# Prelim Flood Risk Assessment for project validation

For the change of use application relating to

## 144 Waldgrave Road, Teddington, TW11 8NA

Prepared by

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Innervision Design Ltd

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# 1 Executive Summary

A There is no apparent flood risk to the proposed development on the site.

B The use of retrofit SuDS and the de-paving of impermeable areas will pro-actively reduce surface water run-off and volumes and hence reduce local flood risk within the CDA.

C The proposed non-major development to an existing building within a developed area at a negligible flood risk is considered acceptable.

# 2 Introduction

## 2.1 Site location

The project is located at 144 Waldegrave Road, Teddington, TW11 8NA.

## 2.2 Project details

All submitted under separate cover.

### 2.2.1 Vulnerability class

The proposal changes the vulnerability class from Less vulnerable to More vulnerable.

This is Appropriate development in areas of Low or negligible Flood risk.

## 2.3 Scope

A FRA doesn't always need to be a very detailed or technical document. A lot of the scale of schemes really only need a covering letter setting out that someone has considered the risks, a bit of analysis as to how the design responds to this and whether anything such as building resilience is required and then a basic sustainable drainage scheme.

# 3 Flood risk analysis

## 3.1 Sources of potential flooding

Flood risk from various sources to the site are analysed in this section. It is concluded that there is no apparent flood risk to the proposed development on the site itself.

### 3.1.1 Flood risk from sea and rivers

The site is not at risk from tidal flooding.

The site lies in Flood Zone 1.

The development site is therefore at a negligible flood risk from sea and rivers.

### 3.1.2 Flood risk from groundwater

Groundwater flooding occurs when water levels in the ground rise above surface levels. It is most common in low-lying areas underlain by permeable rock (aquifers), usually due to extended periods of wet weather. The site's geology is classified as having a very high susceptibility to groundwater flooding (>=75%) with ground water expected close to the surface.

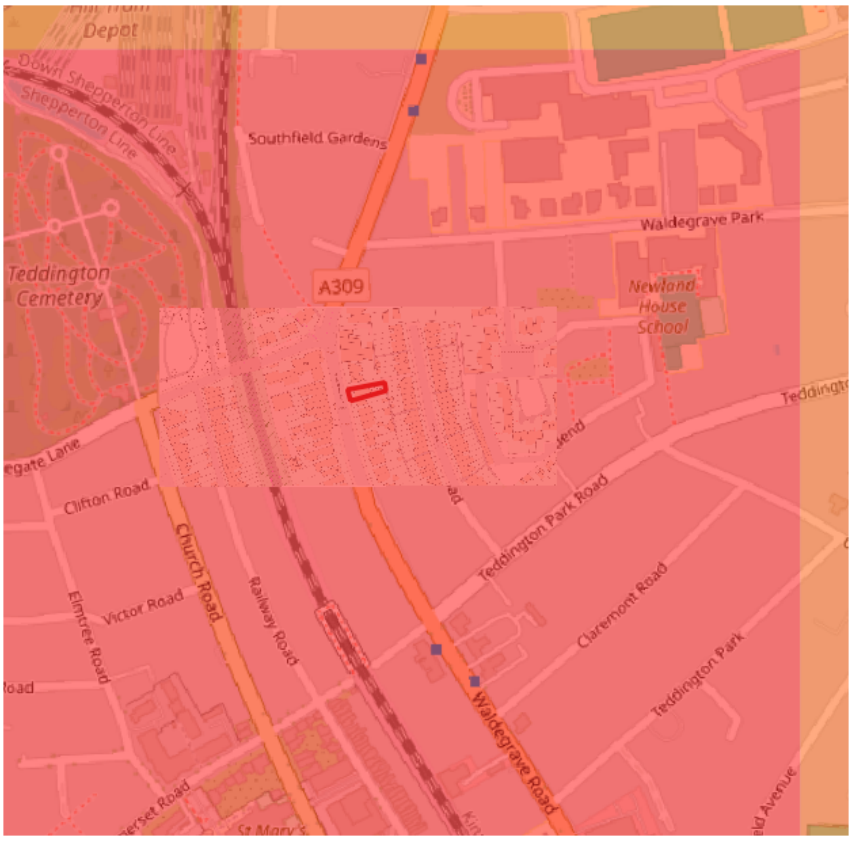


Figure 1: Susceptibility to ground water flooding. The site falls within an area at a Very High risk

The proposed scheme doesn't involve basement elements, so groundwater will have no negative impact on the proposed site. The risk from ground water is therefore considered to be negligible.

### 3.1.3 Flood risk from sewer and highway drains

Flooding occurs when combined, foul or surface water sewers and highway drains are temporarily over-loaded due to excessive rainfall or due to blockage.

There are no indicators to Sewer flooding at the site.

Hence, the risk of sewer and highway flooding to the proposed site can be considered to be Low.

### 3.1.4 Flooding risk from surface water

The development site is not at risk from surface water flooding.

### 3.1.5 Flood risk from infrastructure failure

The site is not shown to be at flood risk from infrastructure failure.

### 3.1.6 EA Summary of flood risk

"The area around Waldegrave Motors, 144, Waldegrave Road, Teddington, TW11 8NA has a

- very low risk of surface water flooding
- very low risk of flooding from rivers and the sea

and,

- Groundwater Flooding from groundwater is unlikely in this area.
- Flooding from reservoirs is unlikely in this area."

## 3.2 Access and Egress

Access and egress are immediately available and not affected by the proposal.

## 3.3 SuDS Statement

The site is within a Critical Drainage Area (CDA, Group 8_006).

The site is currently 100% impermeable (circa 50% roof area and 50% hardstanding).

The Council's SWMP provides SW drainage recommendations for the Council to implement so as to minimise local flooding as per the extracts at Figures 2 & 3.

4.3.24 Types of permeable surfaces include:

- Grass/landscaped areas
- Gravel
- Solid Paving with Void Spaces
- Permeable Pavements

Figure 2: The types of suitable permeable surfaces as listed within the SWMP

| Rainwater Harvesting – Water Butts | | |
|---|---|---|
| **Description** | **Benefits** | **Impacts** |
| Installation of water butts for all new development within Opportunity Areas | Ties in with SuDS hierarchy and reduces peak discharges to surface water | Positive impacts to sustainability and water re-use. |
| Retrofit water butts on all existing development (as shown on Figure 4-6) | Supplementary benefits beyond regeneration and redevelopment sites (volumetric reduction with opportunity for complimentary water quality improvements) | Currently no available incentives to encourage homeowners to install water butts. |

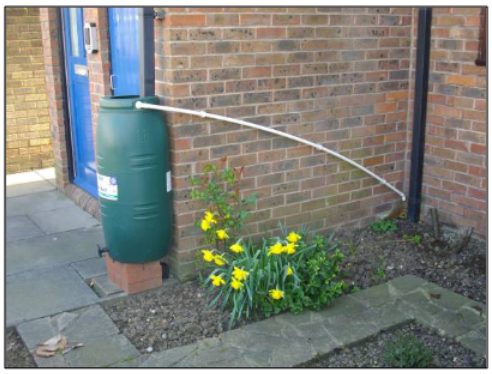

**Figure 4-6 Example of a 100L water butt retrofitted to existing development**

| | |
|---|---|
| ***Option 3g:*** | It is recommended that the Council promote the use of water butts across the Borough and provide information on costs, suppliers, installation and benefits. The Council may choose to make a bid to the Climate Change Fund to provide water butts and rainwater harvesting systems to residents at discounted rates. |

Figure 3: The recommendation to the Council to promote the use water butts within the SWMP.

The design intention is therefore to proactively assist the council to meet their targets by:

- replacing areas on site that are currently impermeable (concreted forecourt and rear service yard) with areas of domestic landscaping to the rear of the site and permeable paving to the forecourt and
- incorporating rainwater butts to reduce potable water demand.

Since the proposal intends reduce the impermeable areas in line with current best practice and the SWMP it will reduce surface water run-off and volumes and hence reduce local flood risk within the CDA.

## 3.4 Flood risk summary

I can confirm that I have assessed all flood risks to this project, and can conclude that

- There is no apparent flood risk to the proposed development on the site.

- The use of retrofit SuDS and the de-paving of impermeable areas will proactively reduce surface water run-off and volumes and hence reduce local flood risk within the CDA.

In respect to flood risk and the critical drainage area the proposed non-major development to an existing building within a developed area and at negligible flood risk is considered acceptable.

Signed: 

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Date: 24th June, 2024