LANMOR Consulting

Civil Engineers & Transport Planners

Hampton Bathrooms, 83 Station Road

Flood Risk Assessment

July 2024

241794/FRA/AG/KBL/01

LANMOR Consulting

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1 INTRODUCTION

1.1 General

1.1.1 Lanmor Consulting Ltd has been appointed to prepare a Flood Risk Assessment for the proposed residential development at Hampton Bathrooms, 83 Station Road, Hampton, TW12 2BJ.

1.1.2 Figure 1.1 below shows the location of the site.

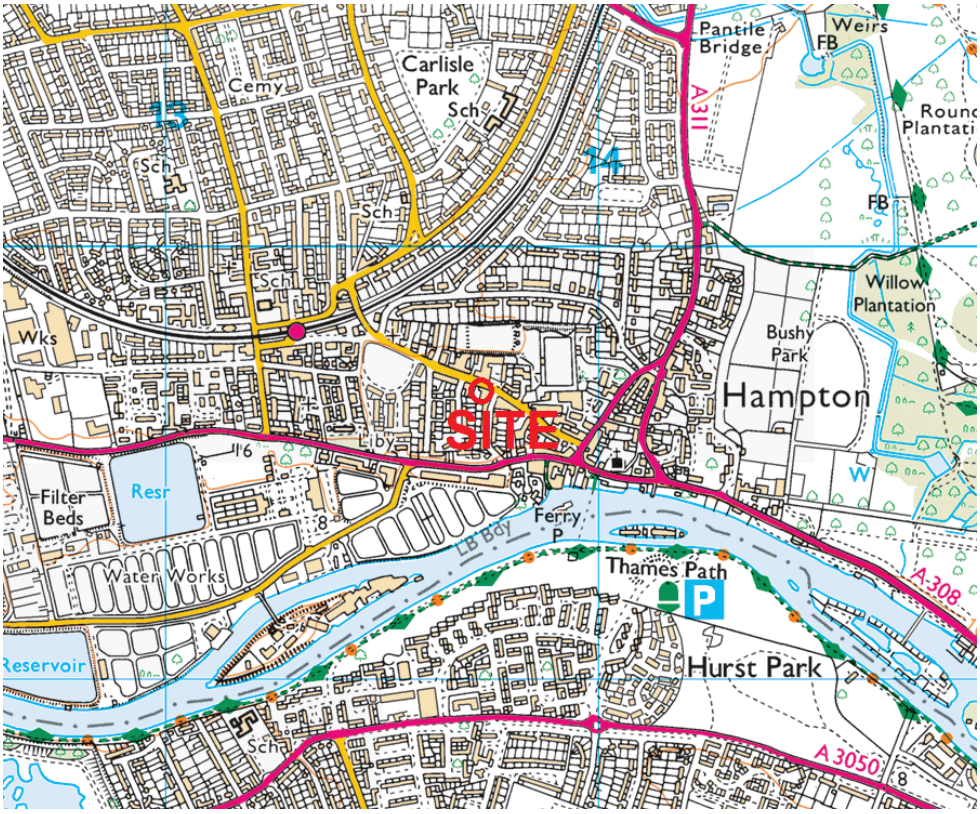

Figure 1.1 – Site Location

1.2 Scope

1.2.1 This report describes the sites existing conditions, development proposals and implications of flooding on the site as described in the governments guidance document; National Planning Policy Framework (NPPF) and its technical guidance. This report will consider the following:

- Development proposals
- Sources of flooding and flood defences
- Flooding extents, depth and climate change predictions
- Impact of flooding on the development
- Dangers presented by flooding

1.2.2 This report has been prepared in accordance with the requirements of the governments National Planning Policy Framework (NPPF) and its planning practice guidance and will demonstrate that the proposed development will be safe and will not increase the risk of flooding in the surrounding area.

1.2.3 This report will also consider the proposed drainage regime for the site. It will assess the site's current Greenfield runoff rate, suitable methods of discharging the runoff from the development and set the drainage strategy for the proposed development, including discharge rates and any requirements for attenuation.

2 EXISTING SITE AND PROPOSED DEVELOPMENT

2.1 Existing Site

2.1.1 The ground floor of the existing building on the site currently operates as a bath showroom and has a floorspace of 95.2m^2 with a small office to the rear for staff. The site faces onto Station Road and sits adjacent to a large car park directly to the east. The closest source of fluvial flooding to the site is from the River Thames which is located approximately 300m to the south. The existing site plan has been enclosed in Appendix A as drawing EX10/005a.

2.2 Regional Geology

2.2.1 The British Geological Survey (BGS) indicates that the site is underlain by London Clay Formation - Clay and silt. Sedimentary bedrock formed between 56 and 47.8 million years ago during the Palaeogene period. Superficial deposits of Taplow Gravel Member - Sand and gravel were also recorded. Sedimentary superficial deposit formed between 362 and 126 thousand years ago during the Quaternary period.

2.3 Proposed Development

2.3.1 The development seeks the change of use of the ground floor and alterations to create two x 1-bedroom flats with amenity space to the rear. There will be no change / increase to the footprint of no. 83. The proposed site layout of the development is included in Appendix A as drawing PL10/010a.

3 SOURCES OF FLOODING

3.1 Fluvial / Tidal Flooding

3.1.1 The NPPF and PPG define the Flood Zones as follows:

- Zone 1: 'Low Probability' This zone comprises land assessed as having a less than a 1 in 1000 annual probability of river or sea flooding (<0.1%) in any year.
- Zone 2: 'Medium Probability' – This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5%-0.1%) in any year.
- Zone 3a: 'High Probability' – This zone comprises 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.
- Zone 3b: 'The Functional Floodplain' – This zone comprises land where water must flow or be stored in times of flood. SFRAs should identify this Flood Zone (land which would flood with an annual probability of 1 in 20 (5%) or greater in any year or is designed to flood in an extreme (0.1%) flood, or at another probability to be agreed between the LPA and the Environment Agency, including water conveyance routes).

3.1.2 The site is located in flood zone 1, the EA flood was unable to provide any modelling for the site as it is at very low risk. The site is within flood zone 1, meaning that the site has a less than 1 in 1000 (<0.1%) fluvial flood risk in any year.

3.1.3 Figure 3.1 below shows an extract of the flood maps for planning provided on the website for fluvial flood risk. The mapping indicates the area at potential risk of flooding and clearly shows the site to be some distance from the nearest source of flooding.

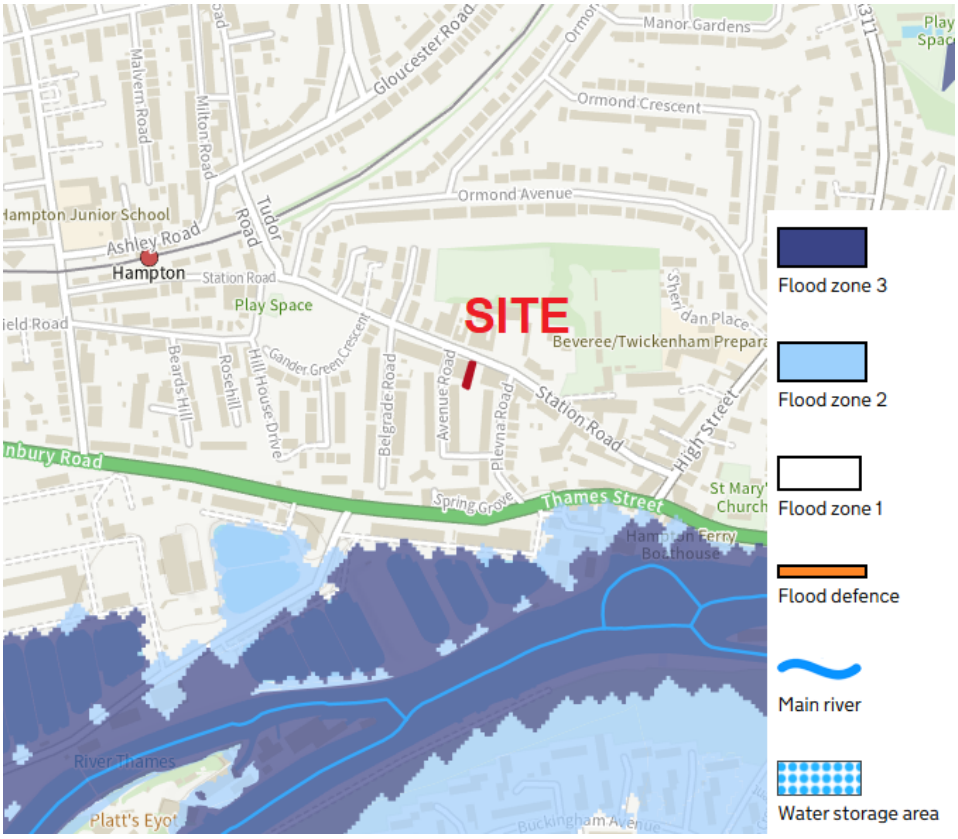

Figure 3.1 – Fluvial Flood Map

3.2 Surface Water Flooding

3.2.1 The surface water flood mapping prepared by the EA is considered to be the best available source of national information of surface water flooding it is a starting point for understanding patterns and probability of surface water flooding. The EA accept that the mapping has limitations and state that "these maps cannot definitely show that an area of land or property is, or is not, at risk of flooding, and the maps are not suitable for use at an individual property level."

3.2.2 The site is shown to be at "low" risk of surface water flooding based on the Environment Agency's surface water flood mapping. This means that the site has a probability of flooding from surface water of between 0.1% and 1% for any given year. Figure 3.2 below shows the site in relation to the surface water flooding extents for the 1 in 100-year storm.

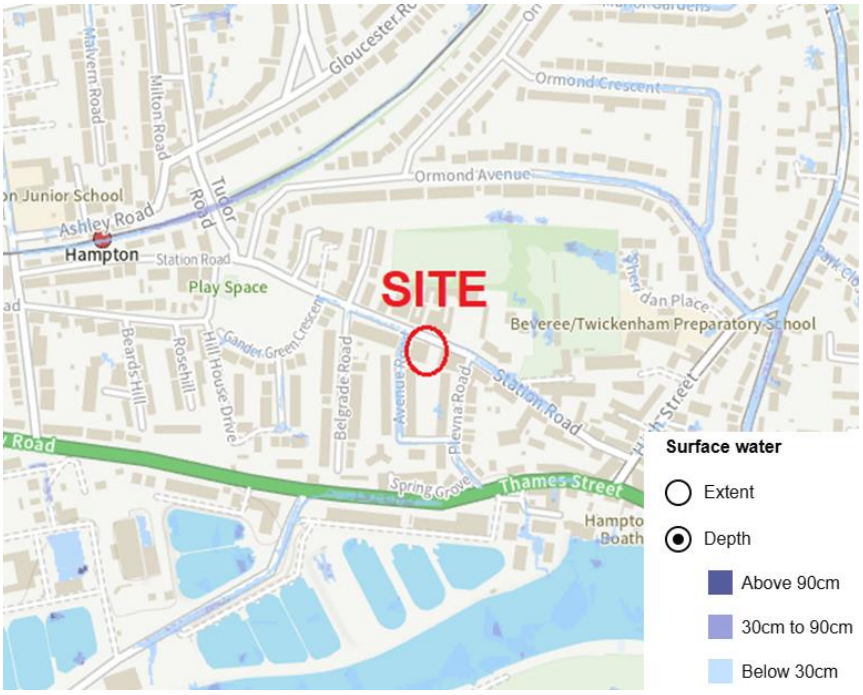

Figure 3.2 – EA Surface Water Flood Map

3.2.3 As the above map shows the site would not be subject to flooding from surface water for the 1 in 100-year storm. Even for the 1 in 1000-year storm event it is only the road to the front that experiences flooding to a maximum depth of 300mm above ground level as shown in Figure 3.3 below.

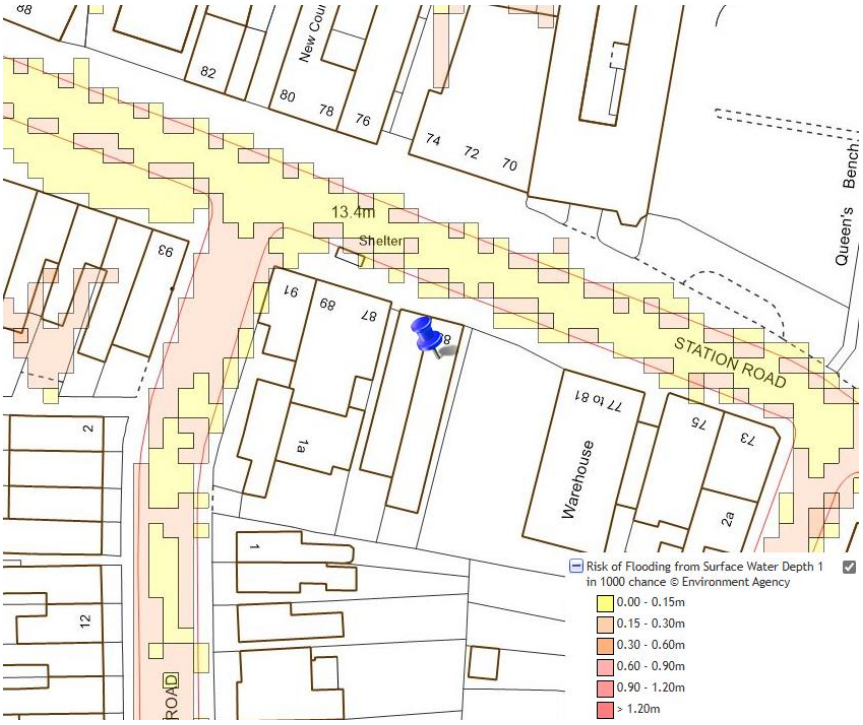

Figure 3.3 – 0.1% Modelled Surface Water Flood Level

3.2.4 The above image is an extract from the Environment Agency's surface water flood model included within the council's detailed SFRA. Therefore, it can be concluded that the site is free from surface water flooding for all modelled return periods. As the dwellings are on the ground floor of the property the FFL will be raised 300mm above ground level to ensure the safety of the development.

3.3 Groundwater Flooding

3.3.1 The interactive map prepared by London Borough of Richmond upon Thames as part of their SFRA shows that the site is within an area considered to have a susceptibility to groundwater flooding of between 50% and 74.9%. However, the site is underlain by clay which would reduce the potential for groundwater emergence. There will also be no building below ground level and so the risk of groundwater flooding to the development is considered low.

3.4 Sewer Flooding

3.4.1 Data from the council's magic map in the SFRA and supplied by Thames Water shows that the site is within an area where 10 or fewer flooding incidents from sewers have been reported to Thames Water and so the site is at very low risk from sewer flooding.

3.5 Reservoir Flooding

3.5.1 The Environment Agency's Long Term Flood Risk Information Service states that reservoir flooding is unlikely for this site. The EA has also stated that *"reservoirs across England have an excellent safety record, with the last fatal failure being nearly 100 years ago. Dams in England are regulated by the Reservoirs Act 1975, which sets out stringent conditions for the operation of reservoirs to ensure high levels of safety. They are designed and operated in a way to ensure the likelihood of failure is incredibly low."* Therefore, the risk of reservoir flooding for the site is also considered low.

4 MODELLED FLOOD LEVELS AND IMPACTS OF FLOODING

4.1 Flood Probability

4.1.1 The site is within Flood Zone 1 and so it has annual probability of fluvial flooding of less than 0.1%. The site is also not affected by the flood extent for the 1 in 100-year surface water flooding incident. Therefore, the site is at low risk of flooding.

4.2 Climate Change Allowances

4.2.1 The Environment Agency have published new climate change allowances. The allowance to be implemented is based on the management catchment area, flood zone and site vulnerability. The site is within Flood Zone 1, so no allowance needs to be considered. However, even if the higher climate change allowance was factored in the site would still be some distance from Flood Zones 2 and 3.

4.3 Impact on Floodwaters

4.3.1 The EA flood mapping has shown the site to be entirely within Flood Zone 1, so the development will not have any impact on the free flow of flood waters for an event with a probability of 1.0% +CC or greater.

4.4 Impact on Flood Storage

4.4.1 The proposed development is securely within Flood Zone 1 and so it is located well above the flood level for an event with a probability of 1.0% +CC or greater. Given the site is above the highest estimated flood level it will not displace any flood storage volumes associated with an event of 1.0% AEP +CC.

4.5 Impact on Development

4.5.1 As the development is located above the flood level for a fluvial event with a probability of 1.0% +CC or greater it will not be at risk of flooding and will not put residents at risk. The development will also be entirely outside of the flood extent for the 1 in 100-year storm event and so will not be at risk from surface water flooding. Nonetheless, as the development is on the ground floor the finished floor levels will be raised 300mm above ground level to ensure the safety of the development and residents.

4.6 Safe Access / Egress

4.6.1 As the site is within Flood Zone 1 and is not affected by floodwaters from the 1 in 100-year storm, a safe access to and from the proposed development can always be provided along Station Road.

4.7 Development Vulnerability Classification

4.7.1 The proposed development will comprise of the conversion of the ground floor of the property into 2 no. flats with amenity space to the rear. Under Annex 3 of the NPPF and Planning Practice Guidance the development would be classified as a building used for dwelling houses and therefore considered to have a “More Vulnerable” proposed use.

4.8 Sequential Test

4.8.1 The principal of the sequential test is to assess locations and to prioritise development in areas at less risk of flooding. The NPPF suggests that Regional Planning Bodies and Local Planning Authorities should ensure their spatial strategies include a broad consideration of flood risk.

4.8.2 Strategic Flood Risk Assessments (SFRA) refine information on the probability of flooding, taking other sources of flooding and the impacts of climate change into account. They provide the basis for applying the sequential test.

Table 2: Flood risk vulnerability and flood zone 'incompatibility'

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	X	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	X	X	X	✓ *

Key:

✓ Exception test is not required

X Development should not be permitted

Table 4.1 – Flood Risk Vulnerability and flood zone 'incompatibility'

4.8.3 Given the proposed dwellings will be located in Flood Zone 1, it is considered that the development meets the requirements of the sequential test as the proposed development has been allocated to an area at less risk of flooding.

5 DRAINAGE STRATEGY

5.1.1 The whole of the existing site is covered by building or hardstanding and the building currently drains to the existing public sewers. The existing building occupies most of the site.

5.1.2 Soakaway and infiltration techniques are not suitable for this site as there is insufficient space between the buildings that would allow surface water runoff to percolate into the ground.

5.1.3 Since this is a change of use application for the conversion of the ground floor into 2 no. flats there will be no alteration to the footprint of the existing building and so no impact on surface water runoff from the site. The only change will be a fence erected to the rear to separate the amenity spaces for the two flats.

5.1.4 Therefore, the proposed development will be able to rely on the existing surface water drainage network for the site. Foul drainage for the development will also connect into the existing sewage network, which presumably outfalls to a public sewer along Station Road.

6 SUMMARY AND CONCLUSION

6.1.1 The site is located in Hampton, in west London, to the southeast of Hampton train station and approximately 300m to the north of the River Thames. The planning application is for the conversion of the existing bath showroom on the ground floor of 83 Station Road into 2 no. 1-bedroom flats with amenity space to the rear.

6.1.2 The proposed development site is located in fluvial Flood Zone 1 and is at very low risk of surface water flooding, or from any other sources. The development will therefore not increase the risk of flooding in or around the site and will not be at risk of damage from flood waters for a 1 in 100-year AEP event, including allowances for climate change. Safe and dry access routes can always be provided to and from the site during a flooding event and therefore the proposals are considered NPPF compliant.

6.1.3 Foul drainage from the proposed residential development will be discharged to the public sewer using the existing connection for the site. Surface water runoff will drain from the site as per the existing situation as the development will not result in an increase to the built footprint, since it is only for the conversion of the ground floor commercial unit into 2 flats.

6.1.4 For the reasons outlined in this report we see no reason to refuse planning permission on the grounds of flood risk, or there being insufficient capacity to discharge runoff from the development.

APPENDIX A

EX13/010a – Existing Floor Plan

Date Issue/Revisions

NORTH

Key

Application boundary

Secondary boundary

0 1 2 3 4 5

Scale at A3 (1:100)

EXISTING GROUND FLOOR PLAN

FORM Design Group
The Control Tower, 12 De Havilland Drive
Weybridge, KT13 0YP
Tel 01932 798132

Architecture
Planning
Structures
interiors
Landscape

CLIENT		SCALE (@A3):	PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
Hampton Bathrooms Ltd	83 Station Road, Hampton	1 : 100	2221	EX13 - 010a	

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PL13/015a – Proposed Floor Plan

Date Issue/Revisions

Key

- Application boundary
- Secondary boundary
- Demolition

Bins per flat

W	Waste wheel bin (120L)
F	External food waste (25L)
RBK	Black recycling box (55L)
RBE	Blue recycling box (55L)

Scale at A3 (1:100)

PROPOSED GROUND FLOOR PLAN

FORM Design Group
The Control Tower, 12 De Havilland Drive
Weybridge, KT13 0YP
Tel 01932 798132

Architecture
Planning
Structures
interiors
Landscape

CLIENT		SCALE (@A3):	PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
Hampton Bathrooms Ltd	83 Station Road, Hampton	1 : 100	2221	PL13 - 015a	

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