



# Hampton Waterworks

## Flood Risk Assessment

*For Waterfall Hampton Investment Ltd*

---

*Date:* 27 April 2020

*Doc ref:* 12193-HYD-XX-XX-RP-FR-0001\_P06

# DOCUMENT CONTROL SHEET

Issued by	Hydrock Consultants Limited Over Court Barns Over Lane Almondsbury Bristol BS32 4DF	Tel: 01454 619533 Fax: 01454 614125 www.hydrock.com
Client	Waterfall Hampton Investment Ltd	
Project name	Hampton Waterworks	
Title	Flood Risk Assessment	
Doc ref	12193-HYD-XX-XX-RP-FR-0001_P06	
Project no.	12193	
Status	S2 - Final Issue	
Date	27/04/2020	

Document Production Record		
Issue Number	P01	Name
Prepared by	Simon Mirams MCIWEM, C.WEM, CSci	
Checked by	David Lloyd BSc, PhD	
Approved by	David Lloyd BSc, PhD	

Document Revision Record			
Issue Number	Status	Date	Revision Details
P02	S2	27/04/2020	Draft for comment
P03	S2	04/05/2020	Draft for comment
P04	S2	16/06/2020	Draft for comment
P05	S2	14/09/2022	Draft for comment
P06	S2	28/02/2023	Final Issue

Hydrock Consultants Limited has prepared this report in accordance with the instructions of the above named client for their sole and specific use. Any third parties who may use the information contained herein do so at their own risk.

# CONTENTS

1.	INTRODUCTION.....	1
2.	SITE INFORMATION.....	2
2.1	Location and Setting .....	2
2.2	Proposed Development .....	2
3.	ASSESSMENT OF FLOOD RISK.....	3
3.1	Flood Zone Mapping.....	3
3.2	Fluvial Flooding .....	3
3.3	Surface Water Flooding .....	3
3.4	Groundwater Flooding.....	4
3.5	Infrastructure Failure Flooding .....	5
4.	NPPF REQUIREMENTS.....	6
4.1	Sequential Test .....	6
4.2	Exception Test.....	6
5.	CONCLUSIONS.....	7

## Figures

Figure 1:	EA Flood Map for Planning.....	3
Figure 2:	EA Flood Map from Surface Water .....	4

## 1. INTRODUCTION

This report has been prepared by Hydrock on behalf of Waterfall Hampton Investment Ltd in support of a Planning Application to be submitted to London Borough of Richmond upon Thames for a proposed residential development at Hampton Waterworks.

This Flood Risk Assessment has been prepared to address the requirements of the National Planning Policy Framework (NPPF), through;

- Assessing whether the site is likely to be affected by flooding.
- Assessing whether the proposed development is appropriate in the suggested location.
- Presenting any flood risk mitigation measures necessary to ensure that the proposed development and occupants will be safe, whilst ensuring flood risk is not increased elsewhere.
- Demonstrating that the development can be adequately drained through the provision of a drainage strategy.

The report considers the requirements for undertaking a Flood Risk Assessment as detailed in the NPPF.

## 2. SITE INFORMATION

### 2.1 Location and Setting

The site is located in the London Borough of Richmond-on-Thames and is bordered to the immediate north by Upper Sunbury Road and by Lower Sunbury Road to the east. The site is within an area that is heavily developed with existing residential development bordering the site to the north and east. To the west of the site is the remainder of the former Waterworks along with areas of former filter beds. Filter beds also border the site to the south with the River Thames being around 100m beyond the southern site boundary.

The site is currently developed and occupied by the former Hampton Waterworks and is comprises a number of existing buildings, internal access roads, areas of car parking, and gravelled areas of working yards. In respect to surface water drainage the site is almost entirely hardstanding.

A summary of the site referencing information is provided in table 1 and a site location plan is shown in figure 1.

Table 1: Site Referencing Information

Site Referencing Information	
Site Address	Hampton Waterworks, Upper Sunbury Road, Hampton, TW12 2DS
Grid Reference	TQ134695
X (Easting), Y (Northing)	513404, 169505

### 2.2 Proposed Development

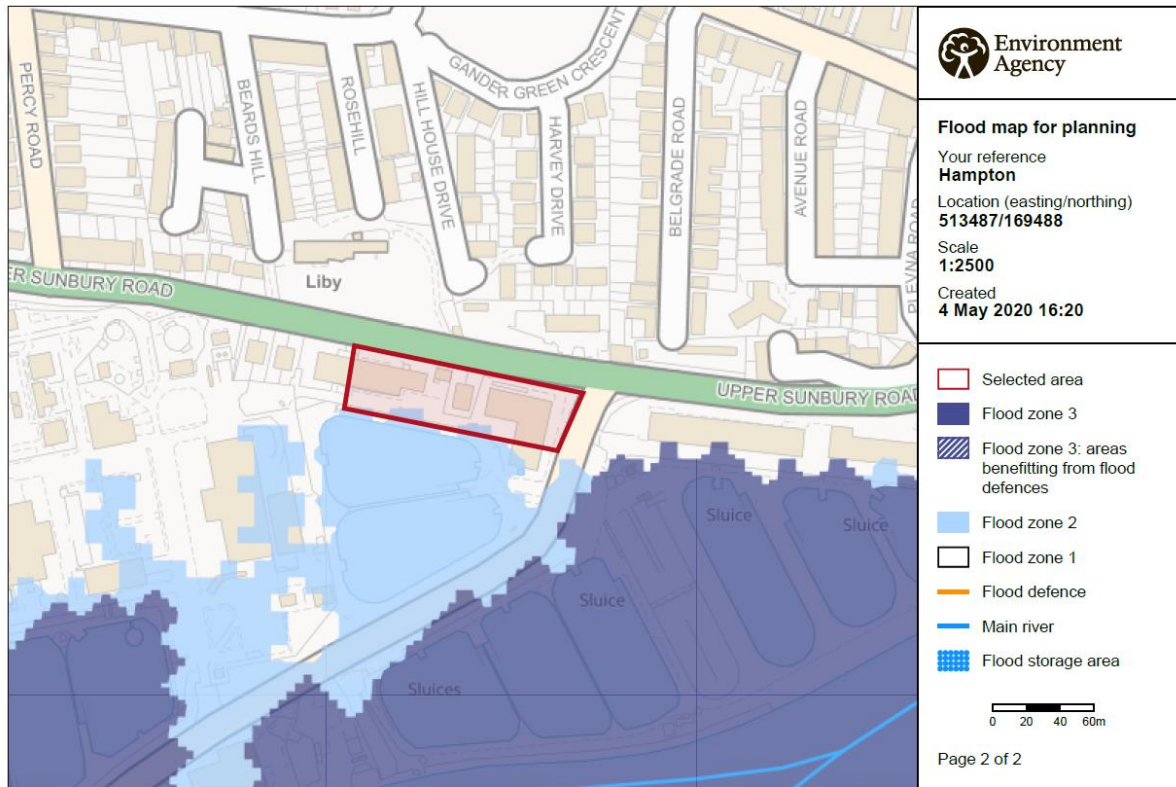
The proposals are for the redevelopment of the site with the conversion of the existing buildings to be used to residential units and commercial space with 36no. residential units.

A proposed site layout plan has been included within the planning application.

### 3. ASSESSMENT OF FLOOD RISK

#### 3.1 Flood Zone Mapping

The entirety of the site and surrounding area is shown to be within Flood Zone 1, i.e. land having a less than 1 in 1,000 annual probability of fluvial or tidal flooding.



© Environment Agency copyright and / or database rights 2018. All rights reserved. © Crown Copyright and database right 2018. Ordnance Survey licence number 100024198.

Figure 1: EA Flood Map for Planning

#### 3.2 Fluvial Flooding

The closest watercourse to the site is the River Thames which is around 100m to the south of the site and beyond the existing filter beds.

The extreme 1 in 1000 year flood outlines extends to the southern limit of the site but is not shown to enter the site. As such, and based on the available mapping, the site is confirmed as being outside all modelled flood events, within Flood Zone 1, and at low risk from fluvial flooding.

Owing to the categorisation of the site as Flood Zone 1 the site is also concluded as being at low risk from tidal flooding.

#### 3.3 Surface Water Flooding

The EA's Flood Risk from Surface Water mapping, as shown in Figure 2 below, shows the site as being predominantly at 'very low' risk of surface water flooding.



Figure 2: EA Flood Map from Surface Water

Whilst the majority of the site is shown as being at 'very low' risk an area within the centre of the northern site boundary is shown as being at an increased risk. However, this area is shown as being of low risk, shallow depth (<300mm depth) and providing no connectivity to the wider area. As such, this area of increased risk is considered as being representative of locally low points within the site and where, in the event of a failure of the sewer network, localised ponding would occur.

This would be considered a residual risk and therefore the site is concluded as being at low risk from this source.

### 3.4 Groundwater Flooding

In the absence of site-specific geotechnical information, the British Geological Mapping has been reviewed and confirms that the site is underlain by London Clay Formation with superficial deposits of low permeability head (which comprises Clay, Silt, Sand and Gravel). The Landis Soilscape mapping has also confirmed that the site and generally surrounding area has impeded drainage owing to clayey soils.

Owing to the site being underlain by impermeable material that has not been identified as susceptible to perched groundwater, and the small number of recorded historical groundwater flood events, the site is concluded as being at low risk from groundwater.

Furthermore, a separate Basement Impact Assessment (report reference: HWW-HYD-00-XX-RP-S-0002) has been carried out and has confirmed that there would be no adverse impacts on groundwater due to the proposed development.

### 3.5 Infrastructure Failure Flooding

The risk of flooding from sewers within the London area is raised due to the increasing urbanisation of areas and rising rainfall intensities. This is a known issue in the London area as the combined system dates from Victorian times and the increased urbanisation has led to capacity issues, particularly during prolonged or intense rainfall events.

Owing to the heavily urban nature of the area surrounding the site, it is considered that the majority of any sewer flooding is as the result of overloading or failure of the sewer network (both combined and foul drainage systems). In the event of the surcharging of any existing sewer network, it is considered that flows would mimic the surface water flood extents shown on the EA mapping. As such, any surcharged sewer flows are considered to be conveyed within the existing road network and pose no increased risk to the site.

The site is therefore considered to be at low risk from sewer flooding.



## 4. NPPF REQUIREMENTS

### 4.1 Sequential Test

This assessment has demonstrated that the site is on land designated as Flood Zone 1 by the EA's Flood Zone Mapping, and at low risk of flooding from other potential sources.

The NPPF considers residential development as 'more vulnerable' and employment development as 'less vulnerable development' in respect of flood risk.

The NPPF Flood Risk Vulnerability and Flood Zone Compatibility matrix (Table 3) indicates that both 'more and less vulnerable' development is appropriate in Flood Zone 1 and accordingly the proposed development is concluded to meet the requirements of the Sequential Test.

### 4.2 Exception Test

Whilst an Exception Test is not explicitly required under the NPPF, due to the site being demonstrated to pass the Sequential Test, the following section details any measures necessary to mitigate any 'residual' flood risks, to ensure that the proposed development and occupants will be safe and that flood risk will not be increased elsewhere, akin to the requirements of the second section of the Exception Test.

#### 4.2.1 *Safe Access and Egress*

Access to the site will be via Upper Sunbury Road on the northern site boundary which is indicated to be at low risk of flooding, based on the EA's Flood Zone and Flood Risk from Surface Water mapping.

As such, a safe / dry access and egress is considered to be possible to and from the site.

#### 4.2.2 *Flood Risk within Catchment*

The proposed development is not considered to increase flood risk within the catchment through a loss of floodplain storage (as the site has been demonstrated as being outside a functioning floodplain).

#### 1.1.1 *Surface Water Drainage Strategy*

A surface water drainage strategy has been undertaken and supports the application. The details of this are included within a separate report (Ref: 12193-HYD-XX-ZZ-RP-C-0001 P-03).

## 5. CONCLUSIONS

This report has considered the flood risk posed to the proposal site from a variety of sources of flooding.

The site has also been concluded as being at a low risk from all assessed sources of flooding.

The proposed development is therefore concluded to meet the requirements of the Sequential Test.

Safe access and egress has also been demonstrated to and from the site, as well as the fact that the proposed scheme will not result in a loss of floodplain storage or redirect any surface water overland flows onto adjacent land / properties.

Preliminary surface and foul water Drainage Strategies have been prepared (via separate report) which demonstrate that the site can be satisfactorily drained without detrimental effects to third party land.

This report therefore demonstrates that the proposed scheme:

- Is suitable in the location proposed.
- Will be adequately flood resistant and resilient.
- Will not place additional persons at risk of flooding, and will offer a safe means of access and egress.
- Will not increase flood risk elsewhere as a result of the proposed development through the loss of floodplain storage or impedance of flood flows.
- Will put in place measures to ensure surface and foul water is appropriately managed.

As such, the Application is concluded to meet the flood risk requirements of the *NPPF*.

*Hydrock Consultants Limited*