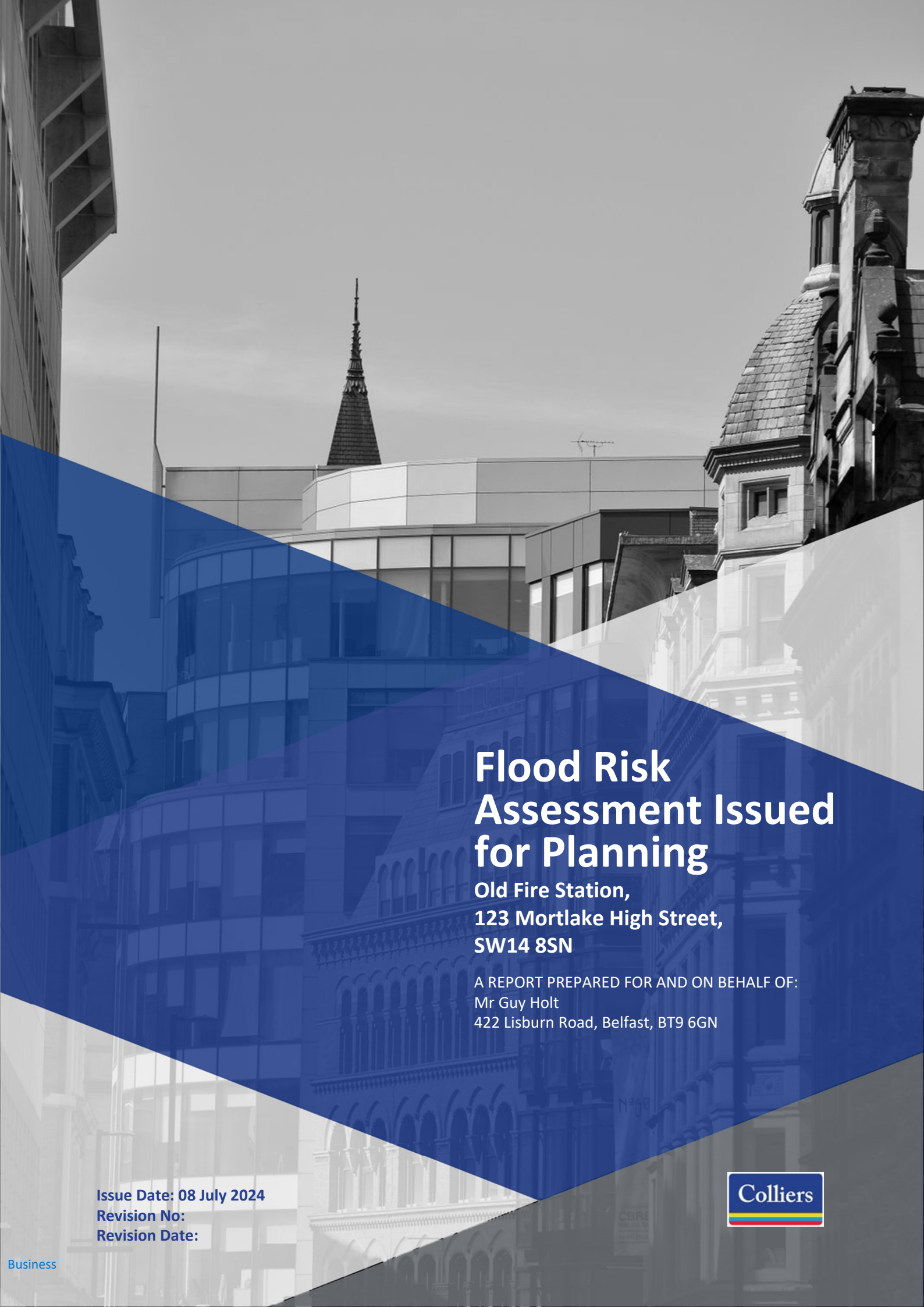

Flood Risk Assessment Issued for Planning

Old Fire Station,
123 Mortlake High Street,
SW14 8SN

A REPORT PREPARED FOR AND ON BEHALF OF:
Mr Guy Holt
422 Lisburn Road, Belfast, BT9 6GN

Issue Date: 08 July 2024
Revision No:
Revision Date:

Business

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For and on behalf of
Colliers Building Consultancy Limited

NPPF 2023 FLOOD RISK RATING

Present Flood Risk

Source \ Risk	V Low	Low	Med	High
Rivers (fluvial)	✓			
Sea (tidal/coastal)	✓			
Surface water	✓			
Groundwater		✓		
Artificial	✓			

Development Flood Risk

Source \ Risk	V Low	Low	Med	High
Rivers (fluvial)	✓			
Sea (tidal/coastal)	✓			
Surface water	✓			
Groundwater		✓		
Artificial	✓			

Present Flood Risk Summary

The Site is located in Flood Zones 1, 2 and 3, but has a Very Low risk of flooding from rivers and the sea, due to the presence of flood defences along the River Thames, which provide a significant standard of protection. Surface water (pluvial) flood risks are Very Low. Groundwater flood risks are Low and flooding risks from artificial sources (i.e. canals, reservoirs and sewers) are Low.

Development Flood Risk Summary

This report has assessed the impacts of flooding to and from the proposed development from all sources, over its lifespan (100 years), accounting for the projected impacts of climate change on flooding mechanisms.

The development risk ratings reflect where the recommended flood mitigation is included in the design of the proposed development. The mitigation measures ensure the development proposals are in line with National and Local planning policy.

KEY ASSESSMENT FINDINGS

The following issues represent the key matters for consideration as a result of our Flood Risk Assessment with regards to flooding, as part of the proposed Permitted Development (PD) of the site.

1.	This Flood Risk Assessment (FRA) has been undertaken to assess flooding from all sources, with consideration to the proposed development for a Change of Use from commercial to a residential house.
2.	A Topographic Survey (Colliers, 2024) confirms the surveyed Finished Floor Levels (FFL) of the ground floor of the building are between 6.68-6.71 mAOD. External ground levels fall towards the River Thames to the north.

3.	The Environment Agency's Flood Map for Planning Purposes, presents a "without defences" scenario confirms an area (17%) in the south of the Site is located in Flood Zone 1, the centre of the Site in Flood Zone 2 (49%) and the north of the Site is located in Flood Zone 3 (34%). However, it should be noted there are significant defences in place along the River Thames which protect the Site in all events up to and including an event which has a 0.1% annual probability.
4.	The EA's TE2100 project forms the policy and strategy of flood defence in the Thames Estuary, this confirms the in-channel water levels will rise from 5.17 mAOD to 6.00 mAOD in a 0.5% annual probability (1 in 200 year) event, as a result of climate change up to 2100. The existing flood defences will be raised over the lifetime of the development from 5.94 mAOD to 6.55 mAOD, to ensure the Site is protected up to 2100.
5.	There is a residual risk of a breach occurring in the River Thames flood defences, however the EA's Risk of Flooding from Rivers and Sea (RoFRaS) mapping confirms the risks of this occurring are Very Low. Furthermore, in the event of a breach occurring, and allowing for the maximum impacts of climate change up to 2100, the breach flood level of 5.998 mAOD would not exceed the surveyed FFL of the building (6.68-6.71 mAOD).
6.	The EA's Risk of Flooding from Surface Water (RoFSW) mapping confirms there is a Very Low risk of surface water flooding at the Site.
7.	The existing surface water runoff drainage systems on the Site will be maintained in-situ and no alterations are proposed to these features.
8.	The Ambiental Risk Analytics Groundwater Flooding Map indicates a Moderate likelihood of groundwater emergence above the ground surface during a 1 in 100 year event. However, the local topography is such that the existing development threshold and essential access/ egress routes are at a higher level than surrounding ground levels. As such, groundwater emergence will preferentially occur in lower lying areas in the vicinity of the Site (subject to local variations in hydrogeological conditions). The risk of groundwater flooding to the existing and proposed development and associated essential infrastructure/ access and egress routes during a 1 in 100 year event are considered to be Low.
9.	Part of the Site is located in Flood Zone 3a. The NPPF (2023) and associated Planning Practice Guidance (PPG, 2022) confirm More Vulnerable Development in Flood Zone 3a is acceptable; subject to passing the Sequential and Exceptions Tests. However, as the development proposals are for the Change of Use of the existing building, the Sequential and Exceptions Tests are not required.
10.	As the FFL's of the property are set a significant height above the 2100 breach flood level, the ground floor of the property (6.68-6.71 mAOD) could be used for any residential purposes, including sleeping accommodation associated with a dwelling house.
11.	There are no reports of historic flooding at the Site anecdotally, within any Council documents or that have been identified from online newspaper articles.
12.	In summary, the development proposals are acceptable in line with national, regional, Local Plan Policy LP21, Development Management Plan Policies SD6 and SD8 and would not be constrained by flooding from any of the sources assessed within this report.

ENVIRONMENTAL RISK RATING

H *Critical or high risk issue for urgent management attention*	M H *Moderate to high risk issue considered as a significant management item*	M *Medium risk issue for ongoing management or action*	L M *Low to medium risk issue that may require management or action*	L *Low risk item or for information only*	N *Note for information only*

We can advise that based on the continued commercial use of the site and its proposed use, there is a **low** flooding risk with regard to environmental liability.	L

RECOMMENDATIONS

1.	No further work is required for a continuation of the current site use or in the proposed use.
2.	The existing on-site drainage networks on the Site have not been surveyed to assess their condition or capacity, but it is recommended these are maintained in perpetuity with the development to ensure their condition and capacity are maximised.
3.	As there may be a shallow groundwater table beneath the Site, non-return flap valves on the existing foul and surface water sewer lines should be considered, to alleviate any issues with groundwater flows entering the buried drainage network.
4.	In the event that any works or activity within 8 metres of the bank of a main river, flood defence structure or culvert or 16 metres if it is a tidal main river should consult with the EA through their Flood Risk Activity Permit (FRAP) process. This is unlikely to be required for the change of use permitted development proposals.

CONTENTS

FLOOD RISK ASSESSMENT REPORT

CLIENT NAME: Mr Guy Holt

PROPERTY ADDRESS: Old Fire Station,
123 Mortlake High Street,
SW14 8SN

TOPOGRAPHIC SURVEY DATE: 10 June 2024

1.0 INTRODUCTION

1.1	**Background and Purpose**
1.1.1	Colliers Project and Building Consultancy Limited (hereafter referred to as Colliers) was instructed by Mr Guy Holt to complete a Flood Risk Assessment on a site referred to as Old Fire Station, 123 Mortlake High Street, SW14 8SN. These works have been undertaken in connection with the permitted development of the site from offices into residential.
1.1.2	A site-specific flood risk assessment has been undertaken, to assess the flood risk to the proposed development and the existing Site, with particular attention to the effects of flooding upon the existing and proposed development and associated infrastructure and access/egress routes that are essential for existing Site operations and/or for future occupancy.
1.1.3	This assessment has been undertaken by firstly compiling information concerning the Site and the surrounding area to construct a 'conceptual site model', including an understanding of the appropriateness of the development as defined in the NPPF (2023) and the source(s) of any flood risk present, guided by the NPPG (2022). Finally, a preliminary assessment of the steps that can be taken to manage flood risk to the development was undertaken to determine if the risks identified could be sufficiently mitigated against.
1.1.4	This report has been prepared with reference to the NPPF (2023) and NPPG (2022), which promote a sequential, risk-based approach to the location of development. This also applies to locating a development within a Site which has a variable risk of flooding.
1.1.5	*"The approach 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"* (Paragraph: 023. NPPG, 2022). The purpose of this report is to provide clear and pragmatic advice regarding the nature and potential significance of flood hazards which may be present at the Site.

1.2 Report Scope

1.2.1 In accordance with the requirements set out within NPPG 2022 (Paragraph: 021 Reference ID: 7-021-20220825), a thorough review of publicly and commercially available flood risk data and EA supplied data has been undertaken to assess potential flood risk to the Site from rivers and coastal sources, surface run-off (pluvial), groundwater and artificial sources (e.g., sewers, canals and reservoirs), including historical flood information and modelled flood extent. Appropriate measures are recommended (where applicable) to manage and mitigate the flood risk to the property.

1.2.2 Information obtained from the EA (additional third parties here) and a review of the London Borough of Richmond-upon-Thames Strategic Flood Risk Assessment (SFRA) (METIS, 2021) and Surface Water Management Plan (SWMP)(METIS, 2021). These documents are used to ascertain local flooding issues and, where appropriate, identify information to support a Sequential and/or Exception test required as part of the NPPF (2023).

1.2.3 The existing and future flood risk to and from the Site from all flood sources is assessed in line with current best practice using the best available data. The risk to the development has been assessed over its expected lifetime, including appropriate allowances for the impacts of climate change. Residual risks that remain after the flood risk management and mitigation measures are implemented, are considered with an explanation of how these risks can be managed to keep the users of the development safe over its lifetime.

1.2.4 An indication of whether the Site will potentially increase flood risk elsewhere is provided, including where the proposed development increases the building footprint at the Site. A drainage strategy to control runoff can be commissioned separately if identified as a requirement within this report.

1.3 Datasets

1.3.1 The following table shows the sources of information that have been consulted as part of this report:

1.3.2 ***Table 1. Datasets Consulted to Identify Flooding Sources and Risks***

Source of Flooding	Datasets Consulted				
	Commercial Flood Maps	**Local Policy & Guidance Documents***	**Environment Agency (Appendix 3)**	**Asset Maintainer (Appendix 4)**	**OS Data**
Historical	X	X	X		
River (fluvial) / Sea (tidal/ estuarine)	X	X	X		
Surface water (pluvial)	X	X	X		
Groundwater	X	X			

Sewer		X		X	
Canal		X		X	
Culvert/bridges		X			X
Reservoir		X	X		

* Local guidance and policy, referenced in Section 1.7, has been consulted to determine local flood conditions and requirements for flood mitigation measures.

1.4 Assessment Methodology

1.4.1 The assessment methodology which has been followed to ensure the flooding risks at the Site are assessed appropriately is provided below:

1. Assess the Present Flood Risk;
2. Assess the Future Development Risk

1.5 Present Flood Risk

1.5.1 The baseline Present Flood Risk Likelihood rating provides a high-level overview of the most up to date risk mapping, this does not consider the site layout or any further detail other than the mapping or the impacts of climate change.

1.5.2

Present day Baseline Likelihood Rating	Likelihood Description	Clarification
High	Flooding indicated to occur in a 1 in 30 year (3.3%) AEP event	Designated where flooding affects part/all of the Site or access and does not account for the location of the proposed development relative to identified flooding. Present-day risks are considered only, the future impacts as a result of climate change to the Site are not considered.
Medium	Flooding indicated to occur in a 1 in 100 year (1%) AEP event	
Low	Flooding indicated to occur in a 1 in 1000 year (0.1%) AEP event	
Very Low	No flooding indicated to occur in a 1 in 1000 year (0.1%) AEP event	

1.6 Future Development Flood Risk

1.6.1 The Future Development Likelihood Rating confirms the likelihood of flooding ingress into the buildings, using topographic survey against the modelled data, including for the impacts of climate change over the projected lifespan of any development proposed.

1.6.2	The Future Development Likelihood Risk Rating is then reviewed against the implementation of appropriate resilience and mitigation measures and their respective impacts upon anticipated internal flooding frequency and depths to determine the future development flood risk.
1.7	**Local Policy and Guidance**
1.7.1	For this report, several documents have been consulted for local policy and guidance and relevant information is outlined below:
1.8	**LBRT Local Plan (2018)** **Policy LP 21 – Flood Risk**
1.8.1	*All developments should avoid, or minimise, contributing to all sources of flooding, including fluvial, tidal, surface water, groundwater and flooding from sewers, taking account of climate change and without increasing flood risk elsewhere. Unacceptable developments and land uses will be refused in line with national policy and guidance [and] the Council's Strategic Flood Risk Assessment (SFRA).*
1.8.2	The following text has been extracted from the Local Plan in relation to the application of the Sequential Test and confirms this is not required, as the development is a Change of Use of an existing property.
1.8.3	*Sequential Test 6.2.2 - Future development in Zone 3a and Zone 2 will only be considered if the 'Sequential Test' has been applied in accordance with national policy and guidance. However, there will be some exceptions to this. The Sequential Test will not be required if is not a major development (2) and at least one of the following applies:* • *It is a Local Plan proposal site that has already been sequentially tested, unless the use of the site being proposed is not in accordance with the allocations in the Local Plan.* • *It is within a main centre boundary as identified within this Local Plan (Richmond, Twickenham, Teddington, Whitton and East Sheen).* • *It is for residential development or a mixed use scheme and within the 400 metre buffer area identified within the Plan or surrounding the centres referred to above.* • *Redevelopment of an existing single residential property.* • *Conversions and change of use.* *6.2.3 The Sequential Test will be required in all other cases*
1.9	**LBRT Development Management Plan (LBRT, 2011):** **Policy DM SD 6 - Flood Risk**
1.9.1	*Development will be guided to areas of lower risk by applying the Sequential Test as set out in paragraph 3.1.35. Unacceptable developments and land uses will be restricted in line with PPS25 and as outlined below. Developments and Flood Risk Assessments must consider all sources of flooding and the likely impacts of climate change.*

	Policy DM SD 8 – Flood Defences
1.9.2	*The effectiveness, stability and integrity of the flood defences, river banks and other formal and informal flood defence infrastructure within the borough will be retained and provision for maintenance and upgrading will be ensured. Setting back developments from river banks and existing flood defence infrastructure, where there are opportunities, will be encouraged. The removal of formal or informal flood defences is only acceptable if this is part of an agreed flood risk management strategy by the Environment Agency. The Environment Agency must be consulted for any development that could affect a flood defence infrastructure.*

2.0 SITE SETTING

2.1	**Site Location**
2.1.1	The site is centred approximately at National Grid Reference: 521148, 176054, and extends to approximately 0.02Ha. A site location plan is provided as Figure 1, in Appendix 1.
2.1.2	The site is situated in a predominantly residential area with the River Thames to the north of the site, a restaurant and commercial uses to the east of the site, Mortlake High Street (road) to the south with residential properties with private gardens beyond, and residential properties to the west of the site.
2.1.3	The EA's elevation data obtained for the Site (1 m resolution, vertical accuracy ±0.15 m) indicates on-Site elevations vary between 5.7 – 6.7 m Above Ordnance Datum (mAOD), falling gradually to the north (Appendix 3). The topographic profile of the surrounding area indicates that ground levels generally fall to the north.
2.1.4	A topographic survey of the Site has also been undertaken (Colliers, 2024, Appendix 2) confirming on-Site elevation varies between 5.68 – 6.72 m AOD. The buildings Finished Floor Levels (FFL) range between 6.68 and 6.71 mAOD.
2.1.5	The levels vary across the site and external areas to the north of the building are below the property. As such, there is a raised access to the rear of the building. The River Thames is situated to the north of the site, and is accessed via steps that lead down to the tow path, and a second set of steps beyond lead down to the river.
2.2	**Existing and Proposed Site Composition**
2.2.1	The site comprises a single three-storey building that is currently used as offices by Winch Design. It is understood that the Site is to undergo a change of use under a permitted development to residential. Whilst designs are not finalised, it is highly likely that the building would be repurposed into one house and no bedrooms are proposed on the ground floor.
2.2.2	The external areas are limited to the car parking spaces immediately to the south of the building. No vegetation is present.

2.2.3 As the proposed development is residential in nature, the estimated lifespan of the development is 100 years and the vulnerability classification of the proposed development (according to Annex 3 of the NPPG, 2023) is considered to be More Vulnerable.

2.2.4 The proposed development will likely result in a decrease in the number of occupants and users of the Site but will result in the change of use, nature or times of occupation and use of the Site.

2.3 Hydrological Features and Relevant Infrastructure

2.3.1 There are no surface water features onsite. The nearest surface water feature is the River Thames some 15m north of the site.

2.3.2 A culvert is mapped approximately 57m east of the Site, which is culverted all the way from its source, to the River Thames outfall.

2.4 Geology

2.4.1 From a review of the British Geological Survey (BGS) mapping, the geology of the subject site comprises the Kempton Park Gravel Member (sand and gravel) over the London Clay Formation (clay).

2.4.2 A review of the BGS mapping records has identified a third-party borehole situated some 125m east of the site. A summary of the ground conditions is presented below.

2.4.3 **Table 2. Ground Conditions**

Depth From (m bgl)	Depth To (m bgl)	Soil Type
Ground Level	0.15	Tarmac
0.15	0.30	Concrete
0.30	0.90	Made Ground
0.90	7.50	Sand and Gravel

2.4.4 Groundwater was encountered at 1.95mbgl.