Flood Risk Assessment

13 Lockett Street

Manchester

M8 8EE

On behalf of Mr N Anwar

Aug 2024

1.Introduction

Manchester Building Design Ltd has prepared a Flood Risk Assessment (FRA) for the change of use of 13 Lockett Street from 5 No. small units that previously sold sports / tech goods to one unit for the production of garments and provision of embroidery services for marketing companies.

The Environment Agency (EA) and Manchester City Council (MCC) need to be satisfied that that granting planning permission / prior approval will address any risk of flooding to the development, and that the proposals will not in turn increase the risk of flooding to neighbouring land and property.

This FRA has been prepared in accordance with the national guidance and requirements set out in the National Planning Policy Framework (NPPF) and National Planning Policy Guidance (NPPG) which give guidance for the preparation of site specifics FRA's.

This FRA has also been prepared to the local guidance requirements set out by Manchester City Council's Local Development Framework (2012), Manchester, Salford and Trafford Councils Level 1 Strategic Flood Risk Assessment (March 2010) and Level 2 Strategic Flood Risk Assessment (March 2011).

This FRA has been prepared to identify and evaluate the various possible sources of flood risk to which the site might be subjected to, and to identify any mitigation or protection measures deemed necessary of feasible; and to ensure the development does not increase the probability of flooding within or near to the site.

2.Site Setting and Description

2.1 Site Location

The site is within the predominantly commercial area of Strangeways near to the junction of Bury New Road and Lockett Street.

The co-ordinates to the centre of the site are: Easting 383454 and Northing 399717

A site location plan is included in Appendix A with the site edged in red.

2.2 Existing Site

The site is already developed with a 2 storey property. The property has a narrow yard to the East that provides access onto Lockett Street.

Existing floor plans and elevation drawings are included in Appendix B.

2.3 Proposed Development

The proposed development comprises the change of use from 5 No. retail units to a single general industrial use.

There are no extensions / changes to the footprint of the building.

Proposed floor plans and elevation drawings are included in Appendix C.

2.4 Topography

Ordnance Survey mapping indicates that the local topography gently falls towards the west and south-west towards the River Irwell, with ground levels at the site in the region of 27.3m AOD.

Digital OS plan with AOD levels is included in Appendix A

2.5 Coast / Rivers / Canals and Artificial Water Bodies

The nearest waterbody to the development site is the River Irwell (classified as a main river), which meanders in a general southerly direction, passing within approximately 250m to the south-west of the site.

There are no other known canal or artificial water bodies in the vicinity of the development site.

2.6 Drains and Sewers

The exact location of any water main or drains within the development site are to be confirmed before works commence on site. However due to the urban nature of the development site it is assumed that public drains and water mains are located in the immediate vicinity.

The proposed development will not involve any new connections to the existing drainage system.

2.7 Ground Conditions

The ground conditions for the site can be determined via the British Geological Survey (BGS) website, where it indicates the site is underlain superficial deposits of Alluvium (clay, silt, sand and gravel) and Glacial Till, over bedrock sandstone of the Triassic Chester Formation. Due to the relatively low permeability superficial deposits and urban nature of the application site, the majority of surface water runoff will discharge to the urban drainage network.

The proposed development involves no external alterations / extensions.

3.National and Local Policy and Water Management Guidance

3.1 National Planning Policy Framework (NPPF) and National Planning Practice Guidance (NPPG)

NPPF 2019 sets out the Government's national policy on development and flood risk, and seeks to provide clarity on what is required at regional and local levels, to ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas at highest risk.

NPPF Paragraphs 149 to 150 provide guidance for developments for the plans to take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk.

NPPF Paragraphs 155 to 165 provides guidance for planning and flood risk, where are plans should apply a sequential, risk-based approach to the location of development taking into account current and future impacts of climate change; to ensure that flood risk is not increased elsewhere due to the development; and to incorporate sustainable drainage systems.

NPPG, Paragraph 030, outlines that the objectives of this FRA are to establish whether a proposed development is likely to be affected by current or future flooding from any source; whether it will increase flood risk elsewhere; whether the measures proposed to deal with these effects and risks are appropriate; whether the evidence for the local planning authority to apply (if necessary) the Sequential Test; and whether the development will be safe and pass the Exception Test, if applicable.

3.2 Flood and Water Management Act

The Flood and Water Management Act takes forward some of the proposals from three previous strategy documents published by the UK Government - Future Water (2008), Making Space for Water (2008) and the UK Government's response to the Sir Michael Pitt's Review of the summer 2007 floods. In doing so it gives the EA a strategic overview role for flood risk, and gives local authorities responsibility for preparing and putting in place strategies for managing flood risk from groundwater, surface water and ordinary watercourses in their areas.

3.3 SFRA

Manchester City, Salford City and Trafford Councils 2010 Level 1 Strategic Flood Risk Assessment (SFRA) and 2011 Level 2 SFRA review the risk of flooding from all sources and provides evidence for local developers and LPA officers to apply the Sequential Test and identify the need to pass the Exception Test where required.

3.4 Manchester City Council's Local Development Framework

The Core Strategy (Adopted July 2012) presents local planning policies for the period 2012 to 2027. Policy EN14 Flood Risk, states:

In line with the risk-based sequential approach contained within PPS25, development should be directed away from sites at the greatest risk of flooding, and towards sites with little or no risk of flooding; this should take account of all sources of flooding identified in the Manchester-Salford-Trafford Strategic Flood Risk Assessment (SFRA).

In addition to the requirements for site-specific Flood Risk Assessments (FRAs) set out in PPS25, an appropriate FRA will also be required for all development proposals, including changes of use, on sites greater than 0.5ha within Critical Drainage Areas (CDAs) and Canal Hazard Zones identified in the SFRA.

All new development should minimise surface water run-off, including through Sustainable Drainage Systems (SUDS) and the appropriate use of Green Infrastructure. Developers should have regard to the surface water runoff rates in the SFRA User Guide. In CDAs, evidence to justify the surface water run-off approach / rates will be required.

The City of Manchester contains many sections of rivers which are culverted or 'hidden'; where these are indicated in the SFRA beneath the proposed development site, further investigation will be required and the development proposal should take this into account; where feasible and appropriate development should seek to open up culverted/hidden rivers to reduce the associated flood risk and danger of collapse, taking advantage of opportunities to enhance biodiversity and Green Infrastructure.

4.Sources of Flooding

In accordance with the NPPF, flood risk must be assessed for all sources of flooding and development of the site should be carried out in such a way as to mitigate any potential flood risk to both the site and third parties and their property. This section identifies all possible sources of flooding.

4.1 Fluvial Flooding

Fluvial flooding results from watercourses / rivers surcharging and flooding the surrounding areas.

4.2 Coastal Flooding

Coastal flooding results from high tides from the sea.

4.3 Pluvial Flooding

‘Pluvial' flooding is that which results from rainfall generated overland flow before the run-off enters any watercourse, drain or sewer. It is more often linked to high intensity rainfall events (typically in excess of 30mm per hour).

However, it can also result from lower intensity rainfall or melting snow where the ground is saturated, frozen, developed or has low permeability. This results in overland flow and ponding in depressions in the topography. In urban areas 'pluvial' flows are likely to follow the routes of highways and other surface connectivity to low spots where flooding can occur. In some cases, it can deviate from this route into adjacent developments via dropped kerbs (either for access to driveways or disability access).

4.4 Groundwater Flooding

Groundwater flooding is caused by the emergence of water from sub-surface permeable strata. Fluctuations in the groundwater table can cause flooding should the table rise above the existing ground level. Groundwater flooding events tend to have long durations, lasting days or weeks.

4.5 Flooding from Drains and Sewers

Flooding from drains and sewers is caused when the capacity of the drains and sewers is exceeded and will result in flooding from the manholes.

4.6 Canals, Reservoirs and Other Artificial Sources

Flooding from canals, reservoirs and artificial sources is caused when the capacity of the sources is exceeded, or if there is, an infrastructure failure.

5.Sourced Data

Data from the Environment Agency; local Strategic Flood Risk Assessments; and information from other parties are to be studied to establish which sources of flooding are at the site.

5.1 Environment Agency Flood Maps for Planning

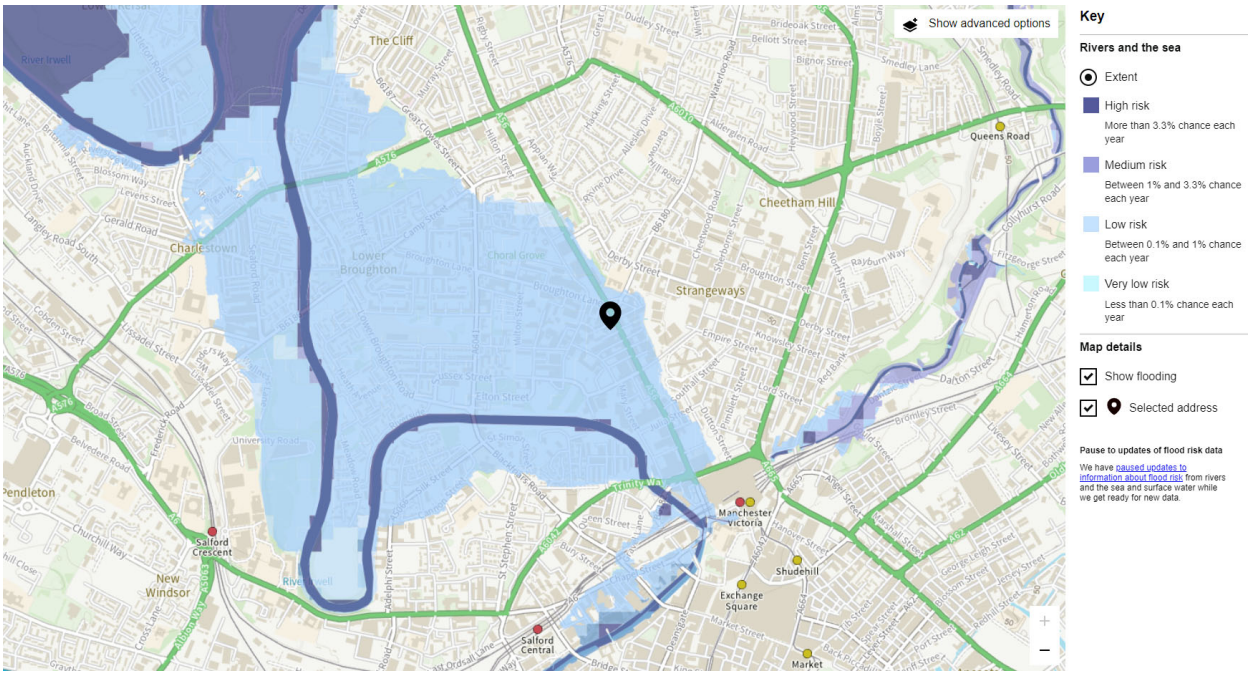

Figure 1 – EA Risk Map of Flooding from Rivers and the Sea

The Environment Agency (EA) Flood Zone Map shown in Figure 1, indicates that the development site is in a Low Risk Flood Zone of between 0.1% to 1% each year from rivers and the sea.

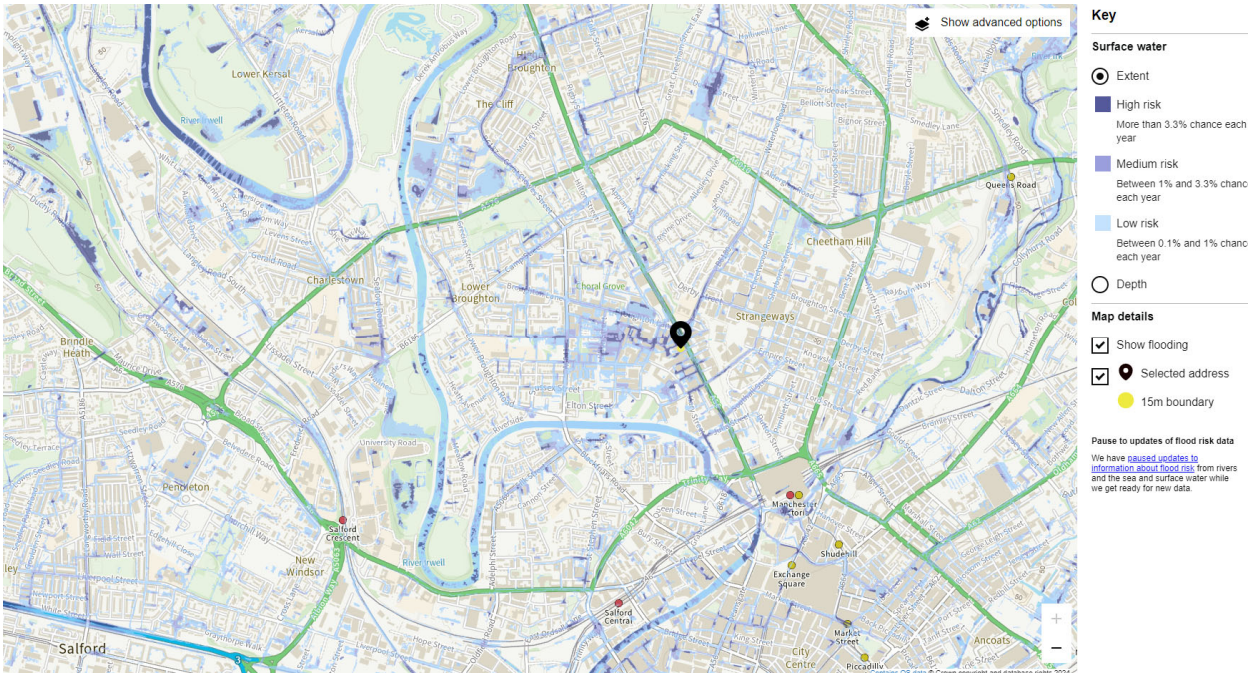

Figure 2 – EA Surface Water Flood Risk

The EA Surface Water Flood Map shown in Figure 2, indicates that the extent of the site has a Medium Risk of surface water flooding (between 1% and 3.3% chance each year).

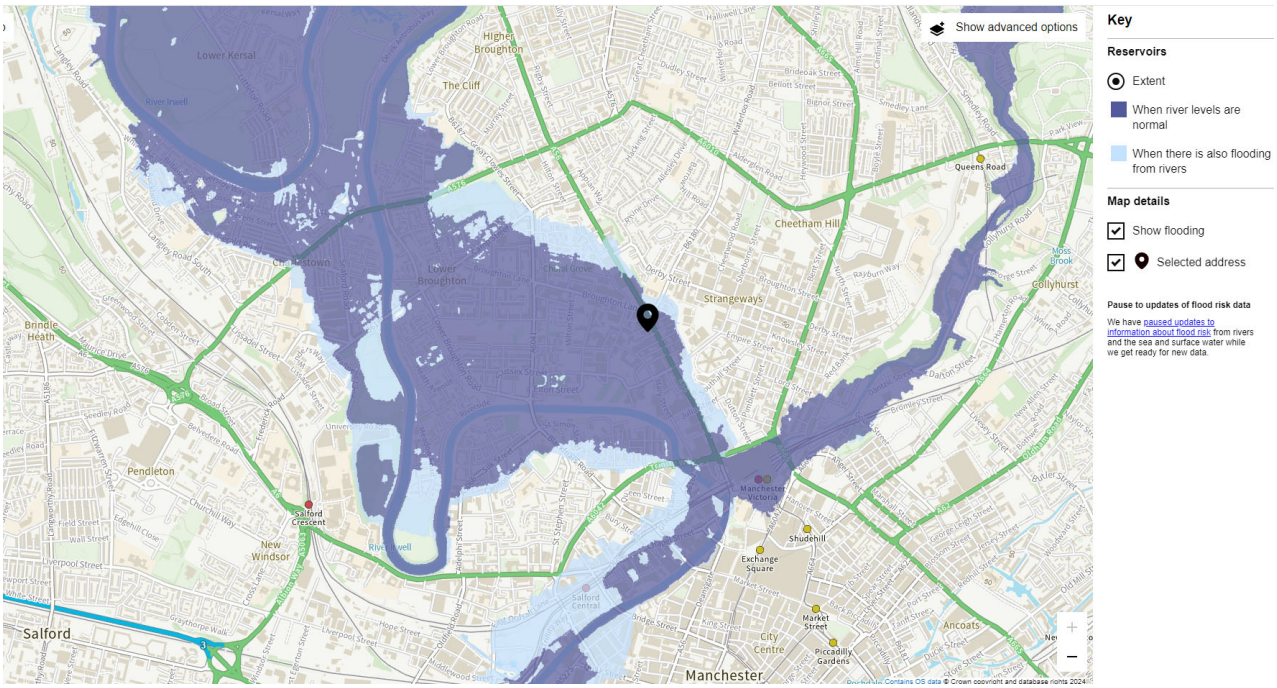

Figure 3– EA Reservoir Flood Map

The EA Reservoir Flood Map shown in Figure 3, indicates that the site lies within the predicted maximum extent of flooding in the event of local reservoir failure. The predicted flood water depth at the site, in the event of reservoir failure, is between 0.3m and 2.0m.

5.2 Environment Agency Climate Change Allowances

Environment Agency guidance on climate change allowances (February 2016) presents predictions of anticipated changes for peak river flows and rainfall intensities by river basin district. Manchester is located within the North West river basin district. The proposed development is classified as 'Less Vulnerable' in flood risk terms and the EA guidance recommends applying the central and higher central climate change allowances for such developments. For the North West, the central allowance is 30% and the higher central allowance is 35%; these are applied within the assessment of predicted flood water levels in the Environment Agency Product 4 Data summary below.

5.3 Strategic Flood Risk Assessment (SFRA)

The Manchester City, Salford City and Trafford Councils SFRA March 2011 and associated flood maps present an assessment of flood risk from local watercourses, surface water runoff and drains and groundwater; a summary of each of the drawings is as follows:

Fluvial Flooding

The hybrid map contained at page 84 of this document assesses the development site to be within Flood Risk Zone 2 based upon the impact of local flood defences.

The Level 2 SFRA concludes that for the M004 Strategic Employment Site (Strangeways), which includes the development site:

The SFRA modelling shows that the 1 in 100 year flood event will remain in bank. Taking climate change into account, the defences will overtop in Lower Broughton, with flooding affecting the west of the site between Rugby Street and Irwell Street to a maximum depth of 1m in places.

There is significant residual risk to the site in the 1 in 1000 year and 1 in 1000 year plus climate change flood events. Flooding is predicted to affect around a quarter of the site in the west, bordering the prison and encroaching on the brewery. The majority of flooding is shown to be in excess of 2m in these events, resulting in hazards of 'danger for all'.

Fluvial Flooding – Flood Defence Breach

The SFRA includes an assessment of a breach of flood defences on the River Irwell at Lower Kersal and Lower Broughton; the breaches were positioned at locations considered to result in the most extensive flooding.

The SFRA presents the predicted flood extent in the event of breaches of the flood defences at these locations during the 100 year event and confirms that the development site remains outside of the predicted flood extent.

Pluvial Flooding

The SFRA confirms that virtually the entire Greater Manchester urban area is designated a Critical Drainage Area, with the development site located within Conurbation Core Critical Drainage Area. Critical Drainage Areas are defined within the SFRA as areas where:

There is a high risk of localised flooding from ordinary watercourses, including culverts surcharging and overland surface water flows, including the potential for flooding from the sewer network due to failure/ blockage or exceedance events when the storm return period is greater than the sewer was designed for; or

Where there are areas of significant redevelopment planned that could have a significant impact on surface water

runoff to local watercourses and the sewer network.

Reasons for designating the broad Conurbation Core Critical Drainage Area include:

• Localised flooding problems in central Manchester and Salford.

• Focus of major regeneration and redevelopment that could have a significant impact on surface water runoff to local watercourses and the sewer network.

• Many lost watercourses that are interconnected with the sewers, canals and open channel watercourses that pose a significant risk.

• 5 postcode areas with over 10 properties affected in the DG5 register.

The SFRA confirms that the development site currently has a very low susceptibility to surface water flooding. Drawing SS_4.2E presents the future risk of surface water flooding, taking account of long term climate change, and indicates that the susceptibility of surface water flooding to the development site remains very low.

Canals and Reservoirs

The Level 2 SFRA (Executive Summary) confirms that local canals are not considered sources of significant flood risk to the development site (M004 Strategic Employment Site, Strangeways). The SFRA has not considered the risks associated with reservoir failure due to implications for national security.

Groundwater Flooding

The indicates that the development site is just located within an area identified as being at risk of groundwater flooding. However, Section 2.5.1 of the SFRA confirms there are no known reports of groundwater flooding within the region.

Historic Flooding

Table 2-5 of the SFRA presents a summary of historical recorded flood events within the region. There are no recorded flood events associated with the River Irwell in the vicinity of the site since 1946 when 5300 properties and 243 hectares flooded. This event pre-dates local flood defences.

Summary

The Level 2 SFRA summarises the flood risk development constraints for the wider M004 Strategic Employment Site (Strangeways), which includes the development site, as follows:

Primary risk from the Lower Irwell and Grey Irwell. Secondary risk from surface water, groundwater and lost watercourses. Most at risk from breach or overtopping in an extreme 1 in 1000 year event.

Development should be acceptable on flood risk grounds. Residual risk from these sources needs to be taken into account when planning developments, including the careful consideration of urban design at Strangeways.

A limited range of land uses could be put forward after careful consideration and detailed FRA, but more vulnerable uses should be steered to lower risk areas. Flood risk is an important influence on how the area could be developed, both spatially and in the design response (1st floor accommodation may be necessary).

6.Probability of Flooding

Now that the extents of the sources of flooding are known from the above data, an assessment is to be made of the probability of flooding from each of the sources.

6.1 Fluvial Flooding (Sea and River) – Probability : Low

The source of the fluvial flooding is from the River Irwell that passes approximately 250m to the south-west of the site. The assessed flood maps indicate that the development site is in Flood Zone 2 (Manchester City Councils SFRA + EA flood maps taking account of flood defence measures), which is classified as having a medium probability of flooding (between 0.1% and 1.0% annual probability).

Data provided by the Environment Agency indicates predicted flood water levels of up to 27.95mAOD within the development site for the 1% AEP (1 in 100 year) event plus 35% allowance for climate change.

The OS Digital Map contained within the appendix confirms ground floor levels within the proposed development site are circa 27.3mAOD.

Predicted flood water depths within the site during the extreme, 0.1% AEP (1 in 1000 year) event are significant (approximately 2.4m), as a result of overtopping of local flood defences. However, there are no records of recent (post 1946) flooding within the development site.

6.2 Groundwater Flooding – Probability : Low

The SFRA mapping indicates that the site is within an area identified as being at risk of groundwater flooding. However, there are no known reports of groundwater flooding within the region and no below ground (basement) development is proposed. Therefore, it is concluded that the probability of groundwater flooding to the development is low.

6.3 Flooding from Drains and Sewers – Probability : Low

The exact location of any water main or drains within the development site are to be confirmed. Section 2.4 of the Level 1 SFRA does not identify Strangeways as an area with reported drainage and sewer problems. Therefore, based on this, the probability of flooding from drains and sewers is deemed to be low.

6.4 Flooding from Canals, Reservoirs and Other Artificial Sources – Probability : Low

EA flood maps indicate that the development site is within the predicted flood extent of local reservoirs.

In England, large reservoirs that are capable of holding 25,000m3 or more of water are regulated under the Reservoirs Act 1975, as amended by the Flood and Water Management Act, 2010. These reservoirs are registered with the Environment Agency and subject to inspection and supervision by reservoir engineers.

Whilst the consequences of reservoir failure could be significant, with the Environment Agency's online map predicting flood water depths of over 2m within the development site, the risk of failure is extremely low.

The SFRA does not identify local canals as a potential flood risk source to the region.

7.Flood Risk and Vulnerability

The NPPG Paragraphs 065 to 067 sets out the flood risk for a site by assessing the flood zones, flood risk vulnerability classification, and flood risk vulnerability and flood zone 'compatibility'.

7.1 Flood Zones

Table 1 – Flood Zones	
Flood Zone	**Definition**
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Flood Plane	This zone comprises land where water should flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

The available map data has identified that the development site is within Flood Zone 3

7.2 Flood Risk Vulnerability Classification

NPPG Paragraph 066, Table 2 stated the flood risk vulnerability classifications as:

Table 2 – Flood Risk Vulnerability Classification
Essential Infrastructure Essential transport infrastructure (including mass evacuation routes) which should cross the area at risk; Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood; Wind turbines.
Highly Vulnerable Police and ambulance stations; fire stations and command centers; telecommunications installations required to be operational during flooding; Emergency dispersal points; Basement dwellings; Caravans, mobile homes and park homes intended for permanent residential use; Installations requiring hazardous substances consent.
More Vulnerable Hospitals; Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels; Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels; Non–residential uses for health services, nurseries and educational establishments; Landfill* and sites used for waste management facilities for hazardous waste; Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

Less Vulnerable Police, ambulance and fire stations which are not required to be operational during flooding; Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'More Vulnerable' class; and assembly and leisure; Land and buildings used for agriculture and forestry; Waste treatment (except landfill* and hazardous waste facilities); Minerals working and processing (except for sand and gravel working); Water treatment works which do not need to remain operational during times of flood.
Water Compatible Development Flood control infrastructure; Water transmission infrastructure and pumping stations; Sewage transmission infrastructure and pumping stations; Sand and gravel working; Docks, marinas and wharves; Navigation facilities.

The development site would be classed as "Less Vulnerable" in flood risk terms as the development comprises the change of use from retail unit to a building used for general indsutrial.

7.3 Flood Risk Vulnerability and Flood Zone "Compatibility"

NPPG Paragraph 067 Table 3, gives guidance on flood risk vulnerability compared with flood zone, to determine the compatibility.

NPPF – Table 3 – Flood Risk Vulnerability and Flood Zone "Compatibility"					
Flood Zones	**Flood Risk Vulnerability Classification**				
	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test Required	✓	✓	✓
Zone 3a	Exception Test Required	✗	Exception Test Required	✓	✓
Zone 3b	Exception Test Required	✗	✗	✗	✓

In accordance with Table 3 of the NPPF "Less Vulnerable" development within Zone 3a does not require an "Exception Test".

7.4 Flood Warning and Evacuation Plan

The owners / occupants of the development are to sign up to the EA and local authority flood warning system, where they can be alerted to any of the above warning codes by either phone; fax; mobile; or email. There is also to be a flood plan in the event of a flood defence breach or overtopping, for the owners / occupants of the development to take appropriate actions for any of the flood waring codes detailed above.

A flood plan is to be put together prior to the occupation of the development, and given to the new owners / occupants as part of the property deeds / information. Details of how the flood plan is to be put together is stated in the 'EA Business Flood Plan' contained within the appendix H

7.5 Flood Warning and Evacuation Plan

	Meaning	General advice
ONLINE FLOOD RISK FORECAST	Be aware. Keep an eye on the weather situation.	• Check weather conditions. • Check for updated flood forecasts on the Environment Agency website.
FLOOD ALERT	Flooding is possible Be prepared.	• Be prepared to act on your flood plan. • Prepare a flood kit of essential items. • Monitor local water levels and the flood forecast on our website.
FLOOD WARNING	Flooding is expected. Immediate action required.	• Move family, pets and valuables to a safe place. • Turn off gas, electricity and water supplies if safe to do so. • Put flood protection equipment in place.
SEVERE FLOOD WARNING	Severe flooding. Danger to life.	• Stay in a safe place with a means of escape. • Be ready should you need to evacuate. • Co-operate with the emergency services. • Call 999 if you are in immediate danger.
WARNING NO LONGER IN FORCE	No further flooding is currently expected in your area.	• Be careful. Flood water may still be around for several days. • If you've been flooded, ring your insurance company as soon as possible.

7.6 Surface Water Management

There are no changes to the surface water run off rates as part of this scheme and therefor pre and post run off rates are comparable and will continue to the managed vis the sites existing drainage system

7.7 Residual Risk

It is difficult to completely guard against flooding since extreme events greater than the design standard event are always possible, however, there are practicable ways to minimise the risk such as by allowing a freeboard (safety margin) and by using suitable construction and management techniques.

This flood risk assessment has been prepared in accordance with the NPPF, Local Planning Policy and the NPPG. Any recommendations regarding floor levels are based on the relevant British Standards (BS8533), the standing advice provided by the EA or based on common practice.

It will be the owner's /occupier's responsibility to regular upkeep the drainage network on site throughout the lifetime of the development to ensure that flood risk on and off site is managed effectively.

Appendices

Appendix A – Site Plan

UK Planning Maps

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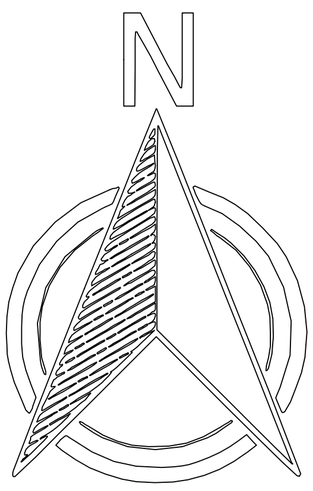
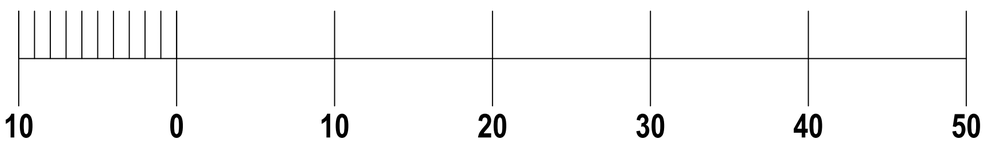
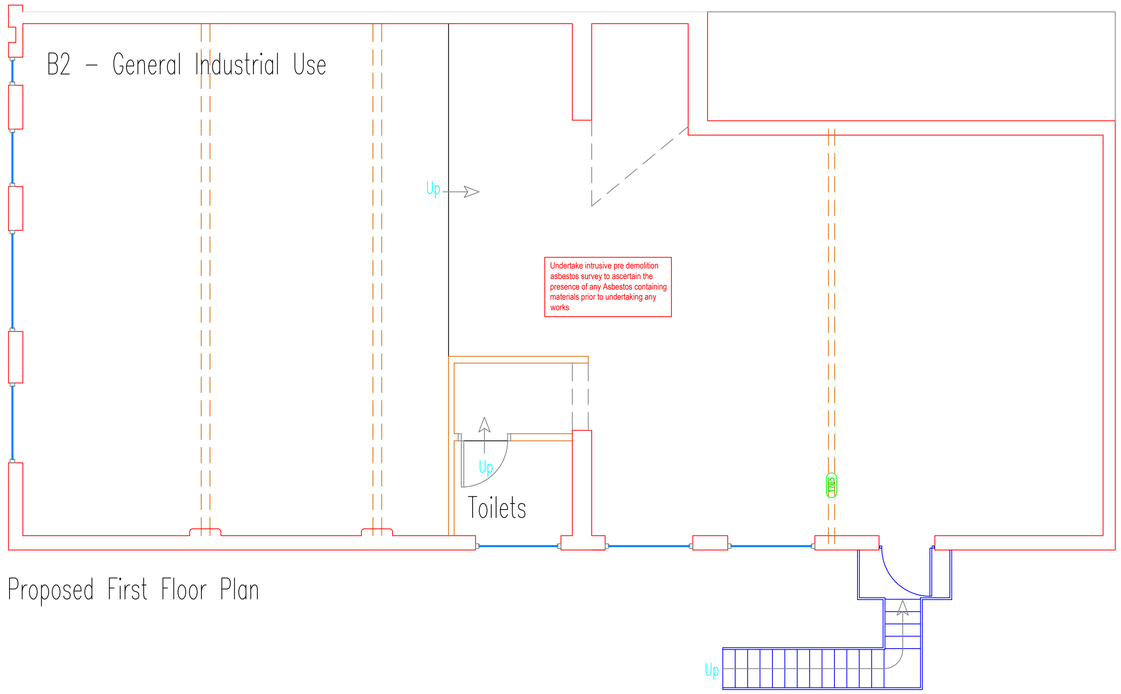
www.UKPlanningMaps.com



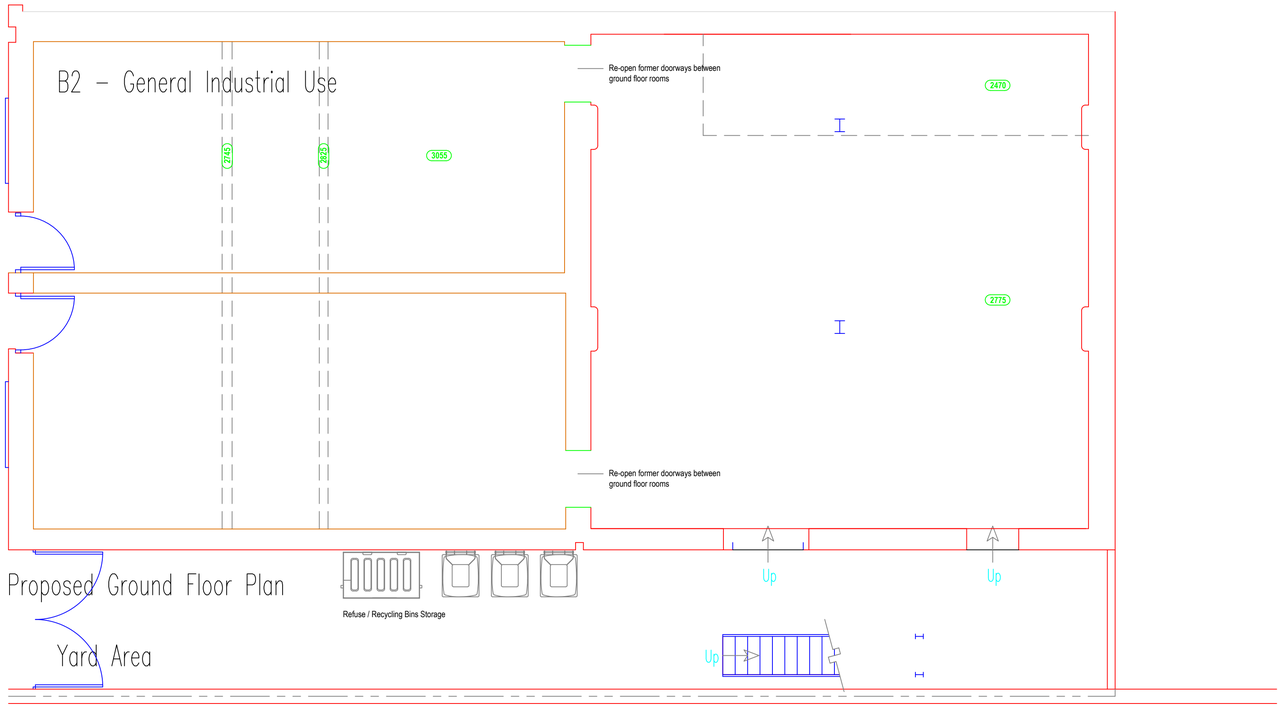
Produced on 22 August 2024 from the Ordnance Survey National Geographic Database and incorporating surveyed revision available at this date.
This map shows the area bounded by 383401 399668,383501 399668,383501 399768,383401 399768,383401 399668
Crown copyright and database rights 2024 OS 100054135. Supplied by copla ltd trading as UKPlanningMaps.com a licensed Ordnance Survey partner (OS 100054135).
Data licence expires 22 August 2025. Unique plan reference: v1f//1140309/1533867



Appendix B – Existing Floor Plan and Elevations

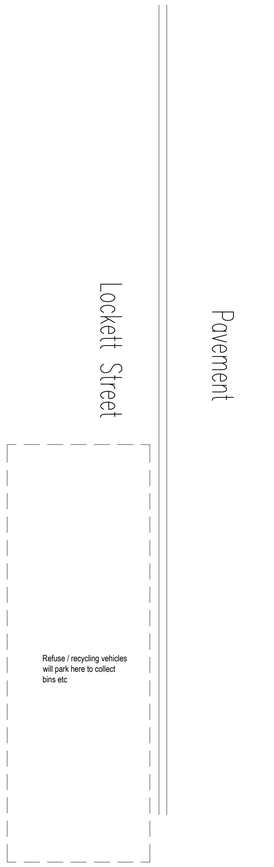


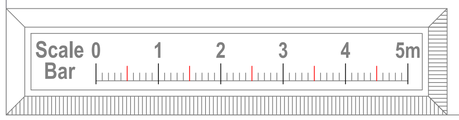
Proposed First Floor Plan



Proposed Ground Floor Plan

Yard Area





Scale for 1:50 on a A1 drawing sheet

GENERAL
No dimensions are to be scaled from this drawing, the contractor is to check and verify all building and site dimensions, levels, drainage locations / invert levels at connection points before work commences.

This drawing must be read with and checked against any structural, specialist and architectural drawings provided / required, the contractor is to comply in all respects with the current Building Regulations whether or not specifically stated on these drawings.

The contractor shall investigate the locations of all domestic services and allow for any necessary modifications to same to complete the project.

Before work commences ensure all Planning conditions and Building Regulation conditions have been resolved to the satisfaction of the Local Authority/Registered Building Control Approver.

All works to comply with BS8000 series, all materials to be used and installed in accordance with the relevant manufacturers instructions and recommendations.

These drawings have been prepared only for the purposes of obtaining Local Authority approval.

The contractor is to notify Building Control/Registered Building Control Approver at the appropriate stages in construction necessary for them to determine the works statutory compliance and should the indicated thermal elements be altered at the construction stage the contractor must seek prior approval from the Building Control Officer/Registered Building Control Approver.

The contractor shall inspect all adjoining properties which may be affected by the works prior to commencement of the works and record and report with the respective owners any defects.

All drainage lines are assumed and shall be confirmed by the client / contractor prior to commencing the works / finalising costings. It is the clients responsibility to undertake all necessary searches with the relevant water / drainage utility company to establish if any water pipes / drains on the clients property are public assets and if so advise the designers accordingly. The client / contractor shall establish the classification of the drains in accordance with the Water Industry Regulations 2011 and if deemed public sewers / water supply pipes then obtain all necessary permissions / diversions etc. from the relevant utility company / building control officer prior to commencing works.

BUILDING SAFETY ACT 2022
The Building Owner/ Client MUST avail themselves of their responsibility under the Building Safety Act 2022. It is a now a CRIMINAL OFFENCE not not to comply with this Act or the Building Regulations 2010. The Building Owner / Client MUST appoint a Principle Designer to ensure that ALL Dutyholders under the Act are competent for the project they are working on. Our engagement is ONLY to obtain plan stage approval from the Registered Building Control Approver or Local Authority and we have not been engaged to perform any functions during or post the construction phase of the project. We will only undertake the role of Principle Designer under the Building Safety Act 2022 during or post the construction phase of the project with prior written explicit agreement between ourselves and the Building Owner / Client. Our duty as a designer to comply with the Act during the design stage to show that it complies with the Building Regulations will be evidenced ONLY when an approved drawing(s) are issued by the Registered Building Control Approver or the Local Authority. Those Approved drawings are our attestation that we have complied with the requirement of the Act for a designer up until that stage ONLY.
The Building Owner / Client MUST then appoint a suitably qualified Principle Contractor and a Principle Designer to fulfill the requirements under the Act for the duration of the construction phase on ALL projects and we repeat that we have not been engaged to undertake the role of Principle Designer under the Building Safety Act for these stages. The appointed Principle Designers for the construction phase and the Principle Contractor MUST provide signed Building Regulation Compliance Declarations in accordance with requirement 2D of the Building Regulations etc (Amendment) (England) Regulations 2023.

PARTY WALL etc ACT
The building owner shall serve notice on all adjoining owners who will be affected by the proposed works as detailed under the Party Wall Act 1996 and receive written consents or appoint surveyors to determine a party wall award, before such works commence on site.

CDM - REGULATIONS
The client MUST avail themselves of their Legal Duties to comply with the CDM Regulations 2015 by visiting the following HSE website http://www.hse.gov.uk/pubns/indg411.htm and the requirements to appoint a Principle Designer and a Principle Contractor for works to commercial properties, and notify the HSE using an F10 form if the project extends to more than 30 days in duration with more than 20 operatives on site at any one time / or will involve more than 500 person days of work. For Domestic clients (those persons engaging services to be undertaken on their own home) the duties under the CDM Regulations are to be undertaken by the Contractor (or in the case where there is more than one contractor, the Client MUST appoint one contractor to undertake the role of Principle Contractor who will have the responsibility to co-ordinate all H&S matters across all contractors involved in the project.

The client has NOT appointed myself as the Designer / Priciple Designer to undertake the duties required under this role as required under the CDM Regulations 2015. The client is aware of their Legal Duty to appoint a competent person to undertake this role in good time BEFORE the construction works commence on site to ensure that the project has been effectively planned, managed, monitored and co-ordinated with respect to Health and Safety matters.

The client must ensure that all appropriate pre-construction information is obtained and provided in good time to the Contractors / Principle Contractors BEFORE construction activities commence on site and the Principle Contractor MUST prepare a suitable Construction Phase Plan on ALL projects BEFORE works commence on site.

CDM - DESIGNERS RESIDUAL RISK ASSESSMENT
No asbestos survey has been undertaken and a level 3 intrusive survey must be undertaken prior to commencing works, should any asbestos containing materials be identified then appropriate action must be taken by licensed contractors to remove any risk to the contractors / occupants / members of the public.In addition to the level 3 survey the contractor shall report any materials which he suspects may contain asbestos and ensure that samples of same are tested for the presence of asbestos.

All demolition works to be undertaken by CITB operatives using appropriate temporary supports. The contractor shall ensure that means of escape are maintained throughout the construction project. All construction activities are to be adequately segregated from members of the public and any occupiers of the building / adjacent properties in accordance with HSG 151 Protecting The Public.

No services investigations have been carried out, the contractor must undertake "dial before you dig", tel 0800 0855 865, investigations before commencing excavations on site. The client must undertake all necessary enquiries with sewerage and water utility companies to establish the exact routes of any public sewers / water mains etc and obtain all necessary agreements /diversions before commencing any works.

All works at height to be undertaken from appropriate working platforms.

The contractor shall programme the works and undertake all necessary temporary measures to maintain the means of escape for the premises throughout the project.

All electrical works to be undertaken in accordance with BS7671 and the latest IEE Regulations, all installations to be inspected and certified by NICEIC / ECA registered engineers. A CO detector shall be installed in each room containing a gas appliance and a smoke detector shall be placed on each floor in all properties offered for rent from 1st October 2015.

All works to gas appliances / pipework / fittings to be undertaken by appropriately licensed engineers who are part of the Gas Safe Register.

BOUNDARIES
The client shall confirm the exact position of legal boundaries, any boundaries shown on these drawings are notional / as advised by the client and must be accurately established before any construction works commence. The client shall obtain all necessary consents from adjoining owners should access be required to their property.

Rev.	Mod. Notes	Date	By
B	Issued for planning	Aug 24	DAP

Client
Mr Anwar

Location
13 Lockett Street
Manchester M8 8EE

Job Title
Proposed change of use from Retail Units to B2

Drawing Title
Proposed Floor Plans

Scale See scale bar	Sheet A1
Date July 24	Drawn by DAP

Dwg. No.	Rev.
81/24-02	B

					Undefended												Defended										
Map Reference	Model Node Reference	Easting	Northing	Data	20 % AEP (1 in 5 year)	10 % AEP (1 in 10 year)	4 % AEP (1 in 25 year)	2 % AEP (1 in 50 year)	1.33 % AEP (1 in 75 year)	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year) + 30% Increase in Flow	1 % AEP (1 in 100 year) + 35% Increase Flow	1 % AEP (1 in 100 year) + 70% Increase Flow	0.5 % AEP (1 in 200 year)	0.1 % AEP (1 in 1000 year)	20 % AEP (1 in 5 year)	10 % AEP (1 in 10 year)	4 % AEP (1 in 25 year)	2 % AEP (1 in 50 year)	1.33 % AEP (1 in 75 year)	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year) + 30% Increase in Flow	1 % AEP (1 in 100 year) + 35% Increase Flow	1 % AEP (1 in 100 year) + 70% Increase Flow	0.5 % AEP (1 in 200 year)	0.1 % AEP (1 in 1000 year)
1	ea013_0208_IRW13899	383197	399341	Modelled Water Level (m aodN)	25.43	25.75	26.27	26.57	26.70	26.94	28.33	28.57	30.01	27.48	30.64	25.65	26.02	26.35	26.57	26.69	26.76	27.66	27.84	29.60	27.06	30.29
				Modelled Flow (cumecs)	294.43	332.97	387.94	416.54	427.80	443.18	463.96	461.90	457.02	464.63	440.40	318.32	356.63	387.12	406.65	417.38	425.09	482.72	481.00	461.07	472.40	435.80
2	ea013_0208_IRW13692	383382	399324	Modelled Water Level (m aodN)	25.32	25.64	26.18	26.48	26.61	26.83	28.18	28.44	29.95	27.35	30.60	25.54	25.92	26.26	26.48	26.61	26.68	27.52	27.69	29.53	26.98	30.24
				Modelled Flow (cumecs)	294.54	333.01	388.01	416.70	433.33	457.32	508.89	506.19	480.96	498.71	466.21	318.42	356.75	387.29	406.85	417.61	425.33	516.71	518.61	509.23	472.52	474.40
3	ea013_0208_IRW13571	383553	399238	Modelled Water Level (m aodN)	25.17	25.48	26.02	26.33	26.46	26.67	28.02	28.30	29.89	27.18	30.55	25.39	25.77	26.11	26.34	26.47	26.55	27.36	27.53	29.45	26.83	30.19
				Modelled Flow (cumecs)	294.60	333.04	388.06	416.74	434.28	460.28	548.53	545.82	530.36	509.27	517.98	318.47	356.83	387.40	406.98	417.76	425.47	528.87	539.41	541.44	472.59	519.73
4	ea013_0208_IRW13338Bu	383619	399074	Modelled Water Level (m aodN)	25.08	25.40	25.94	26.26	26.40	26.60	27.93	28.19	29.72	27.13	30.42	25.30	25.69	26.04	26.28	26.41	26.49	27.31	27.47	29.27	26.77	30.04
				Modelled Flow (cumecs)	294.76	333.14	388.18	416.88	434.37	460.32	587.62	606.70	684.94	511.71	672.43	318.63	357.02	387.65	407.28	418.08	425.77	533.15	547.35	678.73	472.76	673.98
5	ea013_0208_IRW1_3226	383757	398971	Modelled Water Level (m aodN)	24.91	25.20	25.73	26.03	26.17	26.35	27.58	27.79	29.05	26.84	29.77	25.12	25.49	25.84	26.07	26.20	26.27	27.00	27.15	28.65	26.51	29.37
				Modelled Flow (cumecs)	294.84	333.19	388.23	416.97	434.41	460.33	587.22	605.82	674.46	511.72	661.25	318.71	357.12	387.77	407.41	418.24	425.92	533.18	547.41	670.03	472.83	661.85

					Undefended								Defended		
Map Reference	Model Node Reference	Easting	Northing	Data	2 % AEP (1 in 50 year)	1.33 % AEP (1 in 75 year)	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year) + 30% increase in flow	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 70% increase in flow	0.5 % AEP (1 in 200 year)	0.1 % AEP (1 in 1000 year)	1 % AEP (1 in 100 year) + 30% increase in flow	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 70% increase in flow	0.1 % AEP (1 in 1000 year)
6	2D Levels	383546	399555	Modelled Water Level (m aodN)	27.19	27.40	27.49	28.35	28.57	29.98	27.74	30.61	27.83	27.95	29.57	30.26
7		383554	399559	Modelled Water Level (m aodN)	27.19	27.40	27.49	28.35	28.57	29.98	27.75	30.61	27.84	27.95	29.57	30.26

Model data taken from Lower Irwell 2017

AEP - Annual Exceedence Probability

m aodN - metres above ordnance datum Newlyn

cumecs - cubic metres per second

Notes: *Climate Change Scenario - 30%, 35% and 70% increases in flow calculated for the 2080's (2070 - 2115). Please see https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances for more information regarding the new climate change guidance. The location of the site and the type (vulnerability) of development determine the climate change allowances to consider in any flood risk assessment.

Recorded Flood Outlines

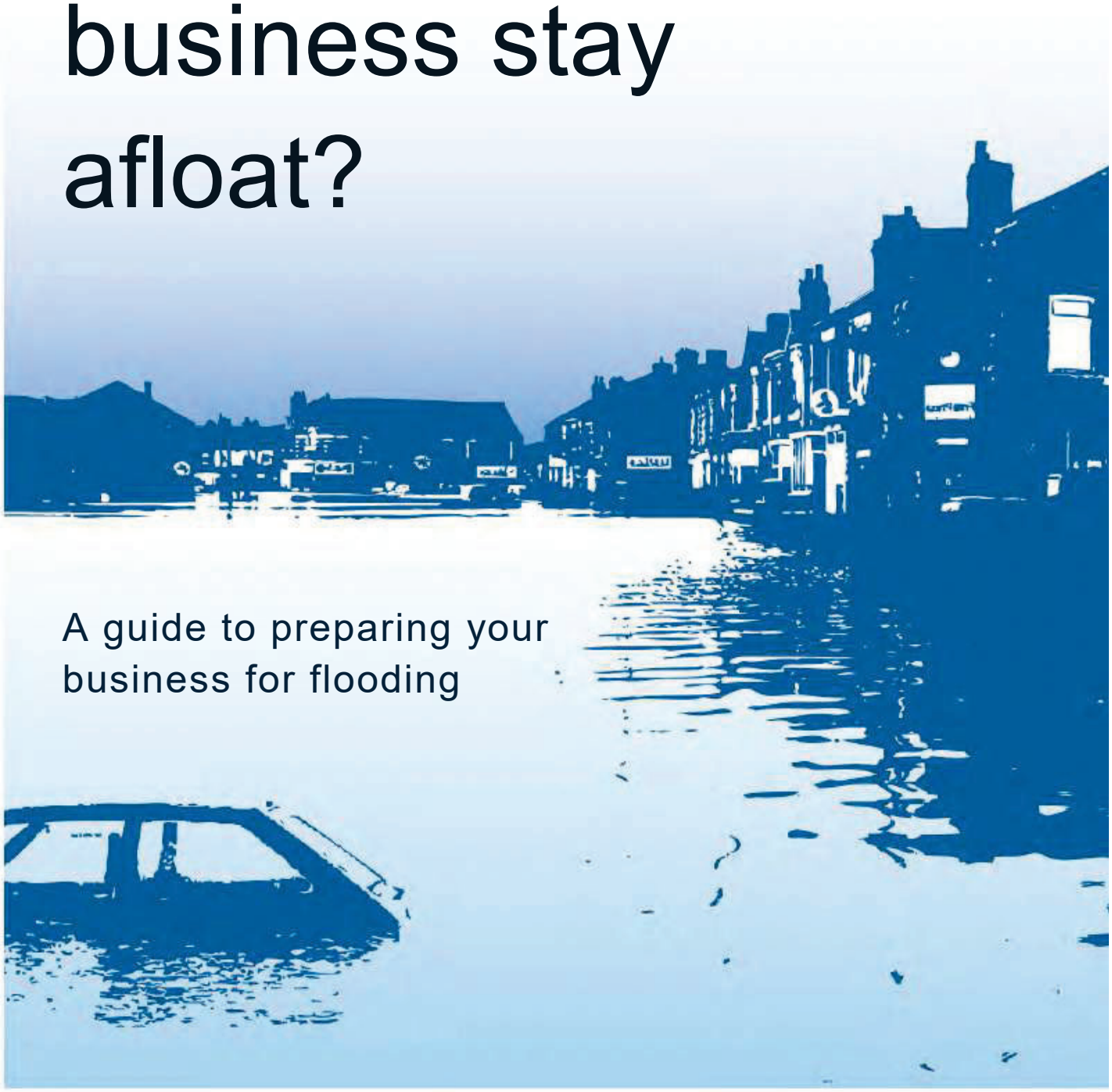
Flood Event Code	Name	Start Date	End Date	Source of Flooding	Cause of Flooding
18323	IRWE	20/09/1946	21/09/1946	Main river	channel capacity exceeded (no raised defences)
27119	IRWE	01/11/1866	02/11/1866	Main river	channel capacity exceeded (no raised defences)
56702	Lower Broughton	26/12/2015	26/12/2015	Main river	Unknown

Flood Defences

Start Date	Asset Type	Asset ID	Standard of Protection	Upstream Actual Crest Level (m aod)	Downstream Actual Crest Level (m aod)
01/01/2003	Embankment	123679	75	27.77	27.48
14/12/2012	Wall	181081	75	27.10	27.07
01/01/2010	Wall	182895	75	29.10	29.10
01/01/2003	Embankment	185864	75	28.33	27.60
01/01/2003	Embankment	437717	75	28.78	28.78
Unknown	Embankment	452758	75	27.10	27.10
01/01/2003	Wall	59942	75	29.93	29.94
01/01/2003	Engineered High Ground	88831	75	27.66	27.44
01/01/2003	Embankment	88832	75	28.91	28.78
01/01/2003	Engineered High Ground	88843	75	27.99	22.22
01/01/2003	Engineered High Ground	88893	75	27.44	27.20
01/01/2003	Wall	89019	75	28.80	28.80
01/01/2003	Engineered High Ground	89056	75	27.06	28.33
01/01/2003	Wall	90454	75	30.07	28.88
01/01/2003	Wall	90457	75	29.69	29.47
01/01/2003	Wall	90459	75	29.96	29.95

Environment Agency

would your business stay afloat?



A guide to preparing your business for flooding

Flooding is the most common and widespread natural disaster in the UK. Since 1998 there has been at least one serious flood every year. Businesses like yours are more likely to be flooded than destroyed by fire. As our climate changes we can expect to see more extreme weather – and more floods.

We aim to reduce the likelihood of flooding by managing land, rivers, coastal systems and flood defences. While we do everything we can to reduce the chance of flooding, it is a natural process and can never be completely eliminated.

By taking action to prepare in advance for flooding, most businesses can save between 20 and 90 per cent on the cost of lost stock and movable equipment, as well as some of the trouble and stress that goes with such an event.

This is a simple guide to some of the easy actions that you can take to make sure that your business is as well prepared as possible.

It tells you about how to find out if your business is at risk, our flood warning service and what our flood warning codes mean. It also has a simple template to use to design a flood plan for your company.

For more information about flooding, visit our website at **www.gov.uk/flood** or call Floodline on **0345 988 1188**.

Make sure that your business is prepared for flooding.

How do I find out if my business is at risk from flooding?

There are two quick and easy ways for you to find out if you're at risk.

call us on
0345 988 1188

Our Floodline service is open 24 hours, calls are charged at local rate. By taking your postcode, our operators will check and see if your business is in a flood risk area.

Look at our website
www.gov.uk/flood

You need to be aware of flooding and keep an eye on the water levels and weather situation at all times. You can do this by checking the flood forecasts and the river and sea levels on our website.

Our online flood map uses the latest technology and data gathered over many years to give the most accurate view of flooding in your area.

By entering your postcode you can find out if your business is at risk. Areas at risk from flooding are shown in dark blue and areas at risk from extreme flooding in light blue.

My business is at risk from flooding. What should I do now?

Start preparing now. If the weather conditions are right, flooding can happen at any time.

Remember, floods can happen at any time and any day – make sure you provide a number that can be contacted at all times – even out of working hours.

Sign up for flood warnings.

The first thing you should do is find out if you can receive flood warnings. In areas of high flood risk, we offer a service called Floodline Warnings Direct. This is a free, 24 hour service that sends automated flood warnings by telephone, SMS text, email, fax or pager.

To find out if you can receive this service, call Floodline on 0345 988 1188.

If your business isn't in an area covered by our warnings you can still check the latest flood warnings in force on our website.

When the situation is serious, flood warnings will also be broadcast on local television and radio news.

What practical steps can I take to protect my business?

Now that you've checked your risk and found out about flood warnings, it's time to start thinking about preparing a flood plan specifically for your business.

Taking simple steps can go a long way to protecting your business from flooding. Preparing a flood plan could:

- Significantly reduce financial losses, damage to property and business interruption;
- Help compliance with regulatory requirements (for example, Occupier's Liability Act 1984);
- Reduce exposure to civil or criminal liability;
- Enhance your company's image and credibility with employees, customers, suppliers and the community;
- Help fulfil your moral responsibility to protect employees, the community and the environment;
- Help you to obtain insurance cover.

What is a flood plan?

Just as many businesses have health and safety policies and contingency plans for an emergency, they should also have flood plans.

A flood plan is a written document that outlines how your business will respond to a flood.

This might include a list of steps you will take in case of a flood and the order you will take them in. It could also include the purchase of flood products and insurance.

A written plan can make information **easy** to access during a flood, **easy** to communicate to staff, and **easy** to remember.

Small businesses should make sure there is a plan of action in case of flooding. As the business owner, this may be your responsibility.

If your business is **medium sized**, flood preparation might be the responsibility of a team of people from different areas of the business.

If your business decides to have a flood planning team, this could be led by the business owner or Managing Director.

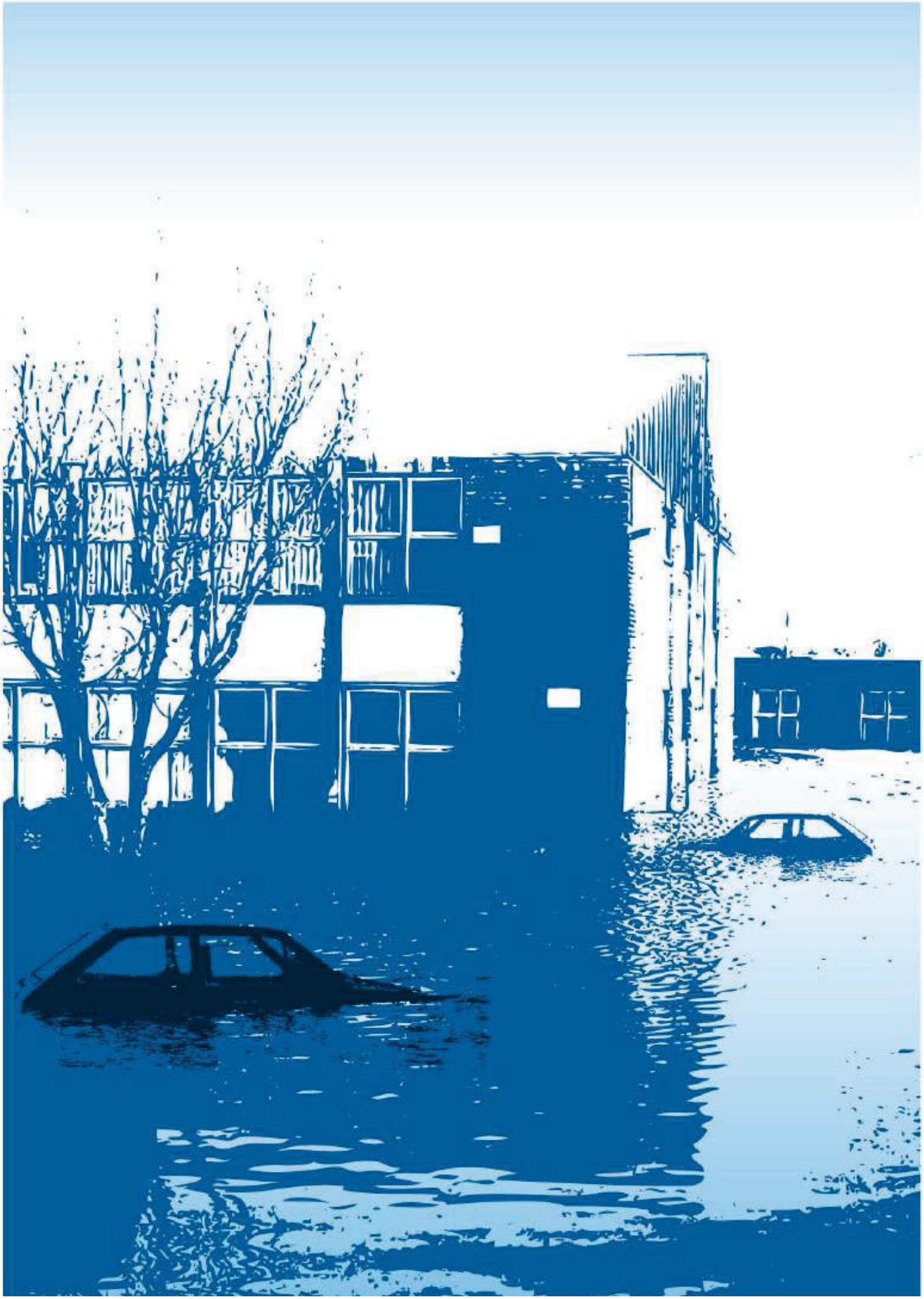
The leader of the flood planning team will need to let staff know about the plan once it is finished.

All members of the team should also keep a copy of important flood contacts at home for easy access.

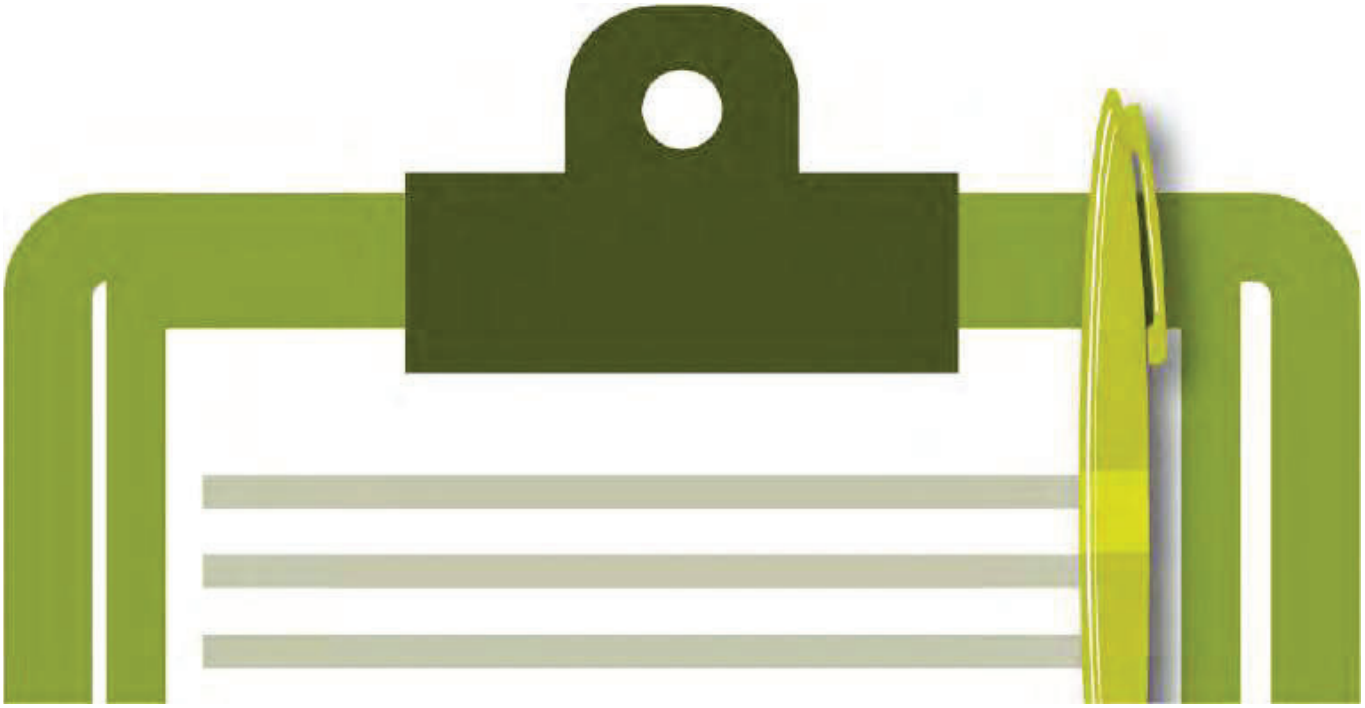
Key areas to consider in your flood plan are:

- human resources;
- maintenance/facilities;
- finance and purchasing.

Once you have completed your plan don't forget about it. Look at it regularly and make sure it is up to date and in the event of a flood **use it**.



business flood plan



A written flood plan is recommended for businesses.

It should include:

- A list of important contacts, including Floodline, building services, suppliers and evacuation contacts for staff;
- A description or map showing locations of key property, protective materials and service shut-off points;
- Basic strategies for protecting property, preventing business disruption and assisting recovery;
- Checklists of procedures that can be quickly accessed by staff during a flood.

If a flood is imminent, your main priority is to make sure that your staff are safe. However there may be other actions that you can take to prepare your building and it's contents to minimise damage and post-flood repair and restoration costs.

Business flood plan

Flood plan for _____ dated _____

Registered address _____

_____

Postcode _____

Staff contact list

Name	Address	Telephone/mobile	Emergency contact	Emergency telephone and address

Note staff who may require assistance in the event of a flood.

Name	Office location

Key locations

Service cut-off	Description of location
Electricity	
Gas	
Water	

Answer the following if applicable

	Description of location	How to protect from a flood (for example, move, cover, tie down)
First Aid Kit		
Oil based products (gasoline, oil, cooking oil etc.)		
Chemicals (including cleaning products)		

Protective actions

Identify stock, equipment and possessions that may need special protective measures, and describe the actions you will take to prevent damage in the event of a flood. We have suggested items and ways to protect them, but make sure you follow through on your plans.

think about:

- Computers;
- Tables / heavy furniture;
- Vehicles;
- Paper files;
- Electrical items;
- Chairs / stools;
- Databases;
- Soft furnishings;
- Computer files;
- Staff files.

ways to protect items

- Make a copy of important documentation and store in safe location;
- Raise items above ground level;
- Buy flood protection products;
- Buy new flood-resistant items;
- Move items to a safer location if possible – to an upper level of the building or off site.

Valuable item	Protective action	New location (if applicable)	Done
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐

Suggested basic building materials to help protect your property

If materials are not needed, leave the relevant section blank

Materials	Used for	Items to protect / where to use	Storage location	Done
Sand and sand bags (unfilled), shovel	Creating flood barriers (used with plastic sheeting)			☐
Tools – hammer, nails, saw	Boarding up doors, windows and openings, creating shelves			☐
Wood – plywood, blocks of wood	Boarding up doors, windows and openings, creating shelves			☐
Sturdy plastic sheeting	Sandbag barriers, pulling up around furniture and appliances			☐
Strong plastic bags	Putting around legs of tables and chairs			☐
Pallets	Raising stored stock above flood level			☐
Emergency power generator	Maintaining function of air conditioning units (can help dry out a building), running fridges and freezers, medical equipment if appropriate			☐

Identify people who can help you before, during and after a flood, and what they can do.

We have suggested ways they might be able to help, but you'll need to discuss this with them.

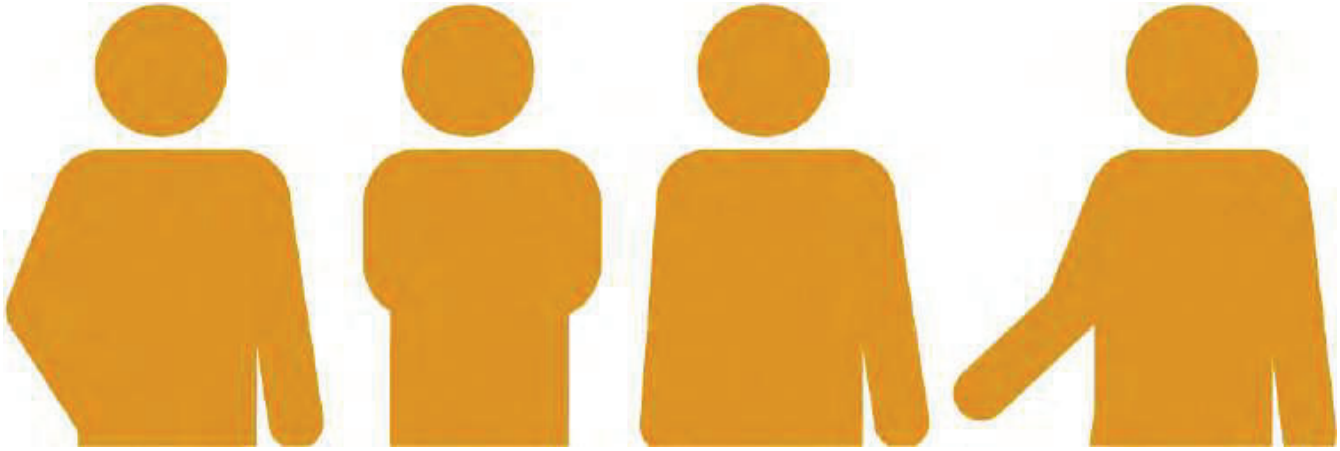
Name	Address	Telephone day	Telephone evening	Mobile

Ways people can help

- assistance with installing flood products;
- assistance with transporting stock/materials to new location if possible;
- provision of emergency storage;
- provision of emergency supplies or medical support if required.

discussion guide

This discussion guide sums up the key areas of flood planning. Some of this information can be found in this pack to help get you started.



Research

- Look at your existing business policies, and think about whether they are appropriate in the event of a flood.

Staff

- Make a list of **employees' contact details in the event of an evacuation**. This might include mobile telephone numbers, or numbers for their home or the home of a friend or relative;
- Think about staff who **may need special assistance** in the event of a flood (for example, elderly, deaf, blind etc.)

Security procedures

- **Locking windows, doors** and **setting the alarm**. You might need more than one person to help do this;
- Insurance policies – **Are you insured for flood damage**, business interruption and lost revenue?
- Employee manuals – You might **add flood safety to staff information packs**, or adapt job descriptions to include flood warden duties;
- Hazardous materials plan – You must ensure that **chemicals, oils** and other **substances in your possession are kept safe** and do not contaminate flood water;
- Health and safety assessment – Plan to **check the functioning of flood products and flood warning systems regularly**, just as you do for fire safety equipment.

Check codes and regulations that might apply to your business in the event of a flood. The following could provide guidance on the right actions to take:

- Occupational health and safety regulations;
- Environmental regulations.

Important contacts

Make a list of important telephone numbers, including contacts for gas, electricity, water and telephone providers.

Key locations

- **Know the location** of cut-off points for gas, electricity and water. Ideally, these should be marked on a map that is stored with your flood plan;
- Know the location of chemicals, oils or other materials that could be dangerous or contaminate flood water. These should be stored safe from floods and other damage.

Protective actions

- Note key stock, equipment and possessions that may need special protection from flood water;
- Consider things you may need during or after a flood (for example, sandbags, plastic sheeting, loudspeaker);
- See if it's **possible to move key operations**, such as shipping or customer services, to another building.

Suppliers and external links

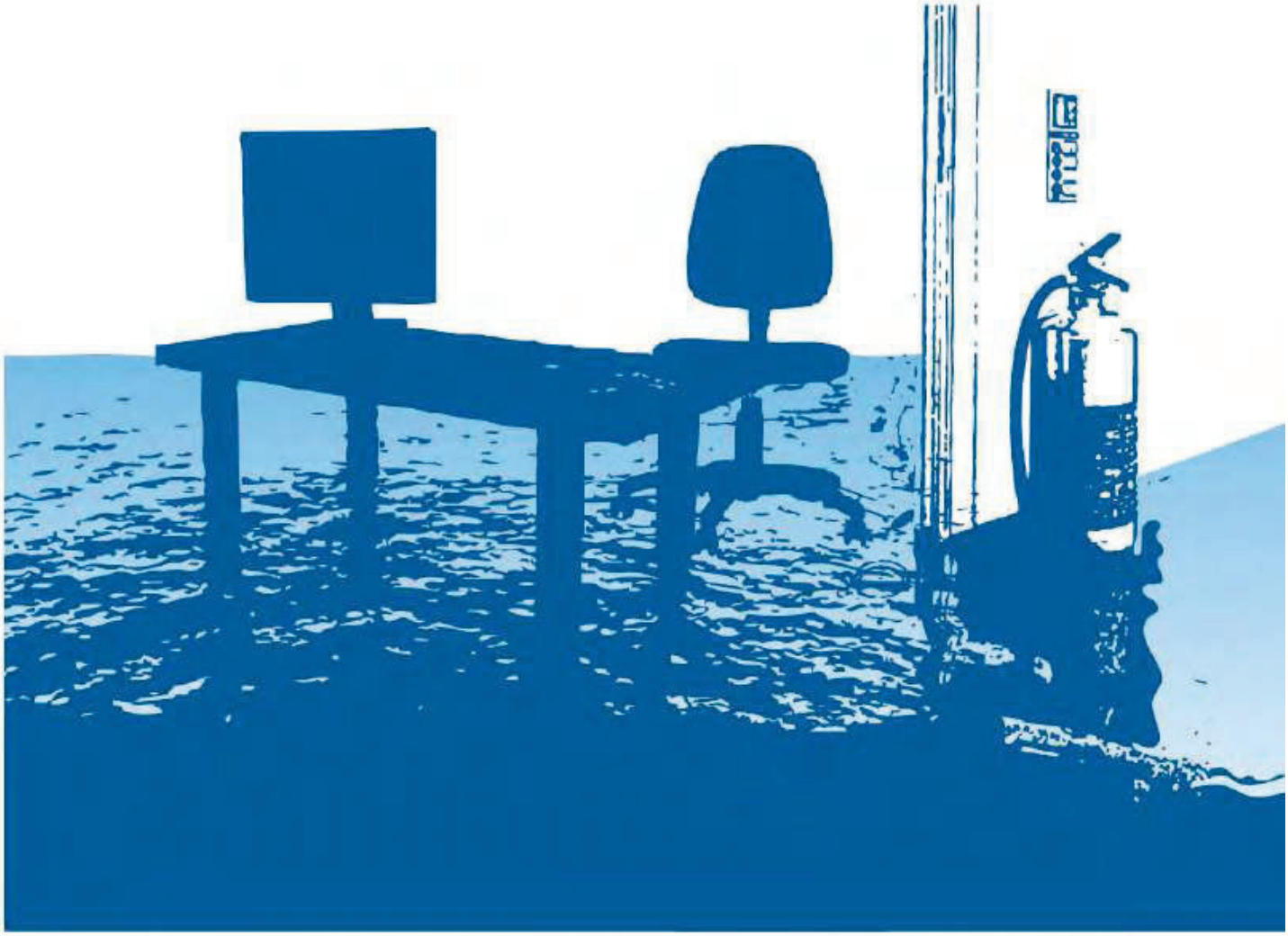
- Identify products and services you won't need in the event of a flood, or which suppliers may not be able to provide. **Make back-up plans** or arrangements for short-notice cancellation of deliveries;
- Consider contracting in advance with companies whose help you may need after a flood.

business checklist

Are you prepared for flooding?

If you answer no to any of the questions overleaf, there may be more you can do to protect your business.

The individual sections will give you valuable information on effective actions you can take to prepare for a flood.



If you can answer yes, please ☒, otherwise leave blank for no.

Know if you're at risk

- ☐ Do you know if you're at risk of flooding?
- ☐ Are flood warnings available in your area?
- ☐ Do you know how you can receive flood warnings?

Preparing a flood plan

- ☐ Do you know how your business will respond to a flood?
- ☐ Do you have a list of useful numbers including Floodline, local authority and insurance company?
- ☐ Do you know how to shut off your gas/electric/water supplies?
- ☐ Are your stock, fittings and valuable equipment stored above flood level?
- ☐ Have you developed flood contingency plans with suppliers and/or clients?
- ☐ Can you call someone to help you in the event of a flood?

Staff training and evacuation

- ☐ Are you aware of correct flood safety procedures for you and your staff?
- ☐ Have you trained your staff on flood safety procedures?
- ☐ Can your staff work quickly and efficiently to protect your business in the event of a flood?

Protecting your property

- ☐ Have you installed flood protection products?
- ☐ Do you have a stockpile of useful materials including plywood, plastic sheeting, sandbags (unfilled), sand, nails, hammer, shovel, blocks of wood and a saw?
- ☐ Have you installed non return valves in your toilets and drains?
- ☐ Do you and your staff have high ground where you can park your cars?
- ☐ Are your electrical sockets above flood level?
- ☐ Do you have computer equipment in the basement?

Flood insurance

- ☐ Do you have sufficient insurance cover in the event of a flood situation?
- ☐ Do you know what information your insurer will require to support a claim?

Evacuation

- ☐ Do you have an easy way to let your staff know about an evacuation?
- ☐ Do you know which roads will stay open in your area during a flood?
- ☐ Have you identified where staff can shelter in the event of a flood?
- ☐ Could you control staff panic during a flood?

understand your flood warning codes

Our warning service has three types of warnings - Flood Alert, Flood Warning and Severe Flood Warning - that will help you prepare for flooding and take necessary actions.

ONLINE FLOOD RISK FORECAST

What it means

Be aware.
Keep an eye on the weather situation.

When it's used

Forecasts of flooding on the Environment Agency website are updated a least once a day.

What to do

- Check weather conditions.
- Check for updated flood forecasts on our website.

What it means

Flooding is possible.
Be prepared.

When it's used

Two hours to two days in advance of flooding.

What to do

- Be prepared to act on your flood plan.
- Prepare a flood kit of essential items.
- Monitor local water levels and the flood forecast on our website.

FLOOD WARNING

What it means

Flooding is expected. Immediate action required.

When it's used

Half an hour to one day in advance of flooding.

What to do

- Move staff, stock and valuables to a safe place.
- Turn off gas, electricity and water supplies if safe to do so.
- Put flood protection equipment in place.

SEVERE FLOOD WARNING

What it means

Severe flooding. Danger to life.

When it's used

When flooding poses a significant risk to life.

What to do

- Stay in a safe place with means of escape.
- Be ready should you need to evacuate.
- Co-operate with the emergency services.
- Call 999 if you are in immediate danger.

WARNING NO LONGER IN FORCE

What it means

No further flooding is currently expected in you area.

When it's used

When river or sea conditions begin to return to normal.

What to do

- Be careful. Flood water may still be around for several days.
- If you've been flooded, ring your insurance company as soon as possible.

useful contacts

Fill in the contact details you may need if your business floods. Keep it in a safe place, where you can hold of it quickly.

	Company name	Telephone number/s
Environment Agency Floodline		0345 988 1188
Electricity supplier and meter number		
Gas supplier and meter number		
Water supplier and meter number		
Telephone provider		
Local authority emergency services		
Insurance company 24-hour number and policy number		
Insurance agent		
Local radio station for news alerts and weather updates		
Companies that may be able to help you after a flood		
Electrician		
Plumber		
Builder		
Equipment repair/suppliers		
Security services		
Water pumping services		
Emergency power suppliers		

Would you like to find out more about us, or about your environment?

Then call us on
08708 506 506* **(Mon-Fri 8-6)**

email
enquiries@environment-agency.gov.uk

or visit our website
www.gov.uk/environment-agency

incident hotline 0800 80 70 60 (24hrs)
floodline 0345 988 1188 (24hrs)

*** Weekday Daytime calls cost 8p plus up to 6p/min from BT Weekend Unlimited. Mobile and other providers' charges may vary.**

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