

Flood Risk Assessment

The Railway 100, West End Lane
West Hampstead

Prepared for:

First Urban (WH) Ltd.

Prepared by:
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Issue	**Description of Status**	**Date**	**Reviewer Initials**	**Author Initials**
3	FINAL	12/11/2013	SG	CD

Contents

List of Figures

List of Annexes

1 Introduction

1.1 Background

ENVIRON UK Limited (ENVIRON) was commissioned by First Urban (WH) Ltd. (the 'Client') to provide a Flood Risk Assessment (FRA) of the proposed redevelopment of The Railway at 100, West End Lane in West Hampstead, London NW6 2LU (the 'Site').

1.2 Site Location

As presented in Figure 1.1, the Site is located in West Hampstead in the London Borough of Camden. The Site lies to the south of West Hampstead underground station. Broadhurst Gardens bounds the Site to the north and the Site forms part of a row of buildings, largely comprising houses which are oriented along a roughly west to east axis along Broadhurst Gardens. West End Lane is immediately to the west of the Site. The area is generally heavily built-up and urban in nature. The Site itself covers less than 1,000 m^2 in area.

1.3 Proposed Development

The proposed development involves refurbishment works to all levels from lower ground through to third floor. The proposed application will seek permission for change of use of the upper floors of the existing Public House (Class A4) and ancillary accommodation to Office (Class B1/A2) at first floor level and self-contained flats (Class C3) at second and third floor level (the 'proposed development'). The Public House (Class A4) and ancillary accommodation use will be retained at ground floor and lower ground floor levels. Access to the upper floors will be via the existing separate entrance and staircase via Broadhurst Gardens to the north of the Site.

The first floor will provide 240 m^2 net internal area (NIA) of office accommodation. The Residential accommodation will comprise 3 no. two bedroom flats, 2 no. one bedroom flat and 1 no. studios. Third floor alterations will include modification and extension to the existing roof. It is proposed that a number of previously blocked up windows are to be reopened in order to sufficiently light the living, office and circulation spaces. The existing fire escape to the rear of the property will be removed. The proposed development layout is presented in Annex A. There will be no increase in the external footprint of the building and no change to the existing drainage arrangements.

However, this report is in support of the BREEAM Domestic Refurbishment Assessment which is applicable to the residential development at second and third floor only (the 'assessed development').

1.4 Requirement for a Flood Risk Assessment

Flood risk is primarily regulated through planning policy. Key requirements with respect to flooding are outlined in the National Planning Policy Framework (NPPF)[1] which was published in March 2012. This replaces and builds on the requirements of Planning Policy Statement 25: Development and Flood Risk (PPS25)[2].

1 Department for Communities and Local Government (March 2012) National Planning Policy Framework.

2 Department for Communities and Local Government (Revised March 2010) Planning Policy Statement 25: Development and Flood Risk.

The NPPF requires that an FRA should be submitted with planning applications for all sites over one ha in area and all smaller sites within Flood Zones 2 and 3 to determine the risks of flooding at a development site (from all sources including rivers, the sea, sewers and groundwater). The proposed development is located within Flood Zone 1 and covers considerably less than 1 ha.

The primary resource for reviewing fluvial and tidal flood risks is via Environment Agency (EA) indicative floodplain maps. These classify risks as follows:

- Flood Zone 1 (Low Probability): annual probability of flooding less than 1 in 1,000 (<0.1%);
- Flood Zone 2 (Medium Probability): annual probability of flooding more than 1 in 1,000 (0.1%) but less than 1 in 100 (1%) for fluvial flooding or 1 in 200 (0.5%) for tidal flooding; and
- Flood Zone 3 (High Probability): annual probability of flooding more than 1 in 100 (1%) for fluvial flooding or 1 in 200 (0.5%) for tidal flooding.

Local policies on flooding are also available for review. These are principally communicated via Strategic Flood Risk Assessment (SFRA) reports. The PPS25 Development and Flood Risk Practice Guide sets out that, where an SFRA has been completed, it should form the starting point for a site-specific FRA.

A commitment has been made by the client to assess the scheme against the requirements of the BREEAM Refurbishment 2012 scheme. In terms of surface water and flood risk, the following issues apply:

"Pol 02 Surface water runoff 3 credits available

First credit – where the refurbishment has had a neutral impact on surface water from the site

Second credit – basic level of reducing run-off from site

Third credit – advanced level of reducing run-off from site including an allowance for climate change

Exemplary credits – eliminating all runoff from site and including an allowance for climate change

Pol 03 Flooding 2 credits available (minimum standard)

Minimum standards – requirement of two or more credits under this issue to achieve an excellent or outstanding rating

Criteria are based on the results of a flood risk assessment. Where the site is defined as medium or high flood risk there are additional requirements for flood resilience and resistance strategies."

Guidance on the content of FRAs is contained in Technical Guidance to the National Planning Policy Framework and also within the Planning Policy Statement 25: Development and Flood Risk Practice Guide. These documents have been used to inform the scope and content of this FRA.

1.5 Consultation

Given the scale of development at the Site, it is not considered necessary to undertake specific consultation with the EA who are not required to be consulted for such a development. All information on flood risks has therefore been derived from a review of the North London Strategic Flood Risk Assessment (SFRA).

1.6 Strategic Flood Risk Assessment

An SFRA was completed for Camden Borough Council as part of the North London SFRA in August 2008. The primary purpose of an SFRA is to determine the variation in flood risk across the study area by identifying areas at risk of flooding from all sources present. The PPS25 Development and Flood Risk Practice Guide sets out that, where an SFRA has been completed, it should form the starting point for a site-specific FRA. Therefore, the North London SFRA has been reviewed to inform the content of this FRA.

2 Baseline Environmental Conditions

2.1 Land Use

The Site is located in a built-up area and there is no landscaping adjacent to or within the Site boundary. The building is accessed via a front door which is at a similar level to West End Lane to the west and a further side entrance from Broadhurst Gardens which enters the ground floor of the property via a number of steps up from the road level.

2.2 Hydrology and Flooding

2.2.1 Surface Water Features

The closest surface water feature is the River Brent which is located more than 3.5 km to the north west of the Site at its closest point. The SFRA reports that there are no open river channels in Camden as all watercourses are culverted.

2.2.2 Site Drainage

It is anticipated that all drainage from the Site is into Thames Water sewers located on Broadhurst Gardens or West End Lane. It is believed that all surface water currently discharges directly to the public sewer without any form of attenuation.

2.2.3 Flood Zone Classification

According to the EA's indicative flood map, the Site is located entirely within Flood Zone 1 (low probability). The Site, therefore, lies outside the extent of inundation predicted to occur during a flood with a 1,000 year return period and is at low risk of flooding from rivers or the sea.

2.2.4 Historic Flooding

Camden suffered widespread surface water flooding in August 2002 due to a high intensity rainfall event. Flooding is also reported to have occurred in 1975. High rainfall levels and flood events are reported in the SFRA to be a recurring feature in Camden due to the nature of summer thunderstorms and the topography of Hampstead.

The flood event on the 7th August 2002 is reported in the SFRA to have been caused by excessive rainfall causing the main sewer system to become completely inundated. The surcharge pressure forced the water to back onto the streets through manholes and gully gratings and into homes at basement and ground floor level. Thames Water has stated that the flooding was caused by its sewer system reaching maximum capacity very quickly so that surface water could not be drained at the rate the rain fell.

There are no specific records of the property having flooded. The ground floor of the property is raised above the road level of Broadhurst Gardens to the north. The topography of Broadhurst Gardens is such that surface water would tend to flow from west to east and the relatively steep slope means that ponding of surface water adjacent to the property on Broadhurst Gardens is considered unlikely. The topography of West End Lane appears to fall from north to south. It is therefore considered that surface water flowing along West End Lane would also be unlikely to pond adjacent to the Site but would flow south along West End Lane or east along Broadhurst Gardens.

3 Assessment Against BREEAM Criteria

3.1 Flood Risk

3.1.1 Fluvial and Tidal

The Site is located entirely in Flood Zone 1 and therefore lies outside the extent of inundation predicted to occur during a flood with a 1,000 year return period. In accordance with the NPPF, the Site is therefore considered to be at low risk of fluvial or tidal flooding.

3.1.2 Pluvial and Sewer

The Site is shown to be on a street which has been impacted by surface water or sewer flooding previously within the SFRA. The SFRA concludes that West Hampstead carries a medium risk of flooding from these sources. However, as the assessed development will all be at first floor and above, the risk of surface water/pluvial flooding in accordance with BREEAM criteria is low.

3.1.3 Groundwater

No historical flood incidents are reported in the SFRA in the vicinity of the Site. The SFRA concludes that the overall risk of groundwater flooding in Camden is very small. The risk of groundwater flooding at the Site is considered to be low.

3.1.4 Artificial Water Bodies

The Site is not located in close proximity to any major artificial water bodies and is considered to be at low risk of flooding from such sources.

3.1.5 Summary of Flood Risks

On the basis of the evidence considered and described above, this FRA demonstrates that the assessed development is located in Flood Zone 1 (low risk) and is at low risk of fluvial, tidal, artificial water bodies or groundwater flooding. There is a medium risk of flooding from surface water/sewer flooding albeit that there are no specific records of the Site having experienced flood damage.

The ground floor of the building is raised above Broadhurst Gardens where the entrance to the proposed development will be located. Surface water/sewer flooding is unlikely to enter the building via this route. The assessed development works are to take place at first floor and above. The risk to these elements of the building from surface water/sewer flooding is therefore low.

The assessed development therefore meets the requirements for Two Credits under Pol 03.

3.2 Surface Water Run-Off

With the exception of the roof work, no refurbishment that would involve changes to Site drainage is proposed. For building conservation reasons and due to the slope and pitch of the roof, green roofs would not be feasible at this Site. Opportunities to reduce surface runoff are not therefore considered to be available during the current refurbishment works.

There will be no increase in the risk of flooding associated with Site-derived runoff because the runoff characteristics will not change as a result of the development which takes place entirely within the existing built footprint. Existing sewers would continue to be used to convey surface runoff from the Site. **The assessed development is therefore considered to meet the requirements for an additional credit for attenuation of surface runoff under Pol 02.**

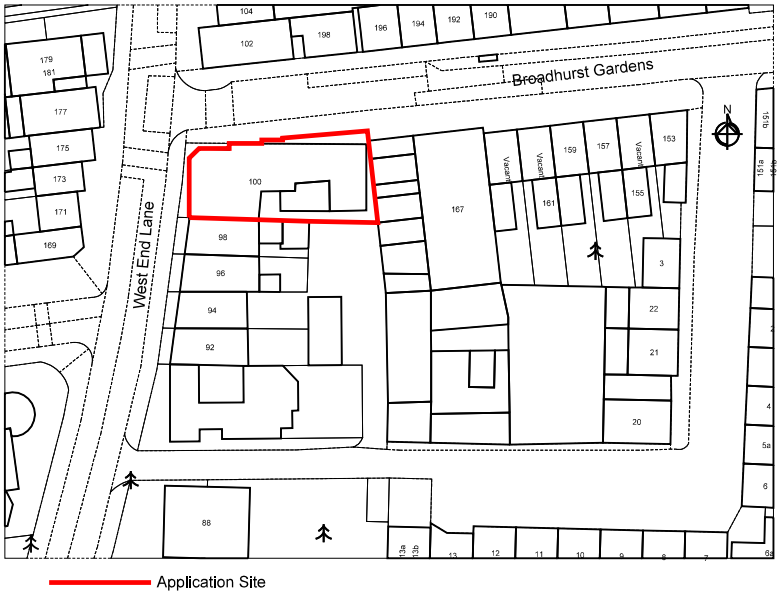
4 Conclusions

ENVIRON was commissioned to provide a Flood Risk Assessment of the proposed redevelopment of The Railway, West End Lane, West Hampstead, London. The conclusions of the FRA are as follows:

- The Site is located in Flood Zone 1 and is therefore outside the extent of inundation predicted to occur during a flood with a 1,000 year return period. In accordance with the NPPF, the Site is therefore considered to be at low risk of fluvial or tidal flooding.
- The North London SFRA concludes that there is a medium risk of flooding from surface water/sewer flooding in West Hampstead. There are no specific records of the Site having experienced flood damage and the ground floor of the building is raised above Broadhurst Gardens where the entrance to the proposed development will be located. Surface water/sewer flooding is unlikely to enter the building via this route. The assessed development for BREEAM will take place at first floor and above. The risk to these elements of the building from surface water/sewer flooding is therefore low.
- The Proposed Development does not represent any change in the runoff characteristics of the Site. Existing sewers would continue to be used to convey surface runoff from the Site and no risk from sewer flooding has been identified.
- On the basis of the evidence considered and described above, this FRA demonstrates that the assessed development is located in Flood Zone 1 (low risk) and is at low risk of fluvial, tidal, sewer, surface water or groundwater flooding. **The assessed development therefore meets the requirements of BREEAM Domestic Refurbishment and is eligible to receive three (3) credits in respect of surface water/flooding (Pol 02 and Pol 03).**

Figures

Figure 1: Site Location Plan



NOTES

Reproduced from the Ordnance Survey map with the permission of the Controller of Her Majesty's Stationary Office, © Crown Coppyright
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Subject to Statutory Approvals.

Rev	Description	Chkd	Date

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Project
The Railway Tavern
100 West End Lane

Drg Title
Site location plan

Status
PLANNING

0 50m

Scale 1:1250@ A4

Date 20/08/2013

Drg No 10833 / TP / 101

Rev

Annex A: Proposed Development Layout

1/105 ELEVATION 1
west

2/105 ELEVATION 2
north

3/105 ELEVATION 3
east

4/105 ELEVATION 4
south

NOTES

Location plan (nts)

N

Areas of concrete infil to be replaced with new brickwork to match existing

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Project
The Railway Tavern
100 West End Lane

Drg Title
Proposed Elevations

Status
PLANNING

0 5 m

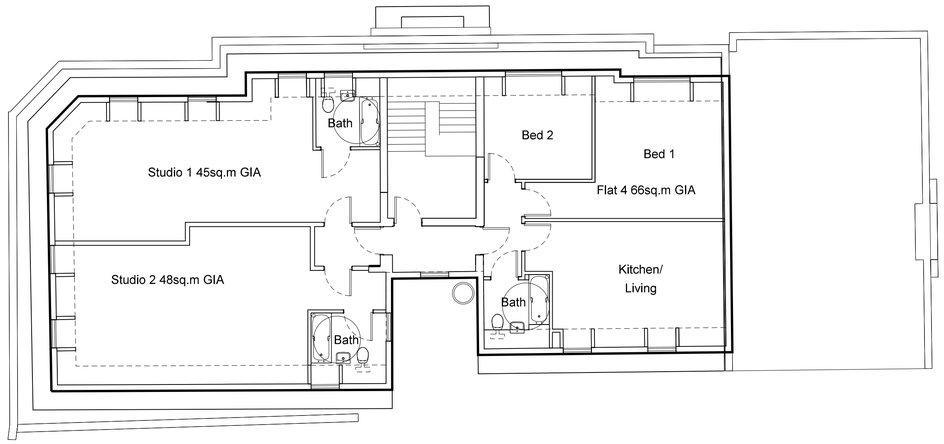
Scale 1:100 @ A1

Date 20/08/2013

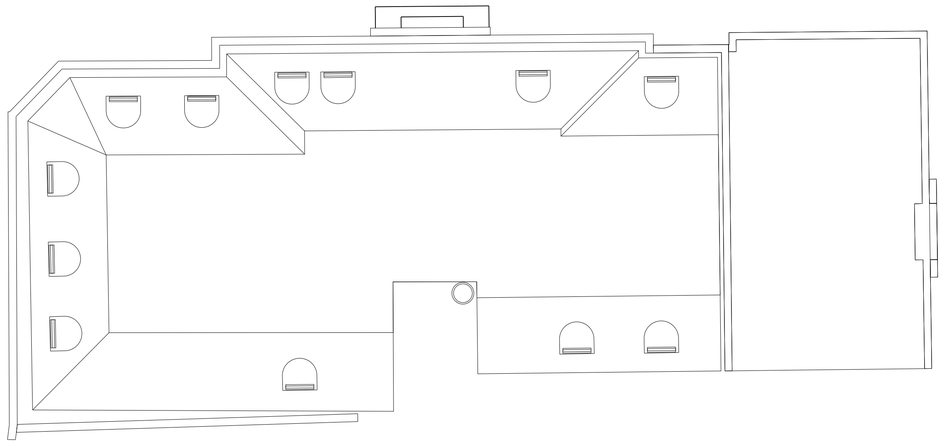
Drg No 10833 / TP / 105

Rev -

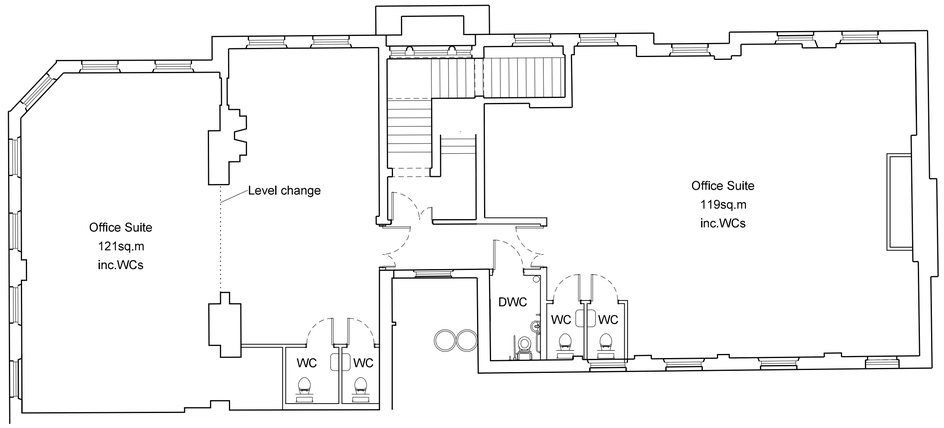
NOTES



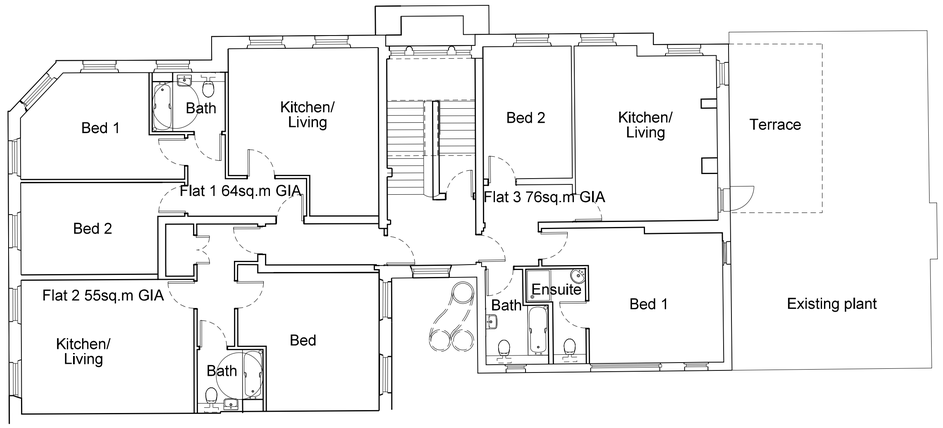
Third Floor



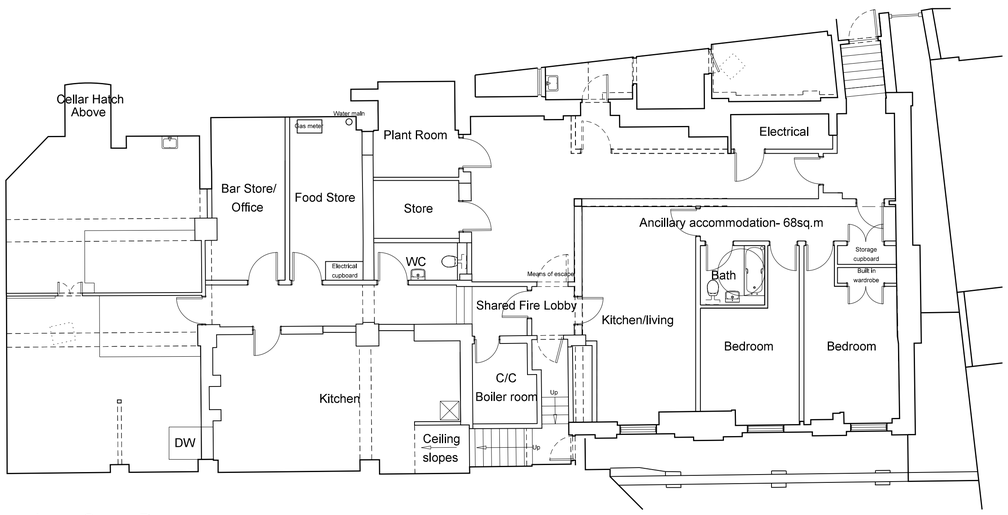
Roof



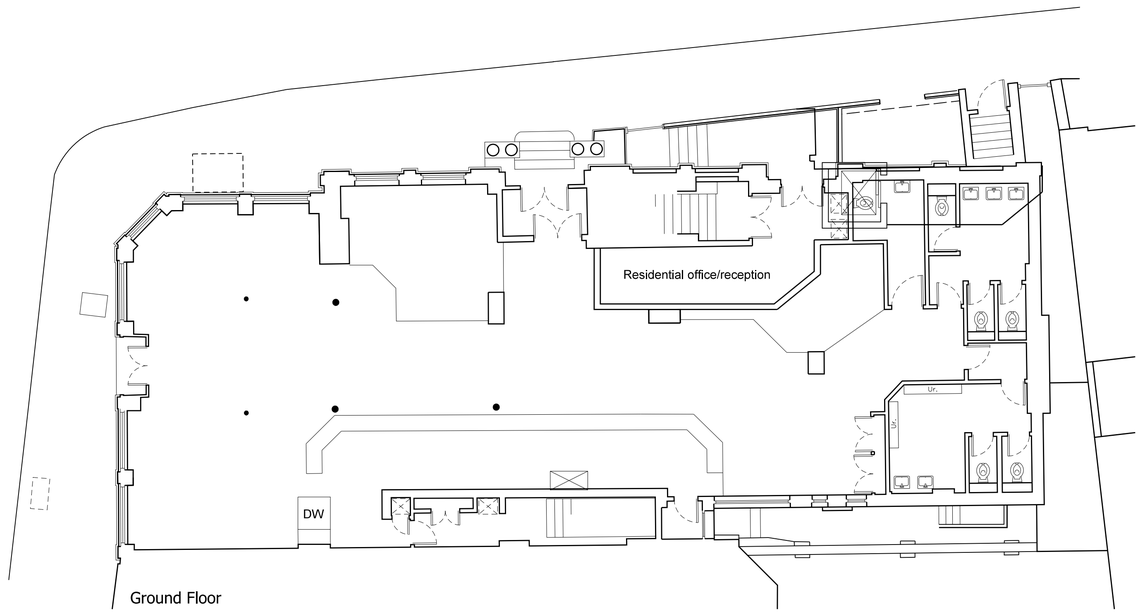
First Floor



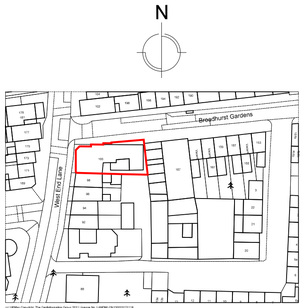
Second Floor



Lower Ground Floor



Ground Floor



Location plan (nts)

N

New 600mm diameter insulated kitchen ventilation ducts

New 600mm x 400mm insulated kitchen ventilation ducts

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Drg Title
Proposed Floor Plans

Status
PLANNING

0 5 m

Scale 1:100 @ A1

Date 20/08/2013

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