these risks.

As part of the National Planning Policy, it is a requirement that Flood Risk associated with developments is assessed, considering the risk of flooding of development sites themselves and also any changes to the surrounding flood regime as a result of the development. The findings of this assessment are outlined in this site-specific Flood Risk Assessment report (FRA). This FRA is based on the requirements of the National Planning Policy Framework (NPPF) and the associated planning practice guidance, as well as any relevant local flood risk policies.

The EA flood map for planning shows that the site is located within Flood Zone 1, which represents a likelihood of less than 1 in 1000 annual probability of river and sea flooding.

Overall, the site is at low risk from all sources of flooding and the development is acceptable in flood risk terms. The risk of the development flooding from different flood sources is summarised below:

FLOOD SOURCE	RISK CATEGORY			COMMENTS
	HIGH	MEDIUM	LOW	
Tidal/fluval			X	Site Located wholly in Flood Zone 1
Surface Water Run-off from Heavy Storm Events			X	The site is classified as being at low risk of flooding from surface water.
Groundwater			X	The site is in an elevated position, and no incidents of groundwater flooding have been identified.
Reservoirs			X	The proposed site does not lie within an area affected by reservoir flooding.
Sewers			X	Records do not show any localised flood incidents on the site.

Table 1 - Summary of the Flood Risk

PLANNING POLICY AND RELEVANT GUIDANCE

INTRODUCTION

The purpose of this section is to give an overview of key flood risk and planning policy matters in England. There is a particular emphasis on the flood risk issues given in the National Planning Policy (NPPF) Framework document.

Consequently, this section of the report is not site-specific. Whilst some issues covered may not be directly relevant to the specific development they do provide the overall context for assessing flood risks in England.

NATIONAL PLANNING POLICY FRAMEWORK

At a national level flood risk planning issues are detailed in the National Planning Policy Framework (NPPF), originally produced by the Department for Communities and Local Government in March 2012 and updated in December 2023. This provides a framework within which local communities can produce their own distinctive plans and determine what and how developments should proceed. The planning authorities and the EA take the NPPF into account when making planning decisions.

When determining applications planning authorities should ensure that there are no consequential increases in flood risk elsewhere.

In areas of flood risk, any proposed developments should be appropriate to the level of flood risk at the site and should be supported by a site-specific FRA. Such an FRA is required for proposals in high and medium flood risk areas and for sites of 1 hectare or more, including those in the lowest flood risk zones.

The impacts of climate change should be taken into account as part of the assessment process for developments. Potential climate change impacts on flood risks and drainage matters must be considered and impacts mitigated in the development proposals.

TECHNICAL GUIDANCE TO THE NPPF

Whilst much of the NPPF consists of high-level policies and principles the particular importance of flood risk is recognised and additional guidance is provided. This was originally in the form of "Technical Guidance to the National Planning Policy Framework", published in March 2012 by the Department for Communities and Local Government and has been updated to the latest version published in September 2023.

As part of the guidance a site-specific FRA checklist has been included, stating that the following issues should be covered in a site-specific FRA:

- Development description and location – including flood vulnerability;
- Definition of the flood hazard – identifying the sources of flooding that could affect the site;
- Probability – covering Flood Zones, mapping, etc.;
- Climate change – considering the possible effects on flood risks at the site;
- Detailed development proposals – including land uses and levels of flood risk;
- Flood risk management measures – to consider how the proposals minimise the on-site flood risks;
- Off-site impacts – ensuring that there are no increases in flood risks elsewhere;
- Residual risks – considering any remaining risks and how these might be managed.

These issues have been considered within this FRA.

SEQUENTIAL TEST

Definition

A key component of the NPPF is the Sequential Test. This is a mechanism for directing development vulnerable to the impacts of flooding to areas with a lower flood risk.

In the Planning Policy Guidance developments with residential units at ground floor are considered to be in the "more vulnerable" category with respect to flood risk. Under this vulnerability classification the Sequential Test advises the following:

- **Flood Zone 1** (Does not flood in a 1,000 year fluvial event): Developments with any level of vulnerability are appropriate for this Flood Zone
- **Flood Zone 2** (floods between a 100 year and a 1,000 year fluvial event): "More vulnerable" development is appropriate for this Flood Zone, with the general provision that it is to be located in the highest land available
- **Flood Zone 3a** (floods in a 100 year fluvial event or in a 200 year tidal event): The requirements of the Exception Test must be passed to allow any "more vulnerable" developments within Flood Zone 3a
- **Flood Zone 3b** (functional floodplain – normally considered to flood in a 20 year fluvial event): "more vulnerable" development is not allowed within Flood Zone 3b

EXCEPTION TEST

Definition

The exception test states that:

- It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk; and
- The development will be safe for its lifetime, without increasing flood risk elsewhere and where possible it will reduce flood risk overall. Table 2 of NPPF outlines the flood risk vulnerability and flood zone compatibility, below outlines the contents of Table 2 in NPPF.

Flood risk Vulnerability Classification		Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test Required	✓	✓
	Zone 3a	Exception Test Required	✓	✗	Exception Test Required	✓
	Zone 3b functional floodplain	Exception Test Required	✓	✗	✗	✗

Key:

- ✓ Development is appropriate.
- ✗ Development should not be permitted.

Table 2 - NPPF Technical Guidance

STRATEGIC FLOOD RISK ASSESSMENT

NPPF guidance refers to Strategic Flood Risk Assessments (SFRAs), which provide an assessment of all types of flood risk in a defined area, which is then used to inform land use planning decisions. They are the responsibility of the Local Planning Authority (LPA). An SFRA may cover part or all of an LPA's area or even an area that includes several LPAs. It should primarily be used to support the development of Local Plans, prepared in consultation with the EA. The SFRAs must consider the effects of climate change.

A SFRA was produced on behalf of Haringey Council in 2015, covering the key flood risks in the Borough. The SFRA has been reviewed and considered as part of the development of this Flood Risk Assessment.

CRITICAL DRAINAGE AREA

The site is in a Critical Drainage Area as defined by the London Borough of Haringey. This does not necessarily mean that the site itself is at high risk of flooding, as the site specific flood risk issues should be considered. This Flood Risk Assessment considers all such site specific issues, in the context of the regional situation to assess the site specific flood risk.

As demonstrated in the site Drainage Strategy document, it is proposed to significantly reduce the peak surface water discharge rate from the site relative to existing, which will result in decreased risk to both onsite and to downstream properties, by reducing the load on the existing public drainage network. The proposals therefore comply with the requirements of Policy DM26, reducing flood risk within the Critical Drainage Area.

CLIMATE CHANGE IMPACTS

In addition to considering the existing flood risk from all sources, an FRA must include an allowance for future climate change, as outlined in section 14 of the NPPF.

Specific details are outlined in Tables 4 and 5 of the document "Technical Guidance to the National Planning Policy Framework", which was prepared by the Department of Communities and Local Government in March 2012 and updated in February 2019.

Recent supplementary guidance was released by the EA in February 2016 updated in May 2022 provides revised predicted impacts to rainfall intensity caused by climate change. If a development is expected to have a lifetime anywhere between 2040 and 2069 an increase in the peak rainfall intensity of 20% should be considered, for developments with a lifetime between 2070 and 2115, an increase in the peak rainfall intensity of 40% should be considered. In addition, this guidance also amends the allowances for a potential change to the peak river flow by location.

SITE DESCRIPTION AND CONTEXT

SITE LOCATION

The proposed site is located in North London, off Cholmeley Park in the London Borough of Haringey. The development site is the existing residential building Elm Court, which is broken up into flats. The building is located off Cholmeley Park road, which is located to the west at the front elevation. The building footprint is shown bounded red in the figure below. The surrounding areas outside this red line are unaffected by the proposals and are therefore not considered in this drainage strategy

The site is centred at:

- Elm Court, Cholmeley Park, London, N6 5EJ
- National Grid Reference: TQ 28837 87483
- Easting, Northing: 528837, 187483



Figure 1 - Proposed Site

HYDROLOGICAL SETTING

The closest hydrogeological feature to the site is Mutton Brook, located approximately 2km to the north west. According to the EA modelling shown on the flood map for planning, the development site lies outside any flooding catchment area for all modelled flood events, therefore is in Flood Zone 1.

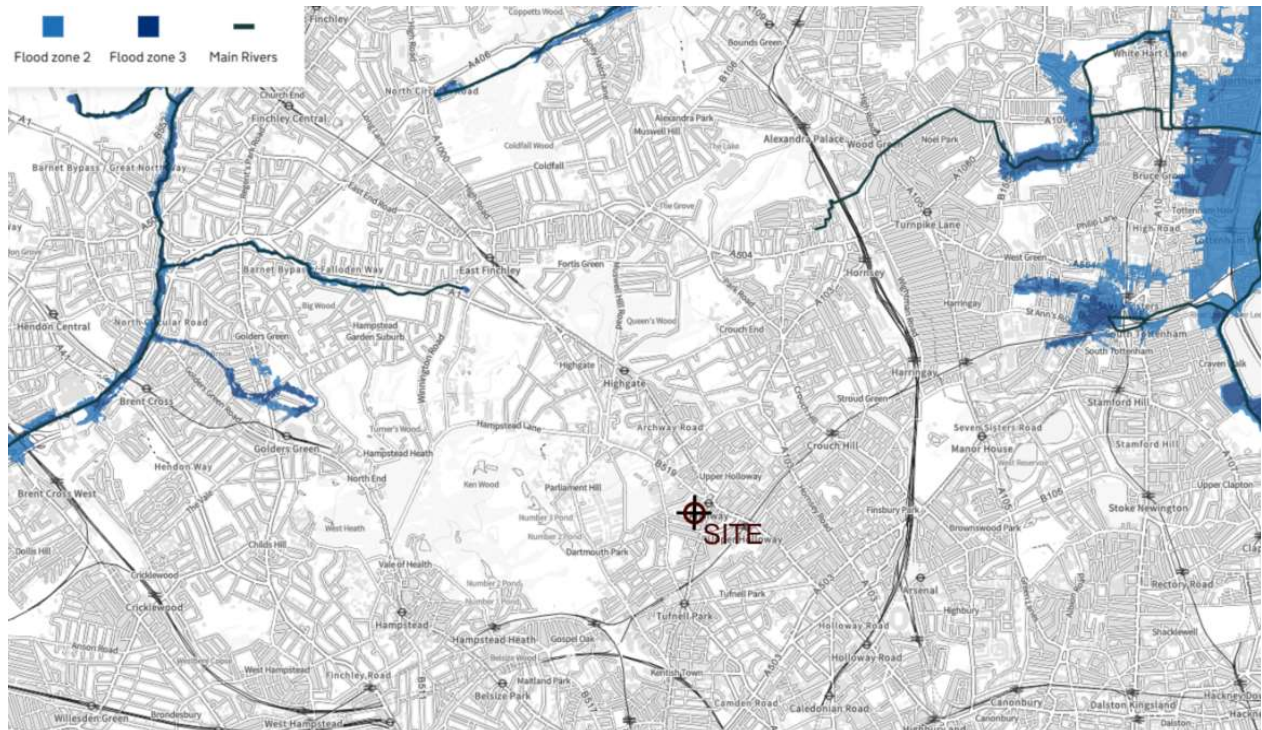


Figure 2 - Environment Agency Flood Mapping

HYDROGEOLOGICAL SETTING

The EA/Defra has developed Groundwater Source Protection Zones (SPZ) to assist in the assessment of risk to groundwater supplies taken from an abstraction point. Details of the zones are as follows:

- Inner zone (Zone 1) - Defined as the 50 day travel time from any point below the water table to the source. This zone has a minimum radius of 50 metres;
- Outer zone (Zone 2) - Defined by a 400 day travel time from a point below the water table. The previous methodology gave an option to define SPZ2 as the minimum recharge area required to support 25 percent of the protected yield. This option is no longer available in defining new SPZs and instead, this zone has a minimum radius of 250 or 500 metres around the source, depending on the size of the abstraction;
- Total catchment (Zone 3) - Defined as the area around a source within which all groundwater recharge is presumed to be discharged at the source. In confined aquifers, the source catchment may be displaced some distance from the source. For heavily exploited aquifers, the final Source Catchment Protection Zone can be defined as the whole aquifer recharge area where the ratio of groundwater abstraction to aquifer recharge (average recharge multiplied by outcrop area) is >0.75 . There is still the need to define individual source protection areas to assist operators in catchment management;
- Special interest (Zone 4) - A fourth zone SPZ4 or 'Zone of Special Interest' was previously defined for some sources. SPZ4 usually represented a surface water catchment that drains into the aquifer feeding the groundwater supply (i.e. catchment draining to a disappearing stream). In the future, this zone will be incorporated into one of the other zones, SPZ 1, 2 or 3, whichever is appropriate in the particular case or become a safeguard zone.

Figure 3 below shows that the proposed development is outside of all the groundwater source protection zones.

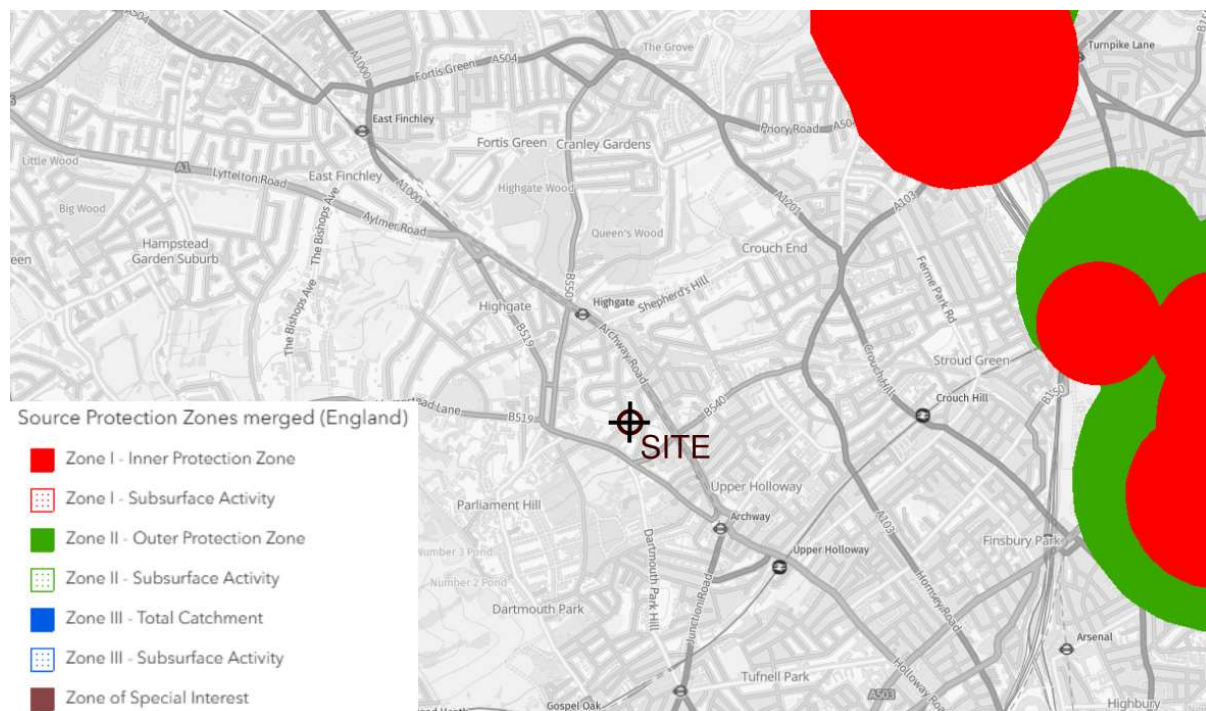


Figure 3 - Extract from EA/Defra Source Protection Zone Maps

The EA/Defra has developed aquifer designations which are in line with the Water Framework Directive and are based on maps produced by the British Geological Survey (BGS). Definitions for the aquifer types are provided below based on the EA website:

- Principal Aquifer: "These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as a major aquifer."
- Secondary A aquifer: "permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers."
- Secondary B aquifer: "predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons, and weathering. These are generally the water-bearing parts of the former non-aquifers."
- Secondary 'undifferentiated' aquifer: "it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type."

It can be seen from the map in Figure 4 that the site is located in an area of high groundwater vulnerability. Figure 5 and Figure 6 show that the site is in a Secondary A aquifer (bedrock). The scheme will not result in any impact on groundwater, as the site is understood to be positively drained to a below ground surface water drainage network that discharges to the existing surface water public sewer serving the site.

No infiltration devices are proposed on the site

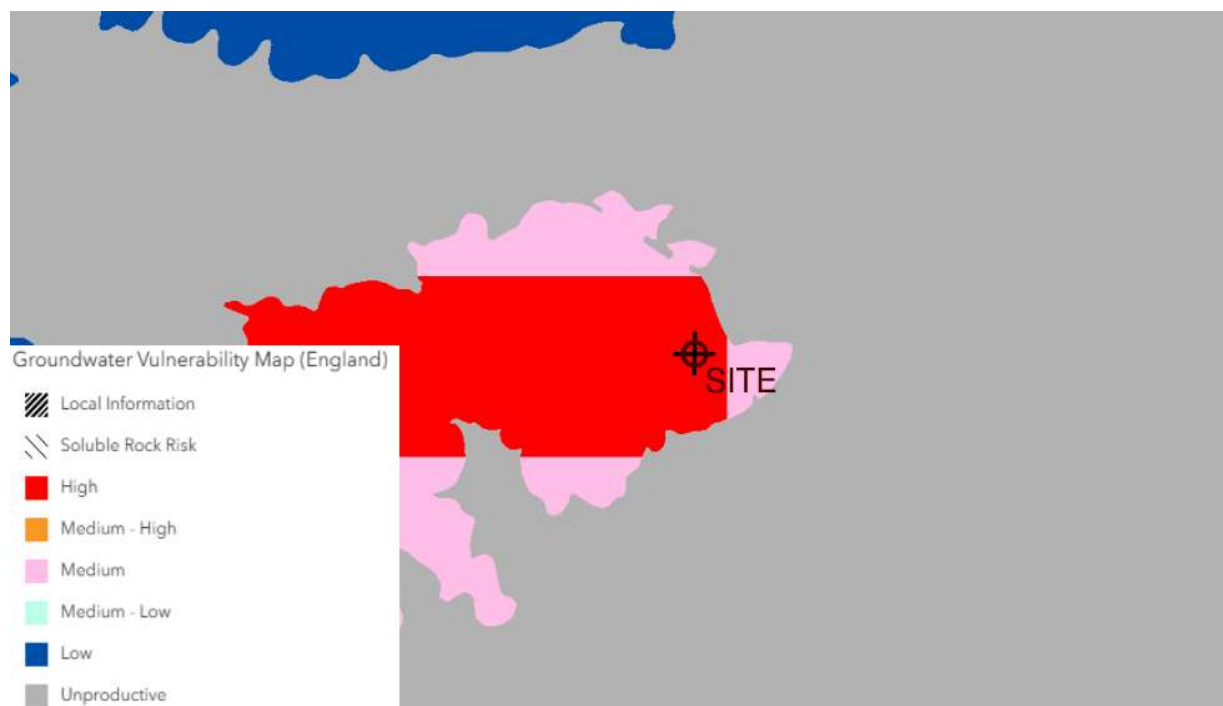


Figure 4 - Extract from EA/Defra Hydrogeological Map (Ground Water Vulnerability Map)



Figure 5 - EA/Defra Hydrogeological Map Aquifer Designation Map (Superficial Drift)



Figure 6 - EA/Defra Hydrogeological Map Aquifer Designation Map (Bedrock)

FLOOD RISK ANALYSIS

FLOOD RISK SOURCES

The potential sources of flooding that could pose a risk to a site are presented in Table 3 below.

FLOOD SOURCE	MECHANISM	SITE IMPACT
Tidal/fluvial	Extreme flood water levels from the nearby watercourses.	Floodwaters entering buildings via thresholds or other openings. Flooding of external areas etc.
Land and Surface water Flooding	Surcharging/inundating of existing drainage networks with overland flows to the site.	Flood water entering the site from adjacent highways/properties. Affecting external areas and proposed buildings.
Groundwater	Rising groundwater within underlying aquifers.	Rising groundwater levels could affect the site if the pathway is available.
Drainage/infrastructure systems	Blockages/failure of drainage or water distribution systems on or adjacent to the site.	Backing up into the site of surface/foul water flows. The risk is to property and low-lying areas.

Table 3 - Flood Risk Sources

DEVELOPMENT PROPOSALS

The existing Elm Court building will be retained and its existing footprint unaltered. The building will be extended vertically through the addition of basement and rooftop extensions to the existing building. These extensions will accommodate additional residential units.

TIDAL AND FLUVIAL

The site is located in Flood Zone 1 based on the Environmental Agency Flood mapping which means that the probability of flooding from tidal and fluvial sources is less than 1 in 1000 years. The risk of tidal/fluvial flooding is deemed to be low.

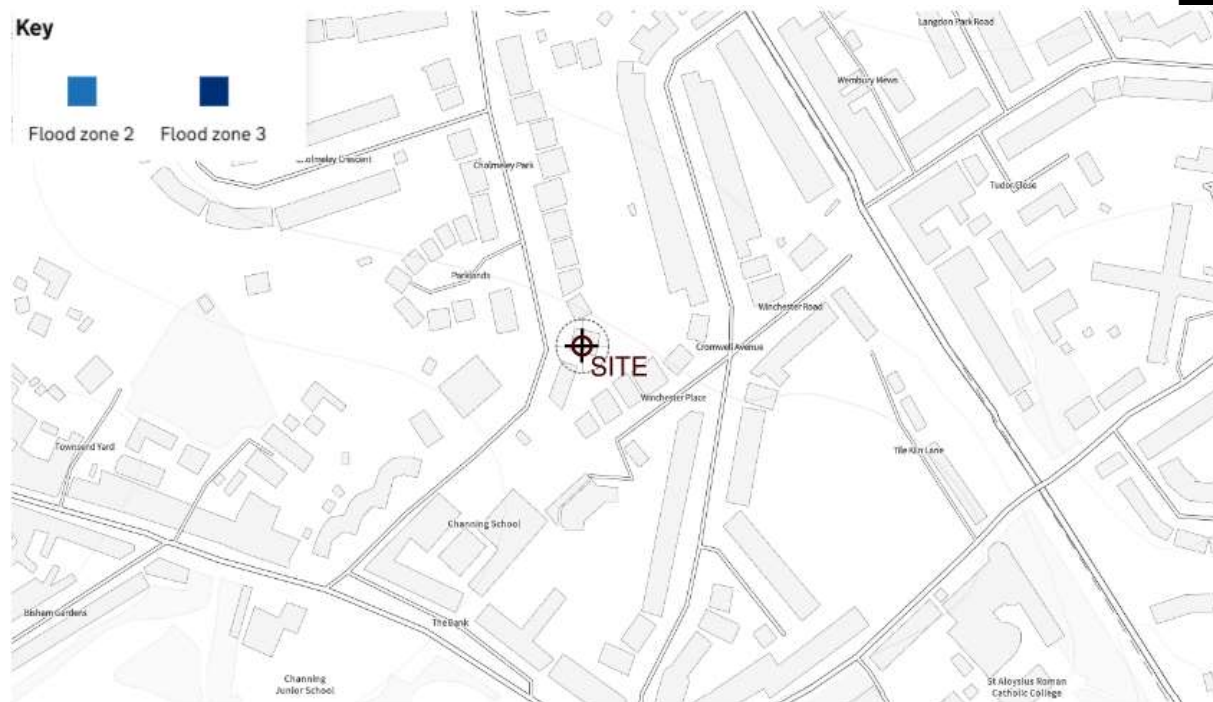


Figure 7 - Extract from EA Flood Maps - Flood Map for Planning (Tidal and Fluvial)

SURFACE WATER FLOODING

Surface water flooding can occur during intense rainfall events where the rainwater is unable to soak into the ground or enter the drainage system. This type of flooding is usually associated with a short duration storm with heavy downpours or a failure or blockage within the drainage system.

The Environment Agency has produced surface water flood mapping which can be used to gain an understanding of the risk, depth, and velocity of flooding.

The site is classified as having a very low chance of surface water flooding in all areas as can be seen in Figure 8. No flooding on or near the site occurs even in the most extreme flood event (1 in 100 year likelihood).

The existing building is positively drained by a surface water below ground drainage network. As part of the proposed works, surface water capture and attenuation is provided on the existing network, to decrease the peak discharge from the site. The proposals will therefore result in a decrease in surface water flood risk relative to existing.

The risk of surface water flooding from the site is therefore considered to be low.

For further details of the surface water drainage refer to the Drainage Strategy.



The Environment Agency mapping in Figure 9 shows that the site does not lie within an area that is susceptible to reservoir flooding. Therefore, flood risk from reservoir failure is considered to be low.



GROUNDWATER FLOOD RISK

Available strategic evidence indicates that the groundwater flood risk at the site is low. The site is located on the elevated Highgate ridge, well above local valley floors, meaning the likelihood of groundwater emergence at surface level is limited. Borough-wide assessments (including Haringey's SFRA and Local Flood Risk Management Strategy) identify groundwater flooding as a minor and infrequent source of risk compared with surface water and fluvial flooding. British Geological Survey susceptibility mapping for this part of Highgate typically classifies the area as having "limited potential for groundwater flooding".

The site is in an elevated position with the ground in the area falling away from the site. The risk of groundwater flooding to the site is considered to be low.

SEWERS FLOOD RISK

The site is served by the public sewer network operated by Thames Water Utilities Ltd. Sewer flooding records in London are held by the Water Company in the DG5 register and are not generally published at individual property level. The London Borough of Haringey Preliminary Flood Risk Assessment, which draws on postcode-linked DG5 data provided by Thames Water, indicates that records of sewer flooding within the borough are limited.

A review of publicly available information (Haringey flood risk studies, planning documents and open web sources) has not identified any specific historical sewer flooding incidents recorded at the site or within postcode N6 5EJ. No evidence has been found of the site lying within a known cluster of sewer flooding incidents.

As can be seen from the extract of the public sewers records, the site is served by dedicated foul and surface water public sewers in the main highway, these do not cross the site. The topography of the area is such that the sewer cover levels drop as you move away from the site, so flooding in the sites elevated position is unlikely.

On this basis and considering the site's elevated topography on the Highgate ridge, the risk of flooding from sewers is assessed as low.



In addition to assessing the sources of flooding to the development, the NPPF requires that an FRA also considers the potential for a development to increase flood risk to the surrounding area.

APPLICATION OF NATIONAL PLANNING POLICY

As the site is located in Flood Zone 1, it automatically satisfies the requirements of the sequential test and therefore the exception test is not required.

Flood Risk Summary

FLOOD SOURCE	RISK CATEGORY			COMMENTS
	HIGH	MEDIUM	LOW	
Tidal/fluvial			X	Site Located wholly in Flood Zone 1
Surface Water Run-off from Heavy Storm Events			X	The site is classified as being at low risk of flooding from surface water.
Groundwater			X	The site is in an elevated position, and no incidents of groundwater flooding have been identified.
Reservoirs			X	The proposed site does not lie within an area affected by reservoir flooding.
Sewers			X	Records do not show any localised flood incidents on the site.

Table 4 - Flood Risk Summary for Development

FLOOD RISK MANAGEMENT RECOMMENDATIONS

On Site Flood Management

This report has demonstrated that there is low flood risk posed to the development from fluvial, tidal or pluvial sources or from infrastructure failure. Appropriate design measures are recommended to be considered to mitigate groundwater and surface water flooding risk, these include design falls away from building entrances and appropriate basement construction to resist surcharge and ensure waterproofing.

Off Site Flood Management

The proposed development is unlikely to increase the risk of flooding offsite, it is proposed to restrict the surface water runoff rate from the site to provide a betterment on the existing surface water discharge rate. This will reduce the hydraulic load on the sewers in the area which is expected to reduce the flood risk down stream of the development. For details of the proposed surface water drainage strategy, refer to the Drainage Strategy report.

Surface and Ground Water Pollution during Construction

The Construction Environment Management Plan (CEMP) for the proposed development should follow the guidance provided within the EA Pollution Prevention Guidance 6. The guidance sets out best practice for producing an incident response plan to deal with an environmental incident on the site. It can also help to prevent environmental damage if an incident does occur.

Overland flow/Exceedance

In the event of flooding due to extreme event or blockage/failure of local infrastructure, to minimise the risks, the site levels should be developed to direct all overland flow routes away from property thresholds. For further details refer to the Drainage Strategy report.

