Fanuc House

1 Station Approach

Ruislip

HA4 8LF

Flood Action Plan

November 2020

Jaysam

Document History

JOB NUMBER: **1626**

DOCUMENT REF: **Flood Action Plan Fanuc House, Ruislip**

REVISIONS: **Final**

Revision	Comments	By	Checked	Authorised	Date
Final 1	For submission	LMW	MD	MD	05.09.18
Final 2	For submission	LMW	MD	MD	04.11.20

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Contents

1 Introduction

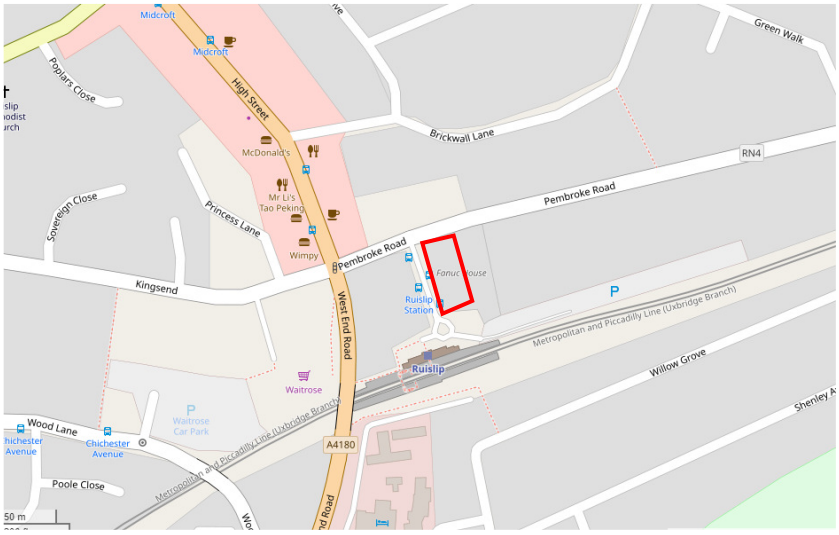
1.1 This Flood Action Plan has been prepared to provide information and advice on what to do in the event of a flood at Fanuc House or the local area. This Flood Action Plan should be provided to the management and residents of Fanuc House as part of a 'Welcome Pack' at the beginning of each occupancy.

1.2 The Flood Action Plan covers the following:

- The existing and proposed flood risk to the site;
- What to do before a flood;
- What to do during a flood;
- What to do after a flood;
- Mitigation Measures and Evacuation Routes;
- Roles of Other Bodies;
- Relevant Contacts;
- Sources of Additional Information.

1.3 The site owner/manager or an appointed management company should also be aware of the contents of the Flood Action Plan.

1.4 The site is located at Fanuc House, 1 Station Approach, Ruislip HA4 8LF (grid ref. 509522 E, 187095 N). Ruislip is within the administrative boundary of the London Borough of Hillingdon. The site is in the town centre, close to shops, amenities and Ruislip tube station. The site location is shown on **Figure 1.**



(Contains data available under Open Database Licence © OpenStreetMap contributors source: openstreetmap.org)

Figure 1: Site Location Site boundary

1.5 The Environment Agency (EA) mapping shows the site to be located within Flood Zone 1. This is defined as having a probability of less than 1 in 1000 of river (or fluvial) flooding in any year, and is considered to be a 'Low' risk fluvial flood zone.

1.6 The Flood Risk Assessment prepared by RAB Consultants in December 2016 (Ref. 1263B) concluded from EA mapping and site-specific modelling that the site is at risk of flooding from surface water (or pluvial) during extreme rainfall events. The site is also in a surface water overland flow path, and it is important not to block the flow path as this could result in an increased flooding to others. The 2016 FRA should be consulted for further information on the local flood risk and proposed mitigation measures.

1.7 This Flood Action Plan has been prepared for the development of 40 residential apartments located over four stories. There will also be a surface level and basement car park/plant area.

1.8 It will be the responsibility of the site manager/owner or an appointed management company to review and implement the Flood Action Plan, and to ensure that the residents and visitors are aware of the risk to the area. It is also the responsibility of the site manager/owner to provide new residents with a copy of this Flood Action Plan at the beginning of a new occupation or tenancy.

1.9 The contents of this document are as follows:

Section 2 sets out the surface water flood risk to the site.

Section 3 discusses the various mitigation measures in place to protect the site.

Section 4 details how to prepare for a flood.

Section 5 discusses what to do during a flood and the evacuation route.

Section 6 explains what to do after a flood.

Section 7 sets out the roles of other bodies.

Section 8 identifies the relevant contacts.

Section 9 explains how the plan should be updated.

Section 10 includes additional sources of information.

2 Surface Water Risk Assessment

2.1 The FRA prepared by RAB Consultants (2016) identifies the primary flood risk to the site is from surface water. Surface water modelling was carried out and demonstrated a flow path from the north west at Pembroke Road towards the south east. Although the surface water modelling does not include details such as drainage features, it does provide an overview of the likely depths and flow paths associated with a 1 in 100 year (+40%CC) surface water flood. **Figure 2** shows the surface water flow paths from the model for the existing site.

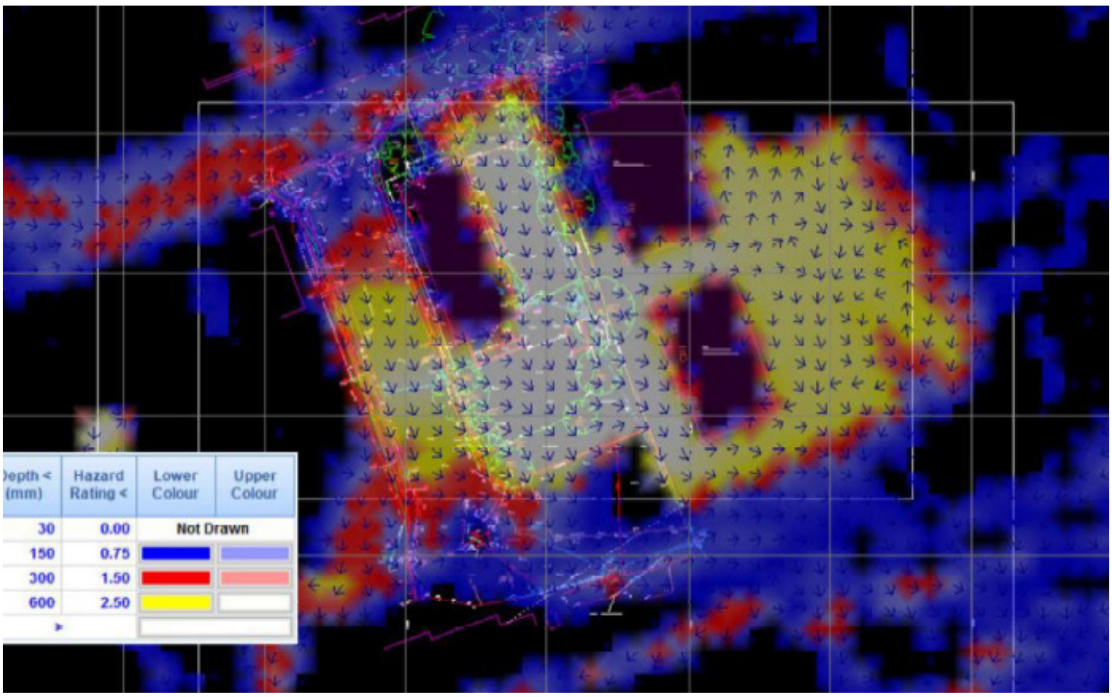


Figure 2: Existing site surface water modelling output (RAB Consultants FRA 2016)

2.2 **Figure 3** shows the surface water risk for the proposed development site, i.e. with the inclusion of the new building with the proposed ground levels and car parking areas.

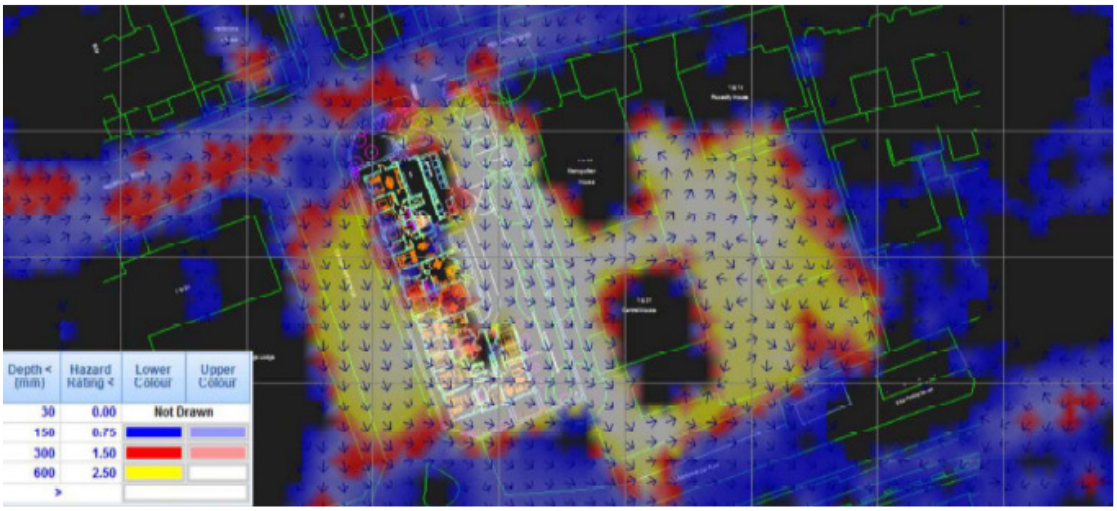


Figure 3: Proposed site surface water modelling output (RAB Consultants FRA 2016)

The Environment Agency (EA) surface water mapping also indicates the risk to the site, although this is a high-level overview and does not include site-specific topographic information. The EA surface water map is included at **Figure 4** and shows the site is in a 'Medium' to 'Low' risk area.

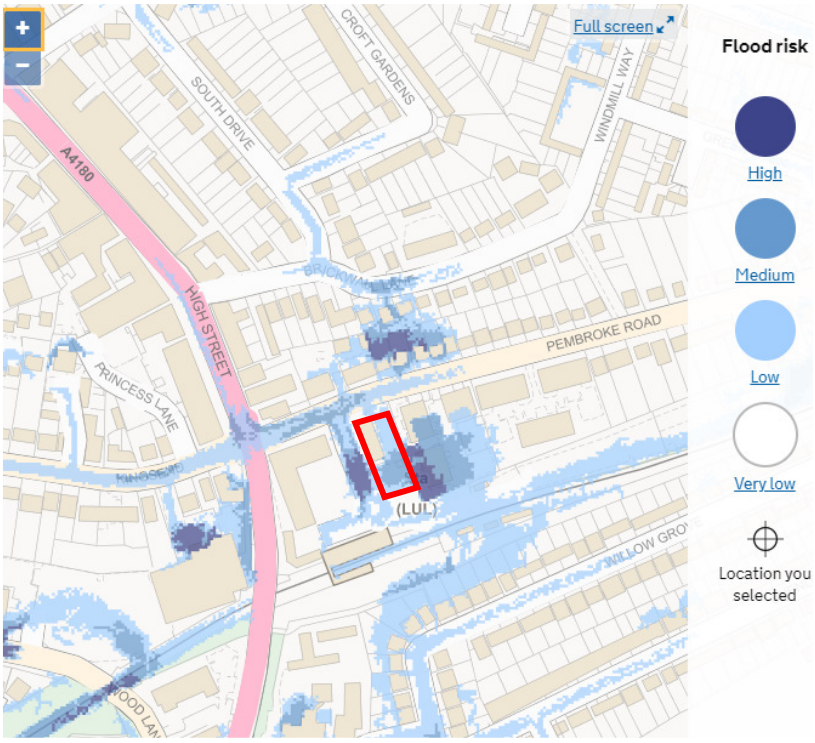


Figure 4: EA Surface Water Map (Source: https://flood-warning-information.service.gov.uk/long-term-flood-risk/map © Environment Agency copyright and database rights 2017. © Ordnance Survey Crown copyright. All rights reserved.)

2.3 The FRA states that the modelling provides a 'worst case' scenario assuming there are no surface water drainage systems in place. The 1 in 100 year (+40%CC) flood level is estimated to be 46.75m AOD in this scenario. The proposed finished floor levels on the ground floor are set at 47.25m AOD, which provides a 0.50m freeboard. This means that the ground floor apartments will remain safe and dry during this extreme flood event.

2.4 The residents will remain safe and dry if they remain in their homes, which is above the 1 in 100 year (+40%CC) modelled water level. However, various areas around the site may become flooded, and it is recommended that residents do not attempt to walk through the floodwater in these areas.

2.5 **Table 1** below estimates the flood depths across different parts of the site during a 1 in 100 year (+40%CC) flood which could reach a level of 46.75m AOD. The ground levels and proposed levels are based on the topographic survey and proposed development levels. The Hazard Ratings are taken from the FRA prepared by RAB Consultants (2016), and are calculated based on the modelled water depth and velocity.

Location	**Ground Level/Proposed Development Levels (m AOD)**	**Estimate flood depth (m)**	**Hazard Rating**
Station Approach Road	46.95 to 46.10m AOD	0m to 0.65m	2.5: Significant (Danger for most people)
Adjacent to building at Station Approach Road	46.90 to 46.45m AOD	0m to 0.30m	1.5-2.5: Moderate (Danger for some) to Significant (Danger for most people)
Proposed site access from Pembroke Road to car park ramp	46.90 to 46.50m AOD	0m to 0.25m	2.5: Significant (Danger for most)
Terrace	47.25m AOD	0m	No Hazard
Garden and land to the south of building	46.45 to 45.75m AOD	0.30m to 1.30m	0.75 – 2.5: Moderate (Danger for some) to Significant (Danger for most)

Table 1: Summary of estimated flood depths and hazards across site based on surface water level of 46.75m AOD and proposed elevations

3 Mitigation Measures

Finished Floor Levels

3.1 Although parts of the site will become flooded during an extreme surface water event, the development has been designed so that all apartments including the ground floor apartments are located above the extreme flood level. This means that residents can remain inside their homes during a flood event and they will be safe and dry for the duration.

Self-Closing Barrier

3.2 The basement car park is at risk of flooding during an extreme event. A self-closing flood barrier will protect the basement car park. This type of flood barrier does not require electricity to operate, but will instead rise with the rising flood water and operates through floatation only. This means that in the event of a power-cut, the flood barrier will continue to protect the basement car park.

3.3 The flood barrier sensor is housed within the barrier's filling chamber and is connected to the Building Management System (BMS). As the water level rises, the water floats the switch to close the circuit, which triggers a warning beacon in the car park and sends a signal to the BMS.

Maintenance and Management Company and their Roles

3.4 There is a management company in place at the development, although they are not onsite 24 hours a day. The BMS is a computer-based control system located in the plant room which controls and monitors the building's mechanical and electrical equipment such as ventilation, lighting and security systems. In the event of a flood, the flood barrier would rise and send a signal to the BMS. This would immediately inform the management company of the flood and they would be able to attend the site.

3.5 The warning beacon will signal the flooding of the car park and residents will know from the Flood Warning Plan to evacuate the car park if this happens. The management company will attend the site as soon as possible depending on the time of day or night.

3.6 It would be the responsibility of the management company to send out a Flood Warning by text or by telephone call to each resident. This will give the residents some warning of the flood, and an opportunity to evacuate the site if they wish to do so.

3.7 In addition to the mitigation measures above, flood warning notices should be located around the site and in communal areas to make residents and visitors aware of the risk. In particular, a flood warning notice should be located in the basement car park so that people know that they may not be able to move their vehicle in the event of a flood if the flood barrier rises.

3.8 An example of a flood warning notice is show in **Figure 5.**

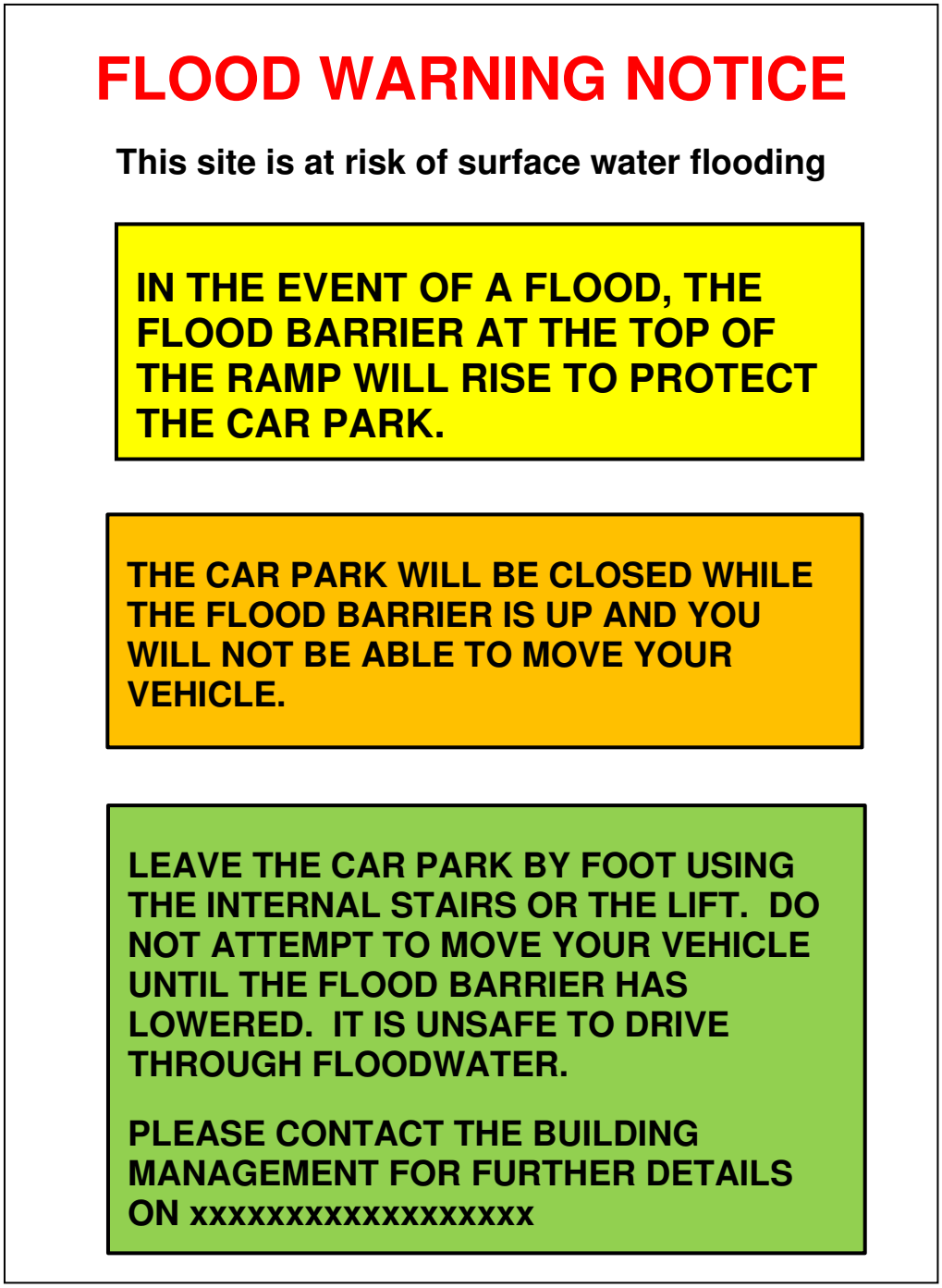


Figure 5: Example Flood Warning Notice

3.9 **The information contained within Sections 4 to 10 should be included in a 'Welcome Pack' and provided to each resident when they move into the development. This information should also be readily available in the reception areas and any communal areas where information is displayed for residents and visitors.**

4 What to do before a flood – Be Prepared!

Flood Warning System

4.1 **<u>ALL RESIDENTS</u> of the new dwellings, and the owner/manager of the development, should provide their mobile phone number and/or landline phone number and email address so that they can receive a flood warning.**

4.2 <u>The site is at risk of surface water flooding, but all residential apartments are located above the flood level so will remain safe and dry.</u>

4.3 There is a self-raising flood barrier to protect the basement car park. The barrier is self-automated and will rise on its own as the flood water increases. When the barrier begins to rise, it will trigger a warning beacon in the car park and send an alert to the Management Company. The Management Company will distribute flood warnings to each resident to make them aware of the risk.

In the event of a flood, the flood barrier will rise and a warning beacon will start to flash. An alert will be sent to the building management and maintenance company.

A flood warning text message or telephone call will be distributed to all residents to inform them of the risk to the premises. A phonecall will be made to the residents who have provided only a landline number.

ANNUAL REVIEW

4.4 **This Flood Action Plan should be reviewed at least annually by the site management and each individual resident, and the following actions should be taken in line with Environment Agency guidance:**

- Reading the plan and updating the contacts list.
- Prepare and maintain a **flood kit** to contain items which are essential for evacuation.
- Although it is unlikely to be required, it is recommended that each resident of the proposed development should try to have in place a local friend or family member who they can stay with should evacuation be necessary.
- Check your insurance cover – ensure it covers flood damage
- Know how to turn off the gas, electricity and water mains supplies if applicable
- Think about what items you would want to move to safety during a flood

4.5 The **flood kit** will also be useful for general emergency situations and should be stored where it can be easily accessed and should include:

- A torch
- Blankets or a sleeping bag, warm clothing and waterproofs
- A first-aid kit, including a supply of any essential medication
- A list of useful telephone numbers
- A supply of bottled water
- A stock of non-perishable food items
- A portable radio and supply of batteries
- Wellington boots or similar waterproof boots

4.6 It is important that these emergency measures are in place **before** a flood event so that should evacuation be required residents do not spend time organising belongings and household members (such as small children) at a time when an evacuation should be taking place.

5 What to do during a flood – Act now!

FLOOD WARNING

5.1 **Upon receiving a Flood Warning, the individual residents should be aware that they may not be able to leave their homes until the floodwater recedes.**

5.2 **Evacuation is not necessary as all residential apartments are located above the flood level. However, if the residents wish to leave the site, they should do so as soon as they receive the Flood Warning. Residents should ensure flood water is not too deep before attempting to walk through it as deep or fast-flowing water is very dangerous.**

5.3 **When a Flood Warning has been received, the flood barrier protecting the basement car park will raise and it will not be possible to move your vehicle. Depending on the severity of the flood, the basement car park may be closed for some time. The flood barrier will lower as the water recedes, enabling residents to access the car park again.**

5.4 **Cars can become unstable and can be washed away when flooding occurs. The AA notes that a vehicle can become unstable in 300mm of floodwater, and advises that people should not attempt to drive through floodwater greater than 100mm in depth. It is not advised to drive out of the surface level car parking spaces if the site begins to flood as the depth could be up to 350mm.**

5.5 When a Flood Warning is issued the following action should be taken by management and residents:

- Reconsider travel plans.
- Listen to and watch for weather and flood warnings on local radio and television stations
- Check that a flood kit has been prepared.
- Evacuation is unlikely to be necessary, but it is recommended to make preliminary arrangements for evacuation, for example to stay with a local friend or family member. Locate keys for locking windows and tools for switching off gas and electricity supplies if evacuation becomes necessary.
- Check with neighbouring homes that they are aware of the situation and have prepared accordingly.
- Move family, pets and valuables to a safe place.

5.6 **If floodwater has reached the site and safe access is no longer available, residents should remain in their homes which will remain safe and dry.**

Preparing for Emergencies

5.7 The London Borough of Hillingdon has lots of useful information on how to prepare for a flood on their website. This can be accessed here: https://www.hillingdon.gov.uk/flooding

5.8 It is recommended that residents familiarise themselves with this information.

5.9 The Management Company will attend the site should a flood warning be triggered to assess the situation. However, it is the Police or the Fire Brigade who will be managing the situation in an extreme flood event as it is likely that much of the surrounding area and nearby roads would also be flooded.

Evacuation

5.10 When a Flood Warning is issued, the site is beginning to flood. The residential apartments will remain above the water level, but the external areas may flood and access will be lost during an extreme event. It is highly recommended that residents remain in their homes if a Flood Warning is received. However, if they need to leave the premises, they should do so quickly and safely before the access becomes flooded, as soon as they receive a Flood Warning text message or phone call.

If safe access has been lost, residents should not attempt to walk or drive through floodwater and should remain in their homes until floodwater recedes.

5.11 **Figures 6 and 7** show the safe evacuation route out of the area which is onto Pembroke Road and to the west towards the High Street (A4180). Once on the High Street, residents can go either north or south to the 'very low' surface water risk areas. This is the quickest route out of the surface water flood risk areas.

5.12 Residents should arrange alternative accommodation with friends or family living nearby, or at local hotels or bed and breakfasts if they choose to leave the site during a flood event. Residents should not rely on the emergency services to rescue them, as they will be focused on those most vulnerable. However, if they are in immediate danger, the residents should contact 999 and await assistance.

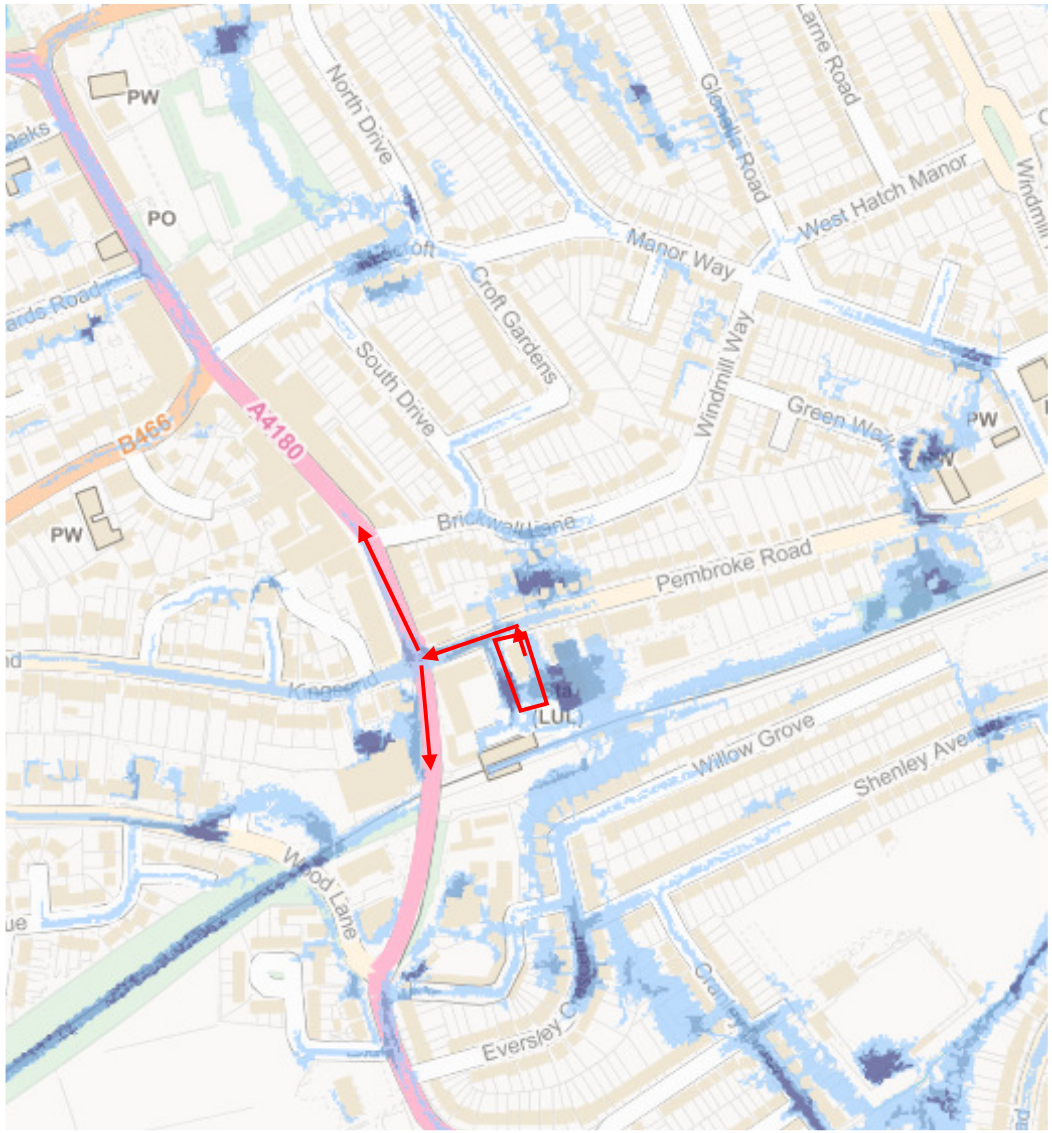


Figure 6: Evacuation Route and EA Floodmap for Planning

Site

Evacuation Route

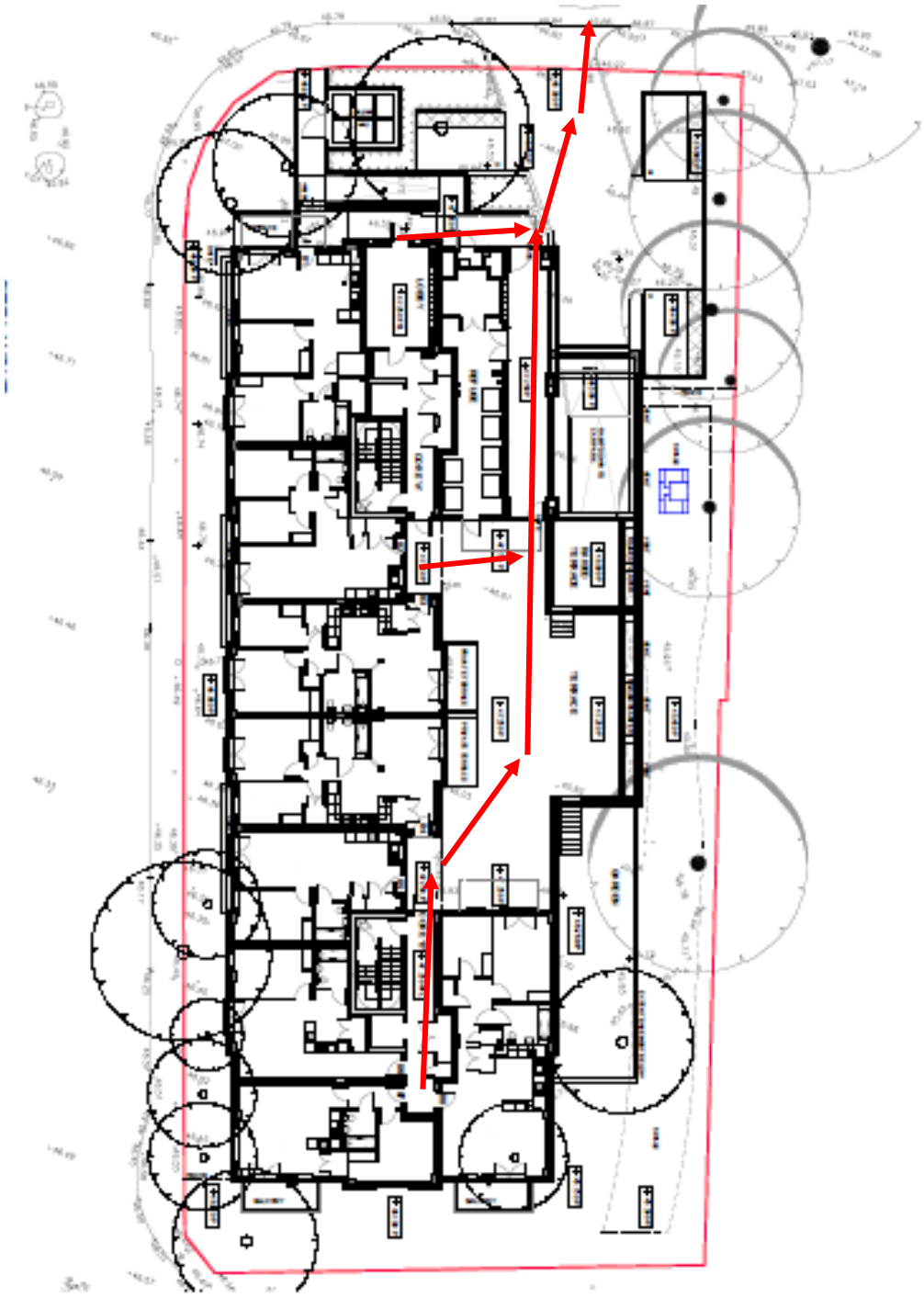


Figure 7: Evacuation Route from Fanuc House Ground Floor to Pembroke Road

6 What to do after a flood – Returning to your homes

Flood Water Recedes - Warnings No Longer in Force

When warnings are no longer in force, no further flooding is currently expected in your area; however flood water may still be present.

6.1 The Police or the Fire Brigade will be managing the situation in an extreme flood event. It will be the responsibility of the Management Company to seek advice from the Police or Fire Brigade on the continuing risk to the building. The Management Company will advise the residents by text message or phonecall when the flood waters have receded and the external parts of the building and basement car park are safe.

6.2 The Management Company will inspect all external areas to ensure debris and litter has not been swept into the onsite drainage system, and that the flow paths around the building are not blocked as this could result in flood risk offsite.

6.3 Floodwater should not have entered any of the apartments as they are located above the extreme flood level and the flood barrier is designed to protect the basement car park. However, if for any reason floodwaters have entered an apartment or the basement car park, it will need to be cleaned, disinfected, repaired and fully dried out prior to re-occupation. In this scenario, the Management Company must check the basement car park is safe before entering, and if there are any doubts professional opinion should be sought. Residents should check their apartment is safe before entering in the unlikely event that floodwater has entered the building.

6.4 If there is any doubt that appliances may be water-damaged they must be checked before switching the power or gas back on. Contact your insurance company as soon as possible to get their approval before arranging any clean-up or repairs. Do not throw away damaged goods until your insurer has authorised you to do so. It is a good idea to take photographs of the damage.

6.5 **The onset of flooding can occur quickly and it is vital that residents evacuate the premises quickly and safely if they need to do so, before safe access is lost. In particular, more vulnerable people such as the elderly or disabled will take longer to evacuate the area, so it is important to ensure that these people have enough time to leave the premises.**

6.6 **It is not recommended to drive through floodwater, and residents will not be able to move their vehicles from the basement car park once the flood barrier has raised. The flood barrier will lower once the floodwater begins to recede and as long as the access road is clear of water, residents will then be able to move their vehicles.**

7 Roles of Other Bodies

7.1 There are many organisations that will play a part in response to a major flooding incident; emergency services, utility companies and voluntary agencies to name but a few. Below are the roles and responsibilities of some of the principal organisations that will be involved in the early stages of a response.

7.2 The Management Company should liaise with the Police and Fire Brigade in the event of a flood to assess the risk to the site and to advise the residents when it is safe to leave their homes.

7.3 **MET Office:** The Met office issues severe weather warnings for heavy rain, snow, severe gales etc. These warnings are delivered directly to Local Authorities, the emergency services and the media.

7.4 **Police:**

- Co-ordination of the emergency services at a major flood event, as well as helping to save lives and protect property
- Establishment of cordons where practical to facilitate the work of the emergency services
- In conjunction with other emergency services, to evacuate people from properties at risk, if necessary
- Collation and dissemination of casualty information

7.5 **Fire & Rescue:**

- Saving lives and rescuing trapped people
- Provide monitoring procedures in respect of health and safety of those persons operating within an established cordon
- Carry out essential damage control measures including pumping out flood water and salvage work
- Rendering humanitarian services in support of the Local Authority

7.6 **Environment Agency (EA):**

- **The EA do not provide warnings relating to surface water flood events, but may be involved if river levels locally rise as a result of extreme rainfall.**
- Predicting flooding from statutory main rivers and the sea including the location, timing and magnitude
- Issuing of Flood Warnings (as a result of river flooding) to partner agencies and ensuring that the public are warned and informed
- Maintenance and operation of sea and river flood defences. Checking defences and undertaking essential repairs as required
- Monitoring and clearing blockages of culverts and repairing breaches of defences
- Support the Police and Local Authority by providing materials, equipment and manpower as far as resources and other duties permit
- Advisory role in dealing with pollution issues as a result of flooding

7.7 **Local Authority**

- Providing flood evacuation points for shelter and temporary accommodation
- Providing support to the emergency services
- Mitigation of the effects of an emergency on people, including emergency feeding, accommodation and welfare.
- Co-ordination of the voluntary sector response
- Information services to the public and media
- Environmental health advice
- Rehabilitation of the community and restoration of the environment
- Further information on the role of Hillingdon Borough Council during an emergency and advice on flooding is found on the Council website here: https://www.hillingdon.gov.uk/flooding

7.8 **Utility Companies**

- In the event of a flood, will secure their services and equipment to ensure continuity of supply
- Repair services disrupted by flood
- Provide alternative means of supply during service disruption if life and death health risks are identified.

8 Relevant Contacts

8.1 The emergency contact details below should be checked annually by the management of the premises and individual residents.

Management Company:	PBM Property Management, 395 Centennial Park, Centennial Avenue, Elstree, Herts WD6 3TJ
Electricity provider:	EON Energy (Electric Emergency Tel. No. 105)
Gas provider:	EON Energy (National Gas Emergency Helpline 0800 111 999)
Water company:	Affinity Water (24hr Emergency Helpline 0345 357 2407)
Telephone provider:	BT Business (24/7 Helpline 0800 800 154)
Insurance company and policy number:	Currently contractors policy with Allianz Insurance Plc but will put new buildings and lift policy in place upon sale of properties.
Local council:	London Borough of Hillingdon General Switchboard: 01895 250111 https://www.hillingdon.gov.uk/residents
Local radio station:	BBC Radio One or Hayes FM
Travel/weather info:	www.bbc.co.uk
Location of Emergency Kit:	TBC
Family member / friend contact and address details for temporary evacuation:	TBC
Fire Brigade (local number):	020 8555 1200
NHS:	111
Hillingdon Hospital:	01895 238282

8.2 It is useful to keep a note of the location of cut off valves in the event that utilities need to be turned off in an emergency. **Figure 8** can be used to record this information along with any other notes relevant to switching off utilities.

Service	Location of Cut-off Switches and Valves	Notes (e.g. who is responsible to do this, where is the key kept)
Electricity	**LV room panel board (supply 1) on back wall and lifeline service supply isolator on right hand wall next to main meter.**	**Management Company is responsible and they hold the master key.**
Gas	**Isolation point on ground floor in the gas room and it is sign posted.**	**Management Company is responsible and hold the master key.**
Water	**Plant room (where blue pipe turns to copper pipe next to tank).**	**Management Company is responsible and hold the master key.**
Telephone/IT	**No isolation points, the only way to turn off system is to physically disconnect cables (located in LV room right hand side of rack).**	**Management Company is responsible and hold the master key.**

Figure 8: Utilities Information

9 Updating the Plan

9.1 It is intended that this Flood Action Plan be a live document to be managed by the building managers of the development, and also by each resident of the development.

9.2 The plan should be reviewed:

- On first occupation
- Every 3 years following first occupation or;
- As a result of lessons identified following a flood event or exercise, or;
- Following changes of ownership/use of the property or;
- Following changes to the Flood Warning process.

9.3 A record of any changes made to this plan should be kept in the table below for information:

Date of Review	Changes to Plan	Issued to

10 Sources of Additional Useful Information

10.1 Am I at risk of Flooding?

https://flood-warning-information.service.gov.uk/long-term-flood-risk/map

10.2 Make an Emergency Flood Plan for your Home

- https://www.gov.uk/prepare-for-a-flood
- www.environment-agency.gov.uk/homeandleisure/floods/38329.aspx

10.3 Preparing your home or business for flooding

- https://www.gov.uk/prepare-for-a-flood
- https://www.gov.uk/prepare-for-a-flood/make-a-flood-plan

10.4 Before, During and After a Flood – Advice Guides

- www.environment-agency.gov.uk/homeandleisure/floods/114724.aspx

10.5 Hillingdon Borough Council Information

- https://www.hillingdon.gov.uk/flooding