

62-68 YORK WAY ISLINGTON LONDON N1 9AG

FLOOD RISK ASSESSMENT



FLOOD RISK ASSESSMENT
FOR
PROPOSED DEVELOPMENT
AT
62 – 68 YORK WAY
ISLINGTON
LONDON
N1 9AG

Prepared for:
Whitbread Property PLC
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1. INTRODUCTION

- 1.1 This report has been prepared by Simpson Associates on behalf of Whitbread Property PLC to accompany a planning application for the redevelopment of 62 – 68 York Way, Islington, London.
- 1.2 The report considers the flood risk associated with the development proposals, which will comprise of a seven storey 408 bedroom hotel with two storey basement below ground floor level.
- 1.3 This report considers the flood risk associated with the development proposals and follows advice contained in the Department for Communities and Local Government document “*Technical Guidance to the National Planning Policy Framework (NPPF)*”, which provides guidance to planning authorities, developers, the public and Environment Agency (EA) on development and flood risk.

2. SITE LOCATION AND TOPOGRAPHY

- 2.1 The application site is located at 62 – 68 York Way, Islington, London as shown below on *Figure 1*. The site is centred on Ordnance Survey grid reference TQ 30355 83380 and co-ordinates X: 530355, Y: 183380, while the nearby post code is N1 9AG.

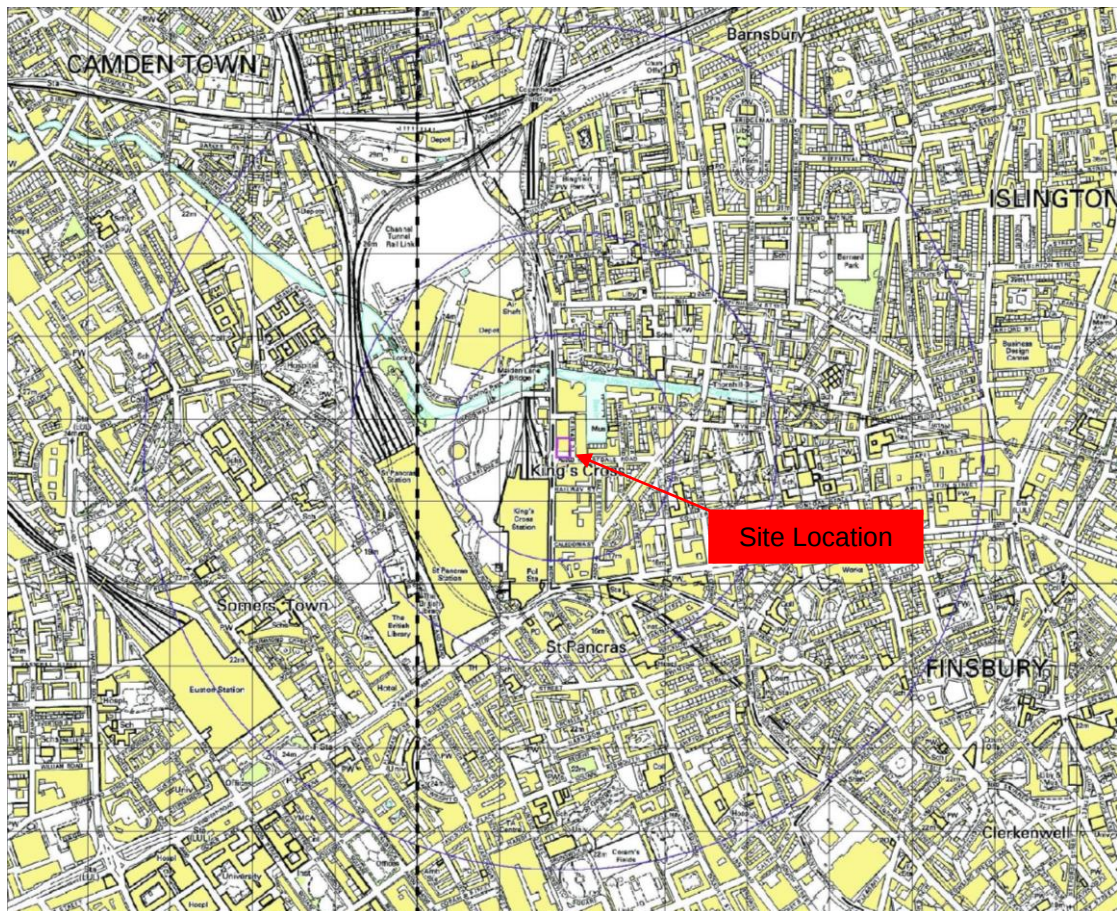


Figure 1: Site Location

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- 2.2 The existing site is occupied by low level light industrial buildings (Use Class B1). The northern part of the site is a through-drive car wash operation with access from York Way and egress onto Crinan Street. The southern section of the site is currently open and derelict space enclosed by a 2m + solid fence. The site abuts an 8 storey residential block to the north.
- 2.3 The site does not vary significantly in level, with the ground floor level of the existing warehouse buildings understood to be 19.76mAOD.

3. EXISTING GROUND CONDITIONS

- 3.1 A site investigation carried out in June 2011 by AP Geotechnics Ltd reported the following ground conditions:
- Beneath the concrete floor slabs that predominantly cover the site Made Ground was encountered to a maximum depth of 1.7m below ground level. The material varied in nature and consisted of a sand with some gravel, brick and occasional concrete fragments or a grey and brown sandy clay also with gravel and brick fragments.
 - The London Clay formation was encountered beneath the layer of Made Ground. At shallow depths, the material comprised of a brown silty clay with some grey laminations, which was considered to represent the weathered London Clay. A fissured dark grey silty clay, consistent with the unweathered part of the formation, was encountered at greater depths. The site investigation terminated within the London Clay formation, which was proven up to a depth of 20.0m below ground level.
 - No Groundwater was encountered during the investigation, however, the report advises that the speed of drilling and need to case boreholes may have masked inflows.

4. EXISTING DRAINAGE CHARACTERISTICS

- 4.1 Public sewer records received from Thames Water are included in *Appendix A*. The sewer records confirm that the local area is served by a network of combined sewers.
- 4.2 The sewer records confirm that a 1270x750mm combined sewer passes though the eastern half of the site.

5. PROPOSED SCHEME

- 5.1 The development proposals comprise Demolition of existing buildings and redevelopment to provide a ground plus six storey building, with two basement levels, comprising hotel use (Use Class C1) with up to 408 bedrooms and retail floorspace (Use Class A1-A3) at ground level, together with associated facilities, plant, landscaping and servicing. A set of floor plans showing the layout of the hotel is included in *Appendix B*.

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6. SOURCES OF FLOODING

- 6.1 Planning Authorities are responsible for the production of Strategic Flood Risk Assessments (SFRA's). These are studies that allow more detailed examination of the likely appropriateness of developing sites within a planning area.
- 6.2 The following reports are available on London Borough of Islington's website and provide an assessment of the extent and nature of the risk of flooding in the local area:
- August 2008 North London SFRA
 - April 2011 Preliminary Flood Risk Assessment (PFRA) for the London Borough of Islington

http://www.islington.gov.uk/services/planning/planningpol/local_dev_frame/pol_evidence/Pages/SFRA.aspx

- 6.3 The possible flood risk associated with sources of flooding considered within the SFRA has been reviewed under the headings below.

Fluvial / Tidal Flooding

- 6.4 The North London SFRA confirms that the London Borough of Islington has no fluvial watercourses within its boundary. The SFRA includes a flood zone map illustrating the fluvial and tidal Flood Zones (1, 2 and 3) as defined by the Environment Agency. The Flood Zone map confirms that the entire borough falls within Flood Zone 1, which is land assessed to fall outside of the floodplain with a less than 1 in 1000 (0.1%) annual probability of flooding in any year. A copy of the flood map is included in *Appendix C*.
- 6.5 The flood map corresponds with the below flood map taken from the Environment Agencies website, which confirms that the site is not situated within an area that could be affected by fluvial / tidal flooding.

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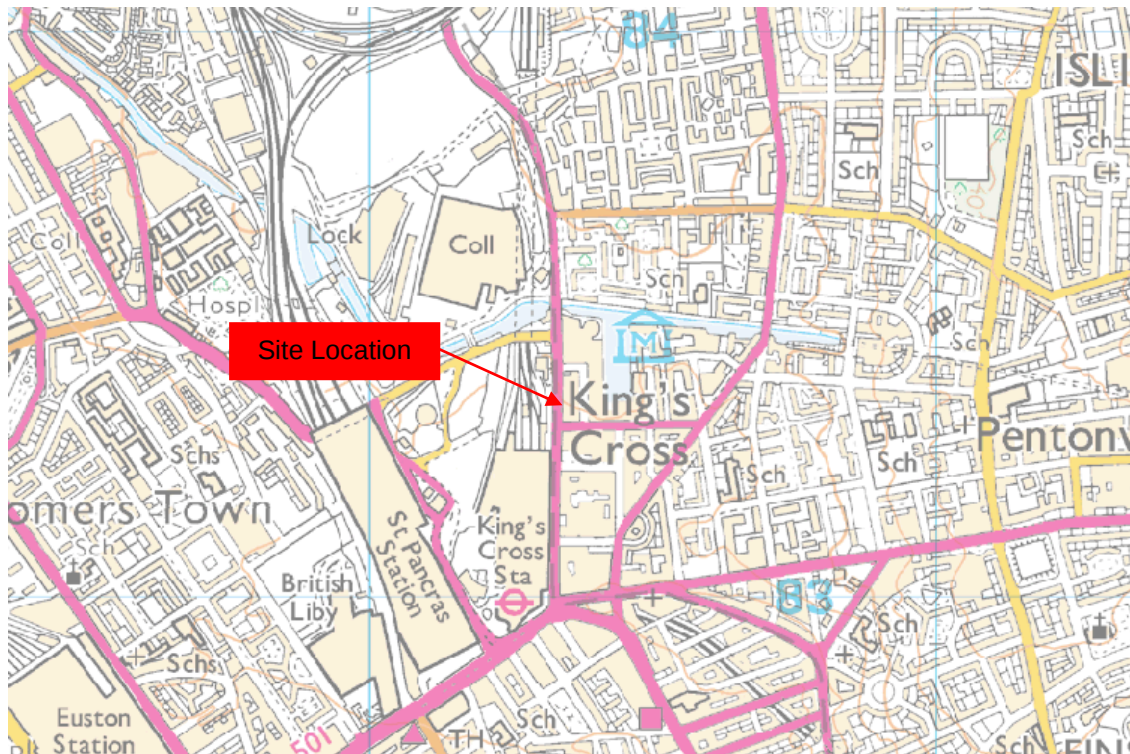


Figure 2: EA Flood Map

- 6.6 As SFRA and EA flood maps shows the site and surrounding area to be located outside of the floodplain and not affected by past flood events, the site is considered to be at low risk of tidal / fluvial flooding.

Surface Water and Sewer Flooding

- 6.7 To support the North London SFRA, Thames Water provided a record of past incidents of sewer flooding experienced across local post codes within the last 10 years as a result of failure of the public sewer system. The SFRA referenced Thames Water's records on a sewer flood map. A copy of the flood map is included in *Appendix C*. Within the sites surrounding postcode "N1", the flood map indicates that there has been one recorded incident of sewer flooding in the past.
- 6.8 Also in support of the North London SFRA, The London Fire Brigade provided a record of incoming calls relating to flood risk. Due to the large amount of data provided, the SFRA grouped incidents based on date order and relationship with rainfall records. The SFRA referenced those incidents found to have a relationship with rainfall data on a Flooding Incidents Map. A copy of the flood map is included in *Appendix C*. The flood map indicates that the nearest incidents of reported flooding are situated some distance to the east of the site beyond Battlebridge Basin.
- 6.9 The below table has been extracted from the PFRA for the London Borough of Islington. It provides a summary of past floods that are known to have occurred within the Borough of Islington.

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Table 1: Summary of Past Floods in the London Borough of Islington

Location	Source	Description	Consequence
1. Caledonian Road	Surface Water	Flooding occurred at low point in road.	Properties affected. Basements Flooded.
2. Clerkenwell Road	Surface Water	Blocked Road Gullies	Properties affected. Basements Flooded.
3. Jackson Road	Surface Water	Flooding occurred at low point in road.	Properties affected.
4. Finsbury Park Station – Severn Sisters Road	Surface Water	Runoff from Finsbury Park and poor drainage in the station.	Limited number of properties affected.
5. Upper Holloway area	Surface Water	Roads act as gullies and funnel water. Flooding also occurs from gullies.	Limited number of properties affected.

6.10 The above locations are identified on the below flood map, which has also been extracted from the PFRA.

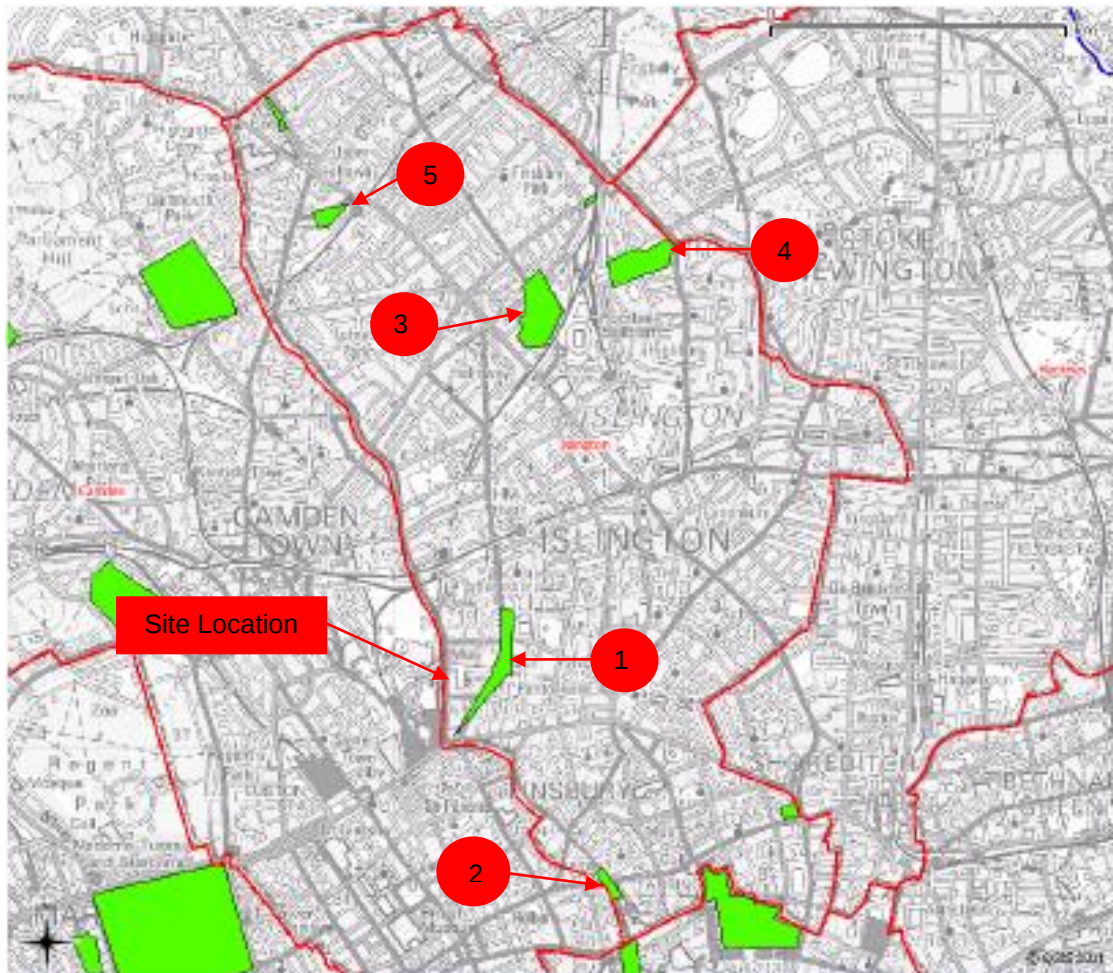


Figure 3: Location of Past Floods in the London Borough of Islington

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- 6.11 The locations of flooding identified on the flood map are similar to those reported by the London Fire Brigade and identified on the Flooding Incidents Map included in *Appendix C*. The nearest incidents of reported flooding are shown to be situated in Caledonian Road, which is located approximately 200m east of the site.
- 6.12 As historic flood maps included in the North London SFRA and PFRA for the London Borough of Islington show the site and immediate surrounding area to be predominantly unaffected by past incidents of sewer and surface water flooding, the development is considered to be at low risk of flooding from these sources.

Groundwater Flooding

- 6.13 The North London SFRA has combined groundwater flooding records with geological and topographic plans to identify a series of groundwater flood risk locations across North London. All groundwater flooding locations are recorded on the Flooding Incidents Map included in *Appendix C*. The map indicates that there are no locations known to be susceptible to groundwater flooding in the London Borough of Islington.
- 6.14 The SFRA includes a groundwater contour plan, which is based on borehole records supplied by the EA. A copy of the groundwater contour map is included in *Appendix C*. Within the proximity of the site, the map indicates that groundwater levels are at a depth of 60-70m below the surface.
- 6.15 It is understood that the borehole data, used to develop the groundwater contour map, records the depth of the groundwater table in the chalk aquifer located beneath the London Clay layer that underlies a majority of North London and does not record the intermittent groundwater levels that occur where the gravel and silt deposits overlay the London Clay layer. However, the map would appear to be consistent with the findings of the intrusive site investigation reported in Section 3.0, which did not encounter groundwater to a depth of 20.0m below ground level.
- 6.16 Based on the groundwater flooding information extracted from the North London SFRA and the findings of AP Geotechnics June 2011 site investigation report, the development is considered to be at low risk of flooding from this source.

Artificial Sources of Flooding

- 6.17 The North London SFRA has mapped the location of artificial flood sources such as reservoirs and canals. A copy of the map is included in *Appendix C*. The map indicates that the Regents Canal is situated in close proximity to the site. The SFRA advises that development adjacent to canal structures should be set back 5m from canals to ensure it does not breach or undermine the canal structure in any way.
- 6.18 The sites northern boundary is located approximately 150m from the southern bank of the Regents Canal, while the sites eastern boundary is located approximately 40m from the western bank of the Bridgewater Basin. Due to the sites distance from the Canal, the development is considered to be at low risk of flooding from this source.

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7. THE SEQUENTIAL & EXCEPTION TEST

- 7.1 The National Planning Policy Framework (NPPF) encourages a sequential risk-based approach to determine the suitability of land for development in flood risk areas. It advises local planning authorities to demonstrate that there are no reasonably available sites in areas with a lower probability of flooding that would be appropriate to the type of development or land use proposed.
- 7.2 In areas at risk of flooding, the NPPF advises that preference be given to new development in Flood Zone 1. If there are no reasonably available sites in Flood Zone 1 the flood vulnerability of the development can be taken into account for considering development applications in Flood Zone 2 and then Flood Zone 3. Within each flood zone new development should be directed to sites at the lowest probability of flooding from all sources.
- 7.3 Section 6 of this report has established that the site is considered to fall entirely within Flood Zone 1. The NPPF advises that all land uses are appropriate in Flood Zone 1. Therefore, the proposed development is considered appropriate in terms of the sequential test.

8. MANAGING THE RISK OF FLOODING

- 8.1 It has been established that the site is at low risk of flooding from all sources. However, the development proposals incorporate a two storey basement, which will provide hotel accommodation. In terms of flood risk policy for basements, the North London SFRA places use restrictions on basements situated in Flood Zones 2 and 3, however, there are no restrictions for basements in Flood Zone 1. On this basis, the proposed use of the two storey basement as hotel accommodation is considered acceptable.
- 8.2 Whilst there is low risk of fluvial flooding in the London Borough of Islington, the North London SFRA advises that a greater likelihood of surface water flooding poses a threat to properties with basements. Section 6 of this report included a review of surface water and sewer flood maps contained in the North London SFRA and PFRA for the London Borough of Islington. The maps show the site and immediate surrounding area to be predominantly unaffected by past incidents of surface water and sewer flooding and it was concluded that the site is considered to be at low risk of flooding from these sources. On this basis, it is considered unlikely that surface water flooding would pose a risk to the basement.
- 8.3 The North London SFRA also advises that there is a risk of large basements impeding groundwater flow, which could cause springs to arise on adjacent sites. Section 6 of this report included a review of groundwater flooding information extracted from the North London SFRA and the findings of AP Geotechnics June 2011 site investigation report. Within the vicinity of the site, groundwater contour maps included in the SFRA indicated that groundwater levels are at a depth of 60-70m below the surface. This was consistent with the findings of the intrusive site investigation undertaken by AP Geotechnics, which did not encounter groundwater to a depth of 20.0m below ground level. As basement construction will not be undertaken at a depth greater than 20m below ground level, it is considered unlikely

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that the basement would come into contact with groundwater and cause an increase in the risk of groundwater flooding in the local area.

- 8.4 Section 3 of this report established that a 1270x750mm combined sewer passes through the eastern half of the site. The sewer is located within the footprint of the new basement, therefore, to ensure the sewer remains unaffected by the development, it will be necessary to divert the sewer prior to construction of the basement. Thames Water have confirmed that it would be acceptable to divert the sewer and have prepared a preliminary scheme, which proposes to divert the sewer into Crinan Street. A copy of Thames Water's initial diversion report is included in *Appendix A*.
- 8.5 The two storey basement will include unrestricted access to upper levels of the hotel, therefore, in the unlikely event of flooding, it would be possible evacuate hotel guests from the basement. Such an evacuation would follow standard evacuation procedures as identified for fire or other hazards, which would be familiar to staff and management.
- 8.6 New development has the potential to increase volumes of foul and surface water runoff discharged to the public sewer system, which can result in an increase in flood risk both on the site and elsewhere within the catchment. In terms of foul water runoff, Thames Water have confirmed that the existing public sewer network is capable of supporting the development. In terms of surface water runoff, Thames Water have confirmed that it will be acceptable to discharge surface water runoff to the public sewer on a like for like basis with the existing situation. On this basis it is considered unlikely that the development would lead to an increase in the risk of sewer flooding. Relevant correspondence received from Thames Water is included in *Appendix A*.
- 8.7 In terms of flood risk it is concluded that the development can be occupied and operated safely and that there will be no increase in the level of flood risk to the site or neighbouring sites as a result of the development. Therefore, the scheme can be considered acceptable in terms of flood risk.

9. CONCLUSIONS AND RECOMMENDATIONS

- 9.1 The application site falls within Flood Zone 1, which is land assessed to have a low probability of flooding with less than a 1 in 1000 annual probability of river or sea flooding in any year ($< 0.1\%$). Based on a review of flood maps included in the North London SFRA and PFRA for the London Borough of Islington, the site is also considered to be at low risk of flooding from all other sources including sewers, surface water, groundwater and artificial sources.
- 9.2 All land uses are appropriate in Flood Zone 1. Therefore, the proposed hotel development is considered appropriate in terms of flood risk. There are no use restrictions on basements in Flood Zone 1, therefore, the proposed use of a two storey basement as hotel accommodation is considered acceptable.
- 9.3 By their nature, basements are more susceptible to flooding than surface level development. However, following a review of relevant flood risk information contained within the North London SFRA and PFRA for the London Borough of Islington, it is considered unlikely that surface water or groundwater flooding would pose a risk to the basement. In the unlikely event of flooding, it would be possible

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evacuate hotel guests from the two storey basement as it would have unrestricted access to upper levels of the hotel.

- 9.4 Through a review of groundwater contour maps and the findings of an intrusive site investigation it is also considered unlikely that the basement would come into contact with groundwater and cause an increase in the risk of groundwater flooding in the local area.
- 9.5 Thames Water have confirmed that the existing public sewer network is capable of supporting the development. Therefore, it is considered unlikely that the development would lead to an increase in the risk of sewer flooding.
- 9.6 A 1270x750mm combined sewer passes through the footprint of the two storey basement, therefore, to ensure the sewer remains unaffected by the development, it will be necessary to divert the sewer prior to construction of the basement. Thames Water have confirmed that it would be acceptable to divert the sewer and have prepared a preliminary scheme, which proposes to divert the sewer into Crinan Street.
- 9.7 In terms of flood risk it is concluded that the development can be occupied and operated safely and that there will be no increase in the level of flood risk to the site or neighbouring sites as a result of the development. Therefore the development can be considered acceptable in terms of flood risk.

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APPENDIX A
THAMES WATER SEWER RECORDS & CORRESPONDENCE

**APPENDIX B
FLOOR PLANS**

APPENDIX C
SFRA FLOOD MAPS