

Project_

**Tavistock Works
West Drayton
London, UB7 7QX**

Title_

**Flood Risk Statement for
Permitted Development Application**

Project No_

431

Date_

December 2018

Revision_

B

This report has been prepared for the private and confidential use of Linea Homes, and cannot be reproduced in whole or in part or relied upon by any third party for any use whatsoever without the express written authorisation of Flo Consult UK Limited. If any third party whatsoever comes into possession of this report, they rely on it at their own risk and Flo Consult UK Limited accepts no duty or responsibility (including in negligence) to any such third party.

Author: Mark Symonds

1. Introduction

Flo Consult UK Ltd have prepared a Flood Risk Statement for a permitted development application, for a proposed new site at Tavistock Works, West Drayton, London, UB7 7BX.

The flood risk statement is based on the requirements from the local authority. The information required by the local authority is as follows:

- i. **What Flood Zone is the site in?**
- ii. **What is the flood level, if known?**
- iii. **Is the site protected by flood defences – if so, what standard do they provide?**
- iv. **What is the existing ground level of the site above the Ordnance Datum (AOD)?**
- v. **What are the proposed levels of your development?**
- vi. **How will the surface water be drained?**
- vii. **Where a change of use of an existing building being proposed, an option may be to use damage limitation and flood protection products.**

2. Site Location

The development site is in the London Borough of Hillingdon, and is approximately 75m west of West Drayton train station, 25m east of Fray's River, and 50m south of the Grand Union Canal.

The site is bound between a new development / building to the north and west; Tavistock Road to the south; and an existing commercial building to east.

The full address of the development site is Tavistock Works, West Drayton, London, UB7 7QX, and the co-ordinates of the centre of the site are: Easting: 50589, Northing: 180158.



i. Flood Zones

The Environment Agency (EA) fluvial flood map shown in Figure 1, indicates that the development site is within **Flood Zone 1 - Low probability** (land having a less than 1 in 1,000 annual probability of river or sea flooding).

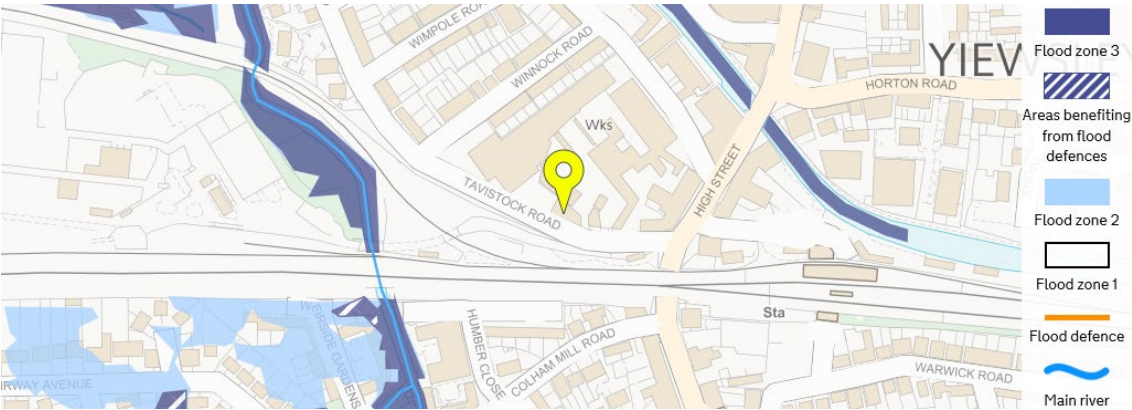


Figure 1 – EA Flood Zone Map

ii. Flood Levels

The EA flood map shown in Figure 2, indicates in a high-risk scenario there is no fluvial flooding at the development site.

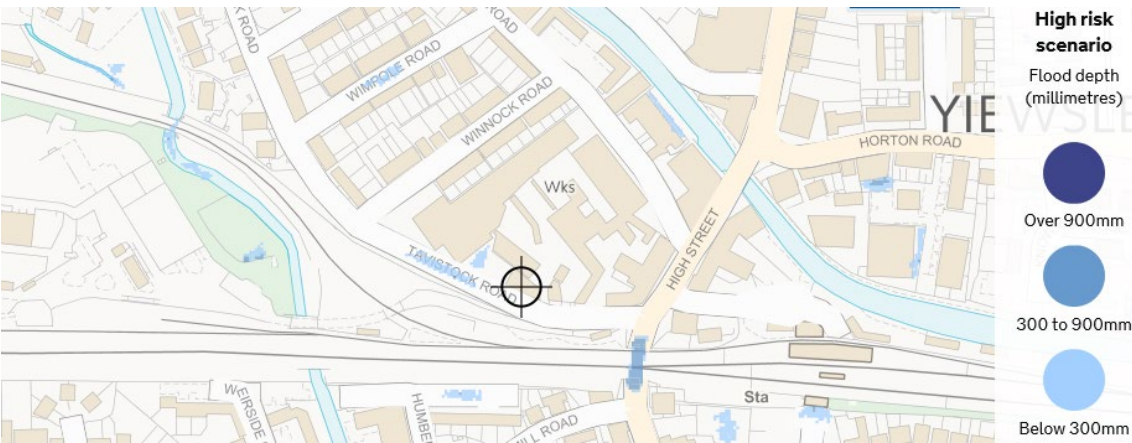


Figure 2 – High-Risk Fluvial Flood Area and Depth

The EA flood map shown in Figure 3, indicates in a medium-risk scenario there is no fluvial flooding at the development site.

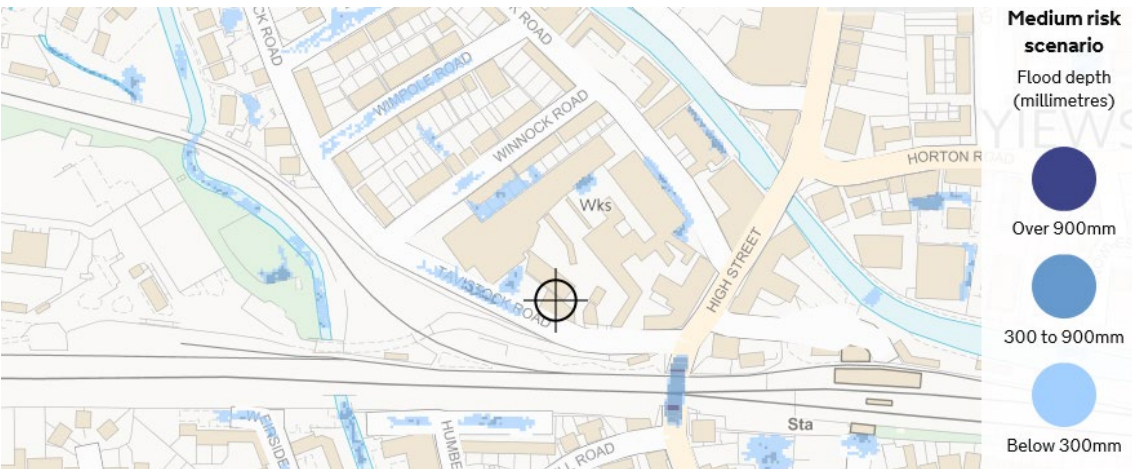


Figure 3 – Medium-Risk Fluvial Flood Area and Depth

The EA flood map shown in Figure 4, indicates in a lo-risk scenario there is fluvial flooding to a depth below 300mm in the external areas of the development, and not at the existing building within the site.

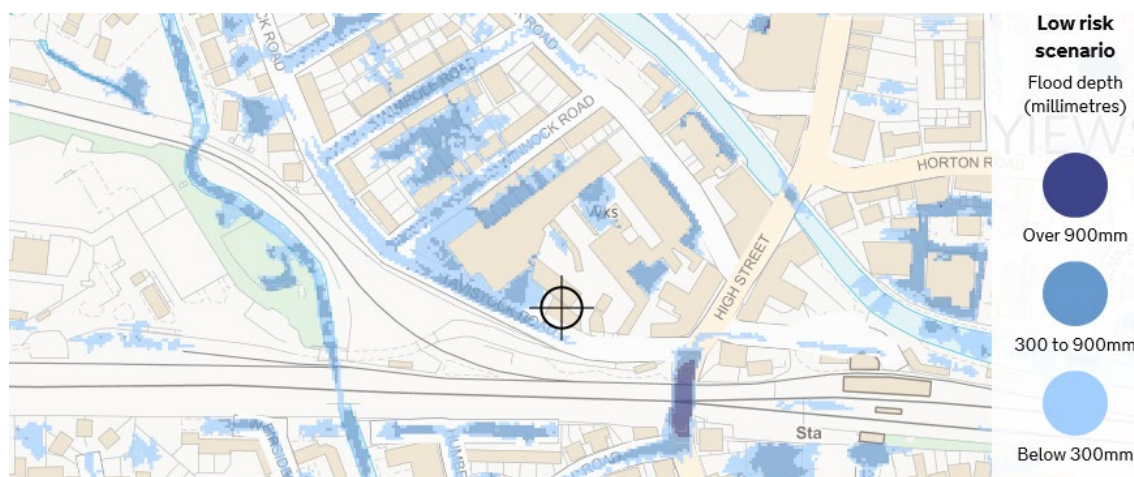


Figure 4 – Low-Risk Fluvial Flood Area and Depth

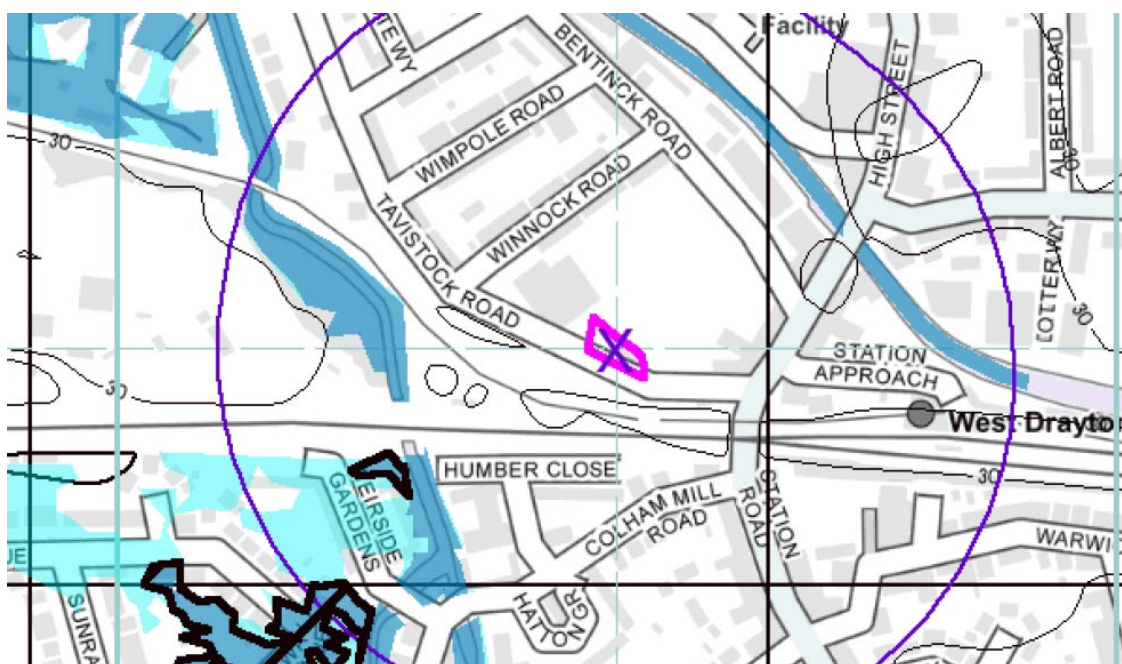
Based on the flood maps, there is no flooding at the development in the high to medium risk scenarios, with a flood level of below 300mm for the low-risk scenario in the external areas only. Therefore, based on this, it is deemed that the floor level of the existing building is at least 300mm above the external levels, and is at a height that will not flood.

iii. Flood Defences

The EA maps and local authority information do not identify any flood defences that benefit the development site.

iv. Existing Ground Level

The OS Map contour lines in Figure 5 below indicate that the existing ground level at the site is below 30.00m AOD, and further on-line data has identified that level of Tavistock Road at the development site ranges from 27.95m AOD at the external hard-standing area to 28.25m AOD at the existing building location.



v. Proposed Development Level

The proposed building level will be the same as the existing building at approximately 28.25m AOD, which has been shown to be approximately 300mm above the existing external levels, and above any fluvial flood levels.

External areas for access and egress purposes are also to be at least 28.25m AOD.

vi. Surface Water Drainage

The surface water run-off from the development site is to be drained and managed so that it adheres to the current regulations, and local authority requirements, where:

National Planning Policy Framework (NPPF)

Paragraph 165 of NPPF – July 2018 states that:

Developments should incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate. The systems used should:

- take account of advice from the lead local flood authority;
- have appropriate proposed minimum operational standards;
- have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development; and
- where possible, provide multifunctional benefits.

Run-Off Destination

Surface water run-off is to discharge to one or more of the following in the order of priority shown:

- Discharge into the ground (infiltration);
- Discharge to a surface water body;
- Discharge to a surface water sewer, highway drain or other drain;
- Discharge to combined sewer.

The Management Train

A concept fundamental to implementing a successful SuDS scheme is the management train. This is a sequence of SuDS components that serve to reduce run-off rates and volumes and reduce pollution. The hierarchy of techniques that are to be used for the surface water management of the development are:

- Prevention - Prevention of run-off by good site design and reduction of impermeable areas;
- Source Control - Dealing with water where and when it falls (e.g. infiltration techniques);
- Site Control - Management of water in the local area (e.g. swales, detention basins);
- Regional Control - Management of run-off from sites (e.g. balancing ponds, wetlands).

Design Principles

- The design principles for the surface water management of the development will be to:
- Ensure that people, property and critical infrastructure are protected from flooding;
- Ensure that the development does not increase flood risk off site;
- Ensure that SuDS can be economically maintained for the development.

Peak Surface Water Flow

The London Plan Paragraph 5.13 states that the preferred surface water run-off is to greenfield levels where practical. The NPPG Paragraph 051 states the drainage is to be designed to control surface water run-off close to where it falls and mimic natural drainage as closely as possible, provide opportunities to reduce the causes and impacts of flooding, and remove pollutants from urban run-off at source.

Sustainable Design and Construction Supplementary Planning Guidance (SPG) produced by the Greater London Authority offers recommendations for developers. Clauses 3.4.2, 3.4.12 and 3.4.14 set out the expectation of SuDS to be incorporated into the design of new developments to prevent increasing volumes of surface water runoff and reduce flood risk. Clauses 3.4.8 -3.4.9 stipulate that:

“Most developments referred to the Mayor have been able to achieve at least 50% attenuation of the site’s (prior to re-development) surface water runoff at peak times. This is the minimum expectation from development proposals”.

Therefore, based on the guidance, the surface water run-off from the post development site will aim for the equivalent greenfield rates, or a 50% betterment of the pre-development 1 in 1-year rate as a minimum.

Volume Control

The aim is to ensure that the run-off volume from the developed site for the 1 in 100-year 6-hour rainfall does not exceed the pre-development run-off volume for the same event.

Should infiltration methods not be suitable, and it is not possible to achieve pre-development runoff volume, then it will be demonstrated that the increased volume will not increase flood risk on or off site.

Flood Risk

The drainage system will be designed so that, unless an area is designed to hold and/or convey water, flooding does not occur on any part of the site for a 1 in 30-year rainfall event.

The drainage system will also be designed so that, unless an area is designed to hold and/or convey water, flooding does not occur during a 1 in 100-year rainfall event in any part of a building (including a basement) or in any utility plant susceptible to water (e.g. pumping station or electricity substation) within the development.

The design of the site will ensure that flows resulting from rainfall more than a 1 in 100-year rainfall event are managed in exceedance routes that avoid risk to people and property both on and off site.

Pollution

The SuDS design for the development site will ensure that the quality of any receiving water body is not adversely affected and preferably enhanced in accordance with Ciria SuDS Manual C753, Chapter 4.

Designing for Exceedance

The development site design will be such that when SuDS features fail or are exceeded, exceedance flows do not cause flooding of properties on or off site. This will be achieved by designing suitable ground exceedance or flood pathways, and run-off will be completely contained within the drainage system (including areas designed to hold or convey water) for all events up to a 1 in 30-year event. The design of the site ensures that flows from rainfall more than a 1 in 100-year rainfall event are managed in exceedance routes that avoid risk to people and property both on and off site.

vii. Building Change of Use

There will be a change of use for the permitted development scheme to C3 residential. A full drainage survey of all existing drainage on-site will be carried out, to establish whether the existing drainage can be re-used. If so, suitable flood protection products, such as non-return valves, will be fitted to all outfall pipes.

