Binks Vertical

Proposed Residential Scheme
Ledgards Bridge
Mirfield
West Yorkshire

Flood Warning & Evacuation Plan

Prepared by EWE Associates Ltd
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APPENDICES:

1 FLOOD LEVEL ESTIMATES AT SITE

1.1 EA Flood Level Estimates

The River Calder rises in the Pennine Moors west of Todmorden. It is predominantly an urban river, flowing through the West Yorkshire towns of Brighouse, Huddersfield, Dewsbury and Wakefield, before it joins the River Aire at Castleford. The River Calder is located directly to the south of the site. The site is located downstream of Ledgard Road Bridge and upstream of Hopton New Road Bridge.

There are no formal flood defences between the two road bridges and in line with the site. As such, the site relies upon the natural river bank level to provide a flood defence. The river bank is generally at 44.5mOD and above in line with the site.

As the proposed development is for a residential land use, consideration has therefore been given to consider the potential effects of climate change over the next 100 years in accordance with NPPF. The Environment Agency provided an estimated 1 in 100 year plus climate change flood level in line with the site.

JBA as part of the flood volume compensation model constructed an existing baseline model which included improved cross section and hydrological information. The Flood Risk Assessment provides the model stage hydrographs at Appendix H, the flood level estimates at Appendix I and the void modelling at Appendix K. It is estimated that the existing 1 in 100 year plus climate change 30% flood level in line with the site varies between 45.24mOD and 45.72mOD. It is estimated that the existing 1 in 100 year plus climate change 50% flood level in line with the site varies between 45.49mOD and 46.00mOD.

JBA has confirmed a 100yr+CC30% design level of 45.38mOD for the building.

The site is located directly adjacent to the River Calder which is not protected by any flood walls or embankments in line with the site. JBA have undertaken update river modelling which has been reviewed and approved by the Environment Agency. The modelling included post development modelling to establish the impacts of the proposed building on local flood levels and flow routes. The JBA report is provided at Appendix I and makes the following recommendations.

- The proposed building blocks fall within the River Calder's 100-year, 100-year with (+30%) climate change and 1,000-year floodplain.
- **JBA has confirmed a 100yr+CC30% design level of 45.38mOD for the building.**
- To minimise their impact on flood depths, the proposed buildings will be built on a void/on stilts. The soffit of the void should be set to a minimum elevation of 45.68mOD which is 300mm above the 100yr+CC40% level.

2 FLOOD WARNING PROCEDURE

2.1 Current Procedures

Existing formal Flood Warning Procedures have been identified within the adjacent residential apartment development previously developed by Binks Vertical (see Appendix H). The flood warning system includes river monitoring telemetry which warns occupants when river levels are high. It is proposed that the telemetry system is extended to include this development. The following warnings will be given.

- Amber Warning when river level 43.5mOD – Monitor river levels and advice from EA/local authority and weather updates
- Red Warning when river level is 44mOD – move vehicles to higher ground

2.2 Limitations of Current Procedures

The proposal is to provide a single residential apartment building. The ground floor level of the building will be above the estimated 1 in 100 year plus climate change 50% flood level. However, it is considered that an appropriate flood evacuation plan will reduce the risk to the proposed development further and allow the occupants to leave the new apartment building prior to the site being flooded.

2.3 Objectives

In the production of this Flood Warning & Evacuation Plan, EWE Associates Ltd have identified the following key objectives:

- To encourage residents to sign up to Flood Warnings Direct and Weather Warnings;
- To encourage residents to develop household flood plans, which should include;
    - Identifying alternative safe area.
- To encourage residents to join the local Community Resilience volunteer programme;
- To provide for and signpost clear evacuation routes for residents;
- To ensure adequate ingress and egress for the emergency services; and
- Reduce the risk to life and damage to property.

2.4 EA Flood Warnings

The EA operate a flood forecasting and warning service in areas at risk of flooding from rivers or the sea, which relies on direct measurements of rainfall, river levels, tide levels, inhouse predictive models, rainfall radar data and information from the Met Office. This service operates 24 hours a day, 365 days a year.

Floodline Warnings Direct is a free service operated by the EA that provides flood warnings direct to you by telephone, mobile, email, SMS text message and fax. Sign up for Floodline Warnings Direct by calling Floodline on 0845 988 1188 or online at https://fwd.environmentagency.gov.uk/app/olr/register.

If flooding is forecast, warnings are issued using a set of easily recognisable codes, identified in **Appendix F**.

It should be noted that such warnings are issued in respect of flood risk within large river catchment areas and may not specifically apply to the site itself and its immediate neighbourhood: in other words, the EA warning system will frequently issue an alert which may not be applicable to the part of the at-risk-catchment within which the unit lies.

3 GENERAL EVACUATION PROCEDURE

3.1 Safe Exit Plan

Safe Exit Route

The ground floor level of the building will be above the estimated design flood level of 45.38mOD.

The Environment Agency will provide at least a 2 hour warning of flooding to the area, however, this is a catchment wide warning which is not as accurate and robust as an onsite warning system.
Kirklees Emergency Planning team have raised concerns regards the potential escape route for vehicles along Station Road due to the flood water depths that could be experienced.

Therefore, it is proposed that dry access and egress is provided from the proposed building to the Ledgards Bridge over the River Calder. This will involve constructing an elevated walkway within the site to the bridge abutment/parapet wall where flood levels are less than 200mm deep (blue area on flood plan by JBA Appendix C) and safe to access. Steps will be required over the bridge parapet wall to allow access. The walkway will be within the site boundary and requires lifting levels between 0.16m and 0.68m. The escape route is 110m from the building to the bridge. Approximately 55m of the route the increase in levels is 300mm or less. The remaining 55m is between 300mm and 680mm increase in levels. The proposed access will be constructed using timber post and boards with voids beneath. Following discussions with JBA it was confirmed that the flood route will result in lowering of flood levels adjacent to the river bank and within the site.

The following warnings will be given by the onsite telemetry system which will provide a warnings to the individual residential units.

- Amber Warning when river level 43.5mOD – Monitor river levels and advice from EA/local authority and weather updates
- Red Warning when river level is 44mOD – this is approximately 600mm below the level of the main car park. At this stage move vehicles to higher ground within the car park and prepare to evacuate the building. Continue monitoring river levels, if rising then evacuate the building.

From here the Safe Exit Plan shown in Appendix C indicates the safest exit route that all people (i.e. occupants and visitors) within the new development should follow once a flood warning has been received. This route is appropriate for pedestrian exit only. Appendix C also includes details of the proposed walkway.

The exit route and evacuation procedures are appropriate for the users of the development and shall be followed during both construction and operational phases of the proposed development.

Exit Procedure once flood exceed 100yr+CC23%

If occupants of the site find themselves in a position that they have not evacuated the site and reach flood zone 1 in the dry before the flood water has exceeded the elevated flood route the occupants should remain in their residential units.

- If the exit route is flooded it is likely to be unsafe for all users to cross safely. It should be noted that the building within the site is a safe area during a flood event.
- The resources and equipment at the building are enough to support the evacuees – measures to ensure this include the preparation of an emergency kit to be kept easily accessible within the main building.
- It should be noted that there is no statutory power to implement evacuation and the police are only likely to be involved with an evacuation on a priority basis and generally only when lives are at risk.
- The police are not equipped to operate in flood waters and therefore evacuation post flooding tends to fall to the Fire and Rescue Service.
- It should be noted that in times of intensive flooding, the emergency services will experience high levels of demand and are unlikely to be able to manage small scale evacuations unless life was in imminent danger.
- In serious or widespread flooding the Local Resilience Forum partners implement joint plans with joint command protocols. The police role is one of coordination.
- The main purpose of any Flood Evacuation Plan is to implement the evacuation in circumstances and within time scales so as not to leave the vulnerable in jeopardy and to avoid creating additional and unnecessary drain on local services.

Plan Placement

A plan (Appendix C) indicating the flood evacuation route and the procedure (Appendix E) should be placed in the building and be A4 in size.

The occupants are advised to make modifications based on lesson learnt from flooding at the site or other relevant sites to ensure the plan has the optimum opportunity for success on any subsequent occasions.

4 USEFUL TELEPHONE NUMBERS AND WEBSITES

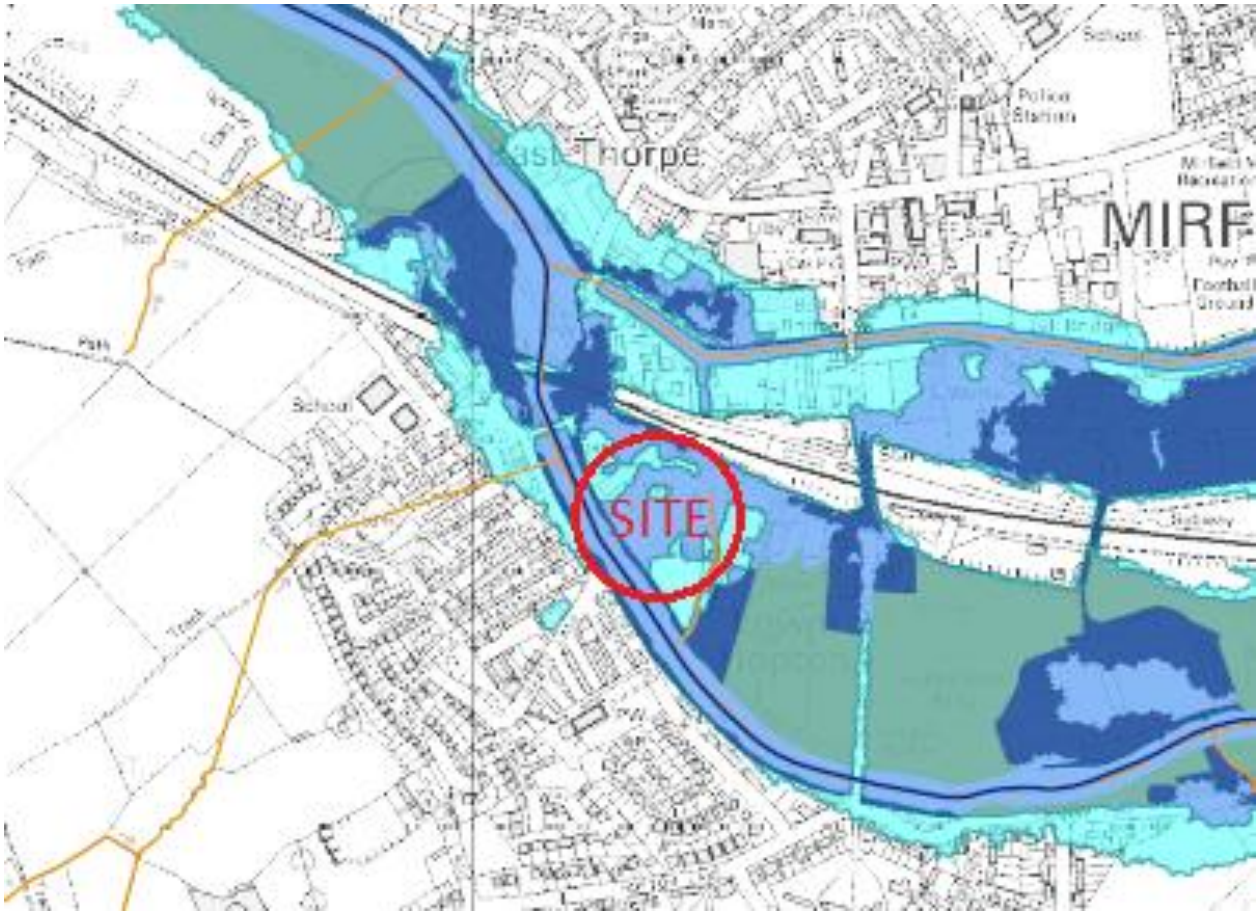
4.1 Telephone Numbers

- Floodline Direct (Environment Agency) - **0845 988 1188**
- Dewsbury Police Station, Aldams Rd, Dewsbury WF12 8AR - **01924 962430**
- Mirfield Fire and Rescue, 25 Huddersfield Rd, Mirfield WF14 8AE - **01924 493399**
- Huddersfield Royal Infirmary, Acre St, Lindley, Huddersfield HD3 3EA - **01484 342000**
- General Emergency Services Number – **999**

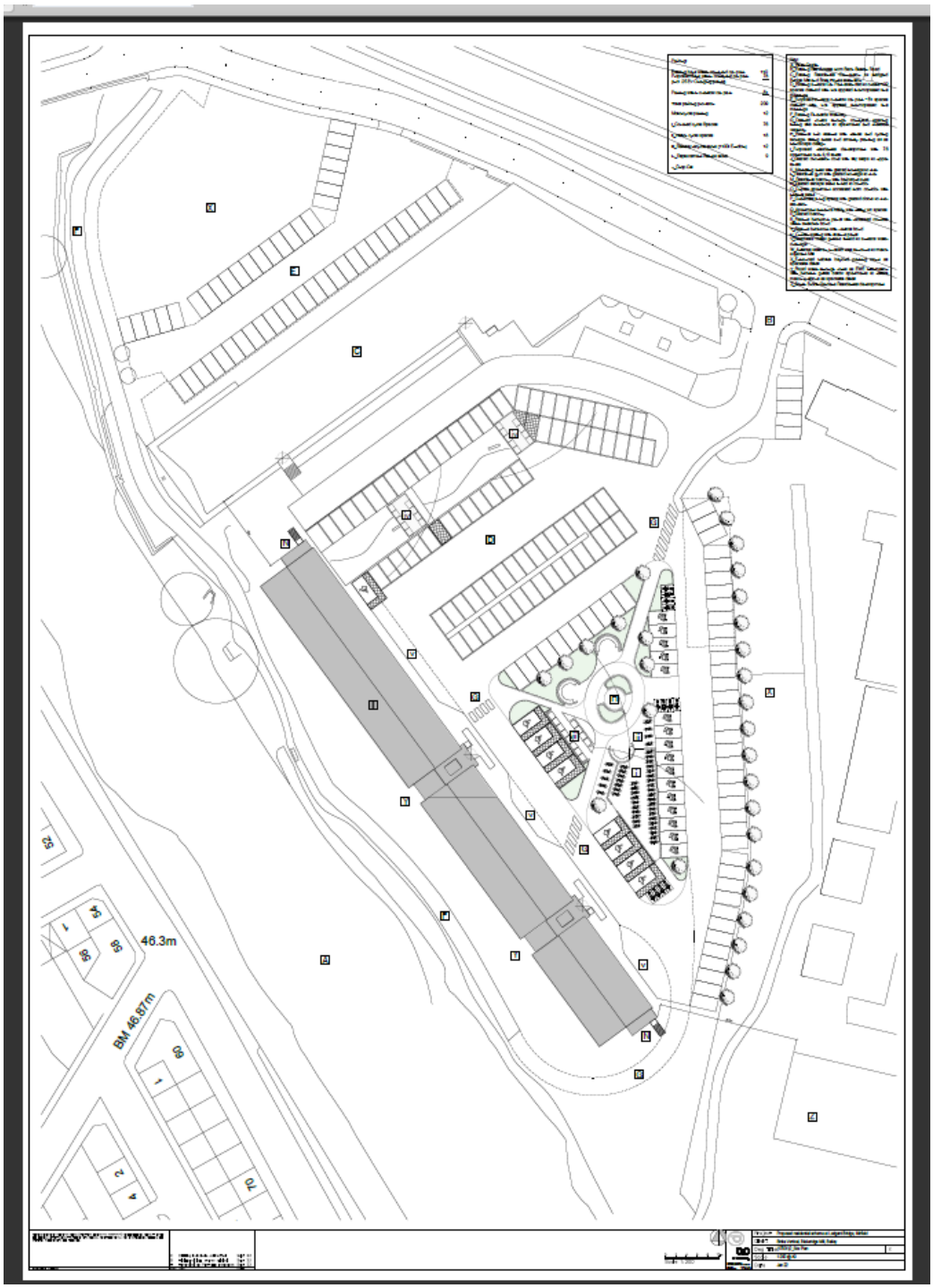
4.2 Websites

- http://www.environment-agency.gov.uk/subjects/flood
- Dewsbury_Mirfield@westyorkshire.police.uk
- http://www.wyfire.gov.uk
- http://www.cht.nhs.uk
- http://www.defra.gov.uk

Appendix A: - Flood Map of Area

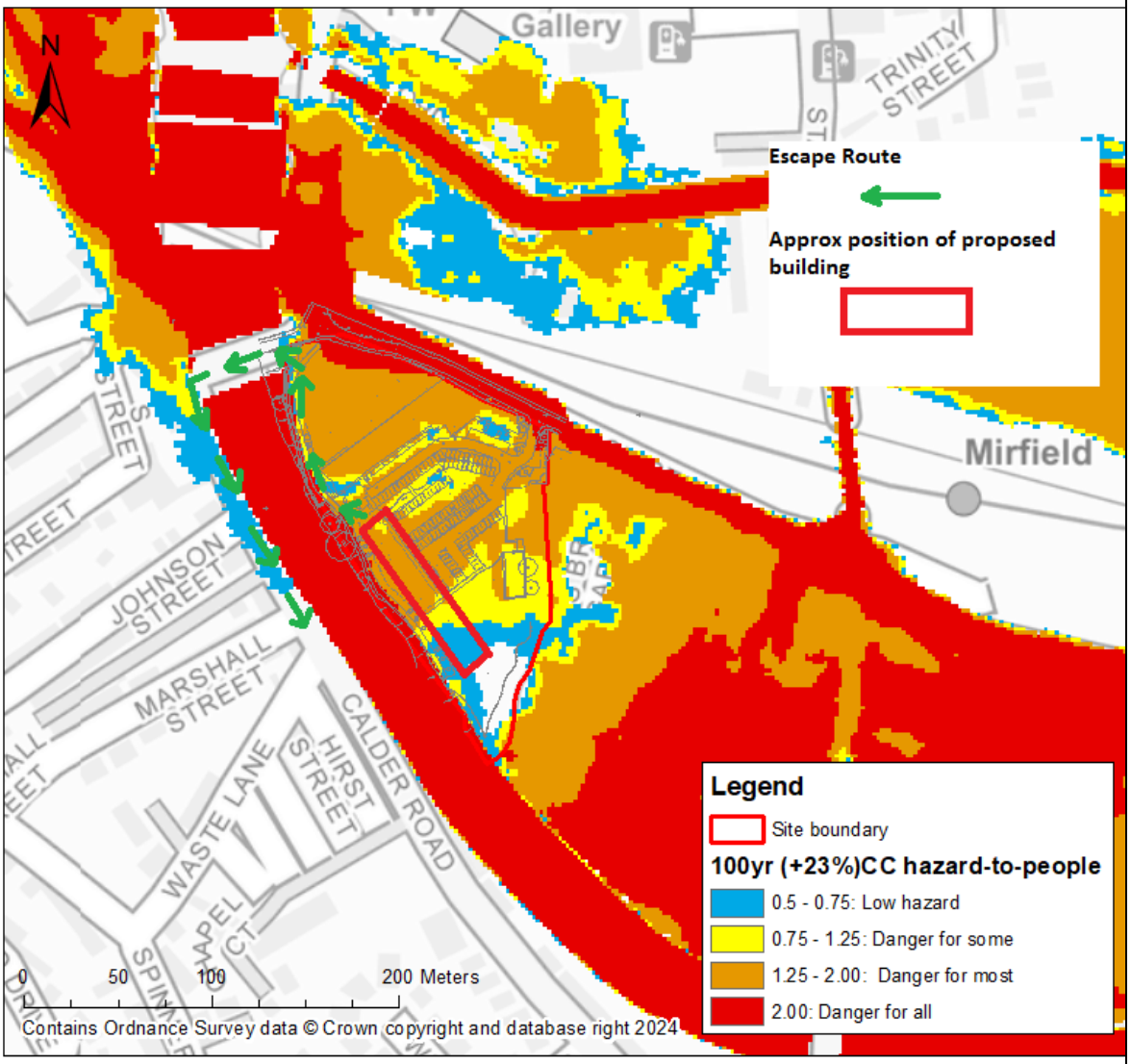


Appendix B: - Proposal Plan

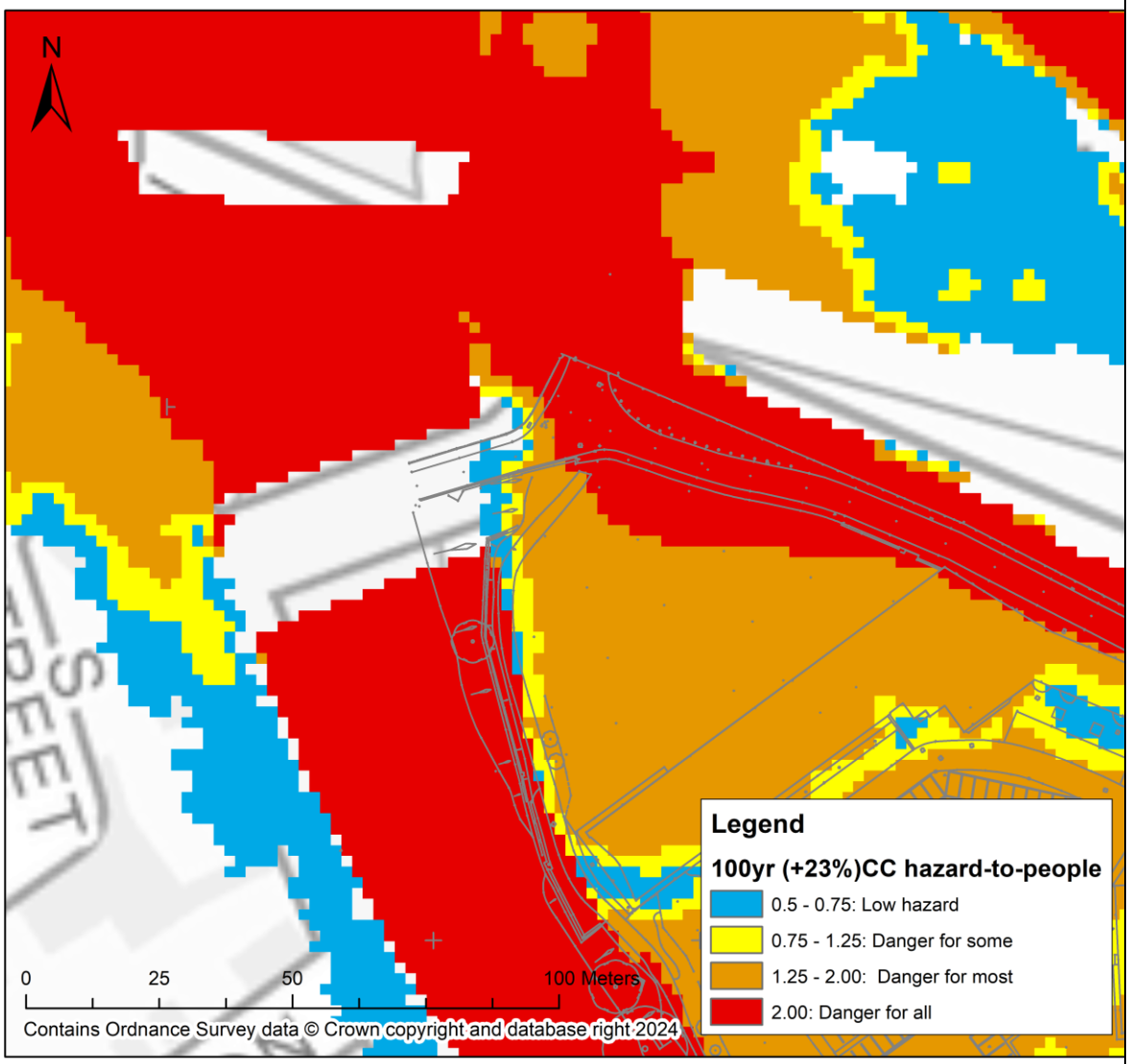


Appendix C: - EVACUATION ROUTE & Walkway Details

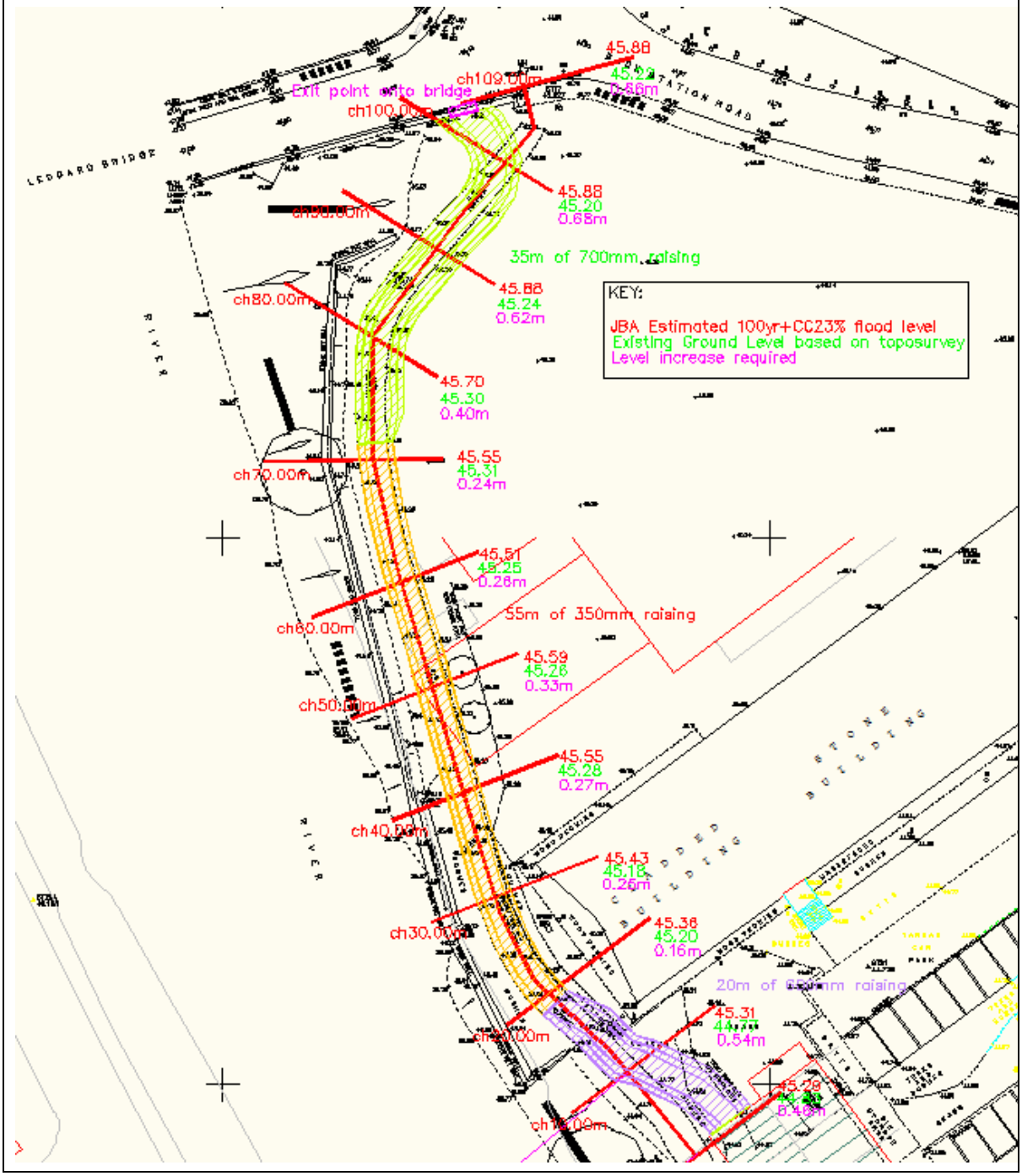
Flood Warning Procedure – Safe Exit Route overlaid on JBA 100yr+CC23% flood map



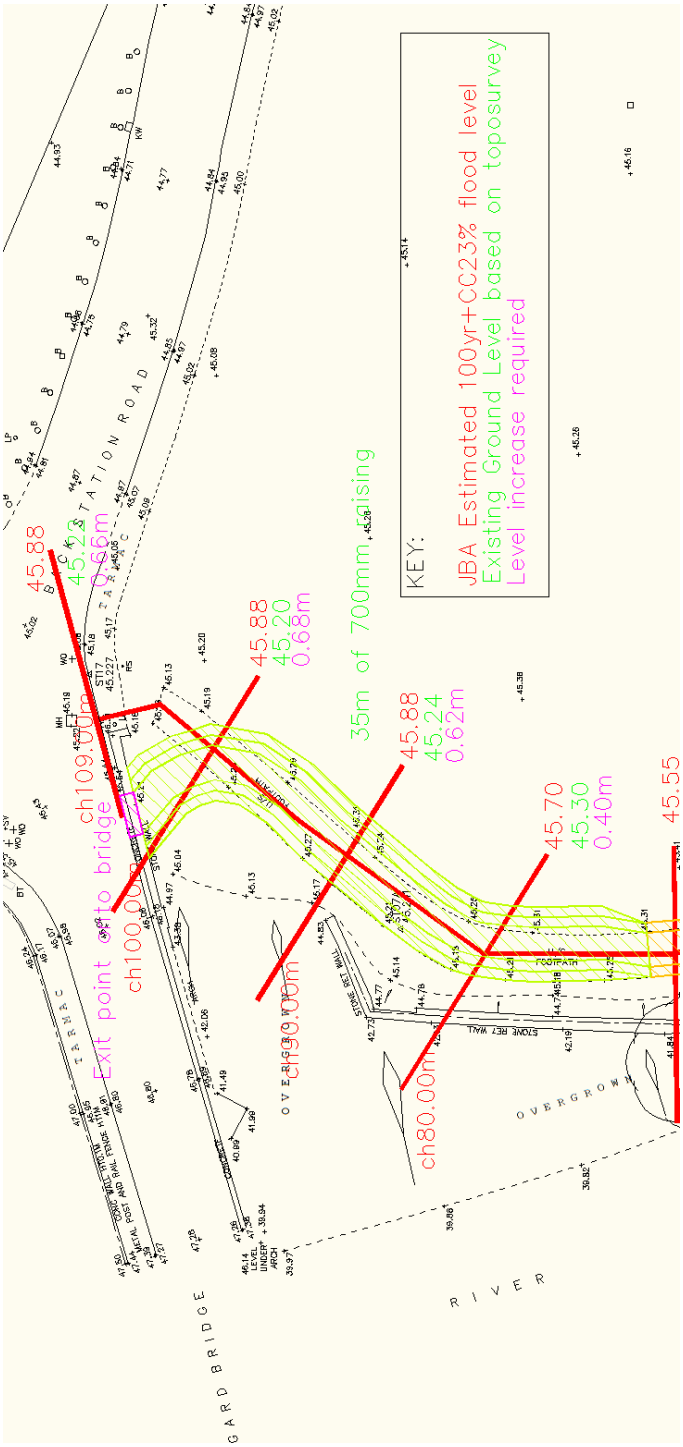
Flood Warning Procedure – JBA 100yr+CC23% flood map zoomed on bridge area



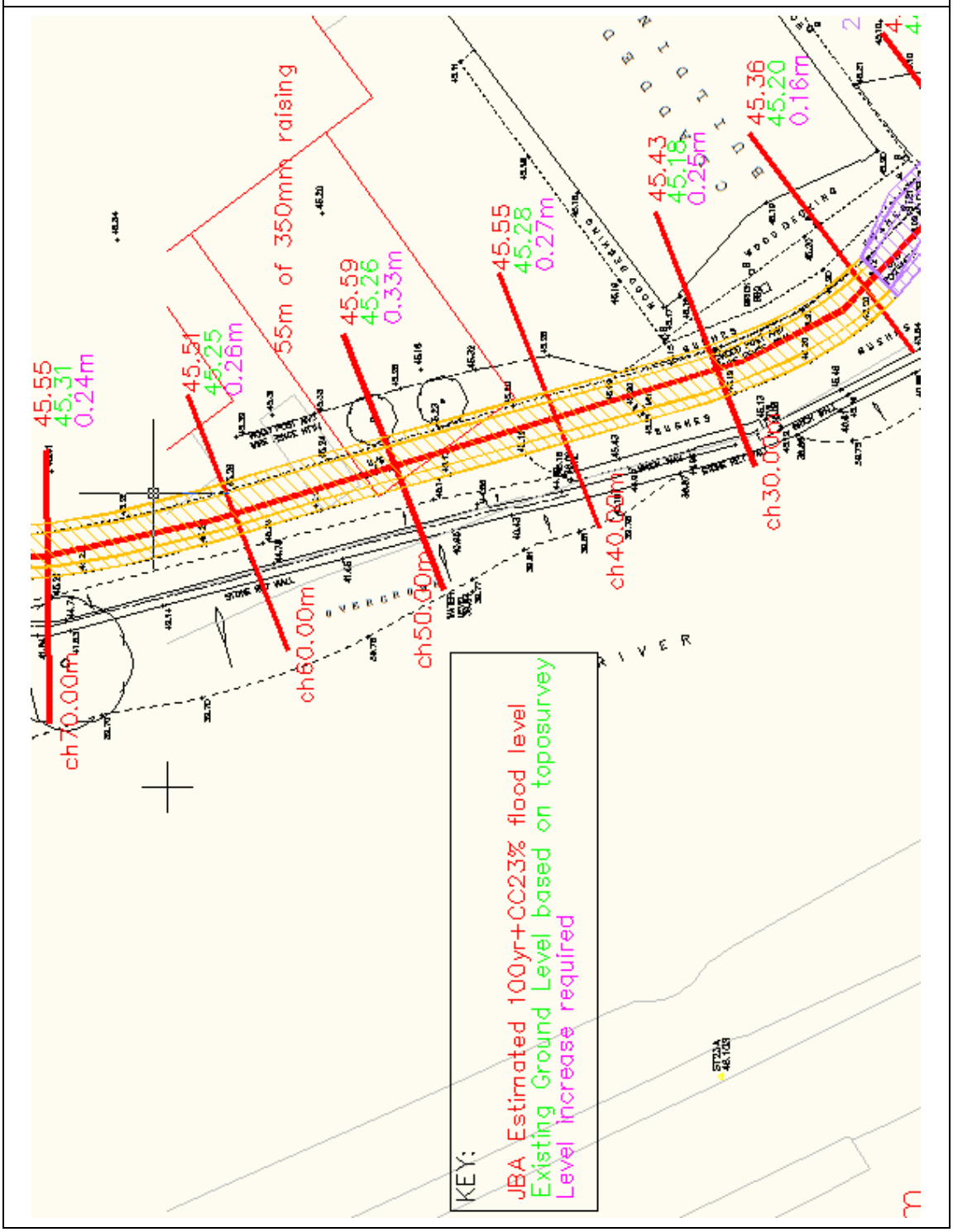
Flood Warning Procedure – Walkway flood levels and existing levels



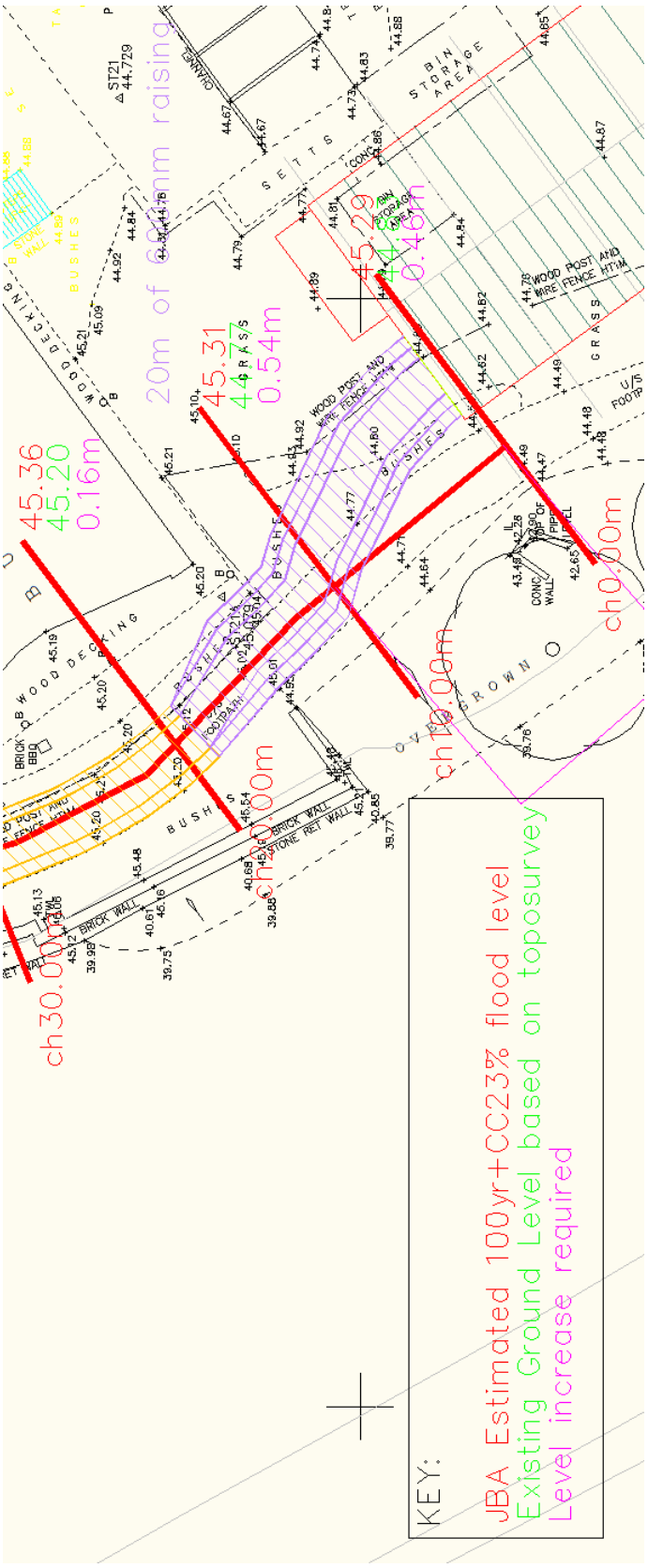
Flood Warning Procedure – Walkway flood levels and existing levels bridge area



Flood Warning Procedure – Walkway flood levels and existing levels middle section



Flood Warning Procedure – Walkway flood levels and existing levels bridge area



Flood Warning Procedure – Walkway Details

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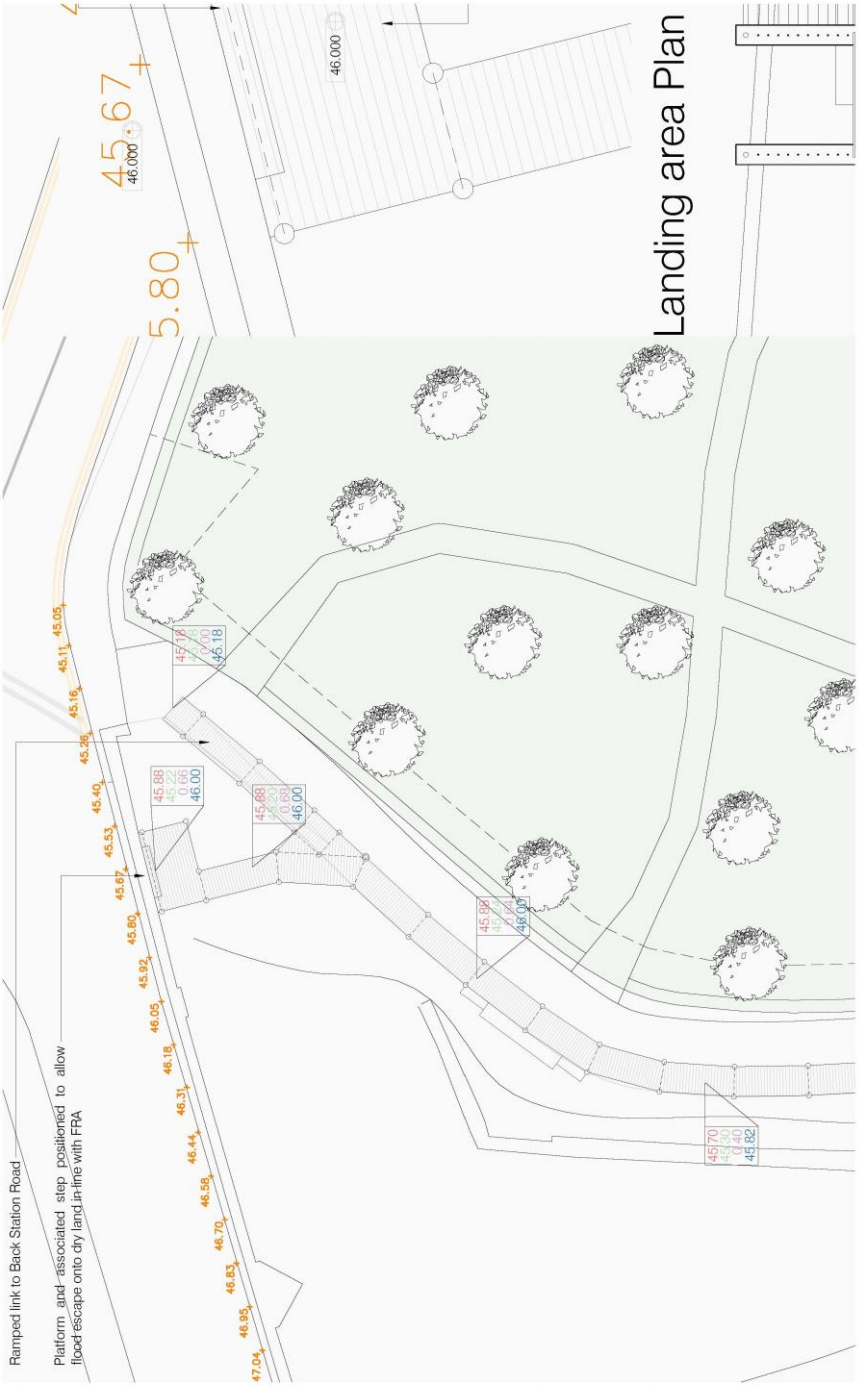


Appendix D: - FLOOD PLAN

The building will have a copy of this flood plan upon occupation of the site and will be kept up to date with any changes to this plan. Included in **Appendix G** is a copy of the Environment Agency Personal Flood Plan Template. This should be filled in by the unit occupant as it will help them to prepare for flooding and provide a useful source of information in the case of an emergency, as it will contain the numbers for emergency services, local council and other necessary contacts. The residents should sign up to the Environment Agencies Floodline Warnings Direct System as detailed in **Section 1.3** of this plan. This will allow them to receive timely updates and flood warnings that may affect them. Further information regarding weather warnings can be gathered from the Met Office Website, local radio and news. Occupants should prepare a Flood Kit and keep this in a safe, dry place. The kit should include:-

- Torch (windup if possible or spare batteries)
- Blankets
- Waterproof clothing
- Wellingtons
- Water
- Non-perishable food
- First aid kit
- Portable radio (windup if possible or spare batteries)
- Rubber gloves
- Medications
- Mobile Phone
- Key personal documents (in a waterproof folder)
- Toys for children or pets
- A copy of this flood plan

Precious items such as photo albums, insurance documents, passports and other important documents can be kept on site as the individual units are located above the predicted 100 year plus climate change flood level.

In the event of flooding the site should be evacuated prior to flood waters reaching the properties. Evacuation from the site should follow the routes shown on the plan included in **Appendix C**. Units should be secured and electricity, gas and water supplies shut off wherever possible.
Yorkshire Police will lead the evacuation of areas affected by flooding and they hold evacuation plans for the area. There are designated evacuation points/rest centres that are made available in the event of flooding. The nearest ones to the site are located below:

- to be provided by occupants as plan evolves
- to be provided by occupants as plan evolves

In the event that floodwaters reach the building prior to evacuation taking place then residents should remain within the building and await rescue by the emergency services.

Occupants should only return to site when it safe to do so.

The emergency services working with other key agencies in the Local Resilience Forum would provide factual information about general conditions in terms of further anticipated flooding,

and any associated risk and if they were able, for example they would give information on the status of utilities etc., or other key information that may be available.

In light of this, occupants would be advised to follow local media reports and gauge for themselves, given their own personal circumstances when it might be sufficiently safe to return. For example, young fit and abled individuals may well feel a return to their property was 'safe' for them where a family with young children may not.

In addition to the above, individual parties would need to assess any post flooding damage to determine whether it was safe or suitable to return to a property to live.

The following procedure should be followed by all site occupants:

General Conditions – Flood Warnings from local telemetry system

Each apartment will be linked to an automated messaging system which can also be linked to mobile phones which will give an amber and red warning. These warnings will allow the occupants to remove vehicles from the car park to flood zone 1. The **Occupants** should be aware of potential risk factors (forecasted bad weather, tide times) which may result in a change in flood warning.

The **Occupants** shall pay particular attention to weather conditions and flood warnings during these times of high risk.

Although the Environment Agency undertake to formally provide a 2 hour notice of flooding the following will give a very clear indication of potential flooding in this County:

- Short periods of very intensive precipitation
- Long periods of less intensive precipitation
- Any combination of the two
- The risk is exacerbated when river levels are already high or the ground is saturated and flood plains are at or nearing capacity.

Flood Alert
Upon receipt of a 'Flood Alert' Warning the **Occupants** shall:

- Notify all occupants of the residential unit, including visitors, of the Flood Watch warning level.
- Check that the Flood Emergency Kit is available and in good condition.
- Monitor weather conditions and EA flood forecast (using the EA website).

Weather Conditions can be monitored using the following services:

- Weather Advice – www.metofice.gov.uk
- News Services – www.bbc.co.uk/news
- AA Roadwatch (broadcasts warnings) – www.theaa.com
- Local Radio Stations

Appendix E: - FLOOD PLAN NOTICE

General Conditions – No Warnings Received

The **Occupants** should be aware of potential risk factors (forecasted bad weather) which may result in a change in flood warning.

The **Occupants** shall pay particular attention to weather conditions and flood warnings during these times of high risk.

All residents should sign up to receive the EA Flood Warnings by ringing 0845 988 1188.

Flood Alert

Upon receipt of a 'Flood Alert' Warning the **Occupants** shall:

- Notify any other occupants of the residential unit of the Flood Watch warning level.
- Check that the Flood Emergency Kit is available and in good condition.
- Monitor weather conditions and EA flood forecast (using the EA website).

Flood Warning - Amber

Upon receipt of a 'Flood Warning' the **Occupants** shall:

- Notify any other occupants of the residential unit of the Flood Watch warning level.
- Visually monitor the water levels within the vicinity of the site– minimum half hourly,
- Cancel any anticipated deliveries.
- The **Occupants** should ensure all occupants know there is a Flood Warning.
- Remove vehicles from car park to safe area in FZ1

Severe Flood Warning - Red

Upon receipt of a 'Flood Severe Warning' the **Occupants** shall:

- Notify any other occupants of the residential unit of the Flood Watch warning level.
- Continue regular visual monitoring of water level within the vicinity of the site (as above).
- The **Occupants** should decide when to evacuate the premises such that escape route is still dry

Evacuation

At any time should water levels exceed the River Calder flood walls or flood waters adjacent to the site then the **Occupants** should immediately evacuate the building. This shall involve:

- **Occupants** to isolate unit services (gas / water / electric)
- Evacuation of all residents. **Occupants** shall gather immediate family members and any guests, collect the **Flood Kit** and leave the building. All buildings should be secured on leaving. Residents to be aware of vulnerable individuals who may need assistance securing and leaving their premises. All residents should move to the designated areas of higher ground across Ledgards Bridge where they will muster. Residents are to follow the direction of the emergency services at all times. Where necessary move to the nearest evacuation point/rest centre or as directed.

The Occupants should check all the occupants and visitors have evacuated the unit/building.

The Flood Evacuation Route is included in **Appendix C**.

- Any cars / bicycles within the car park at the start of a building evacuation shall be left in place. No attempt shall be made to remove these vehicles from site once a building evacuation has commenced.
- State the Rest Centres when known?

Water Level Dropping or Warnings no longer in force
As noted the Flood Warnings identify a potential rather than actual threat. It is noted therefore that not all events will result in an automatic progression from one warning to another with the end result being flooding of the site. It is possible for smaller events to trigger initial warnings with water levels dropping before flooding of the site occurs.

If visual monitoring confirms a sustained drop in water level over an hour period the site can revert to a Flood Watch status, until such time as the EA remove the catchment wide flood warning and provide an 'All Clear'.

Under no circumstances should anyone attempt to re-enter a building to isolate services once flooding has started. At no point should any individual put his/her life in danger by entering flood waters.

Appendix F: - ENVIRONMENT AGENCY WARNING CODES

Flood Alert

Key Message: Flooding is possible. Be prepared
Timing: 2 hours to 2 days in advance of flooding
Actions: Be prepared for flooding
Prepare a flood kit of essential items
Monitor local water levels and flood forecasts
Channels: Floodline Warnings Direct
Floodline
Internet

Flood Alerts are to warn people of the possibility of flooding and encourage them to be alert, stay vigilant and to make early preparations for flooding.

Flood Warning

Key Message: Flooding is expected. Immediate Action Required
Timing: Half an hour to 1 day in advance of flooding
Actions: Act now to protect your property
Block doors with flood boards or sandbags and cover airbricks and other ventilation holes
Move family, pets and valuables to a safe place
Turn off gas, electricity and water supplies if safe to do so
Keep a flood kit ready
Move cars, pets, food, valuables and important documents to safety
Channels: Floodline Warnings Direct
Floodline
Internet
Sirens
Loudhailers
Media

Flood Warnings are to warn people flooding is expected and encourage them to take immediate action to protect themselves and their property.

Severe Flood Warning

Key Message: Severe flooding. Danger to life
Timing: When flooding poses a significant threat to life and different actions are required
Actions: Stay in a safe place with a means of escape
Be ready should you need to evacuate from your home
Co-operate with the emergency services
Call 999 if you are in immediate danger
Channels: Floodline Warnings Direct
Floodline
Internet
Sirens
Loudhailers
Media

Severe Flood Warnings are to warn people of a significant risk to life or significant disruption to communities caused by widespread or prolonged flooding, and encourage them to take immediate action to protect themselves and follow the advice of the emergency services.

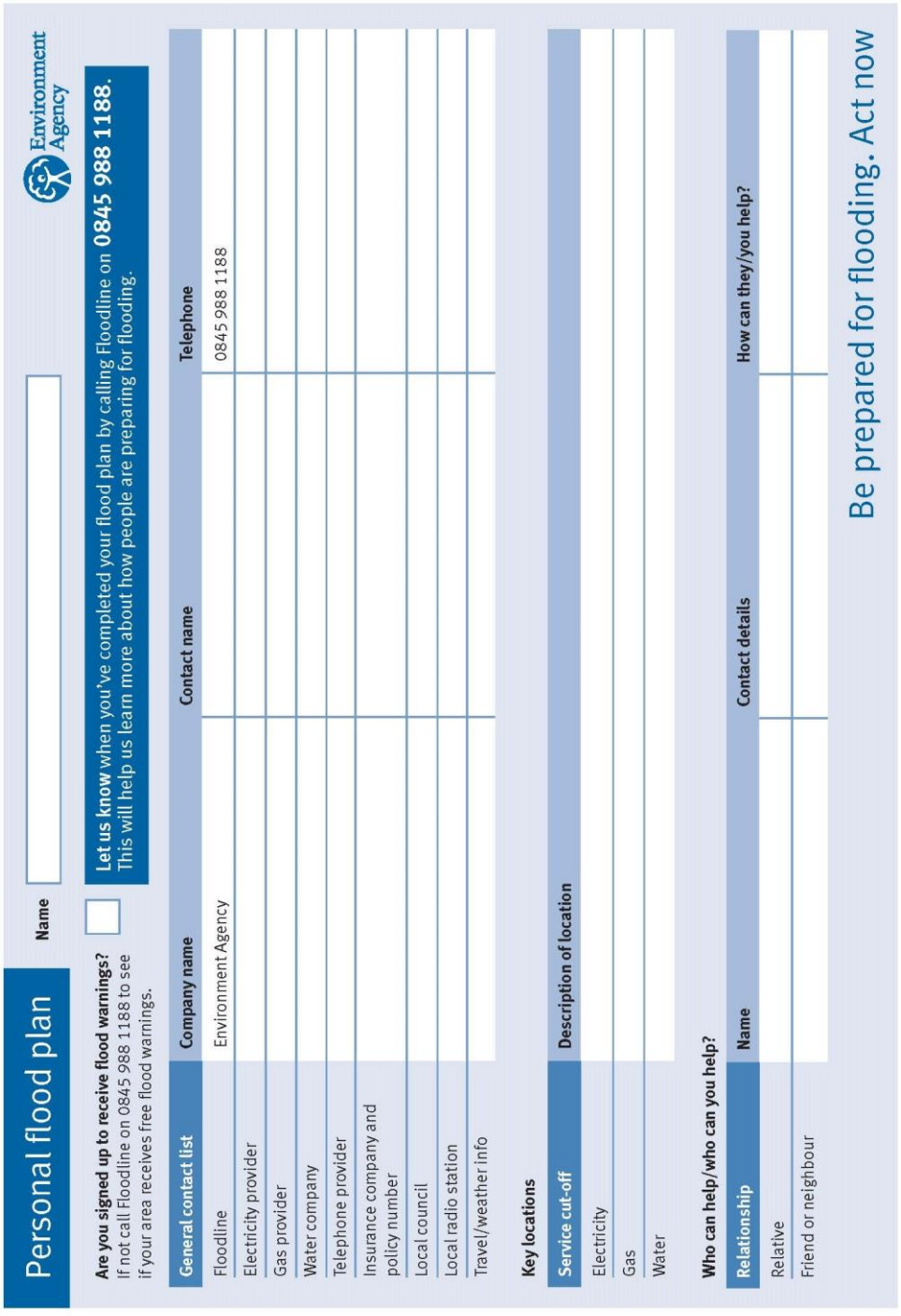
Warnings no longer in force

(no icon)

Key Message: No further flooding is currently expected for your area
Timing: When river or sea conditions begin to return to normal
Actions: Be Careful. Flood water may still be around for several days and could be contaminated
Channels: If you've been flooded, ring your insurance company as soon as possible
Floodline Warnings Direct
Floodline
Internet

Warnings are removed to inform people that the threat has now passed.

Appendix G: - ENVIRONMENT AGENCY PERSONAL FLOOD PLAN



Personal flood plan

Name

Environment Agency

Are you signed up to receive flood warnings? If not call Floodline on 0845 988 1188 to see if your area receives free flood warnings.

Let us know when you've completed your flood plan by calling Floodline on **0845 988 1188.** This will help us learn more about how people are preparing for flooding.

General contact list	Company name	Contact name	Telephone
Floodline	Environment Agency		0845 988 1188
Electricity provider			
Gas provider			
Water company			
Telephone provider			
Insurance company and policy number			
Local council			
Local radio station			
Travel/weather info			

Key locations

Service cut-off	Description of location
Electricity	
Gas	
Water	

Who can help/who can you help?

Relationship	Name	Contact details	How can they/you help?
Relative			
Friend or neighbour			

Be prepared for flooding. Act now

Personal flood plan

What can I do NOW?

Environment Agency

- ☐ Put important documents out of flood risk and protect in polythene
- ☐ Look at the best way of stopping floodwater entering your property
- ☐ Find out where you can get sandbags
- ☐ Identify what you would need to take with you if you had to leave your home
- ☐ Check your insurance covers you for flooding
- ☐ Make a flood plan and prepare a flood kit
- ☐ Identify who can help you/ who you can help
- ☐ Understand the flood warning codes

What can you do if a flood is expected in your area?

Actions	Location
Home	
☐ Move furniture and electrical items to safety	
☐ Put flood boards, polythene and sandbags in place	
☐ Make a list now of what you can move away from the risk	
☐ Turn off electricity, water and gas supplies	
☐ Roll up carpets and rugs	
☐ Unless you have time to remove them hang curtains over rods	
☐ Move sentimental items to safety	
☐ Put important documents in polythene bags and move to safety	
Garden and outside	
☐ Move your car out of the flood risk area	
☐ Move any large or loose items or weigh them down	
Business	
☐ Move important documents, computers and stock	
☐ Alert staff and request their help	
☐ Farmers move animals and livestock to safety	
Evacuation - Prepare a flood kit in advance	
☐ Inform your family or friends that you may need to leave your home	
☐ Get your flood kit together and include a torch, warm and waterproof clothing, water, food, medication, toys for children and pets, rubber gloves and wellingtons	

There are a range of flood protection products on the market to help you protect your property from flood damage. A directory of these is available from the **National Flood Forum** at **www.bluepages.org.uk**

Be prepared for flooding. Act now

GEH00709BQPU-E-E

Appendix H: - Adjacent Flood Warning Plan

vehicles on-site during the 1 in 100 flood event with the car parking areas raised to prevent damage. However, some residents may require the use of their vehicles during a major flood event to vacate the wider local area and would therefore need warning prior to the onset of flooding to Back Station Road so that their vehicles could be safely moved out of the floodplain area. A private Flood Warning Scheme (discussed in Section 6.5) was therefore included as part of the development proposals.

Pedestrian

As part of the works, a pedestrian footpath was also proposed to be constructed to a minimum level of 44.65mAOD along the southern side of Back Station Road elevated above the predicted 1 in 100 year (including climate change) flood level for the area. This would therefore facilitate safe, dry access and egress on and off the site during flood events as an emergency escape route to higher ground at the Newgate Street/Ledgard Bridge intersection. This route is illustrated in Appendix B.

Current Situation

An agreement has already been obtained from the EA to upgrade Back Station Road as a result of the 2005 Scott Wilson FRA prepared for the redevelopment of the South Brook Mill site adjoining the Ledgard Bridge Mill site to the east. However, at the time of submission of this report, construction delays with regard to the programme of completion of this road upgrade and raised footpath have occurred.

Until a timetable is put forward for completion of the upgrade to Back Station Road incorporating ground raising of the road and footpath to the recommended levels, a temporary, alternative pedestrian flood evacuation route is subsequently required to reduce the flood risk to occupants of the proposed development following a flood warning, discussed in Section 6.5.

6.5 Emergency Flood Warning & Evacuation Procedures

After the 2006 FRA for the Ledgard Bridge Mill redevelopment was approved, the local planning authority, KMC, as one of their conditions, required a flood warning system to be installed on the site for the benefit of residents to mitigate against the residual risk posed to the wider development and local area. The warning system was to be in addition to, and therefore not be reliant on, the EA's flood warnings. The planning condition stated that the flood warning system must be installed and functioning before occupancy of the apartments takes place. Scott Wilson was therefore commissioned in 2006 to develop a private Flood Warning System[3] (FWS) as a feature for the Ledgard Bridge Mill residential complex and surrounding grounds.

The report detailing the private Flood Warning Scheme was submitted to the Local Planning Authority for approval and the system was installed prior to the first residents occupying the existing apartments within the Ledgard Bridge Mill neighbouring those remaining for proposed redevelopment.

The main purpose of the FWS was to alert residents to the potential onset of flooding to give them time to take evasive action that they may wish to take to protect their property e.g. relocate their cars to park them outside of the flood risk area (1 in 100 year floodplain) or perhaps to evacuate the site itself prior to Back Station Road becoming inundated.

The lowest areas of the site are situated immediately adjacent to the river and flooding depths are expected to reach approximately 0.5m in these areas during the 1 in 100 year flood event inclusive of climate change. Although flooding of the developed area would not occur during the 1 in 100 year design flood event, flooding of Back Station Road would still occur. Many vehicles would be able to flood depths of the predicted 0.3m if absolutely necessary, however this would be undesirable. Whilst the risk of damage to cars left parked on the site during a flood event is low, it was considered that residents may require the use of their vehicles during the flood event to vacate the wider local area and floodplain, and would therefore welcome an early flood warning, prompting them to relocate their vehicles prior to the onset of flooding along Back Station Road.

The private FWS consists of a river level gauge and associated logger/telemetry installed along the site's south western boundary. Using further findings from the 2006 FRA, the hydraulic model from the 2005 FRA and topographic survey together with EA river level records from their river gauges at Ledgard Bridge, Elland and Colne Bridge, two flood warning trigger levels were derived[3]. The trigger levels have been designed to allow a reasonable amount of time to action a flood warning whilst being high enough to avoid issuing too many unnecessary false alarms.
In order to determine river levels, a water level gauge and hydrometric logger was installed on the site. The gauge continually monitors levels and the logger activate an alarm within each dwelling when the pre-determined trigger levels are reached.

- An Amber Flood Warning will be issued when river levels reach or exceed 43.5 m AOD, 0.5m below the lowest point in the river bank at the site.
- A Red Flood Warning will be issued when river levels reach or exceed 44.0 m AOD, the point at which water will just start overtopping the river bank at the site but still 630mm below the proposed car park level.
- As river levels fall below the red trigger level, the red warning light will be extinguished. Similarly, the amber warning lights will be extinguished once river levels fall below the amber trigger level.

Warnings are disseminated throughout the building by electronic panels installed in each apartment. When an amber warning is issued, an amber light will illuminate on the panel. When a red warning is issued a red light will illuminate on the panel. Similarly a flood warning board will be prominently displayed in the atrium of the mill and will also highlight the current flood warning status using an amber or red light. Automated voice messaging and SMS messaging have also been utilised to inform and warn occupants.

Depending on the warning, advice on appropriate action is given to the residents. During an Amber Warning, residents will be alerted to the fact that river levels are high and advised to monitor the situation and weather reports. During a Red Flood Warning, residents will be alerted to the fact that river levels are very high and advised to monitor the situation and move their cars to higher ground if necessary. Residents of the existing apartments are currently made aware of flood escape routes off the site from their apartment within their Buyers Information.

The FWS is checked on a monthly basis and maintained on a six-monthly basis. It is the responsibility of the management company to carry out checks and organise maintenance and servicing of the equipment. Such operation and maintenance of the FWS however necessitates a charge levied on the residents as part of their annual site management fee.

The flood warning provisions currently in place throughout the Ledgard Bridge Mill residential development should be extended within the remaining six units proposed for redevelopment into apartments. Information on the scheme should be given to all new residents potentially occupying and residing within the proposed apartments on the site.

Following any issued flood warnings, the 2006 FRA proposed a flood evacuation route via Back Station Road which was to be upgraded, consisting of re-profiling of the road levels and to include a new footpath on the south side which would be elevated above the 1 in 100 year plus climate change flood level in the area to facilitate dry, safe egress away from the site to outside the floodplain at the Newgate Street/Ledgard Bridge intersection. This route is illustrated in Appendix B, however, has of yet not been undertaken as discussed in Section 6.4. Therefore, a temporary alternative pedestrian flood evacuation route has consequently been made available for the existing and proposed occupants.

This alternative route is also illustrated in Appendix B and depicts access from each individual proposed apartment on the ground floor into the main entrance of or through the communal foyer area of the main mill building, proceeding out of the rear entrance along the western face of the building across open land to the west, and continuing towards Ledgard Bridge/Newgate Street. Spot levels annotated on the drawing highlight that the ground levels along the entirety of the route remain sufficiently above the 1 in 100 year flood level including climate change (44.63mAOD) and therefore will remain dry throughout. There are no current plans to develop the land and thus impede this proposed route to the west of the mill and therefore this route remains feasible until the necessary planned upgrade to Back Station Road is completed as originally allocated for emergency evacuation.

Within the Ledgard Bridge Mill site itself, an unimpeded route through the main building will have to be enabled for the occupants of the four proposed ground floor apartments by ensuring they have security access (keys/swipe-cards if necessary) in the event of such an emergency .

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