



Civil Engineers & Transport Planners

Kingston
Bridge House

Flood
Evacuation
Plan

November 2023

201345/FEP/AG/RS/01



Civil Engineers & Transport Planners

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DOCUMENT STATUS

Project: Kingston Bridge House
Title: Flood Evacuation Plan
Client: Westcombe Group
Reference: 201345/FEP/AG/RS/01

Produced by: AG Date: 27/11/23
Checked by: RS Date: 27/11/23
Approved by: RS Date: 27/11/23

<u>Issue/revision</u>	<u>Date</u>	<u>Status</u>	<u>Issued by</u>
First	27/11/23	For Approval	RS

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APPENDICES

APPENDIX A

FLU.1191.3.10 – Proposed Site Plan

1 INTRODUCTION

1.1 Scope

1.1.1 Lanmor Consulting Ltd have been commissioned to prepare a site-specific Flood Management and Evacuation Plan for the proposed development at the site of Kingston Bridge House, Church Road, Hampton Wick, KT1 4AG. Figure 1.1 below shows the location of the proposed development.

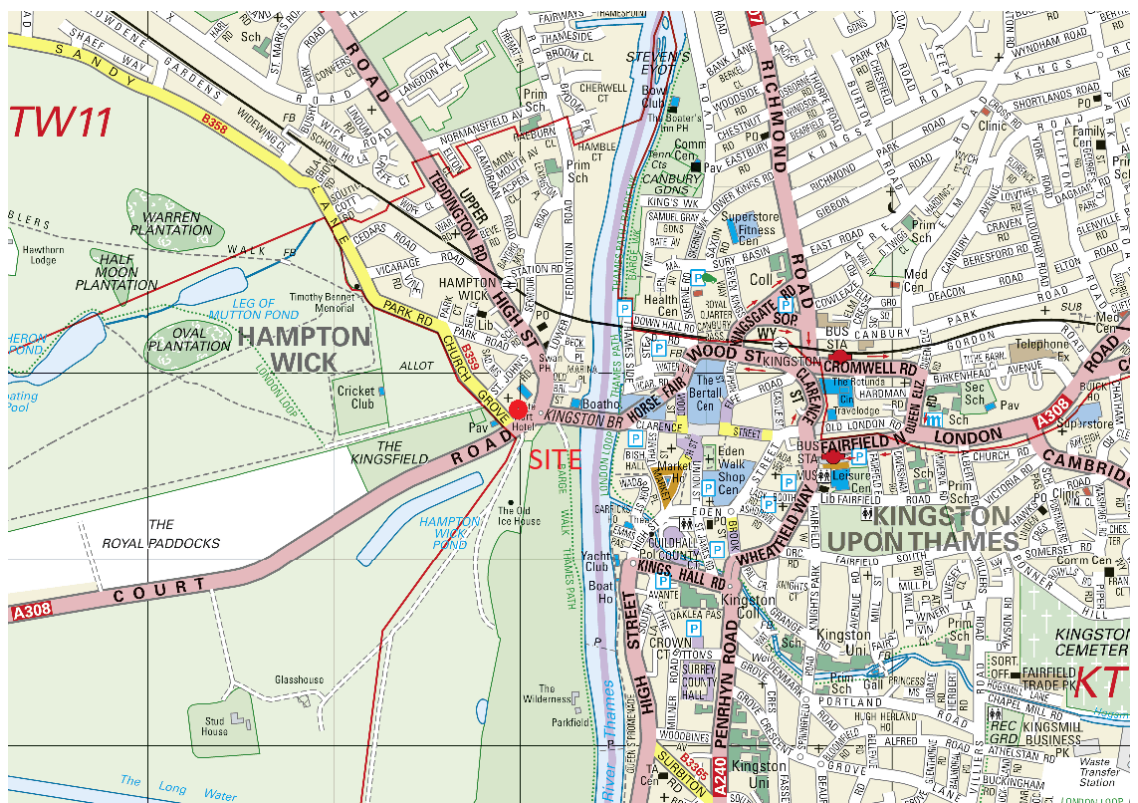


Figure 1.1 – Location Plan

1.1.2 This plan will outline the flood risk to the site, provide recommendations for procedures during times of flooding and the proposed measures to prevent flood waters entering the building and how to protect the building from flooding.

1.1.3 The Objectives of this plan are:

- (i) To define responsibilities and roles of organisation and individuals.
- (ii) To establish warning procedures of potential floods.
- (iii) To establish evacuation procedures to be implemented at times of flood.

1.2 Existing Site and Land Use

- 1.2.1 The existing site is located with the Borough of Richmond upon Thames. The site is located at the junction of Church Grove and Hampton Court Road, opposite the Kings Field. The River Thames is located just east of the site, approximately 140m away.
- 1.2.2 Kingston Bridge House is currently occupied as student living accommodation which span over 7 floors. Drawings FLU.1191.3.02 – 09 in Appendix A show the plans for the existing development.

1.3 Proposed Development

- 1.3.1 The proposed development will see the conversion from the existing student living arrangement to make way for a total of 70 new residential units spread across 7 floors.
- 1.3.2 Drawings FLU.1191.3.10 – 17 show the proposed make-up of the development at Kingston Bridge House, these drawings can be found in Appendix A.

1.4 Existing Geology

- 1.4.1 The British Geological Survey indicates that the site has an underlying bedrock of London Clay Formation, which consists primarily of clay, silt and sand. Sedimentary bedrock formed between 56 and 47.8 million years ago during the Palaeogene period.
- 1.4.2 Superficial deposits have also been recorded at the site. The superficial geology consists of Kempton Park Gravel Member, which is made up of sand and gravel. These deposits were formed between 1.6 and 1.8 million years ago during the Quaternary period.

2 SOURCES OF FLOODING

2.1 Fluvial/Tidal Flooding

2.1.1 Detailed flood information was requested from the Environment Agency (EA) for this site. The information supplied included flood extent maps for different return periods. National Planning Policy Framework (NPPF) defines the Flood Zone as follows:

- **Zone 1:** 'Low Probability' This zone comprises land assessed as having a less than a 1 in 1000 annual probability of river or sea flooding (<0.1%) in any year.
- **Zone 2:** 'Medium Probability' – This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5%-0.1%) in any year.
- **Zone 3a:** 'High Probability' – This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.
- **Zone 3b:** 'The Functional Floodplain' – This zone comprises land where water has to flow or be stored in times of flood. SFRAs should identify this Flood Zone (land which would flood with an annual probability of 1 in 20 (5%) or greater in any year or is designed to flood in an extreme (0.1%) flood, or at another probability to be agreed between the LPA and the Environment Agency, including water conveyance routes).

2.1.2 The proposed site is shown to be partly within Flood Zone 2, which is land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding. Figure 3.1 below shows an extract from the Environment Agency Map for Flooding. Figure 3.1 below shows approximately half of the site is located in Flood Zone 2. Figure 3.2 shows that the flood extent of the 1% +CC allowances event does not impede safe access to and from the site.

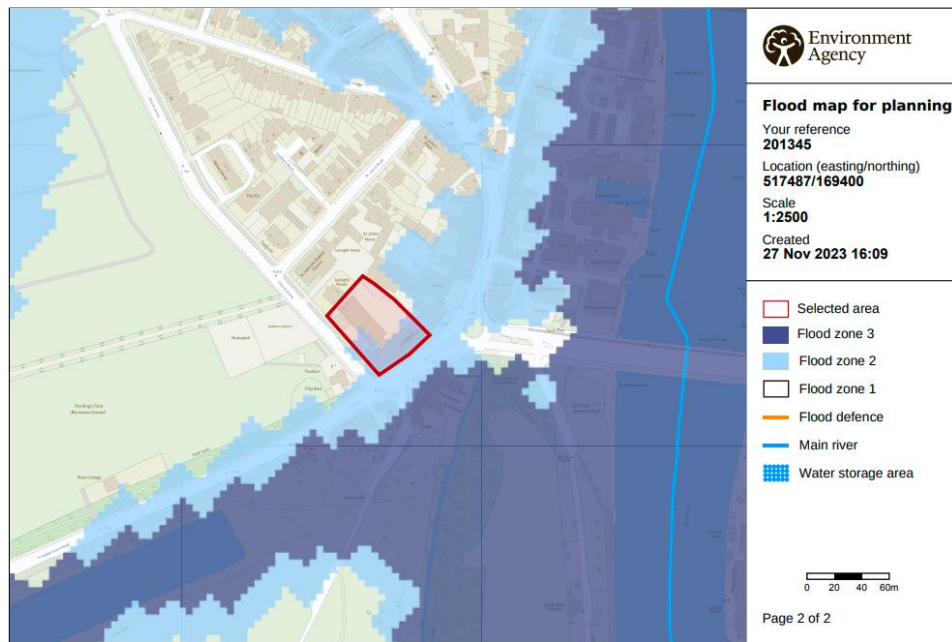


Figure 3.1 – EA Flood Map



Figure 3.2 – FZ2 and FZ3 Modelled Flood Extents

2.2 Surface Water Flooding

2.2.1 The Environment Agency online mapping of the extent of surface water flooding in the local area shows that the site is at very low risk of surface water flooding. Figure 3.3 below indicates the areas prone to surface water flooding within the surrounding area.



Figure 3.3 – Surface Water Flood Map

2.2.2 Richmond Borough Council completed a Strategic Flood Risk Assessment in September 2020. As part of the report, a drawing was produced to highlight areas which are susceptible to surface water flooding. The drawings show that the site will not be prone to surface water flooding.

3 ORGANISATION AND RESPONSIBILITY

3.1 Statement of Responsibility

3.1.1 The developer/owners of the building recognise their obligations to Health and Safety and have implemented procedures necessary to comply with and control all risks to public safety, this document provides the background to the risk of flooding and should be passed on to future occupiers of the premises.

3.2 Management Structure and Responsibilities

3.2.1 The owners of the freehold will have the overall responsibility for maintaining the flat building. They will be responsible for ensuring flooding and evacuation procedures are kept up to date. They will notify all residents living in the property of any changes to the flood procedures.

3.2.2 They will also be responsible for maintaining their flood emergency kits and ensuring a flood warden is appointed to aid in the evacuation of the building in the event of flooding. The EA have produced guidance on measures to be adopted during a flood, which includes a check list of things to do, list of important contact details, emergency kits, all of which are discussed later and residents on the property should familiarise themselves with these and have them prepared soon after occupation to make sure everything is in place in the event of a flood.

3.3 The role of other bodies

Duty Holders

3.3.1 A number of bodies/organisations will be responsible in the event of a major flood, this will include emergency services, local authorities, utility companies and the Environment Agency. The main roles of the different bodies are summarised below:

The Emergency Services

- Rescuing trapped individuals from dangerous scenarios and escaping flood waters.

- Undertaking flood mitigation measures such as pumping out flood waters and salvage works.
- Coordination of the public to reduce congestion.

Richmond Borough Council

- Emergency care, this may include ensuring the public have access to appropriate welfare facilities such as food, water and safe accommodation.
- Emergency transport if necessary, this may include the transportation of people, equipment and materials.
- Flood alleviation, this may include flood prevention techniques such as providing sandbags and creating appropriate flood barriers.
- Clearing of flooded areas such as roads and ensuring blocked culverts/ditches are cleared.
- Providing necessary information to the public regarding evacuations and providing advice on health and safety matters that may result from flooding.

The Environment Agency

- Issue flood warnings for the appropriate areas.
- Regularly maintaining and inspecting EA assets such as flood defences. Experienced, competent personal will be required to carefully inspect EA assets to ensure they are fit for purpose.
- Monitor water levels/flows and assessing the risks accordingly and advising emergency services/local authorities.
- Assisting emergency services and local authorities with the aid of materials, manpower and equipment when necessary.

Utility Companies

- Provide repairs to any damaged services caused by flood waters.
- Provide alternative supplies during periods of service disruptions.

3.4 Important Contacts

3.4.1 The table below lists the relevant duty holders that can be contacted in the event of a flood, some spaces have been left blank as they will vary dependent on the individual.

Contact	Company Name	Contact Number
Floodline	EA Floodline	0345 988 1188
Management Company		
Electricity provider		
Gas Provider		
Water Provider		
Drainage Authority	Thames Water	0800 316 9800
Local Authority	Richmond Borough Council	020 8891 1411
Fire Station	Kingston Fire Station (London Fire Brigade)	020 8555 1200
Ambulance (non-emergency)	NHS 111 Service	111
Police	Kingston Police Station (Metropolitan Police)	101 or 999
Local Public Transport	Transport for London	0343 222 1234
Insurance company		
Insurance Agent		

Table 3.1 – General Contact Details

4 PREPARING FOR FLOODS

4.1 Scope

4.1.1 This section details the proposed measures and approach to be taken to ensure occupants, visitors, the wider public, and emergency services personnel are safe in the event of flooding. These measures are in line with EA guidance.

4.2 Risk of Not Evacuating the Site

4.2.1 The goal of this plan is to facilitate and encourage full evacuation of occupants in the event of a flood warning being issued. While the property can provide a safe haven in the event of a flood, it is better to evacuate the site. The Environment Agency and other websites provide details on the risks of remaining on site when a flood is occurring. If occupants remain on site, some of the risks they may face are:

- No power or heat;
- Lack of access to food and fresh water;
- Lack of medical care;
- Floating debris;
- Electrical hazards;
- Hidden trip and other hazards;
- Lack of communication; and
- Contaminated flood water (sewage, etc.).

4.3 Flood Warning System

4.3.1 To alert occupants to the onset of flooding, all users should join the Floodline warnings service. The background and details of this service are outlined below.

4.3.2 The Environment Agency endeavours to provide a minimum flood warning of 2 hours via the Floodline service. Nevertheless, within the lower reaches of the River Thames, substantial forewarning is generally available due to the regional and usually prolonged nature of the rainfall event that leads to downstream flooding.

4.3.3 The site/occupants of the building should be registered with the service (via <https://www.fws.environmentagency.gov.uk/app/olr/register> or telephone 0345 988 1188 or Type talk: 0345 602 6340 for the hard of hearing). This will ensure that all occupants are made aware of the potential for flooding, providing sufficient time for the appropriate preparations to be made.

4.4 Floodline Warnings Service

4.4.1 The Environment Agency (EA) operates a Flood Forecasting and Warning Service in areas at risk of flooding from rivers. This relies on the direct measurement of rainfall, river levels, predictive models, rainfall radar data and information from the Met Office. The service operates 24 hours a day, 365 days a year. The Environment Agency operated Floodline warnings service is based on the Flood Forecast and Warning Service.

4.4.2 For the occupants of the site the service can be used via the use of Telephone call, SMS and email.

Flood Alerts are issued when heavy rainfall which may impact river levels is forecast; these are issued up to two days in advance of flooding.

Flood Warnings are issued when river levels have begun to respond to the storm event and flooding is expected within one day.

Severe Flood Warnings are issued when flooding is imminent. Flood warnings may also be viewed on the Environment Agency website.

5 RESPONSE TO FLOODING

5.1.1 This section outlines the flood emergency procedure which should be followed in the event of a flood alert or warning being issued on the Flood-line Service. The significance of the three categories of EA flood alert messages outlined above are set out below, along with some suggested actions for occupants and visitors on receipt of the various categories of warning.

5.2 Flood Alert Response

5.2.1 Flood alerts are issued up to 2 days before a flooding event is expected. On the issue of a flood alert, a flood warden (nominated from among the occupants of the building) will inform the other occupants and visitors that there is a potential flood risk and that they may have to evacuate the site if flooding occurs.

5.2.2 The flood warden should also ensure the following actions are taken:

- Monitor local news and forecasts;
- Be aware of water levels in the rivers nearby;
- Notify occupants of the building and prepare to enact the flood plan;
- Notify all visitors to site of the potential risk and procedures to follow should flooding occur.

5.3 Flood Warning Response

5.3.1 On the issue of any flood warning the flood warden will ensure the areas at risk of flooding are vacated and that these areas are closed. Occupants and visitors on site will be informed of a potential imminent flood event and if they are required to evacuate to a safe area. Otherwise, they will be advised to monitor the situation and prepare to evacuate, if necessary. The flood warden will inform them of any change in the situation.

5.3.2 If a Flood Warning is issued for the site (i.e., flooding is expected at the site), the flood warden will ensure the following actions are undertaken.

- Monitor local news and forecasts;
- Monitor water levels in the river nearby and when levels are likely to breach the banks, so any evacuation can commence;
- Any visitors to the site will be informed of the potential flood risk and warned they may need to evacuate the site at short notice;
- The areas of site that might be prone to flooding will be kept closed. The warden should be informed if anyone needs to enter the area and they will always be contactable by phone/radio;
- If flooding occurs on site all occupants and visitors should avoid walking or driving through flood waters and they should evacuate to dry land to the north;
- If in danger, call 999 immediately, being aware that emergency services may be overwhelmed and have difficulty accessing the site in times of flooding;
- Listen to emergency services advice.

5.4 Severe Flood Warning Response

- 5.4.1 By the time a Severe Flood Warning has been issued, the flood warden should have ensured the areas at risk of flooding have been evacuated and are completely free of any occupants or visitors.
- 5.4.2 The flood warden will continue to monitor the extent of flooding on site and ensure that no one enters the flood risk zones.
- 5.4.3 Should flooding start to occur on any part of the site without warning, the flood warden will inform the occupants and visitors to evacuate to higher ground above the level of flooding.

5.4.4 Should for any reason some one refuses to evacuate the area the flood warden will explain the dangers of remaining. If they still refuse to leave, they will be monitored, and the emergency services informed it there is a risk to the individual.

5.5 Escape Routes

5.5.1 As mentioned, if there is likely to be a flood on site, the Environment Agency will make the flood warden aware and therefore can relay this message to those within the building.

5.5.2 If the Environment Agency have deemed it suitable/safe to do so, the escape route for all occupants and or visitors will be as follows:

- All those exiting the building should do so by heading to the west onto the pedestrian/vehicle access road, which is in Flood Zone 1.
- From there, occupants will be encouraged to head further north up Church Grove, away from the source of flooding to ensure their safety. The proposed escape route for occupants and visitors of the site is shown below in Figure 5.1.



Figure 5.1 – Flood Evacuation Route

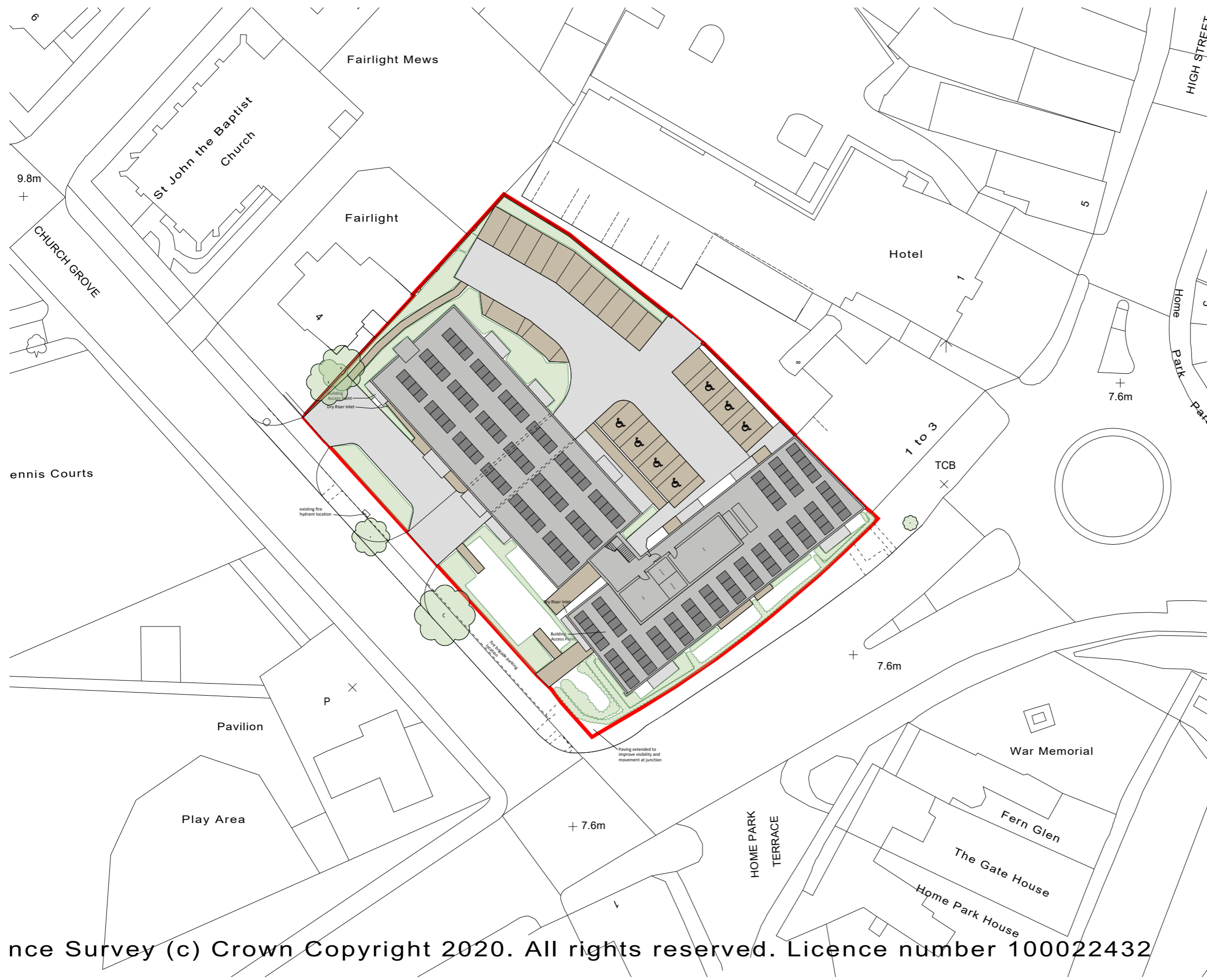
5.5.3 From the initial warnings issued this route can be used to evacuate the site. Should an evacuation be required / instructed by the flood emergency response team, occupants should follow the instructions of the emergency services. It is strongly recommended that occupants evacuate the site if instructed to do so by the emergency services.

6 FLOOD RECOVERY PLAN

- 6.1.1 Once the flooding has cleared, Environment Agency flood information, local news and media can be monitored to determine when it is safe to attempt to access the site again. Flood conditions in the area will be assessed by the Council and the emergency services before reoccupation is attempted. This process should be conducted in cooperation with representatives from the public utilities to ensure no unacceptable risks remain.
- 6.1.2 When it is deemed safe to attempt to access the site, a thorough assessment and inventory should be made of any possible health and safety risks at the site because of flood damage. These will include debris and foliage, broken glass/edges, slip hazards, standing water, damaged electrical equipment, and compromised slopes amongst others. Particular attention should be paid that no loose or dangling wires or broken service pipes remain before utilities are reconnected and power is restored.
- 6.1.3 Further information concerning flood recovery is available from the EA website at <http://www.environmentagency.gov.uk> which contains advice regarding clear up after a flood, contacting your insurers, temporary accommodation and charities that may aid.

APPENDIX A

FLU.1191.3.10 – Proposed Site Plan

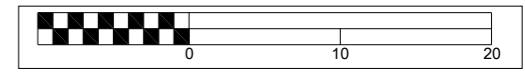


Rev	Date	Description

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Kingston Bridge House
Church Grove, Hampton Wick

Proposed Site Plan



Scale 1:500 @ A3	Dwg No. FLU.1191.3.10
Date 07.10.20	Rev N
Drawn N.Millin	

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