

Planning  
Place Directorate  
Mulberry Place  
5 Clove Crescent  
London  
E14 2BG

Dear Planning Officer,

Date 19/11/2020

### **LCY10: 1-4 GREENWICH VIEW PLACE FLOOD RISK**

This letter has been prepared in support of a planning application for a rooftop extension, creating 3500m<sup>2</sup> of floorspace within an existing data centre building located at 1-4 Greenwich View Place, London, E14 9NN (refer to Figure 1). The building footprint will not be altered by the proposal, nor will there be any changes to the building usage or the overarching surface water drainage strategy as a result of the scheme. It is understood that the size of louvres located at ground floor level will be increased, to provide additional ventilation to plant.

Based on Tower Hamlets Local Planning Application Requirements (FRA)<sup>1</sup>, it is understood that a Flood Risk Assessment is not required. However due to the context with the Thames catchment, this document has been prepared to demonstrate that flood risk to and as a result of the development has been appropriately considered.

Flood Risk Assessments have been prepared previously for the site and were submitted in support of Phase 1 (PA/12/02055/A1) in August 2012 and Phase 2 (PA/16/01026/B1) in February 2016 of development at 1-4 Greenwich View Place.

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<sup>1</sup> Tower Hamlets Council Local Planning Application Requirements – Flood Risk Assessment (FRA) available at:  
[https://www.towerhamlets.gov.uk/lgn/planning\\_and\\_building\\_control/planning\\_applications/Making\\_a\\_planning\\_application/Local\\_validation\\_list/Flood\\_Risk\\_Assessment.aspx](https://www.towerhamlets.gov.uk/lgn/planning_and_building_control/planning_applications/Making_a_planning_application/Local_validation_list/Flood_Risk_Assessment.aspx)

## 1 Site Context

### 1.1 Topography

According to Environment Agency (EA) LIDAR 1 m DTM spatial data, site elevations are approximately 4.6 – 5.2 metres above Ordnance Datum (mAOD). However, levels at the north-west boundary increase steeply to 5.5 – 5.9 mAOD (refer to Figure 2).

### 1.2 Hydrology

The site is situated within the Thames catchment and the nearest water body is the Millwall Outer Dock adjacent the eastern site boundary. The River Thames partially surrounds the Isle of Dogs and is 700 m from the site's western boundary at its closest point.

### 1.3 Geology and Groundwater Level

BGS mapping of the area (1:50,000 scale map series) was accessed via the online BGS Onshore GeoIndex digital mapping database. The site is underlain by the Lambeth Group - clay, silt and sand. Superficial deposits consist of Alluvium - clay, silt, sand and peat. The site is also identified as being underlain by artificial ground (worked ground).

The site is situated above the Lambeth Group rock unit which is characterised as a low productivity aquifer by the BGS. The two closest BGS borehole logs (BGS refs. TQ37NE3033 and TQ37NE1454) accessed through the BGS Onshore GeoIndex identified groundwater strikes at 1.2 – 1.9 mAOD. The London Borough of Tower Hamlets Strategic Flood Risk Assessment (2016)<sup>2</sup> notes that only one incident of groundwater flooding has been recorded by the EA in the Borough to date (2016) and map 007 of the SFRA indicates the site itself is not in an area with the potential for groundwater flooding to occur.

### 1.4 Flood Zone Classification

The EA online Flood Map for Planning indicates the site is situated within Flood Zone 3 (refer to Figure 3). According to the Planning Practice Guidance, land in this zone is considered to have a 1-in-100 or greater annual probability of river flooding in any year (>1%) or a 1-in-200 or greater annual probability of flooding from the sea in any year (>0.5%).<sup>3</sup> It is also indicated the area benefits from flood defences.

### 1.5 Flood Defences

The primary flood defences in Tower Hamlets are the strategic Thames Tidal Defences (TTD), which include the Thames Barrier and secondary tidal flood defences along the River Thames. The EA inspects the defences twice annually to ensure that they remain effective and in good working condition.

The Thames Barrier, located approximately 3.8 km east of the site, is the main defence structure of the TTD system. The barrier is intended to prevent extreme storm surges. Additionally, the Isle

<sup>2</sup>London Borough of Tower Hamlets Strategic Flood Risk Assessment, available at: [https://www.towerhamlets.gov.uk/Documents/Planning-and-building-control/Strategic-Planning/Local-Plan/Evidence\\_base\\_2016\\_Local\\_Plan/SFRA\\_REG\\_18\\_Finalcompressed.pdf](https://www.towerhamlets.gov.uk/Documents/Planning-and-building-control/Strategic-Planning/Local-Plan/Evidence_base_2016_Local_Plan/SFRA_REG_18_Finalcompressed.pdf)

<sup>3</sup>Planning Practice Guidance: Flood Risk and Coastal Change Flood Zone and Flood Risk Tables available at: <https://www.gov.uk/guidance/flood-risk-and-coastal-change#flood-zone-and-flood-risk-tables>

of Dogs benefits from hard defences along the Thames frontage. The TTD provides protection during fluvial and tidal events with up to a 1 in 1000 (0.1%) annual probability.

## 1.6 Defence Breach

The EA has undertaken hydraulic modelling of potential breaches in the TTD. The modelling considered simulation of 5679 continuous tidal breach simulations along the entire extent of the Thames from Teddington to the Thames Barrier. For breaches upriver of the Thames Barrier, there is no return period for the model as the levels are controlled by barrier closures. The levels used are referred to as Maximum Likely Water Levels (MLWLs). Therefore, the 2005 and 2100 epochs were modelled to represent a current day scenario and future scenario considering the likely effects of climate change.

The Thames Tidal Breach Extent Mapping, based on current topography, indicates that the 2100 breach scenario will extend to the north-west site boundary (refer to Figure 5). However, maximum predicted flood depth is modelled to be <0.25 m (refer to Figure 6).

## 1.7 Surface Water (Pluvial) Flooding

The Flood and Water Management Act 2010 defines surface water flooding as flooding that takes place when surface runoff generated by rainwater falls on the surface of the ground and has not yet entered a watercourse, drainage system or public sewer. The EA Long Term Flood Risk Map shows the site is at a "Very Low Risk" of surface water flooding. Areas at very low risk are considered to have a less than 1-in-1000 annual probability surface water flooding in any year (<0.1% chance per annum).

## 1.8 Existing Drainage

The site is serviced by surface water sewers connected to a combined sewer under Millharbour, operated by Thames Water. The Drainage Statement<sup>4</sup> submitted as part of the planning application for the building identifies that discharge rates were restricted to provide betterment over the pre-existing situation and attenuation included with the scheme.

## 1.9 Historic Flooding

As stated in the Tower Hamlets SFRA, flooding occurred in central London in 1928 when the defences along the River Thames were breached. This resulted in the inundation of much of the Isle of Dogs and the other areas of the Thames frontage. The extent of this flooding is indicated in the EA historic flood data. The site is not situated within the areal extent of the historic flooding and the closest extent of the historic flooding is approximately 150 m west of the site (refer to Figure 4).

## 1.10 Flood Risk from Artificial Sources

Artificial sources of flooding can include the breaching of water bodies such as reservoirs and flooding from sewers. The EA Long Term Flood Risk Map indicates the site is not within an area at risk of flooding from a reservoir breach. Additionally, map 004 of the SFRA indicates the site is not in an area of postcodes having reported flooding from overloaded sewers.

<sup>4</sup> Elliot Wood 2016 Drainage Statement

## 2 Flood Risk to Proposed Development

### 2.1 Tidal and Fluvial

The site is situated within Flood Zone 3 but benefits from flood defences. This status is unaffected by the Proposed Development i.e. the development does not increase fluvial flood risk, either to itself or neighbouring locations. Additionally, the Proposed Development is not at ground level. The risk of flooding to the development from tidal and fluvial sources is therefore considered to be low.

### 2.2 Surface Water (Pluvial)

This site is not presently at risk of pluvial flooding and no increase in hardstanding is expected and no changes to existing drainage are planned. Additionally, because the Proposed Development is not at ground level, risk of pluvial flooding to the development is considered low.

### 2.3 Groundwater

As discussed in 2.3, the site is not in an area prone to groundwater flooding. Because the Proposed Development is above ground level, risk of groundwater flooding is considered low.

### 2.4 Artificial Sources

The site is not in an area at risk of flooding from reservoirs and no flooding from overloaded sewers has been reported. Assuming no significant changes to local infrastructure, this will remain true. Risk of flooding from artificial sources is therefore considered low, again with the additional consideration that the Proposed Development is above ground.

### 2.5 Suitability of Development

Development in the context of flood risk is regulated through the planning process via the NPPF. The NPPF provides a classification of types of development according to their vulnerability. Commercial, general industry, professional services and office space is categorised as 'Less Vulnerable'. Although the Sequential Test would normally be required for a development within Flood Zone 3, this process has already been completed for the previous phases of building work on the site including the building proposed to be extended, within the planning applications listed. On this basis, the Sequential Test is deemed to have been passed.

## 3 BREEAM Assessment

The Proposed Development is to be assessed for BREEAM to ensure environmental targets are achieved within the design and construction. BREEAM Data Centres (2010) is a sustainability assessment tool which can be applied to new developments to set environmental targets for new and refurbished buildings. For flood risk and surface water drainage, three credits are available if the criteria of Pol 05 are satisfied for a new development.

Two credits are available if the criteria of Pol 5 (flood risk) are satisfied through the following:

- The assessed development is located within an area at low annual probability of flooding; and

- A site-specific FRA confirms that there is low risk of flooding from all sources (a full FRA is not required in this instance).

As discussed in sections 2 and 3, EA flood data and the Tower Hamlets SFRA indicate that although the site is situated within Flood Zone 3, it is protected by flood defences up to a 1-in-1000 year flood event and there is a low risk of flooding in the case of a breach of the defences. The overall tidal and fluvial flood risk to the site is therefore considered to be low. The review of information on flood risk from all other sources indicates low risk. Therefore, both credits can be achieved in this instance.

One additional credit is available if the following can be satisfied:

- Where attenuation measures are specified to ensure that the peak rate of runoff from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for the predevelopment site.
- The capacity of the attenuation measures must include an allowance for climate change.

The site drainage strategy remains unchanged from the previous development at 1-4 Greenwich Place; therefore, runoff discharge is not expected to increase. The BREEAM credit could be achieved under the previous assessment and is therefore considered achievable again as the conditions remain the same.

#### **4 Conclusion**

Based on the findings of this flood risk assessment, flooding from fluvial, tidal, pluvial, groundwater and artificial sources are considered to present a low risk to the Proposed Development which is, therefore, considered to be acceptable in flood risk terms in accordance with the requirements of the NPPF. No further flood risk assessment is deemed necessary.

Yours sincerely



**Daniel Porteous**

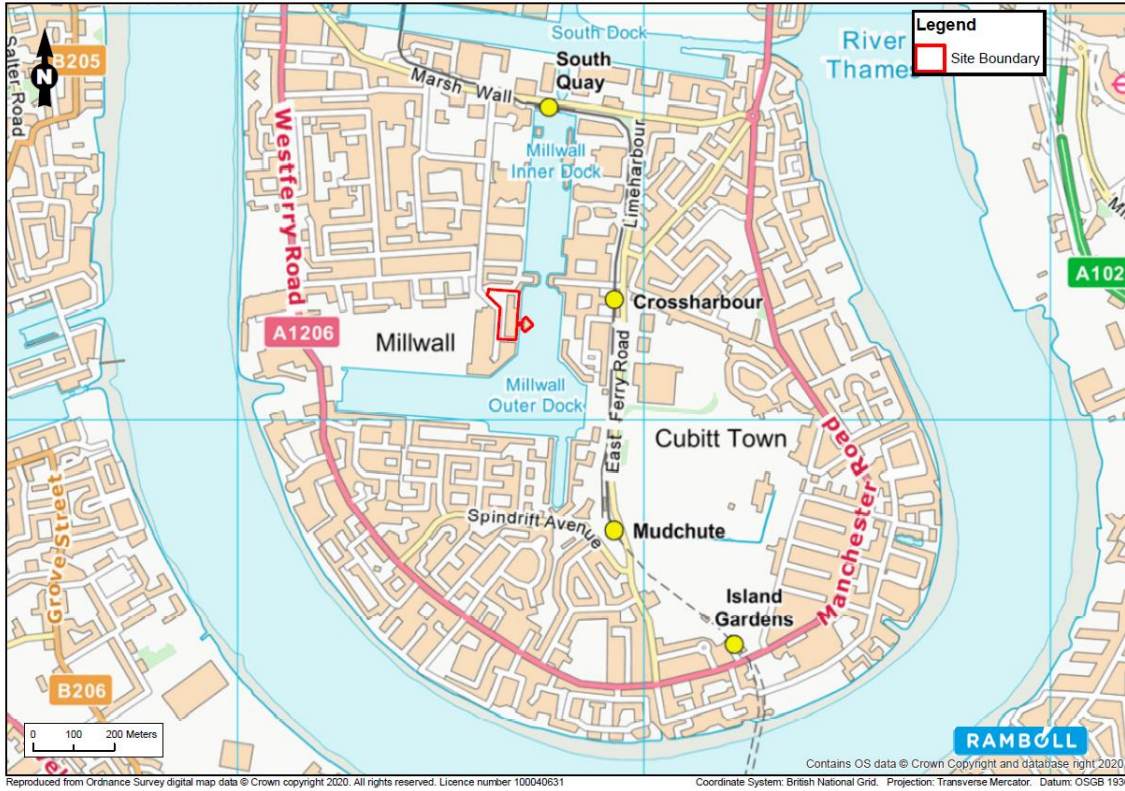
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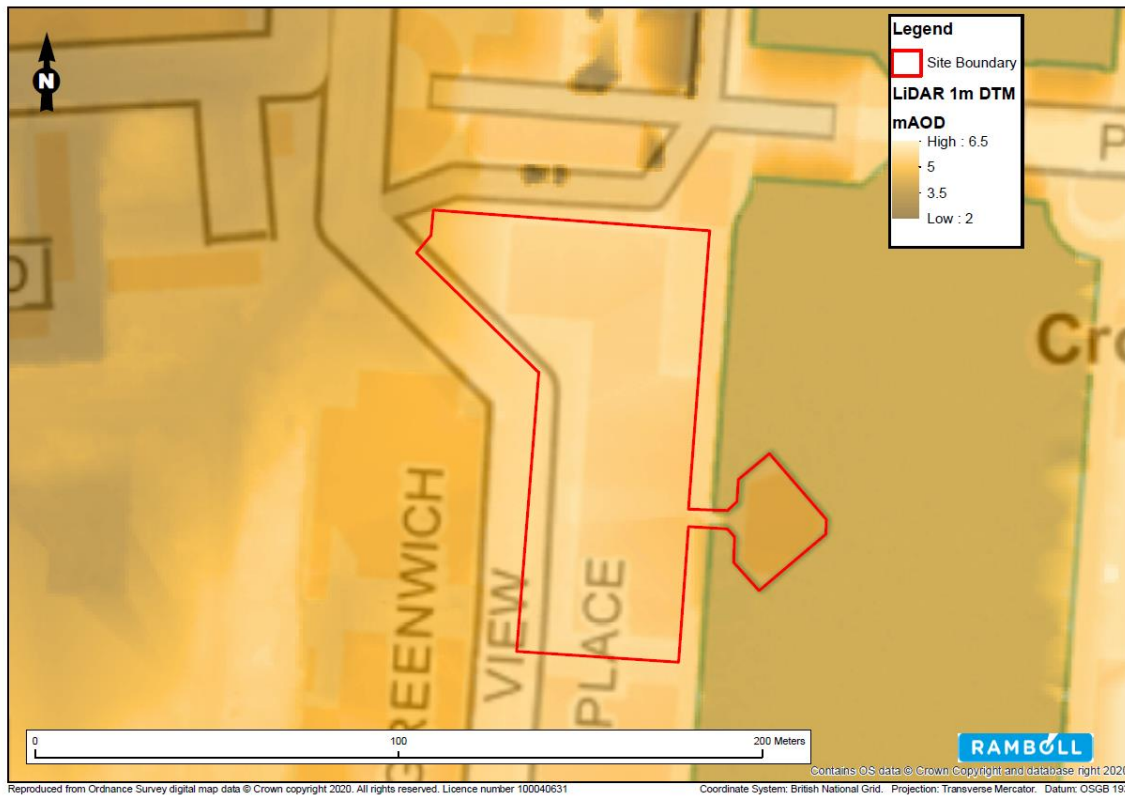
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**APPENDIX**

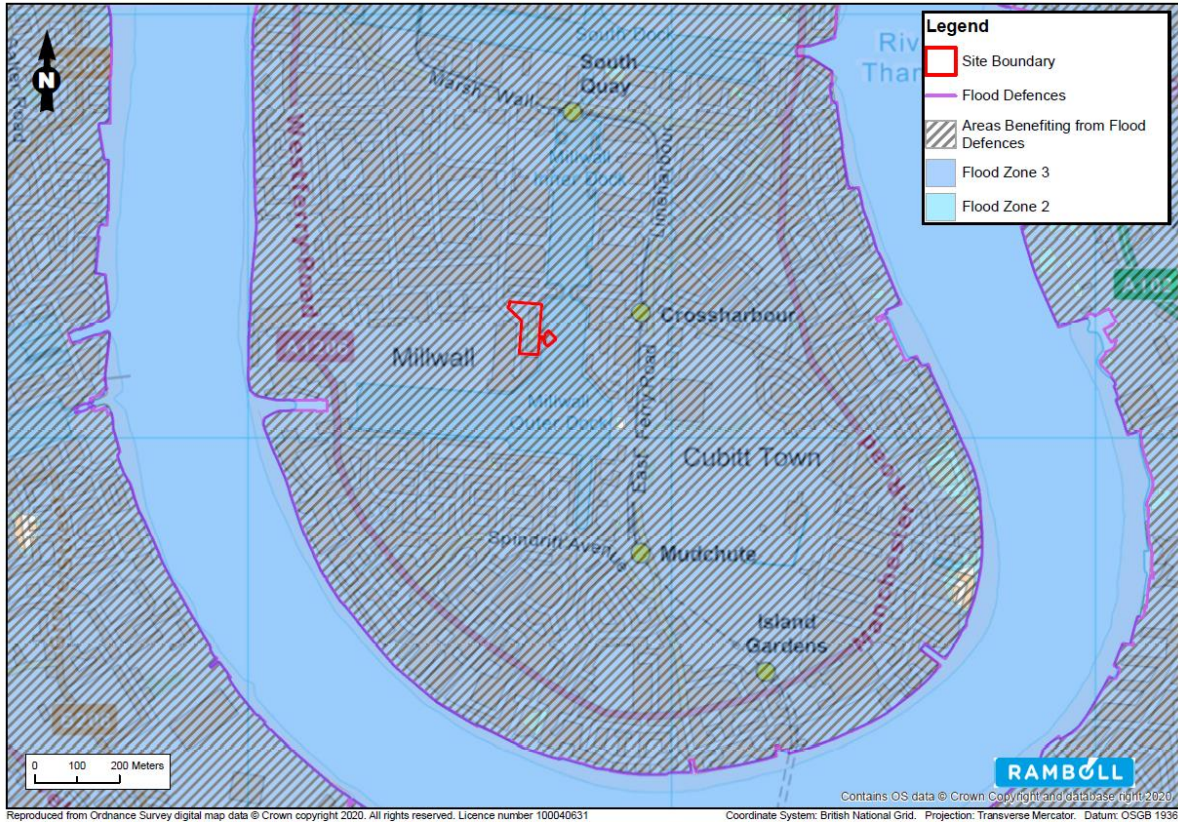
**Figure 1. Site Location**



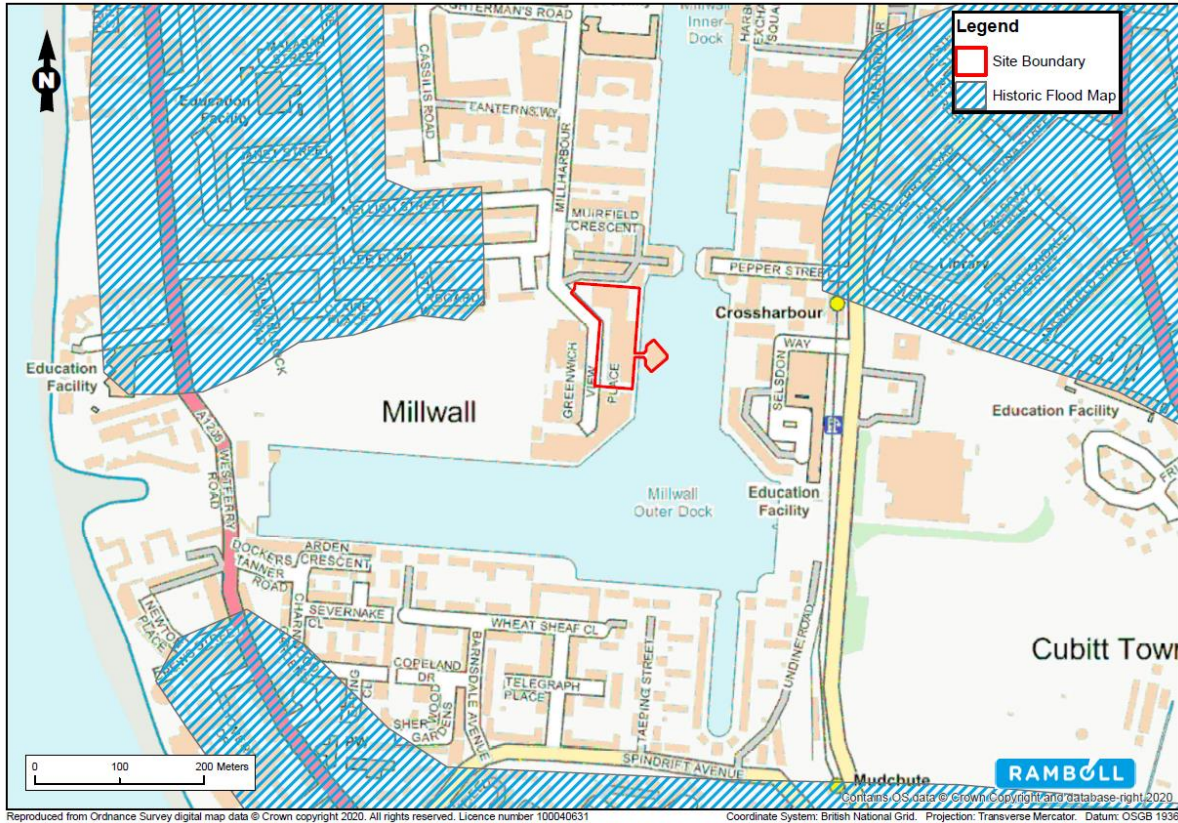
**Figure 2. LiDAR 1m DTM**



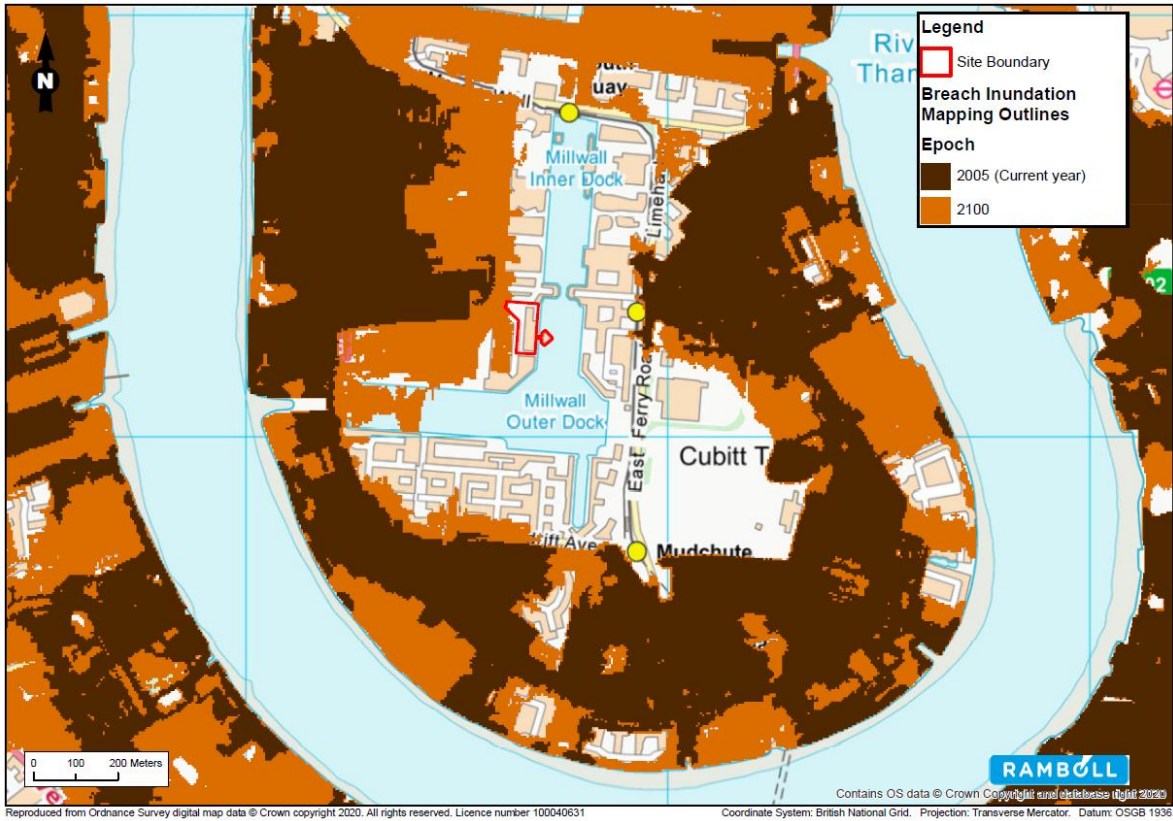
**Figure 3. Flood Map for Planning**



**Figure 4. Historic Flood Map**



**Figure 5. Breach Inundation Extents**



**Figure 6. Peak Flood Depth**

