

# Saltisford FRA

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# Warwick

## Final Report

July 2019

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## Contract

This report describes work commissioned by Kwaku Tano-Yeboah from Patrick Parsons, on behalf of Waterloo Housing Group, by an email dated 9/01/2019. Patrick Parsons' representatives for the contract were Kwaku Tano-Yeboah and Robert Masson. Erin Holroyd and Adam Church of JBA Consulting carried out this work.

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## Purpose

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## Executive summary

### Introduction

JBA Consulting was commissioned by Patrick Parsons, in December 2018, to prepare a Flood Risk Assessment (FRA) for a proposed development at St Michaels Hospital, Saltisford, Warwick.

Flood risk to the site has been determined from hydraulic modelling, publicly available information and a review of the site topography, in accordance with the revised National Planning Policy Framework (NPPF) 2018 and associated Planning Practice Guidance (PPG).

### Proposal details

The proposed development site is located off the A425, Saltisford, Warwick. The site is approximately 0.21ha in size and currently predominately greenfield. The site is the historical site of 15<sup>th</sup> Century Leper Hospital and contains two listed buildings, The Master's House (Grade II\* listed) and the Chapel (Grade II listed). The proposal plans to finance the refurbishment of the dilapidated historical buildings with a new build within the north of the site. Current access to the site is achieved from the A425. The proposal is for a mixed-use development and includes:

- A new apartment block with associated facilities (including car parking), in the southern section of the site
- The refurbishment of the Chapel into a 1-bed house
- The refurbishment of the Master's House, residential.

### Fluvial flood risk

The revised NPPF classifies residential dwellings as "More Vulnerable" and office space(s) as "Less Vulnerable".

The Saltisford Brook flows approximately 45m to the north/northwest of the site. According to the Environment Agency (EA)'s Flood Zone maps, the proposed development site is located within Flood Zones 2 and 3.

A hydraulic modelling study of the Saltisford Brook was undertaken for the 20-year, 100-year, 100-year with (35%) climate change, 100-year with (70%) climate change and 1,000-year fluvial flood events. Model results indicate that flooding is concentrated to the north of the site, with depths decreasing towards the south of the site in all modelled scenarios.

In the worst-case flood scenario, flood hazard to people mapping shows there is a moderate to significant risk to people across the site. Exploration of this mapping shows there is no safe egress route off third party land and safe access and egress to/from the site is maintained via A425, westbound, where there is low-no flood risk during any modelled fluvial flood events.

### Other sources of flood risk

The EA Risk of Flooding from Surface Water (RoFSW) maps indicate the site is at a medium risk of surface water flooding. The overall risk impacts the north of the site within 1 in 30-year extents which reduces towards the south of the site and the A425. The chapel is at low risk from surface water flooding.

Groundwater flood risk to the site is considered to be low with no documented cases of groundwater flooding in the vicinity of the proposed development.

The EA Reservoir Flood Risk map shows the site is not within the modelled extents of reservoir failure. As such the risk is deemed to be negligible.

There are no site-specific records of sewer flooding relating to the proposed development site.

### **Flood mitigation measures**

In order to mitigate against the flood risk within the site the following is recommended:

- With regards to the new apartment block building, the Finished Floor Levels (FFL) and openings (e.g. air bricks) should be set to the highest of the following values:
  - 150mm above the surround ground level
  - 600mm above the 100-year with (35%) climate change flood level
  - Above the 100-year with 70% climate change flood level

Using the worst-case scenario (i.e. 600mm above the 100-year with (35%) climate change flood level), this corresponds to a min FFL 56.78m AOD throughout the site.

- With regards to the Chapel, where a change-of-use into residential development is being considered, the site falls outside of the 100yr floodplain but remains located within the 100-year with (35%) climate change floodplain. As a result, the FFL should ideally be raised, if practical (i.e. with consideration of the Grade II nature of the building) but can be kept to existing level provided that bedrooms are exclusively located on the upper floor.
- For the Master's house redevelopment, where a change-of-use into residential development is being considered, the site falls within the 100-year floodplain. As a result, the Finished Floor Level should be raised, if practical (i.e. with consideration of the Grade II\* nature of the building).

The following **flood resilience** measures should also be implemented within The Chapel and The Master's House:

- Services such as electrical fittings, kitchen appliances and sanitary ware should be fitted above the maximum expected height of flooding.
- Shallow flooding may occur outside of the proposed dwellings in the future and thus the electrical sockets, switches and wiring should meet the wiring regulations listed under Part M of the Building Regulation and BS7671.
- Materials that are resilient to water should try to be integrated into the design where possible. For example, hard surfaces can be used, such as tiles or stone flooring. Ground floors should be concrete with a suitable damp proof membrane connected to the external walls. Internal walls and skirting should be waterproofed.
  - All external walls should be waterproof which can be achieved through the application of waterproof render.
  - Kitchen units and appliances should be raised.
- With regards to the new build, it is recommended set the building on stilts to minimise its impact on floodplain capacity. To support this, it is recommended to set the minimum void soffit level to 56.33m AOD, i.e. 150mm above the 100-year with (35%) climate change peak water level. As such, assuming a building floor slab thickness of 450mm floor slab, the

minimum Finished Floor Level of the dwelling will be set 600mm above the 100yr (+35%) climate change flood level (i.e. min FFL=56.78m AOD).

- The post-development surface water runoff from the northern part of the development site should be managed utilising SuDS techniques. The Surface Water Drainage Strategy was prepared by Patrick Parsons and is available in an external report.
- When considering landscaping of the site the ground levels should be set to route any overland flows away from the dwellings and towards formal drainage systems or less vulnerable areas like roads and open spaces.
- Access road/ car park spaces should slope away from the proposed building.
- To minimise the hazard to people classification on-site, building a boardwalk to enable permanent safe access and egress during the peak of the 100-year with (+35%) climate change flood event to/from the proposed new building was initially considered and later discarded to the impact to the heritage assets at the front of the site (The Chapel and The Master's House). As an alternative, early evacuation of the site should be considered and, once evacuation becomes unsafe, the proposed new building will be used as a safe refuge.
- Flood alert services will initially be considered to trigger the evacuation of the site prior to a flood event. To reduce the current flood alert frequency (i.e. thrice over the last couple of years) and durations (i.e. up to 6 days in 2017 and 2018) the provision of new flood warning services should be considered. In 2018 Waterloo Housing Group merged with Fortis Living to create a new Group, called Platform Housing Group. Waterloo is an operating Association within Platform Housing Group. Waterloo Housing Group is currently in discussions with the Environment Agency regarding a small financial partnership contribution to help improve off-site mitigation measures, such as a water level monitoring station at the Saltisford Common Play Area, or to contribute into the possible EA led alleviation scheme in order to improve the alerts in this area, so that an early evacuation for this site can be considered. This is subject to agreeing the level of contribution sought and with consideration for the future use of the site as affordable housing – as a sizeable contribution would affect viability of the site. Any one-off contribution could help maintain, and feasibly, help improve the provision and efficiency of the storage area and flood alert service in order to provide a flood warning service. The storage area and provision of flood alerts already offers wider benefits to the existing area and if the development goes forward, will provide additional benefits to any approved dwellings on the Saltisford site. Waterloo are willing to work alongside the relevant flood risk management authorities as this development would offer additional wider sustainability benefits and assist with safeguarding properties.
- A flood marker board should be installed along the evacuation route within the site boundary. This flood marker board will inform:
  - When safe pedestrian access is lost.
  - When safe vehicular access is lost and persons remaining on-site should find a safe refuge.
- It is also recommended to consider the impact of the Environment Agency flood storage scheme currently under consideration upstream of the site once its timescale has been confirmed.

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## Abbreviations

AEP	Annual Exceedance Probability
CFMP	Catchment Flood Management Plan
EA	Environment Agency
FFL	Finished Floor Level
FRA	Flood Risk Assessment
FRP	Flood Response Plan
FZ	Flood Zone
Ha	Hectares
JBA	Jeremy Benn Associates
LiDAR	Light Detection and Ranging
M AOD	Metres Above Ordnance Datum
NPPF	National Planning Policy Framework
OS	Ordnance Survey
OS NGR	Ordnance Survey National Grid Reference
PFRA	Preliminary Flood Risk Assessment
PPG	Planning Policy Guidance
SFRA	Strategic Flood Risk Assessment
SuDS	Sustainable Drainage System
SWDS	Surface Water Drainage Strategy

# 1 Introduction

## 1.1 Terms of Reference

JBA Consulting were commissioned by Patrick Parsons to undertake a Flood Risk Assessment (FRA) for a residential scheme at the former St Michaels Leper Hospital in Saltisford, Warwick. This FRA report provides information on the nature of flood risk at the site and follows government guidance with regards to development and flood risk.

The site is approximately 0.21ha in size, is predominantly greenfield and includes the Master's House, a Grade II\* listed building, and the Chapel, a Grade II listed building.

This FRA provides information on the nature of flood risk at the site and follows government guidance with regards to development and flood risk. The flood risk to and from the site has been determined based on publicly available information, review of OS maps and site topographic survey data provided by Stadia Surveys.

## 1.2 FRA Requirements

This FRA has been prepared in line with the revised National Planning Policy Framework (NPPF) 2018. It is a requirement for development applications to consider the potential risk of flooding to a proposed development over its expected lifetime and any possible impacts on flood risk elsewhere, in terms of its effects on flood flows and runoff as a result of the development. Where appropriate, the following aspects of flood risk should be addressed in all planning applications within flood risk areas:

- The area liable to flooding;
- The probability of flooding occurring now and over time;
- The extent and standard of existing flood defences and their effectiveness over time;
- The likely depth of flooding;
- The rates of flow likely to be involved;
- The likelihood of impacts to other areas, properties and habitats;
- The effects of climate change;
- The nature and expected lifetime of the development and the extent to which the development is designed to deal with flood risk.

As the site is located within Flood Zones 2 and 3 and is to be re-developed into residential dwellings, it is classified as 'More Vulnerable' under the revised NPPF 2018. A Flood Risk Assessment (FRA) is required to consider the risk to the proposal from all sources of flooding, including fluvial (river), tidal, coastal, pluvial (surface runoff / surcharging sewers), flooding from reservoirs and groundwater. The flood risk to and from the site has been assessed in line with EA requirements.

This FRA determines whether:

- The site is at risk of any form of flooding;
- The proposed development will increase the risk of flooding to adjacent properties and land
- Safe access to and from the site is achievable;

Measures can be introduced to mitigate flood risk at the site

## 2 Site details

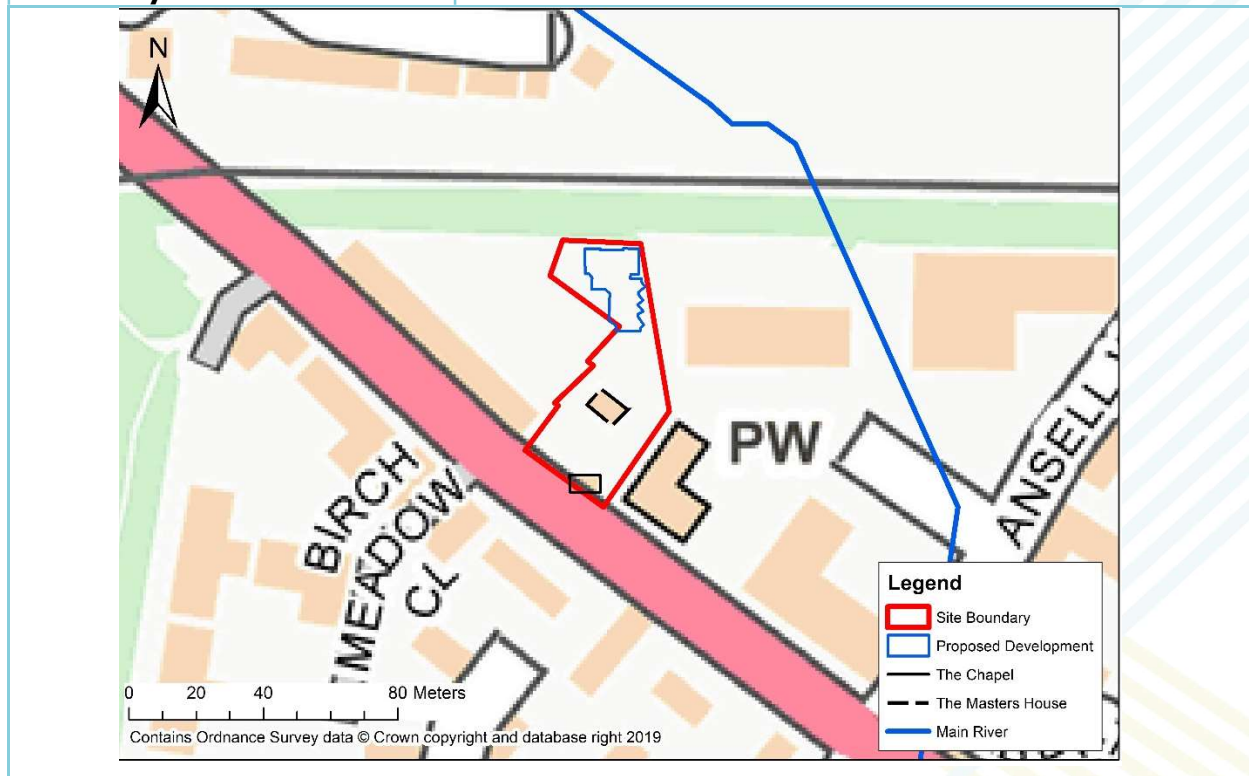
### 2.1 Site description

The proposed development site is located off the A425, Saltisford, Warwick. The 0.21ha site is predominately greenfield and includes two listed buildings which form part of the 15th Century St Michaels Leper Hospital. The site is bounded a railway line to the north, commercial units to the east and residential units to the west. Access to the site is via the A425 to the south

The nearest watercourse from the site is the Saltisford Brook, a tributary of the River Leam, located to the North West/West of the site. The site location and key site details are represented in Table 2-1.

Table 2-1: Summary of site details

<b>Site name</b>	St Michaels Hospital
<b>Site area</b>	0.21ha
<b>Existing land-use</b>	Predominately greenfield
<b>Purpose of development</b>	Mixed-use – New residential dwellings (10 apartments) and refurbishment of 2 listed buildings (including change-of-use into residential).
<b>OS NGR</b>	SP 27700 65421
<b>County</b>	Warwick
<b>Local Planning Authority</b>	Warwick District Council
<b>Lead Local Flood Authority</b>	Warwickshire County Council



## 2.2 Proposed development

The proposal is for the construction of an apartment block and the refurbishment of: The Chapel (a Grade II listed building located to the south of the site) and the Master's House (a Grade II\* listed building located to the centre of the site). The Chapel and Master's House are proposed to be converted into residential units. The construction of the new apartment block is required to finance the renovation of historical building.

The residential parts of the development are classified as 'More Vulnerable' and 'Less Vulnerable', accordingly under the revised NPPF.

The proposed site layout is located in Appendix A.

## 2.3 Existing hydrology and drainage network

Given the site's historical nature and its predominately greenfield state, it is assumed there is no existing drainage system within the site. A Water Management Strategy (WMS) will be produced by Patrick Parsons be documented in a separate report.

The site lies within the catchment of the Saltisford Brook, which flows from North West to South East through this part of Warwick. The Brook passes through two areas of open land both known as Saltisford Common. One area of the common is located between Wedgnock Lane and St Michael's Road (western area) and the other area is located between St Michael's Road and the railway (eastern area).

In 2000, Warwick District Council constructed a flood storage area in Saltisford Common (western area), approximately 1km upstream of the development site. The flood storage scheme was initially designed to prevent flooding to properties downstream during the 100-year plus climate change fluvial flood event although the effective Standard-of-Protection was later found to be less.

Downstream of the flood storage area in Saltisford Common, the watercourse discharges into a 1.05m diameter culvert for a short distance then in 1.35m diameter pipe. The watercourse is open for a short distance immediately upstream of the railway line then culverted again through and past the site.

## 2.4 Existing geology and hydrogeology

No site-specific ground investigation has been carried out on site to date.

The British Geological Survey (BGS) maps show that the site is underlain by bedrock of. Undifferentiated Triassic rocks composing of Mudstone, Sandstone and Siltstone. There are no records for superficial geology at or around the site.

The EA groundwater map shows the site is not located in a groundwater Source Protection Zone.

## 2.5 Site topography

A topographical survey of the site and surrounding area was undertaken by Stadia Surveys Ltd. in October 2017, drawing number 17508\_A. A copy of the drawing is provided in Appendix B. The survey shows an increase in the site ground levels from 35.06 AOD in the south-west of the site to 36.08m AOD in the north of the site.

Figure 2-1 shows the topography of the site using 1m LiDAR data last flown in 2017.

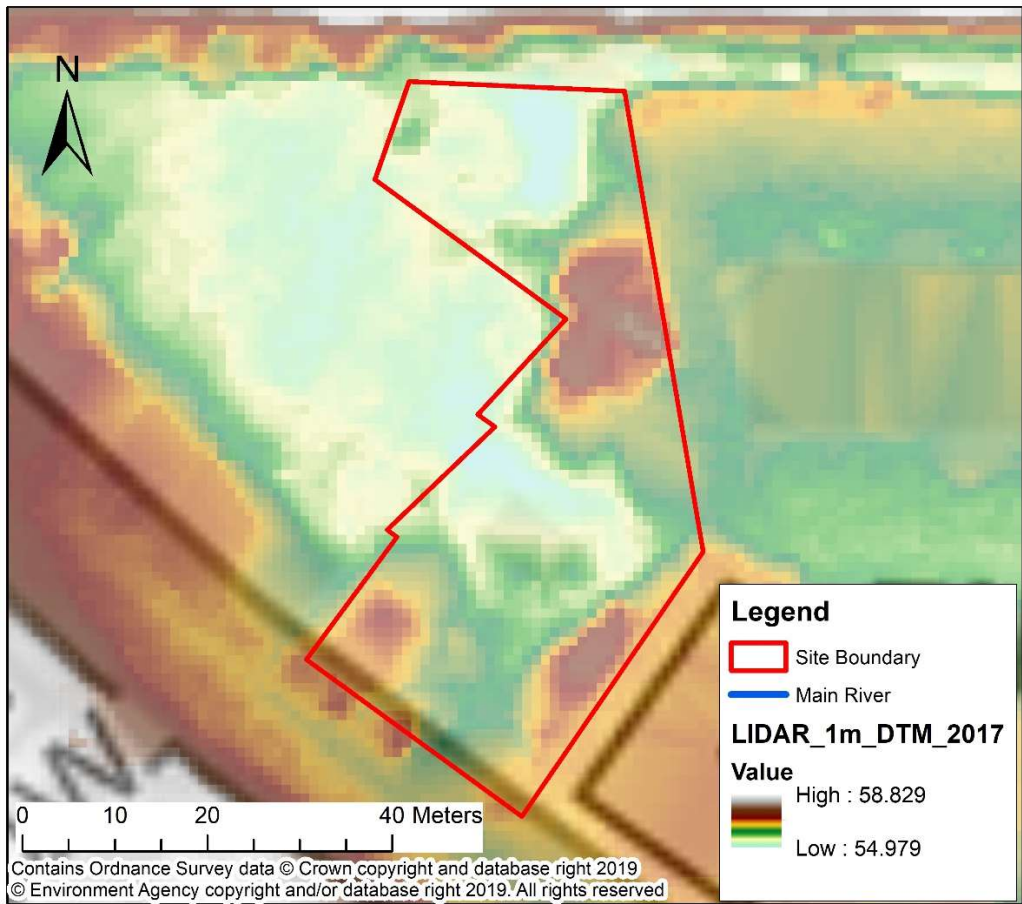


Figure 2-1: LiDAR topography at the site

As shown in Figure 2-1 and the site topographic survey (see Appendix A), there are three areas of raised elevation within the site, with the lowest topography recorded as 35.06 AOD in the south-west of the site and the highest elevation as 36.08m AOD in the north of the site. There is a noticeable depression into the ground in the north-western and central parts of the site which influence flood risks (see section 5).

### 3 Planning policy and flood risk

#### 3.1 Planning context

The NPPF was introduced by the Department for Communities and Local Government in March 2012 and later revised in July 2018. The revised NPPF considers flood risk to developments using a sequential characterisation of risk, based on planning zones and the EA Flood Map. The revised NPPF is supported by the Planning Practice Guidance (PPG), March 2014 which gives further information on the assessment of flood risk. The main study requirement is to identify the flood zones and vulnerability classification relevant to the proposed development, based on an assessment of current and future conditions.

#### 3.2 Development site flood zones

The Environment Agency (EA) states that the flood risk is a function of:

*"The likelihood of a particular flood happening, best expressed as a chance or probability over a period of one year. For example, 'There is a 1 in 100 chance of flooding in any given year in this location'.*

*The impact or consequences that will result if the flood occurs."*

*The EA categorize the risk into a series of Flood Zones; a definition of the Flood Zones can be found in Table 3-1. The EA has developed a Flood Map which shows the risk of flooding in England and Wales for different return period events, assuming no flood defenses. This map provides the basis for the assessment of flood risk and development suitability under the revised NPPF.*

*Section 3.3 shows how the Flood Zones relate to a sequential planning response, as advised in the revised NPPF. The EA Flood Maps show the site to be located within Flood Zones 2 and 3.*

*The revised NPPF classifies residential dwellings as 'More Vulnerable' and their construction is permitted within Flood Zones 1 and 2 and Flood Zone 3a providing the Sequential and Exception Tests are passed. There are advisory notes placed upon this type of development, which are detailed in Table 3-2. Details of Sequential and Exception Tests are provided in Table 3-3.*

Table 3-1: NPPF Flood Zones

Zone 1: Low Probability	
<p>Land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (&lt;0.1%).</p>	<p><b>Appropriate uses</b> All uses of land are appropriate in this zone.</p> <p><b>FRA requirements</b> For development proposals on sites comprising one hectare or above the vulnerability to flooding from other sources as well as from river and sea flooding, and the potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new development on surface water run-off, should be incorporated in an FRA.</p> <p><b>Policy aims</b> Developers and local authorities should seek opportunities to reduce the overall level of flood risk through the layout and form of the development, and the appropriate application of sustainable drainage techniques.</p>
Zone 2: Medium Probability	
<p>Land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% – 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% – 0.1%) in any year.</p>	<p><b>Appropriate uses</b> The water-compatible, less vulnerable and more vulnerable uses of land and essential infrastructure are appropriate in this zone. Highly vulnerable uses are only appropriate in this zone if the Exception Test is passed.</p> <p><b>FRA requirements</b> All proposals in this zone should be accompanied by an FRA.</p> <p><b>Policy aims</b> Developers and local authorities should seek opportunities to reduce the overall level of flood risk through the layout and form of the development, and the appropriate application of sustainable drainage techniques.</p>
Zone 3a: High Probability	
<p>Land assessed as having a 1 in 100 or greater annual probability of river flooding (&gt;1%) or a 1 in 200 or greater annual probability of flooding from the sea (&gt;0.5%) in any year.</p>	<p><b>Appropriate uses</b> The water-compatible and less vulnerable uses of land are appropriate in this zone. The highly vulnerable uses should not be permitted in this zone. The more vulnerable and essential infrastructure uses should only be permitted in this zone if the Exception Test is passed.</p> <p><b>FRA requirements</b> All proposals in this zone should be accompanied by a FRA.</p>

	<p><b>Policy aims</b> Developers and local authorities should seek opportunities to:</p> <ul style="list-style-type: none"> <li>• reduce the overall level of flood risk through the layout and form of the development and the appropriate application of sustainable drainage techniques;</li> <li>• relocate existing development to land with a lower probability of flooding;</li> <li>• create space for flooding to occur by allocating and safeguarding open space for flood storage.</li> </ul>
<p><b>Zone 3b: Functional Floodplain</b></p>	
<p>Land where water has to flow or be stored in times of flood.</p> <p>Local Planning Authorities should identify in their SFRAs areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters.</p> <p>But land which would flood with an annual probability of 1 in 20 (5%) or greater in any year, or is designated to flood in an extreme (0.1%) flood, should provide a starting point for consideration and discussions to identify functional floodplain.</p>	<p><b>Appropriate uses</b> Only the water-compatible uses and the essential infrastructure that has to be there should be permitted. It should be designed and constructed to:</p> <ul style="list-style-type: none"> <li>• remain operational and safe for users in times of flood;</li> <li>• result in no net loss of floodplain storage;</li> <li>• not impede water flows;</li> <li>• not increase flood risk elsewhere.</li> </ul> <p><b>FRA requirements</b> All proposals in this zone should be accompanied by a FRA.</p> <p><b>Policy aims</b> In this zone, developers and local authorities should seek opportunities to:</p> <ul style="list-style-type: none"> <li>• reduce the overall level of flood risk through the layout and form of the development and the appropriate application of sustainable drainage techniques;</li> <li>• relocate existing development to land with a lower probability of flooding.</li> </ul>
<p>Source: Table 1, Revised NPPF (2018) Planning Practice Guidance</p>	



Table 3-2: Flood Risk Vulnerability Classification

<p>Essential Infrastructure</p>	<p>Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk.</p> <p>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.</p> <p>Wind turbines.</p>
<p>Highly Vulnerable</p>	<p>Police stations, Ambulance stations and Fire stations and Command Centres and telecommunications installations required to be operational during flooding.</p> <p>Emergency dispersal points.</p> <p>Basement dwellings.</p> <p>Caravans, mobile homes and park homes intended for permanent residential use (Sequential and Exception Tests required for any change of land use to these sites).</p> <p>Installations requiring hazardous substances consent (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as "Essential Infrastructure").</p>
<p>More Vulnerable</p>	<p>Hospitals.</p> <p>Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.</p> <p>Buildings used for: dwelling houses; student halls of residence; drinking establishments; nightclubs; and hotels</p> <p>Non-residential uses for health services, nurseries and educational establishments</p> <p>Landfill and sites used for waste management facilities for hazardous waste.</p> <p>Sites used for holiday or short-let caravan and camping, subject to a specific warning and evacuation plan.</p>
<p>Less Vulnerable</p>	<p>Police, ambulance and fire stations which are not required to be operation during flooding.</p> <p>Buildings used for: shops; financial, professional and other services; restaurants and cafes; hot food takeaways; offices; general industry; storage and distribution; non-residential</p>

	<p>institutions not included in 'more vulnerable'; and assembly and leisure.</p> <p>Land and buildings used for agriculture and forestry.</p> <p>Waste treatment (except landfill and hazardous waste facilities).</p> <p>Minerals working and processing (except for sand and gravel working).</p> <p>Water treatment works which do not need to remain operation during times of flood.</p> <p>Sewerage treatment works (if adequate measures to control pollution and manage sewage during flooding events are in place).</p>
<p>Water-compatible Development</p>	<p>Flood control infrastructure.</p> <p>Water transmission infrastructure and pumping stations.</p> <p>Sewage transmission infrastructure and pumping stations.</p> <p>Sand and gravel workings.</p> <p>Docks, marinas and wharves.</p> <p>Navigation facilities.</p> <p>MOD defence installations.</p> <p>Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.</p> <p>Water-based recreation (excluding sleeping accommodation).</p> <p>Lifeguard and coastguard stations.</p> <p>Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms</p> <p>Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.</p>

Source: Table 2, Revised NPPF (2018) Planning Practice Guidance

Notes:

1. *This classification is based partly on Defra/Environment Agency research on Flood Risks to People (FD2321/TR2) and also on the need of some uses to keep functioning during flooding.*
2. *Buildings that combine a mixture of uses should be placed into the higher of the relevant classes of flood risk sensitivity. Developments that allow uses to be distributed over the site may fall within several classes of flood risk sensitivity.*
3. *The impact of a flood on the particular uses identified within this flood risk vulnerability classification will vary within each vulnerability class. Therefore, the flood risk management infrastructure and other risk mitigation measures needed to ensure the development is safe may differ between uses within a particular vulnerability classification.*

Table 3-3: Flood Risk Vulnerability and Flood Zone 'Compatibility'

Vulnerability Classification (Table 2)	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Flood Zone (Table 1)	Zone 1	✓	✓	✓	✓
	Zone 2	✓	Exception Test	✓	✓
	Zone 3a	Exception Test	✗	Exception Test	✓
	Zone 3b	Exception Test	✗	✗	✓

Source: Table 3, Revised NPPF (2018) Technical Guidance

- ✓ Development is appropriate
- ✗ Development should not be permitted

Notes:

*This table does not show:*

1. The application of the sequential test which guides development to Flood Zone 1 first, then Zone 2, and then Zone 3;
2. Flood risk assessment requirements;
3. The policy aims for each flood zone.

### 3.3 Sequential and exception tests

The revised NPPF (2018) requires that the Sequential and Exception Tests should be applied when choosing the location of new development and the layout of the development site. The Sequential Test aims to promote development in low flood risk areas. The Exception Test is used where no suitable development areas can be found in low risk zones.

When planning a development, a sequential approach should be applied to identify suitable sites which are at minimal risk from flooding, avoiding Flood Zones 2 and 3 wherever possible. If there are no suitable areas identified in Flood Zone 1 then sites with the lowest flood risk should be considered next. If development is necessary within a medium or high-risk zone an Exception test may be needed to demonstrate the need for the development in that location and plans to mitigate flood risk.

The revised NPPF (2018) classifies infrastructure for residential dwellings as 'More Vulnerable' and their construction is permitted within Flood Zones 1, 2 and Flood Zone 3a, with the inclusion of an exception test. Construction in Flood Zone 3b is not permitted.

With regards to the proposal:

- The proposed new apartment block on site is required to finance the renovation of the two listed buildings.
- The location of the new apartment block on site is dictated by the location of the Master's House. The former has been sited far away from the heritage site and outside of the impact zone of the scheduled monument. There is also a desire not to visually impact the surrounds of the listed buildings with new developments.

- The renovation of two listed buildings is considered as third-party benefit.
- The implementation of the flood mitigation measures discussed in Section 5 will ensure that on-site safety will be maintained to a high standard by minimising the exposure of the future site occupants to flood risk.

With consideration of the above, it is assumed the proposal passes the Sequential Test and satisfies both parts of the Exception Test. However, the responsibility for confirming that the proposal satisfies the Sequential and Exception Test lies with the Local Planning Authority, taking advice from the EA.

## 4 Policy and guidance review

### 4.1 Warwick District Council Level 1 SFRA

A Strategic Flood Risk Assessment (SFRA) was completed for Warwick District Council in May 2008, in combination with Warwickshire County Council and other adjacent district councils. The SFRA level 1 was updated for Warwick District Council in April 2013 to take account of data updates in accordance with the National Planning Policy Framework. Although the site is not identified in the SFRA, the main conclusions of the SFRA which are relevant to the site are listed below.

#### Sources of flood risk

- The main source of flood risk in Warwick is fluvial. The SFRA mapping indicates that a large majority of the site lies within Flood Zone 3a and the eastern boundary of the site is within Flood Zone 1, (classified as low risk).
- The geology of Warwick District is predominantly “sedimentary rocks” and “is dominated by clay rich rocks where soils are not so well drained”. The underlying geology restricts groundwater flow therefore groundwater flooding is considered relatively minor.
- No specific problems with surface water flooding have been identified therefore surface water flooding is also considered relatively minor compared to fluvial flood risk.
- As the sewerage infrastructure in this part of Warwick is largely based on Victorian Sewers, there is a risk of localised flooding if the capacity of the sewerage system is exceeded or the system suffers a structural failure.
- Extensive flooding was recorded in the district in June and July 2007, however, there is no mention of any flooding from Saltisford Brook or at the site in Albert Street. Note: other flood dates are mentioned but these are all prior to 2000, when the Saltisford Brook flood storage area was constructed.

#### Climate change

The effect of climate change on flows in the Saltisford Brook would increase the extent of flood risk to the site.

#### Mitigation

Storage areas should be taken account of in flood risk assessments. Natural and manmade storage ponds provide attenuation and should be maintained.

Each new development over 1 hectare should have an evacuation plan.

The permeability of soils in Warwick is mainly low. Therefore, the implementation of SUDS is restricted, although local ground investigations should be used to identify site specific suitability.

The full SFRA report is available to download from the Warwick District Council Website.

#### 4.2 **Warwick District Council Local Plan**

The new Warwick District Council Local Plan is currently out for discussion and comments. This will replace the Local Plan 1996 -2011.

The council's preferred location of development is to concentrate growth within and on the edge of existing urban areas (RDS3).

Requirements for site-specific FRAs are as follows:

A site-specific flood risk assessment is required for proposals of 1 hectare or greater in Flood Zone 1 and all proposals for new development (including minor development and change of use) in Flood Zones 2 and 3, and also where proposed development or a change of use to a more vulnerable class may be subject to other sources of flooding.

New development will be directed towards areas at the lowest risk of flooding within the District; with priority given to land within Flood Zone 1.

The use of Flood Zones 2 and 3a for recreation, amenity and environmental purposes will be acceptable where an effective means of flood risk management is evident, and considerable green space provided.

Land within Flood Zone 3b will be safeguarded, to ensure that the functional floodplain is protected from development. The Council will also support proposals which reinstate the functional floodplain, where possible.

Development will not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower probability of flooding. The Flood Zones identified in the SFRA will provide the basis for applying this test.

The identification of such land should take account of local circumstances and is generally; land which would flood in an annual probability of 1 in 20 (5%) or greater in any year, or is designed to flood in an extreme (0.1%) flood.

All new development will be expected to ensure that it does not increase the level of flooding experienced in other areas of the District.

Surface water run-off in all developments should be managed, to minimise the net increase in the amount of surface water discharged into the local public sewer system. On previously developed sites, surface water runoff should be attenuated by 20% on the site.

The use of Sustainable Drainage Systems (SuDS) will be expected; and design and layout schemes which enhance natural forms of on-site drainage will be encouraged.

#### 4.3 **Warwickshire County Council local FRM Strategy (2016)**

The Local Flood Risk Management Strategy provides an overview and assessment of local flood risk in Warwickshire, setting out objectives and measures for how WCC will manage and reduce local flood risk. It covers the county of Warwickshire, of which Warwick is part of.

#### 4.4 **River Severn Catchment Flood Management Plan**

The EA's River Severn Catchment Flood Management Plan1 (CFMP) was published in December 2010. This establishes current and future levels of flood risk within the River Severn Catchment, setting appropriate flood risk management policies accordingly. Warwick District Council falls within Policy 5 – take further action to reduce flood risk now and in the future.

#### 4.5 Historical flooding

An assessment of historical flooding at the proposed development site has been undertaken.

The Level 1 SFRA does not record any specific flooding along Saltisford Brook. Local knowledge (Warwick District council Saltisford Planning Applications) does mention that this area has flooded previously and additionally, Saltisford Common flood alleviation scheme, located upstream from the site, was finalised in 2000. The recorded historical flood outlines for the area surrounding the site are shown in Figure 4-1. Based on the Environment Agency’s Historic Flood Maps there does not appear to have been any recorded incidents of flooding at the site.

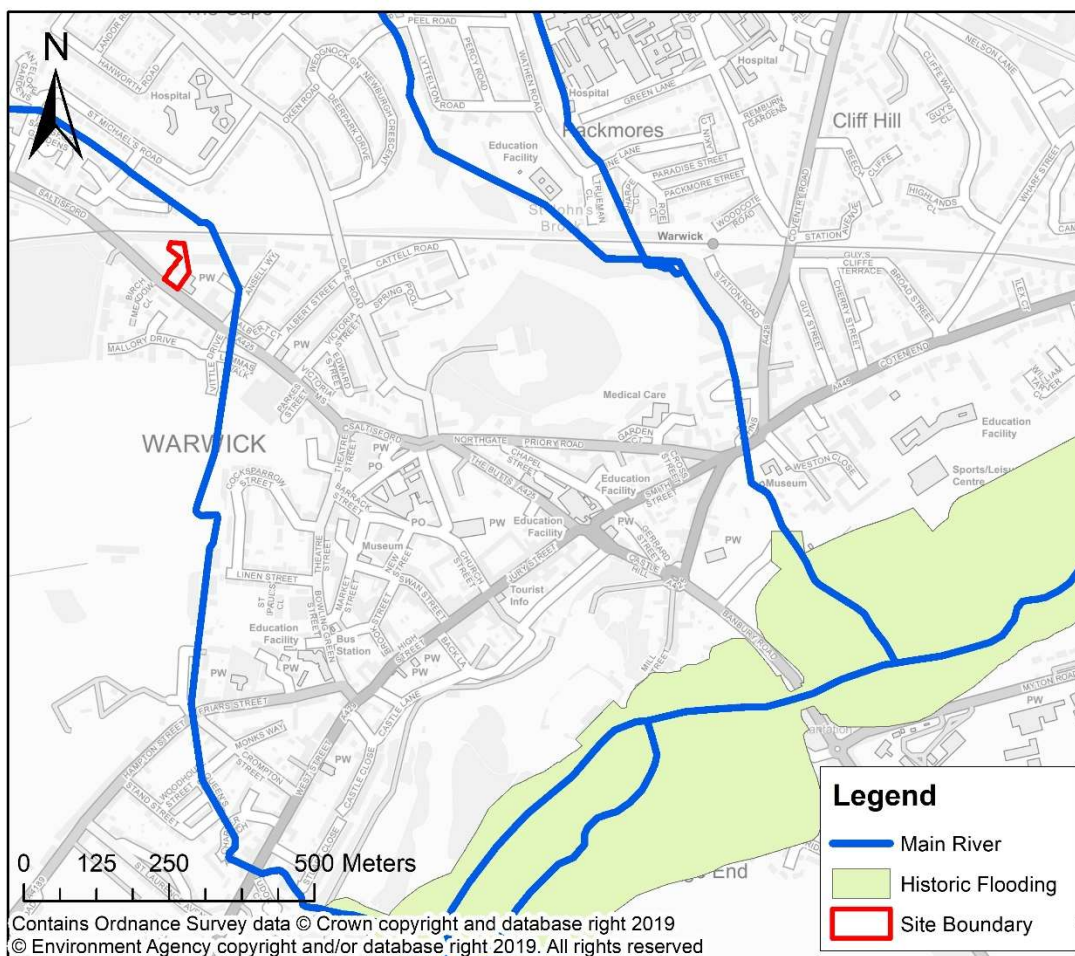


Figure 4-1: EA historical flood outlines

#### 4.6 Flood Alleviation Schemes

There are no flood defences along Saltisford brook, however, there is a Flood Storage Area approximately 430m to the NE of the site as shown on figure 5-3.

The Environment Agency are also currently looking into another potential Flood Risk Management Scheme to reduce the risk of flooding to properties along and within the Saltisford Brook area. An Initial Assessment is currently being undertaken to identify a list of potential flood mitigation options which may be taken forward.

The feasibility of these options will be carried out in due course and a number of funding streams (including external contributions) will need to be explored should a preferred option be identified.

#### 4.7 Fluvial flood risk

##### 4.7.1 To the site

The primary watercourse in the vicinity of the proposed development site is the Saltisford Brook, a tributary of the River Leam located north-east of the site.

The latest EA Flood Zone mapping, Figure 4-2, shows that the site is located within Flood Zone 2 (>0.1% AEP) and Flood Zone 3 (>1% AEP).

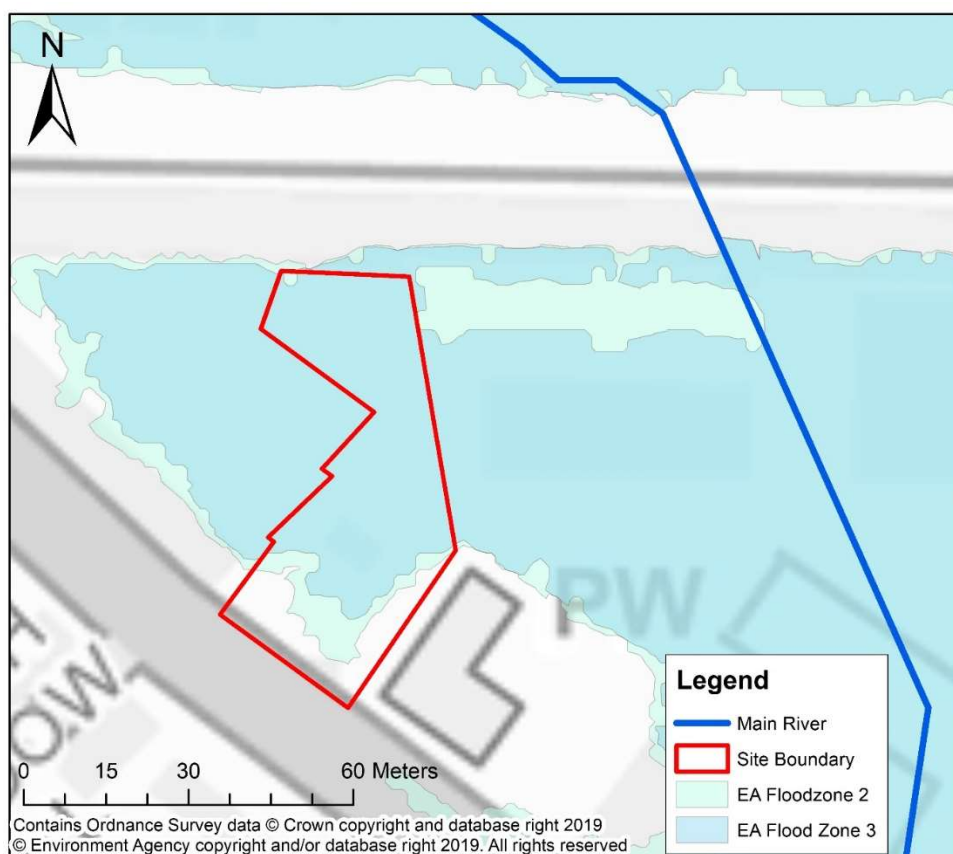


Figure 4-2: EA Flood Zones



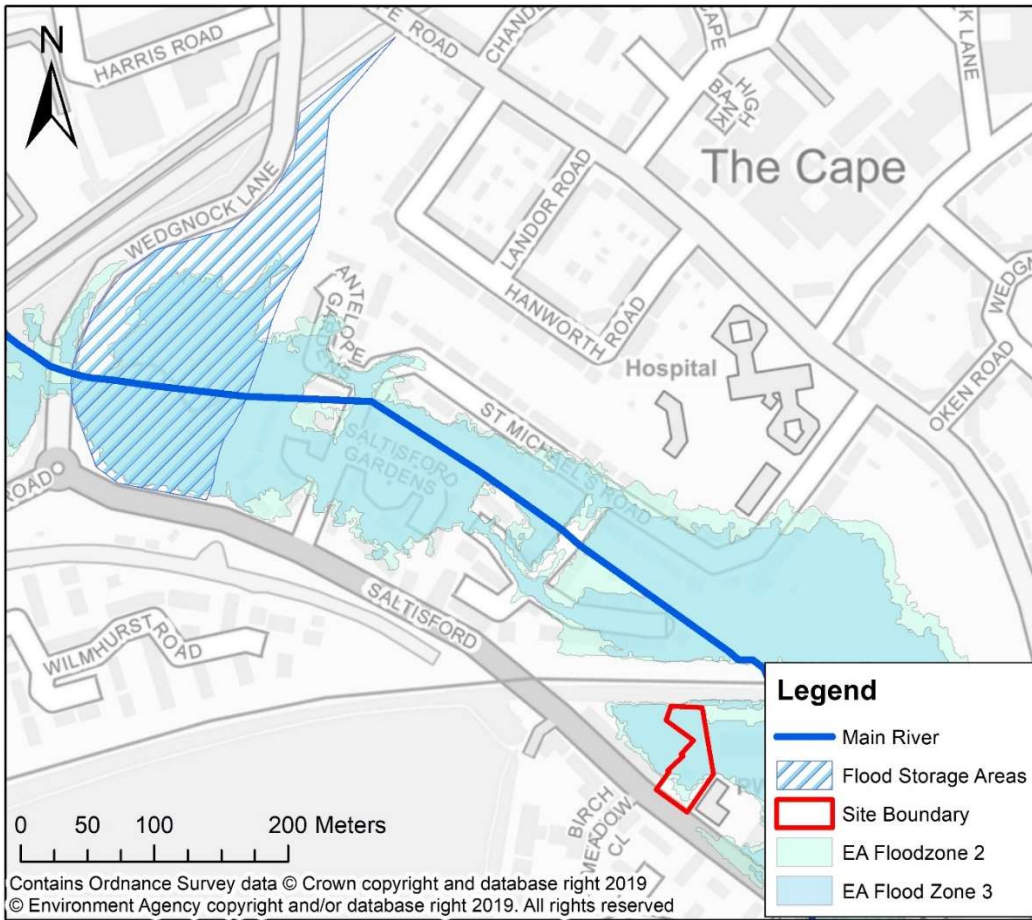


Figure 5-3 Flood storage area upstream of the site.

### Hydraulic Modelling

A copy of the EA model representing the Saltisford Brook was obtained and its geometry was updated using site-specific topographic survey data. The upgraded model was then run for the following scenarios:

- **[Baseline scenario]** 20-year (5% AEP) flood event - existing condition scenario
- **[Baseline scenario]** 100-year (1% AEP) flood event - existing condition scenario
- **[Baseline scenario]** 100-year (1% AEP) with Climate Change (35%) - existing condition scenario
- **[Baseline scenario]** 100-year (1% AEP) with Climate Change (70%) - existing condition scenario
- **[Baseline scenario]** 1,000-year (0.1% AEP) flood event - existing condition scenario

The modelled flood extents for the 20-year, 100-year, 100-year with Climate Change (plus 35% and 70%) scenarios, and the 1,000-year baseline scenarios are shown in

Figure 4-3.

### Flood extents

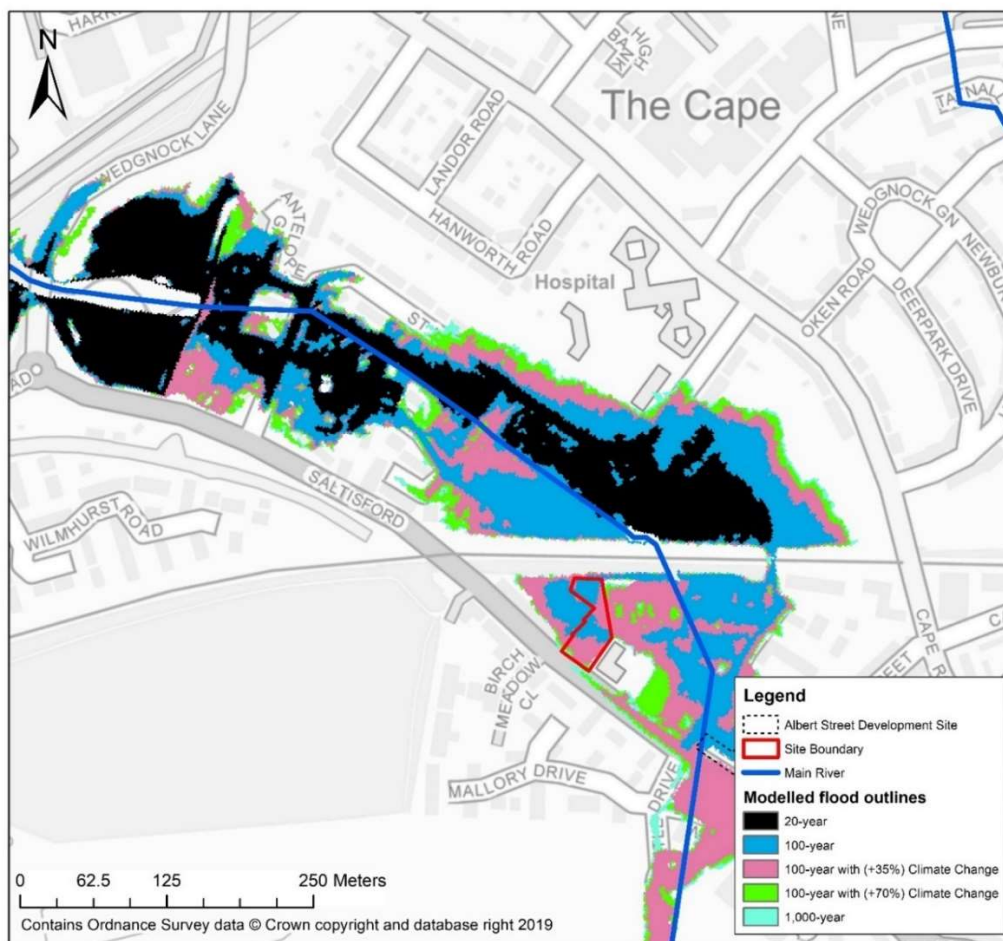


Figure 4-3: Flood extents of the modelled flood events - baseline scenario

Figure 4-3 shows that sections of the site flood during all modelled flood scenarios. Flooding is concentrated to the north of the site, above the railway line in the 20-year scenarios. The site floods during all the 100-year fluvial flood event and beyond. There is a good correlation between the EA Flood Zones and the modelled flood extents.

**Flood levels**

The 100-year with (35%) climate change peak water levels at the site are shown in Figure 4-4 and Figure 4-5.

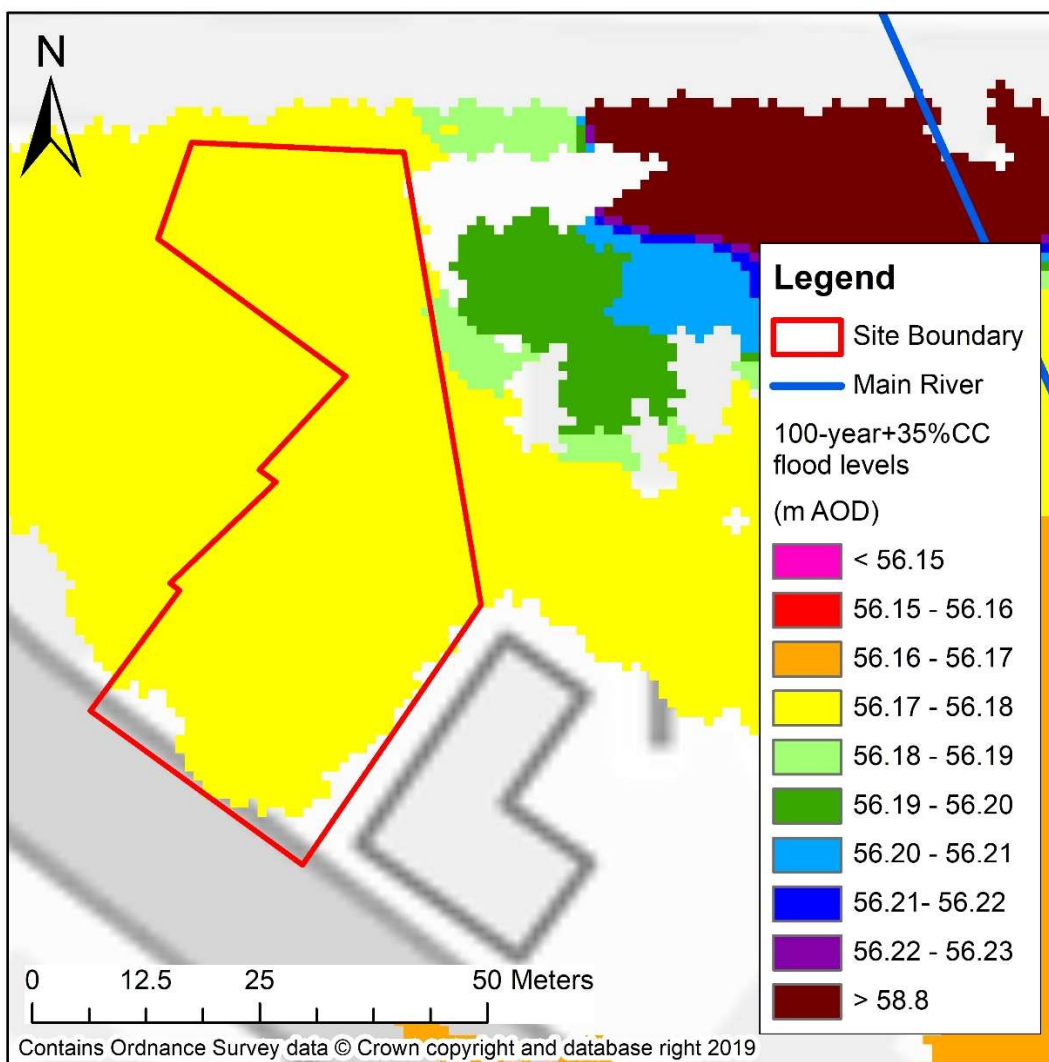


Figure 4-4: Peak water levels during the 100-year with (35%) climate change scenario

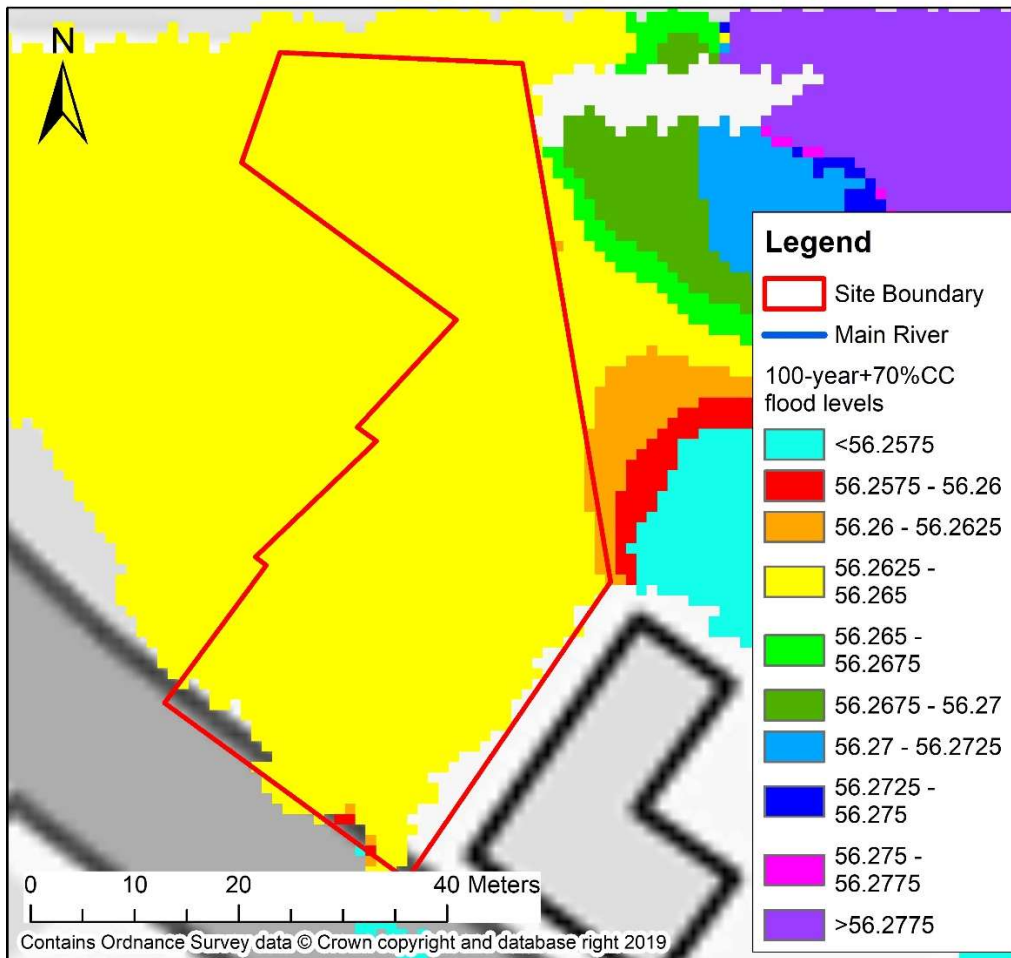


Figure 4-5: Peak water levels during the 100-year with (70%) climate change scenario

Figure 4-4 and Figure 4-5 show:

- The 100-year with (35%) climate change peak water level across the site is between 56.26 and 56.27m AOD.
- The 100-year with (70%) climate change peak water level across the site is between 56.26 and 56.27m AOD.

**Flood depths**

Flood depths for the 100-year with (35%) climate change and 100-year with (70%) climate change scenarios are represented in Figure 4-6 and Figure 4-7.

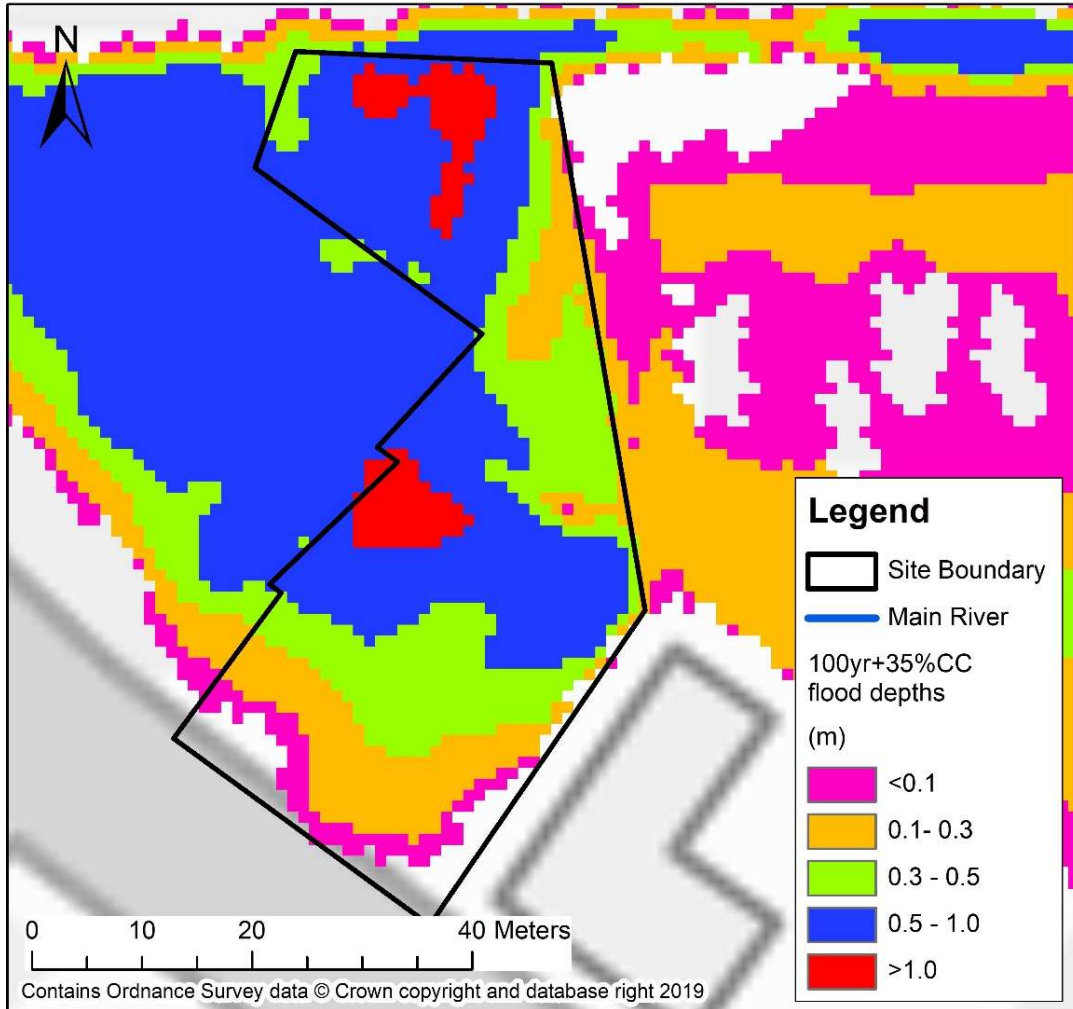


Figure 4-6: Flood depths during the 100-year with (35%) climate change scenario

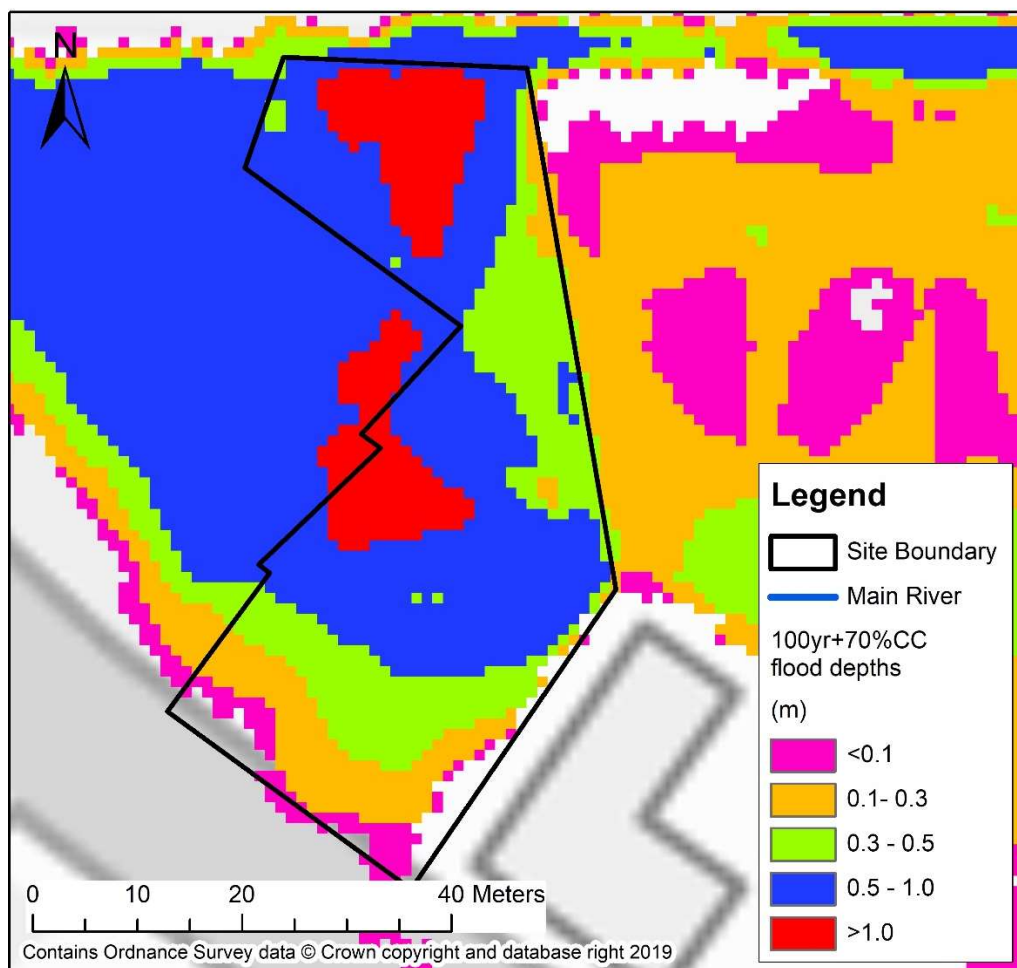


Figure 4-7: Flood depths during the 100-year with (70%) climate change scenario

Figure 4-6 and Figure 4-7 show the flood depths across the site are similar with peak depths of >1.0m mirroring the underlying topography, with the deepest depths in the west side of the central part of the site and an area in the north of the site. Flood depths decrease towards the south of the site and east from these zones of deeper flood depths. The depth of majority of the flooding across the site is between 0.3m-1.0m. Around the new developments in the north of the site the flood depths range between 0.1-0.3m on the eastern side of the building to >1.0m to the north. The Masters house sites within flood depths between 0.3-1.0m. the Chapel is the least impacted by flood depths at the southern border of the site with flood depths between 0.1-0.3m and <0.1m.

#### Hazard to people

The hazard-to-people classification used in the modelled fluvial flooding maps are based on the formula suggested in Defra's FD2321/TR2 "Flood Risks to People" shown below and are represented in Figure 4-8.

$$HR = d \times (v + 0.5) + DF$$

where,

HR = (flood) hazard rating;

d = depth of flooding (m);

$v$  = velocity of floodwaters (m/sec); and

DF = debris factor (= 1, conservative estimate of DF as largely urban area)

Table 4-1: Defra's FD2321/TR2 "Flood Risks to People" classifications

Flood hazard rating depth $\times$ (velocity+0.5) + DF	Level of Flood Hazard Description	Description
< 0.75	Low	Caution "Flood zone with shallow flowing water or deep standing water"
0.75 - 1.25	Moderate	Dangerous for some (i.e. Children) "Danger: flood zone with deep or fast flowing water"
1.25 - 2.0	Significant	Dangerous for most "Danger: flood zone with deep fast flowing water"
> 2.0	Extreme	Dangerous for all "Extreme danger: flood zone with deep fast flowing water"

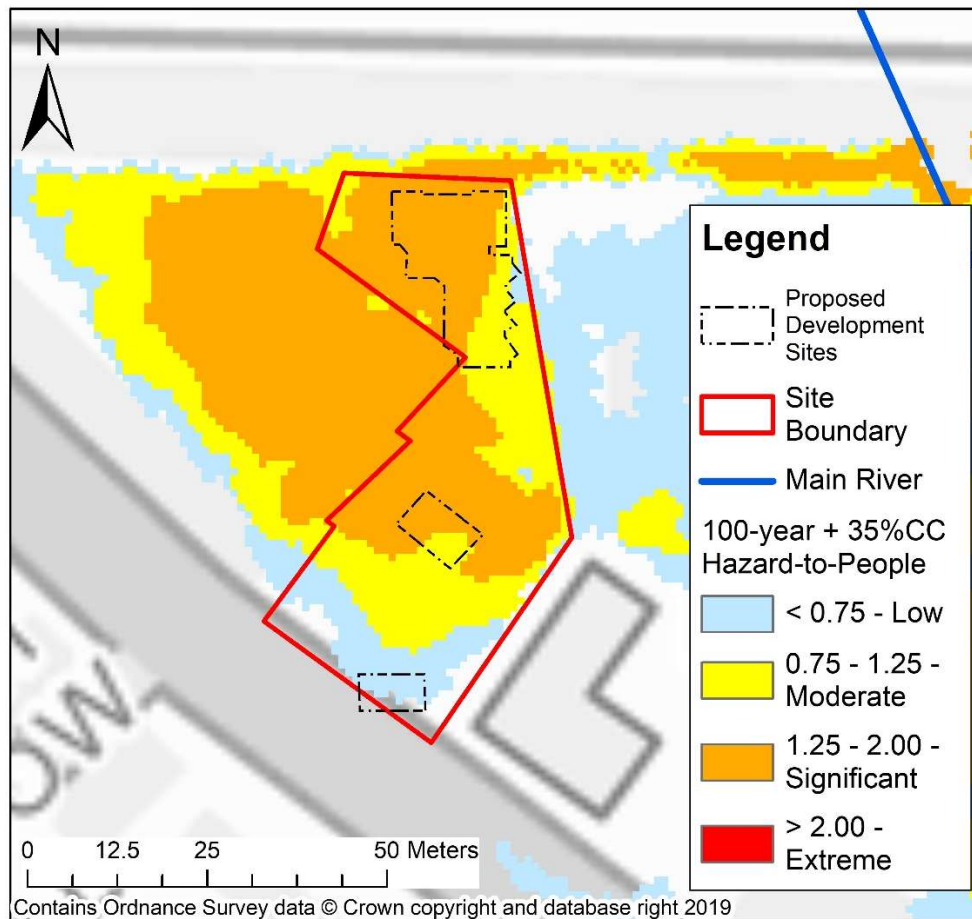


Figure 4-8: 100-year with (+35%) Climate Change hazard-to-people classification.

Figure 4-8 shows flood risk along the A425 remains low whereas flood risk within the proposed development site ranges between moderate and significant. Animation of the model results through time indicates that:

- The hazard to people will remain 'low' on site between  $t = 0\text{hr}$  and  $t = 10.75\text{hr}$  in the simulation
- The hazard to people will remain 'moderate' (also referred to as 'danger for some') on site between  $t = 10.75\text{hr}$  and  $t = 11.33\text{hr}$  in the simulation
- The hazard to people will remain 'significant' (also referred to as 'danger for most') on site beyond  $t = 11.33\text{hr}$

It was not possible to model the receding part of the flood event as a) the site's low topography keep significant flood volumes on site even after the peak of the event b) infiltration into the ground and on-site drainage are not represented in the model.

Whilst access to the site is maintained via the A425, the Master's House and the new apartment block will only be accessible by emergency services during the peak of the flood event. To address this issue, early evacuation of the site (i.e. prior to the peak of the flood event) will need to be considered as a priority and, as a last resort, on-site confinement/safe refuge measures.

#### 4.7.2 From the site

An impact analysis of flood risk across adjacent third-party land was modelled using the following scenarios during the 100-year plus 35% climate change:

- Scenario 1: Proposed building on stilts under normal operational conditions. The proposed building was modelled by increasing its roughness value to 0.4 (i.e. 20% less than a standard building with its whole footprint area to the ground),
- Scenario 2: Proposed building on stilts with 100% blockage to the void inlets. The proposed building was modelled by 'glass-walling' (i.e. raising its level above any possible flood level) its footprint area.

The difference in flood depth between the baseline 100-year plus 35% climate change scenario and the 100-year plus 35% climate change with the proposed building on stilts under normal conditions scenario (scenario 1) is represented in Figure 4-9.



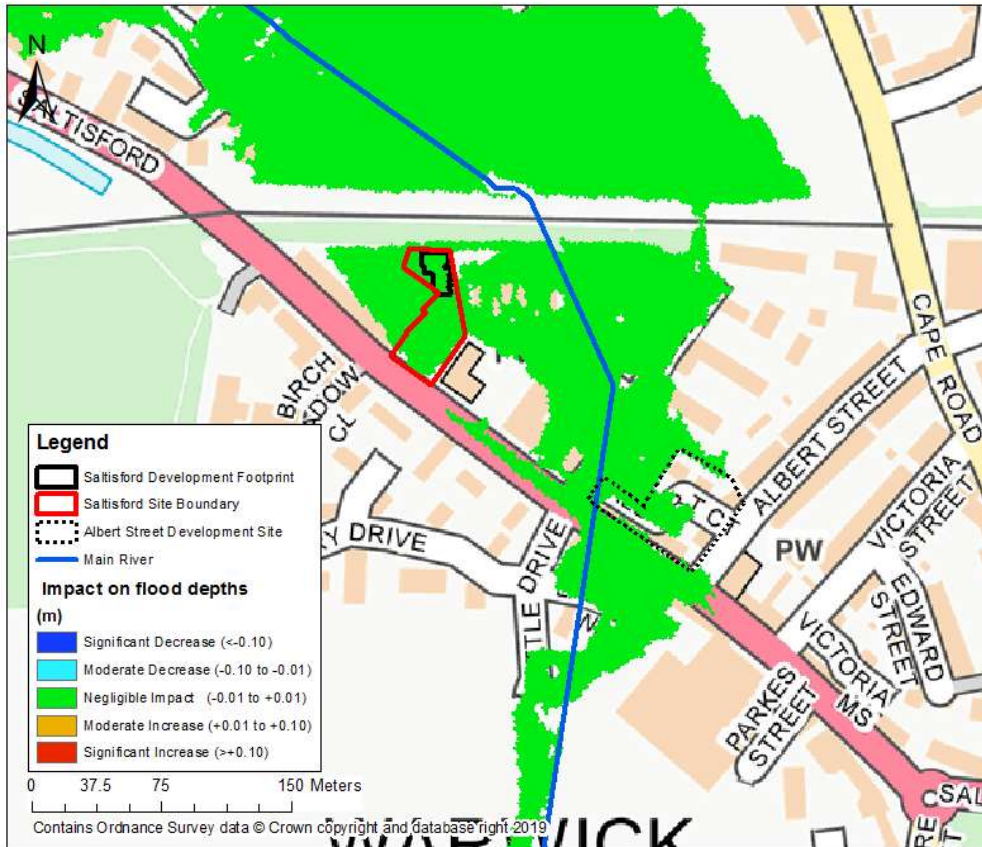


Figure 4-9: Impact of proposal on 100-year with (+35%) climate change flood depths.

Figure 4-9 shows the proposal will not generate any detrimental impact across third-party land during the 100-year plus 35% climate change scenario.

The difference in flood depth between the baseline 100-year plus 35% climate change scenario and the 100-year plus 35% climate change with the proposed building on stilts and a 100% blockage assigned to void inlets (scenario 2) is represented in Figure 4-10.

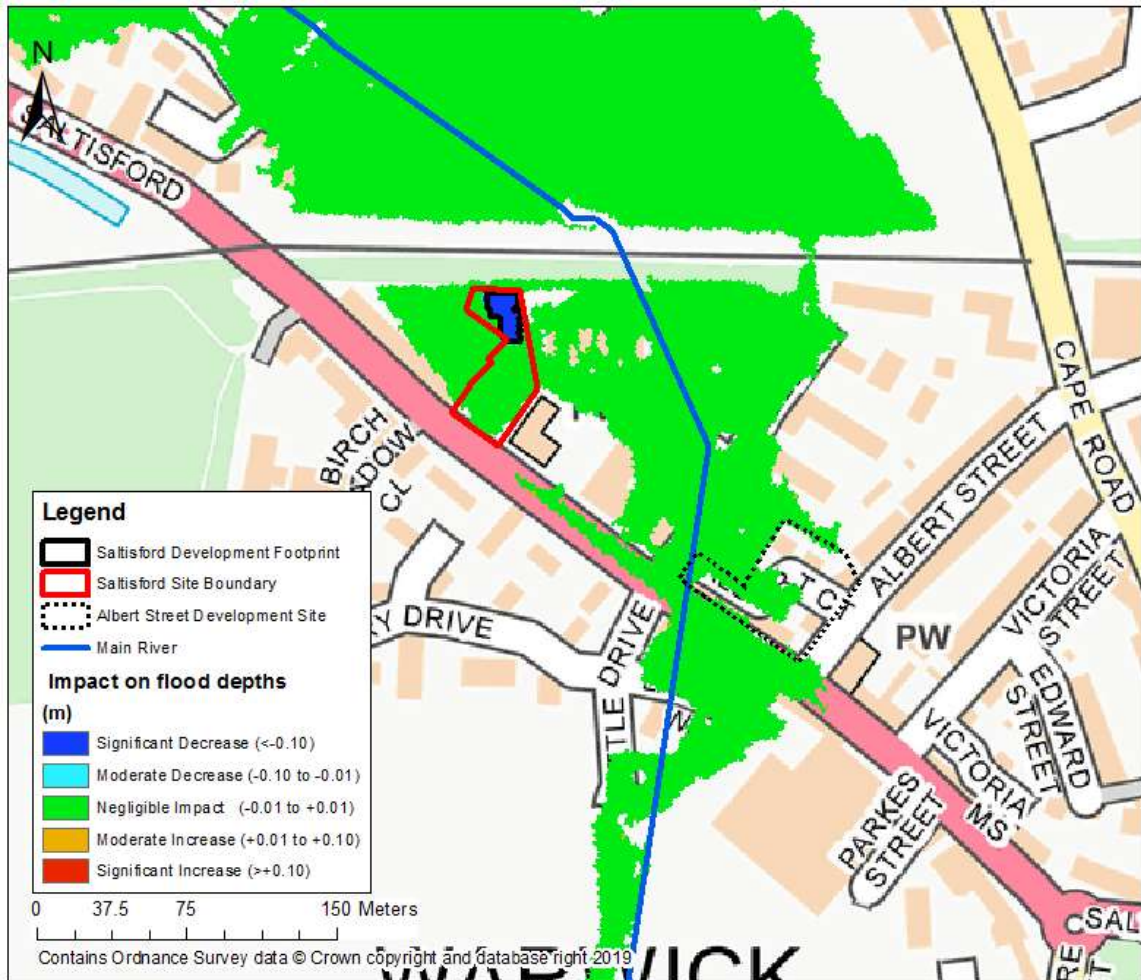


Figure 4-10: Flood depth comparison: baseline 100-year with (35%) CC and Scenario 2.

Figure 4-10 shows that, even with a 100% blockage to the void's inlets, the proposal will not generate any detrimental impact across third-party land..

## 4.8 Surface water flood risk

### 4.8.1 To the site

Surface water flooding arises when rain falling on saturated ground flows overland, following the local topography. Overland flow can therefore pose a risk to both the development site and land surrounding the development site. Surface water flood risk to the site was assessed using the Government's Risk of Flooding from Surface Water (RoFSW) maps which show the extent of surface water flooding to the site (see Figure 5-10). The recurrence of surface water flooding can be classified into risk, as shown below:

**High** – an area has a chance of flooding of greater than 1 in 30 each year

**Medium** – an area has a chance of flooding of between 1 in 30 and 1 in 100 each year

**Low** – an area has a chance of flooding of between 1 in 100 and 1 in 1,000 each year

**Very Low** – an area has a chance of flooding of less than 1 in 1,000 each year

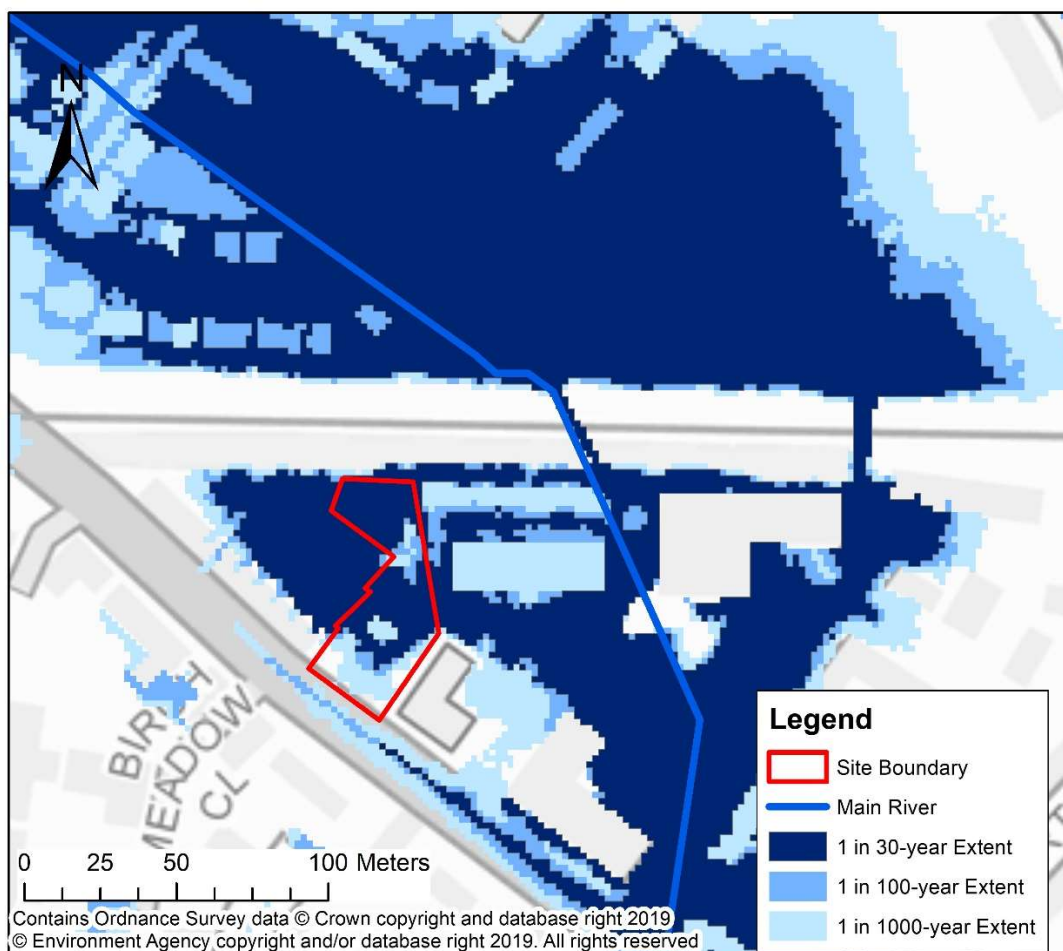


Figure 4-11: Surface water flood extent

Figure 5-10 shows that there is a high risk of surface water flooding to the site. This said, the uFMfSW notoriously account for a proportion of fluvial flooding. Given the correlation between the flood outlines represented in Figure 5-10 and those from

Figure 4-3, this suggest that a proportion of the flood risk from the Saltisford Brook is indeed accounted for and thus that the uFMfSW in relation to the site are conservative.

As a result, the risk of surface water flooding to the site is considered to be 'medium'.

#### 4.8.2 Surface water flood risk from the site

The site is currently predominately greenfield, however the proposal intents to increase the impermeable area of the site. This has the potential to increase surface water runoff from the site and ultimately flood risk elsewhere.

A surface water drainage proposal aiming to offset this impact is currently being designed by Patrick Parsons and relevant information will be provided in an external report.

#### 4.9 Groundwater flood risk

Groundwater flooding occurs when the water table rises above ground level, especially after a period of prolonged rainfall. This is most likely to occur in low-lying areas that are underlain by permeable bedrock and superficial geology. Unlike other forms of flooding, groundwater flooding does not pose a significant risk to life however can cause serious damage to property.

Given the low topography of the site, groundwater flood risk to the site is considered to be 'medium' to 'high' although no documented cases of groundwater flooding have been recorded in the vicinity of the proposed development.

#### 4.10 Risk of flooding from reservoirs

Reservoir flood risk is associated with overtopping of a reservoir (residual risk) or failure (breach). In the unlikely event of a reservoir dam failing, a large volume of water would escape at once and flooding could happen with little or no warning. This is a worst-case scenario as reservoirs are designed to a 10,000-year standard of protection (under the Reservoir Act 1975 in England), and it is therefore unlikely that any actual flood would be this large.

A review of the EA's 'Flood risk from Reservoirs' map shows the site is not within the extent of reservoir flooding. As a result, the risk of flooding from a reservoir is determined to be negligible.

#### 4.11 Sewer flooding

The Warwickshire District Council SFRA identified that sewer flooding has occurred within the city. Within the postcode of the site (CV34 4) there were 7 recorded sewer flooding incidents within the 2012 dataset. This was a reduction from the previous 2008 SFRA. There is then a small, potential risk of sewer flooding in the area, but this risk is diminishing.

The risk of flooding to the site from sewers is therefore considered to be low.

## 5 Mitigation

### 5.1 EA flood warning

To improve flood evacuation on-site, it is recommended to consider establishing a flood warning service in the area in partnership with the Lead Local Flood Authority and/or the Environment Agency. In 2018 Waterloo Housing Group merged with Fortis Living to create a new Group, called Platform Housing Group. Waterloo is an operating Association within Platform Housing Group. Waterloo Housing Group is currently in discussions with the Environment Agency regarding a small financial partnership contribution to help improve off-site mitigation measures, such as a water level monitoring station at the Saltisford Common Play Area, or to contribute into the possible EA led alleviation scheme in order to improve the alerts in this area, so that an early evacuation for this site can be considered. This is subject to agreeing the level of contribution sought and with consideration for the future use of the site as affordable housing – as a sizeable contribution would affect viability of the site. Any one-off contribution could help maintain, and feasibly, help improve the provision and efficiency of the storage area and flood alert service in order to provide a flood warning service. The storage area and provision of flood alerts already offers wider benefits to the existing area and if the development goes forward, will provide additional benefits to any approved dwellings on the Saltisford site. Waterloo are willing to work alongside the relevant flood risk management authorities as this development would offer additional wider sustainability benefits and assist with safeguarding properties.

### 5.2 Safe access and egress

During the peak of the 100-year with (35%) climate change event, the site is affected by the flood extent. Both the proposed new development and the Masters House are situated within a moderate – significant risk to people, and therefore require suitable mitigation methods. The Chapel is partly situated within a low risk to people and therefore requires less intense flood mitigation methods.

Having explored the area around the site, it has been established that there is no safe access or egress routes through third party land surrounding the site. Therefore, safe access and egress, informed by early warning to/ from the development site will be towards the heritage assets at the front of the site and via the A425 (travelling south -West). It is not recommended to travel Eastbound as this is also at risk from flooding.

Flood risk along the A425 remains low whereas flood risk within the proposed development site ranges between moderate and significant. Whilst access to the site is maintained via the A425, the Master's House and the new apartment block will only be accessible by emergency services during the peak of the flood event. To address this issue, early evacuation of the site (i.e. prior to the peak of the flood event) will need to be considered as a priority and, as a last resort, on-site confinement/safe refuge measures.

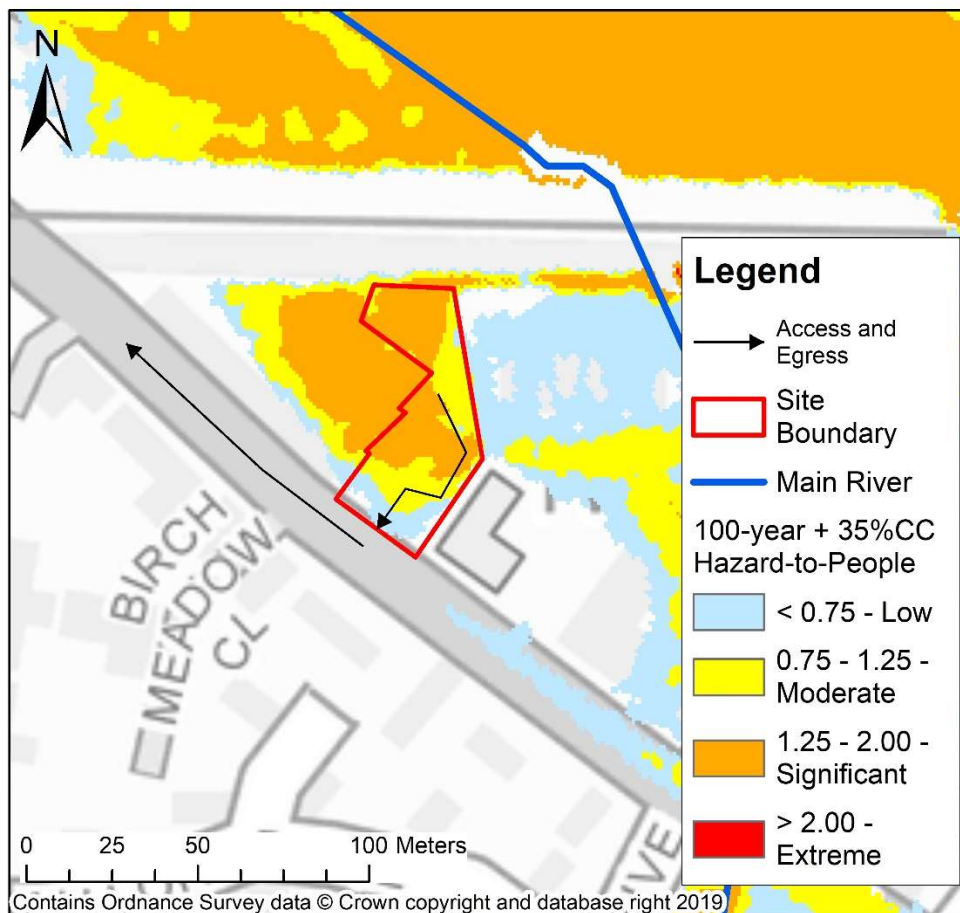


Figure 5-1: Access and egress to and from the site

### 5.3 Finished floor levels

In order to mitigate against the flood risk within the site the following is recommended:

- With regards to the new apartment block building, the Finished Floor Levels (FFL) and openings (e.g. air bricks) should be set to the highest of the following values:
  - 150mm above the surround ground level
  - 600mm above the 100-year with (35%) climate change flood level
  - Above the 100-year with 70% climate change flood level

Using the worst-case scenario (i.e. 600mm above the 100-year with (35%) climate change flood level), this corresponds to a min FFL 56.78m AOD throughout the site.

- With regards to the Chapel, where a change-of-use into residential development is being considered, the site falls outside of the 100yr floodplain but remains located within the 100-year with (35%) climate change floodplain. As a result, the FFL should ideally be raised, if practical (i.e. with consideration of the Grade II nature of the building) but can be kept to existing level provided that bedrooms are exclusively located on the upper floor and building flood resilience measures are considered (see Section 5.7).
- For the Master's house redevelopment, where a change-of-use into residential development is being considered, the site falls within the 100-

year floodplain. As a result, the Finished Floor Level should be raised, if practical (i.e. with consideration of the Grade II\* nature of the building) and flood resilience measures listed in Section 5.7 should be implemented.

#### 5.4 Building void

The impact of the proposed development on the floodplain will be negligible by virtue of the incorporation of a floodable void underneath the new building footprint. Void openings should be a minimum of 1m long and open from existing ground levels to at least the 100-year with (35%) climate change flood level plus a freeboard allowance. Assuming a building floor slab thickness of 450mm floor slab, this means the soffit of the void (and its openings) will be set 150mm above the 100yr (+35%) climate change flood level (i.e.  $56.18 + 0.15 = 56.33\text{m AOD}$ ). Void openings should be provided along all external walls of the proposed building. If security is an issue, 10mm diameter vertical bars set at 100mm centres can be incorporated into the void openings.

The perimeter of the building should incorporate 80% of voids (notwithstanding the vertical bar widths), e.g. 4m of open voids every 5m along the building footprint.

The base of this area will be hard-surfaced so that it can be pressure washed to remove any debris that may accumulate and shall have a shallow gradient to the south-west. This provides a technically robust solution that will mimic the flood characteristics of the existing site for the lifetime of the proposed development.

#### 5.5 Surface water flood risk

An outline surface water drainage strategy has been prepared by Patrick Parsons, to manage the post-development surface water runoff.

The development should aim to reduce the existing flood risk to other sites by on-site management of the generated runoff rates and volumes utilising SuDS techniques.

Details of the proposed Surface Water Drainage Strategy are available in a separate report.

#### 5.6 Groundwater flood risk

Although no evidence of groundwater flooding in the area have been found during the study, considering the position of the site to the Saltisford Brook and the potential for high groundwater levels in the area, incorporation of basements is not recommended. As the new development is to be raised, it is considered that the risk of ground water to the new apartment block will be negligible. With regards to the listed buildings, it is recommended that a waterproofing of the existing floor area is considered.

#### 5.7 Flood Resilience measures

The following flood resilience measures are recommended for The Chapel and the Master's House:

- Services such as electrical fittings, kitchen appliances and sanitary ware should be fitted above the 100-year with climate change fluvial flood levels (i.e. 56.78m AOD for the new builds as represented in Figure 5-2).
- Shallow flooding may occur outside of the proposed building conversions in the future and thus the electrical sockets, switches and wiring should meet the wiring regulations listed under Part M of the Building Regulation and BS7671.

- Materials that are resilient to water should try to be integrated into the design where possible. For example, hard surfaces can be used, such as tiles or stone flooring. Ground floors should be concrete with a suitable damp-proof membrane connected to the external walls. Internal walls and skirting should be waterproofed.
- All external walls should be waterproof which can be achieved through the application of waterproof render.
- Kitchen units and appliances should be raised.

### 5.8 Other mitigation measures

Positioning of dwellings in natural or man-made depressions should be avoided.

When considering landscaping of the site the ground levels should be set to route any overland flows away from the dwellings and towards formal drainage systems or less vulnerable areas like roads and open spaces.

Access roads / parking spaces should slope away from the proposed building.



## 6 Conclusions and recommendations

### 6.1 Conclusions

JBA Consulting were commissioned by Patrick Parsons to undertake a Flood Risk Assessment (FRA) for a proposed residential development site on the adjacent land of the historic St Michaels Leper Hospital, Saltisford, Warwick. This FRA report provides information on the nature of flood risk at the site and follows government guidance with regards to development and flood risk.

The site is approximately 0.21ha in size and is predominately greenfield. There are, however, two listed buildings within the site.

The proposal is for a hybrid development consisting of:

- A new apartment block with associated facilities (including car parking), in the southern section of the site
- The refurbishment of the Chapel into a 1-bed house
- The refurbishment of the Master's House into residential use.

This FRA provides information on the nature of flood risk at the site and follows government guidance with regards to development and flood risk. The flood risk to and from the site has been determined based on publicly available information, review of OS maps and site topographic survey data provided by Strata Surveys Ltd.

The main watercourse affecting the site is the Saltisford Brook a tributary of the River Leam, located approximately 45m to the North West/West of the site.

The latest Environment Agency Flood Zone mapping shows the site to be located within Flood Zones 2 and 3.

Hydraulic modelling outputs of the Saltisford Brook were derived to determine the risk of fluvial flooding to the site in the 100-year with 35% climate change (Design event)

Model results show:

- Flood water will reach the site in the 100-year event, with the extents increasing with the climate change scenarios.
- The 100-year plus 35% climate change scenario flood level will range between 56.17m AOD and 56.18m AOD across the site.
- The climate change scenario flood depths vary across the site and impact the proposed developments differently:
  - The new builds are situated within flood depths between 0.1-0.3m, at the very eastern edge of the build, increasing to >1.0m in the northern area.
  - The Masters House is situated within flood depths of 0.3-1.0m.
  - The Chapel is the least impacted by flood depths, with flood depths between <0.1m and 0.1-0.3m.
- In the worst-case flood scenario (i.e. the 100-year plus 35% climate change flood event), flood hazard mapping shows that the flood risk within the proposed development site ranges between moderate and significant. Whilst access to the site is maintained via the A425, the Master's House and the new apartment block will only be accessible by emergency services during the peak of the flood event. To address this issue, early evacuation of the site (i.e. prior to the peak of the flood event) will need to be considered as a priority and, as a last resort, on-site confinement/safe refuge measures.

The EA surface water flood map indicates that the site is at a medium risk of surface water flooding. The new build and the Master's House are located within the 1in30-year extents, the RoFFSW diminishes towards the south of the site, where the Chapel is located with the 1in1000-year events. The overall risk of surface water flooding to the site is considered to be medium.

Groundwater flood risk to the site is considered to be low with no documented cases of groundwater flooding in the vicinity of the proposed development.

There are no site-specific records of sewer flooding relating to the proposed development site. According to the 2013 SFRA, the postcode (CV34 4) has had 7 sewer flooding incidents between 2008 and 2012.

The EA Reservoir Flood Risk Map shows the site is not at risk of flooding from reservoir failure. The flood risk is deemed to be negligible.

Safe access and egress, informed by early warning to/ from the development site will be towards the heritage assets at the front of the site and via the A425 (travelling south -West).

## 6.2 Recommendations

In order to mitigate against the flood risk within the site the following is recommended:

The Finished Floor Levels (FFL) and openings (e.g. air bricks) of the proposed residential dwellings should be set to the highest of the following values:

- 150mm above the surround ground level
- 600mm above the 100-year with (35%) climate change flood level
- Above the 100-year with 70% climate change flood level

Above the 100-year with (35%) climate change flood level with a blockage to the nearest bridge downstream located approximately 100m southwest from the site (and referred as blockage 2 in this assessment)

Using the worst-case scenario (i.e. 600mm above the 100-year with (35%) climate change flood level), this corresponds to a min FFL of 56.78m AOD throughout the site.

Where change of use is being considered, the Chapel, the site falls outside of the 100yr floodplain, the EA do not have reservations if bedrooms are located on the upper floor and building flood resilience measures are considered (e.g. raising electric sockets above the design flood level).

- For the Master's house redevelopment as residential use, the following should be implemented:
  - Wherever practical, the Finished Floor Level will be raised
  - It is recommended to use Property Level Protection Measures (e.g. air brick covers, flood doors) to improve the building's flood resilience.
  - The following flood resilience measures are also recommended:
    - Services such as electrical fittings, kitchen appliances and sanitary ware should be fitted above the maximum expected height of flooding.
    - Shallow flooding may occur outside of the proposed dwellings in the future and thus the electrical sockets, switches and wiring should meet the wiring regulations listed under Part M of the Building regulation and BS7671.

- Materials that are resilient to water should try to be integrated into the design where possible. For example, hard surfaces can be used, such as tiles or stone flooring. Ground floors should be concrete with a suitable damp proof membrane connected to the external walls. Internal walls and skirting should be waterproofed.
- All external walls should be waterproof which can be achieved through the application of a waterproof render.

Where the development incorporates 'newbuild' properties on the site, the minimum Finished Floor Level of these developments should be set to 56.78m AOD, 600mm above the 100-year with 35% climate change.

It is also recommended to maintain a void beneath the proposed building's floor area in order to maintain the capacity of the floodplain. It is also recommended that the soffit level of the void should be set to 56.33m AOD, which will provide a 150mm freeboard on top of the 100-year with (35%) climate change flood levels. Thus, removing it from all modelled climate change events.

Positioning of dwellings in natural or man-made depressions should be avoided.

When considering landscaping of the site the ground levels should be set to route any overland flows away from the dwellings and towards formal drainage systems or less vulnerable areas like roads and open spaces.

Access roads / parking spaces should slope away from the proposed building.

Due to the heritage assets at the front of the site (The Chapel and The Master's House), building a boardwalk to enable permanent safe access and egress during the peak of the 100-year with (+35%) climate change flood event to/from the proposed new building is not feasible. As an alternative, early evacuation of the site should be considered and, once evacuation becomes unsafe, the proposed new block of flats will be used as a safe refuge. The flood duration will be extracted from the model to estimate how long people will need to stay on site.

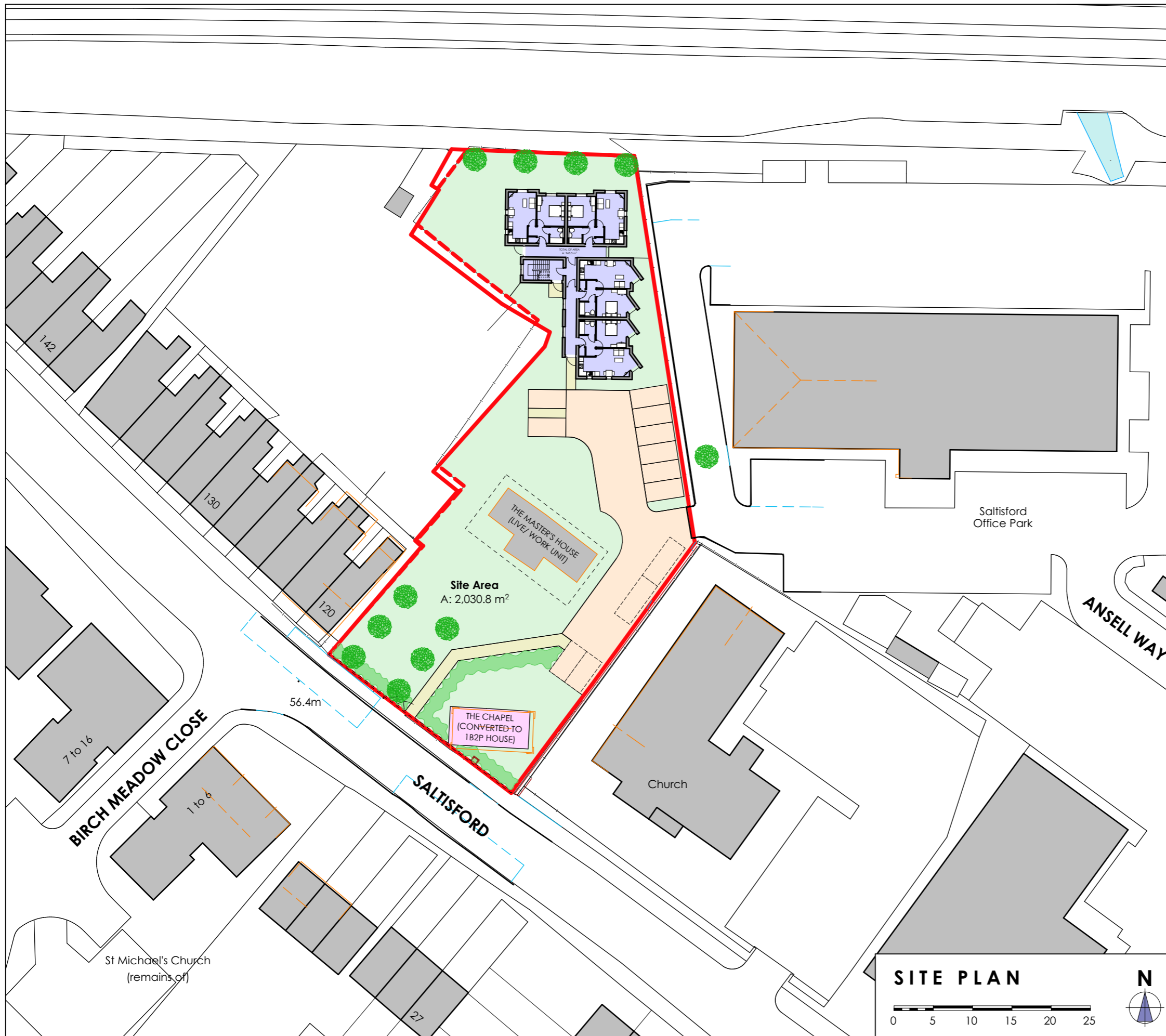
Due to the unsuitability of the current flood alert (with the last three alerts lasting between 5-6 days) it is recommended that a small contribution is given to the LLFA to improve the alerts in this area so that an early evacuation for this site can be considered.

A flood marker board should be installed along the evacuation route. This flood marker board could mark levels including:

- When safe pedestrian access is lost.
- When safe vehicular access is lost and residents and persons on site should contain themselves on site.

## **Appendices**

### **A Site Layout**



## SALTISFORD

### SCHEDULE OF ACCOMMODATION

TYPE	No.	AREA(m <sup>2</sup> )	PARKING
1B2P HOUSE	1	50	2
1B FLAT	10	45	10
<b>TOTAL</b>	<b>11</b>		

REV	DATE REVISED	REVISION	REV BY
B	06.09.2018	FLATS & PARKING REVISED.	LO
A	30.05.2018	LAYOUT REVISED.	LO



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CLIENT  
 Waterloo Housing Group

PROJECT  
 Saltisford, Warwick

DRAWING TITLE  
 Site Plan

DRAWING SCALE 1:500 (A3)	DATE DRAWN 10/12/2018
DRAWN BY LISA OAKLEY	CHECKED BY SIMON OAKLEY
JOB NUMBER 201604	DRAWING NUMBER 02B

## **B Topographic Survey**

265480N  
427640E

427660E

427680E

427700E

427720E

427740E

265480N  
427760E

265460N

265440N

265420N

265400N

265380N  
427640E

427660E

427680E

427700E

427720E

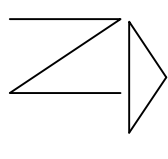
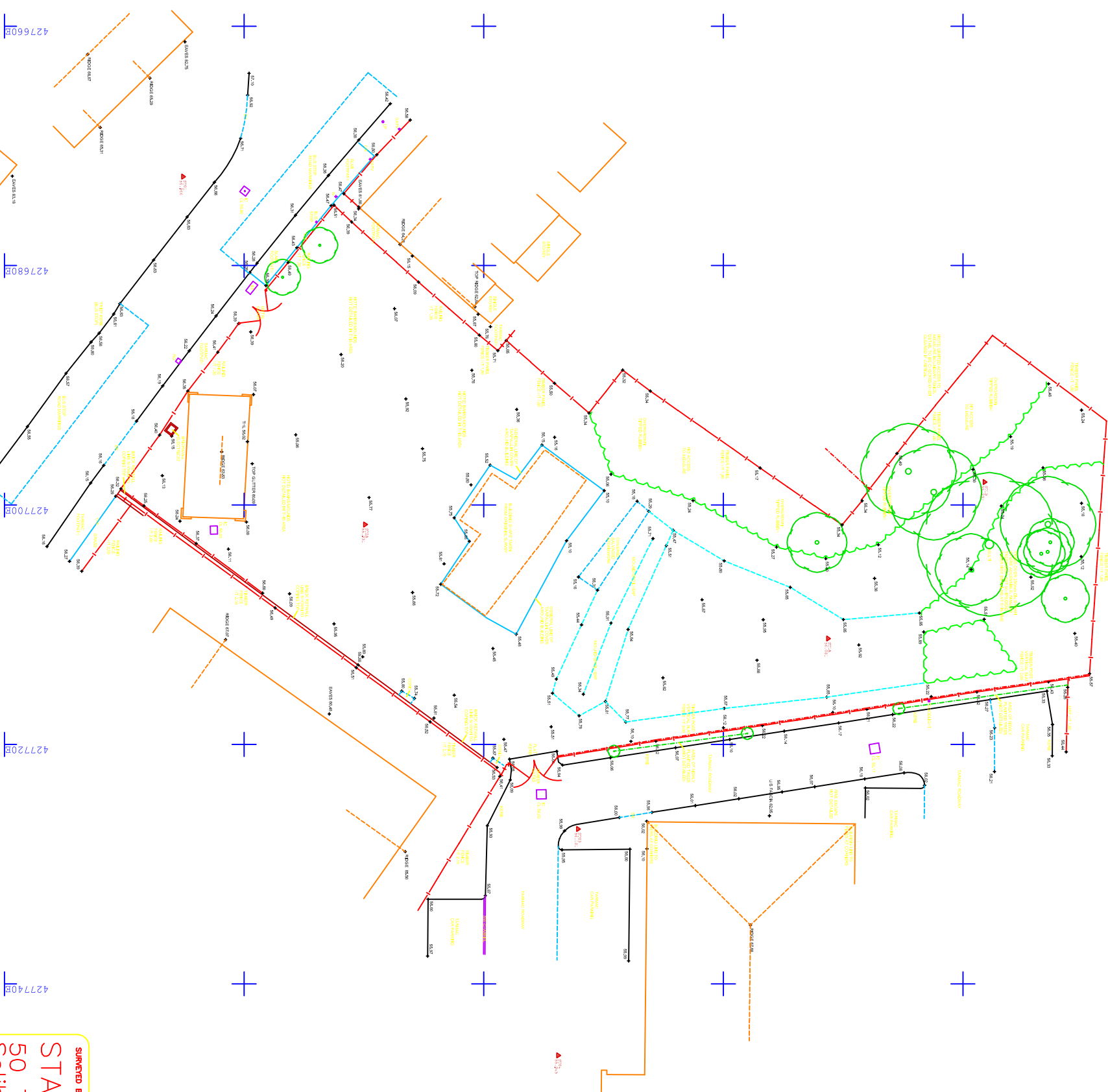
427740E

265400N

265420N

265440N

265460N



**SURVEYED BY**  
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**Title**  
**SITE SURVEY**  
**ST MICHAEL'S HOSPITAL**  
**SALTSFORD WARWICK**

**Levels** OSGB by GPS Grid OSGB fixed at ST01  
 The survey is fitted to National Grid using GPS and has been drawn with a scale factor of 1.000  
 Due to the scale factor any setting out or design work should strictly use the control co-ords shown on drawing

Date	Drawn	Scale	Dwg No	Revision
OCT 17		1:200@A1	01	-

All levels related to nail at ST01 surveyed by GPS.  
 All dimensions to be checked on site if critical  
 ©STADIA SURVEYS LTD 2017

**C Flood Response Plan**







**JBA**  
consulting

## Flood Response Plan for Saltisford, Warwick

Final Report

July 2019



**waterloo**  
housing group

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## Revision History

Revision Ref / Date Issued	Amendments	Issued to
1.0 / 2nd April 2019	Draft issue	Robert Masson, Patrick Parsons
2.0 / May 2019	Final issue	Robert Masson, Patrick Parsons
2.1, 2.2 & 2.3 / July 2019	Final issue	Robert Masson, Patrick Parsons

## Contract

This report describes work commissioned by Patrick Parsons, by email in January 2019. Hannah Hogan of JBA Consulting carried out this work.

Prepared by ..... Hannah Hogan MA MCIWEM C.WEM CENV  
 Chartered Senior Flood Resilience Analyst

Reviewed by ..... Sara Lane-Dredge BSc MA  
 Senior Analyst

## Purpose

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JBA is aiming to reduce its per capita carbon emissions.

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#### Abbreviations

AEP .....	Annual Exceedance Probability
EA .....	Environment Agency
FRP .....	Flood Response Plan
FWD .....	Floodline Warnings Direct
JBA .....	Jeremy Benn Associates
SFRA .....	Strategic Flood Risk Assessment
SuDS .....	Sustainable Urban Drainage System

# 1 Introduction

JBA Consulting was commissioned by Patrick Parsons, in January 2019, to prepare a Flood Response Plan (FRP), with two sets of actions in the event of a flood, for a proposed development at St Michaels Hospital, Saltisford, Warwick.

One set of actions are for residents - to raise awareness of the flood risk and give them instructions on what to do before, during and after a flood event, and how to remain safe. Secondly, actions for Waterloo Housing Group to maintain and action when required, to safeguard their properties in a climate change flood event.

The flood risk to the site has been determined from hydraulic modelling, publicly available information and a review of the site topography, in accordance with the revised National Planning Policy Framework (NPPF) 2018 and associated Planning Practice Guidance (PPG).

The proposed development site is located off the A452, Saltisford, Warwick. The site is approximately 0.21ha in size and currently predominately brownfield. The site is the historical site of 15th Century Leper Hospital and contains two Grade II listed buildings; the Master's House (Grade II\* Listed) and the Chapel. The proposal plans to finance the refurbishment of the dilapidated historical buildings, with a change-of-use into residential development being considered for the Master's House and a new build within the north of the site. Current access to the site is achieved from the A452. The proposal is a hybrid development and includes:

- New apartment build, 10 one-bedroom apartments, in the southern section of the site;
- Refurbishment of the Chapel into a one bed / two person dwelling;
- Refurbishment of the Master's House, potentially to residential;
- Car Parking facilities (12 spaces) for the new residential properties.

Subsequently, this plan includes information on the site's flood sources and risk and details the actions the residents and Waterloo Housing Group should take to prepare itself and the site's residents for a flood from the Saltisford Brook. The plan also includes procedures which should be followed by the Waterloo Housing Group and the site's residents before and during these flood event.

## 1.1 Scope

The development of a Flood Response Plan (FRP) was a recommended mitigation measure made by JBA Consulting in the Flood Risk Assessment, and to ensure the flood risk at the site is adequately managed.

The FRP is not a disaster recovery or business continuity plan. However, this plan can and should be used alongside existing disaster recovery and/or business continuity plans (both during and after a flood emergency). Suggestions for when to implement the existing disaster recovery and/or business continuity plans are provided.

The FRP does not detail short or long-term recovery actions to be undertaken after a flood event at the site. However, possible initial recovery actions to be taken in the immediate aftermath of the flood event have been provided. See section 9 for further information.

## 1.2 Aims and objectives

This FRP records the contingency measures developed to maximise the safety of residents at the Saltisford site for the apartments, refurbishment of the Chapel and refurbishment of the Master's House in Warwick before and during a river (including main rivers and ordinary watercourses) flood event.

The aims of this FRP are to provide procedures to help residents and the Waterloo Housing Group facilitate the monitoring and response of the site's residents and / or staff before and during a flood event, and to safeguard the properties.

The plan's objectives are to:

- reduce the risk to life;
- provide guidance on raising resident and staff awareness of the flood risk;
- establish procedures for activating the plan;

- establish procedures for containment of the site residents before and during a flood event; and
- define the areas of responsibility for those participating in the plan.

### 1.3 Individuals responsible for the plan

In 2018 Waterloo Housing Group merged with Fortis Living to create a new Group, called Platform Housing Group. Waterloo is an operating Association within Platform Housing Group.

Therefore, the maintenance and activation of the plan is the responsibility of:

- Jeff Plant  
Assistant Director, Platform Housing Group  
0345 600 6055  
jeff.plant@platformhg.com
- Kevin Carl  
Platform Housing Group  
0345 600 6055  
kevin.carl@platformhg.com

The 'Contingency Planning' sections of the 2004 Civil Contingencies Act states that emergency plans should be maintained, and it is a requirement that such plans include the provision to carry out regular exercises and the training of staff. The Assistant Director and other such Directors are to ensure that all staff employed at the Waterloo Housing Group, and Platform Housing Group and Residents on the site are aware of, and fully understand the Flood Response Plan. Training and exercising requirements of this plan are detailed in Section 10.

### 1.4 Plan review schedule

For this plan to be successful, the Waterloo Housing Group and Platform Housing Group, will need to ensure that the plan is checked, maintained, rehearsed, reviewed and revised when required.

It is recommended that:

- the plan is reviewed annually, in line with the staff training and exercise regime.
- a record is kept to document reviews and any subsequent revisions.
- any revisions to the plan are communicated to all staff and residents.

## 2 Key site information

### 2.1 Key site details

The following table provides a list of key site details, and Figure 2-1 shows a map of the Saltisford site and its only vehicular access route.

Table 2-1: Key site details

<b>Individual(s) responsible for plan maintenance:</b>	Waterloo Housing Group
<b>Individual(s) responsible for activating the flood procedures:</b>	Platform Housing Group
<b>Site name:</b>	St Michaels Hospital, Saltisford
<b>Site address:</b>	Former St Michaels Leper Hospital, Saltisford, Warwick, Warwickshire, CV34 4TD
<b>Site use:</b>	Residential dwellings and refurbishment of two Grade II listed buildings
<b>Nearest hospital with A&amp;E department, and details:</b>	Warwick Hospital, Lakin Road, Warwick, CV34 5BW Main switchboard Tel: 01926 495321 / 999 (By car, the hospital is 1 mile / 5 minutes from the site)
<b>Local Planning Authority:</b>	Warwick District Council
<b>Lead Local Flood Authority:</b>	Warwickshire County Council

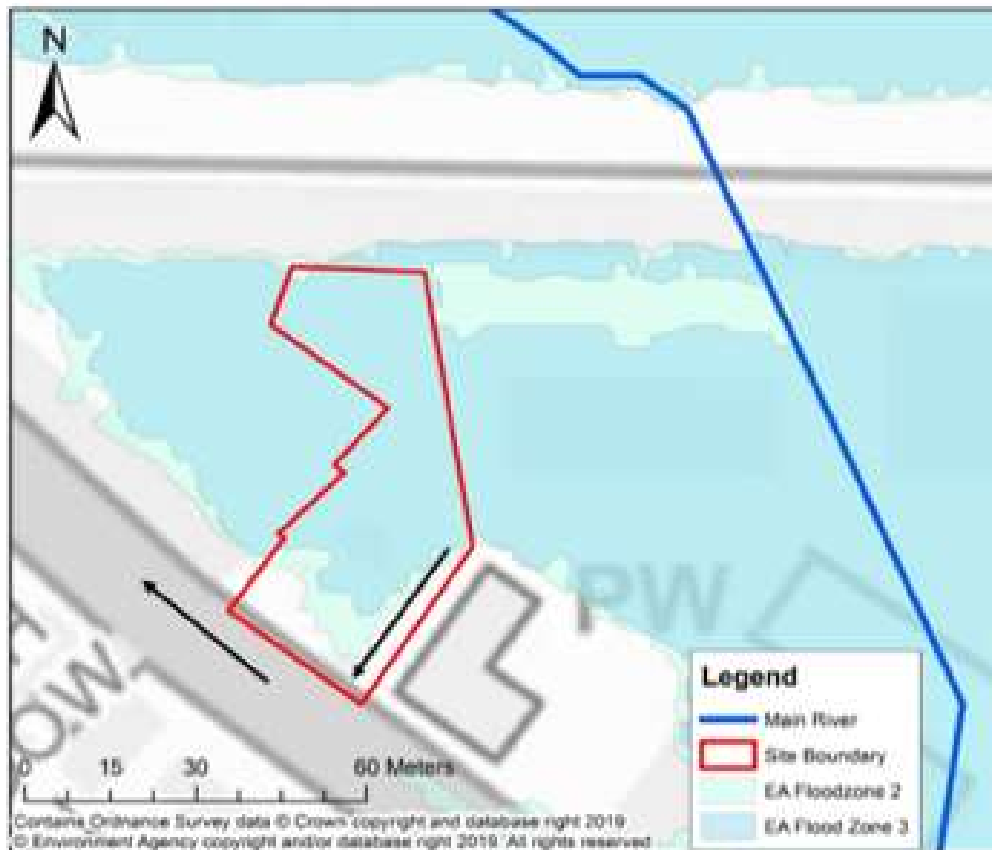


Figure 2-1: Saltisford EA Flood Map



## 3 Flood risk information

### 3.1 Historical flooding

An assessment of historical flooding at the proposed development site has been undertaken. The Warwick District Council Level 1 Strategic Flood Risk Assessment (SFRA) does not record any specific flooding along Saltisford Brook. However, local knowledge (obtained from Warwick District Council Saltisford Planning Applications) does mention that this area has flooded previously and additionally, Saltisford Common flood alleviation scheme, located upstream from the site, was finalised in 2000.

Based on the Environment Agency's Historic Flood Maps there does not appear to have been any recorded incidents of flooding at the site, although standing water has been noted around the Saltisford and Ansell Way areas.

### 3.2 Ground Water Flood Risk

Groundwater flooding occurs when the water table rises above ground level, which generally occurs during or following a period of prolonged rainfall. This is most likely to occur in low-lying areas that are underlain by permeable bedrock and superficial geology. Unlike other forms of flooding, groundwater flooding does not pose a significant risk to life however can cause serious damage to property.

The Warwick SFRA indicates that neither the Environment Agency or the British Geological Survey (BGS), hold any records to indicate major problems with flooding from groundwater within Warwick District. Groundwater flood risk to the site is therefore considered to be low with no documented cases of groundwater flooding in the vicinity of the proposed development.

### 3.3 EA modelled flood risk

#### 3.3.1 Surface Water Flood Risk

The EA Risk of Flooding from Surface Water (RoFSW) maps indicate the site is at a medium risk of surface water flooding. The overall risk impacts the north of the site within 1 in 30-year extents which reduces towards the south of the site and the A452. The Chapel is at low risk from surface water flooding.

An outline surface water drainage strategy has been prepared by Patrick Parsons to manage the post-development surface water runoff. The development should aim to reduce the existing flood risk to other sites by on-site management of the generated runoff rates and volumes utilising sustainable drainage (SuDS) techniques. For more information see the SSWDS report provided by Patrick Parsons (external report).

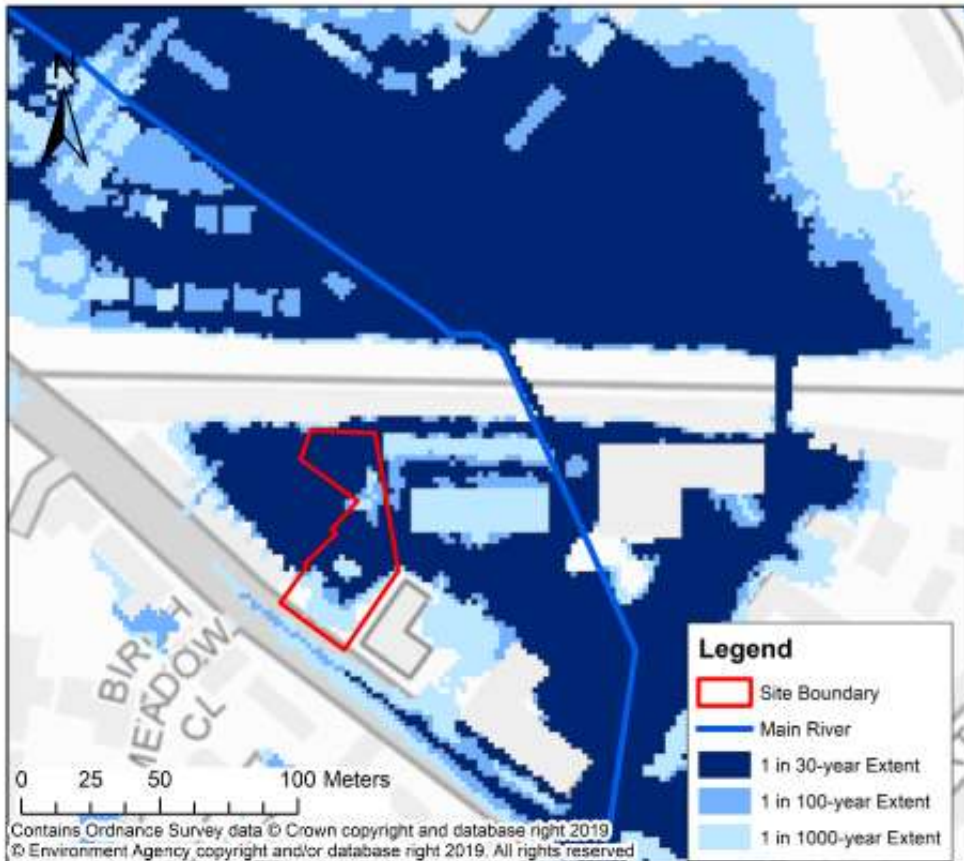


Figure 3-1: Environment Agency Surface Water Flood Risk Map.

### 3.3.2 Reservoir Flood Risk

The EA Reservoir Flood Risk map shows the site is not within the modelled extents of reservoir failure. As such the risk is deemed to be negligible.

### 3.3.3 Fluvial flood risk

The primary watercourse in the vicinity of the proposed development site is the Saltisford Brook, a tributary of the River Avon located north-east of the site. The Saltisford Brook is afforded a flood storage area upstream in Saltisford Common, the Brook then discharges into a 1.05m diameter culvert for a short distance then into a 1.35m diameter culvert. The Brook is open for a short distance immediately upstream of the railway line and then culverted again through and past the site.

The latest EA Flood Zone mapping, as shown in Figure 3-2, shows that the site is located mainly within Flood Zone 3 (1% AEP) and Flood Zone 2 (0.1% AEP). A small section of the site to the southeast and southwest is outside both Flood Zone 3 and Flood Zone 2.

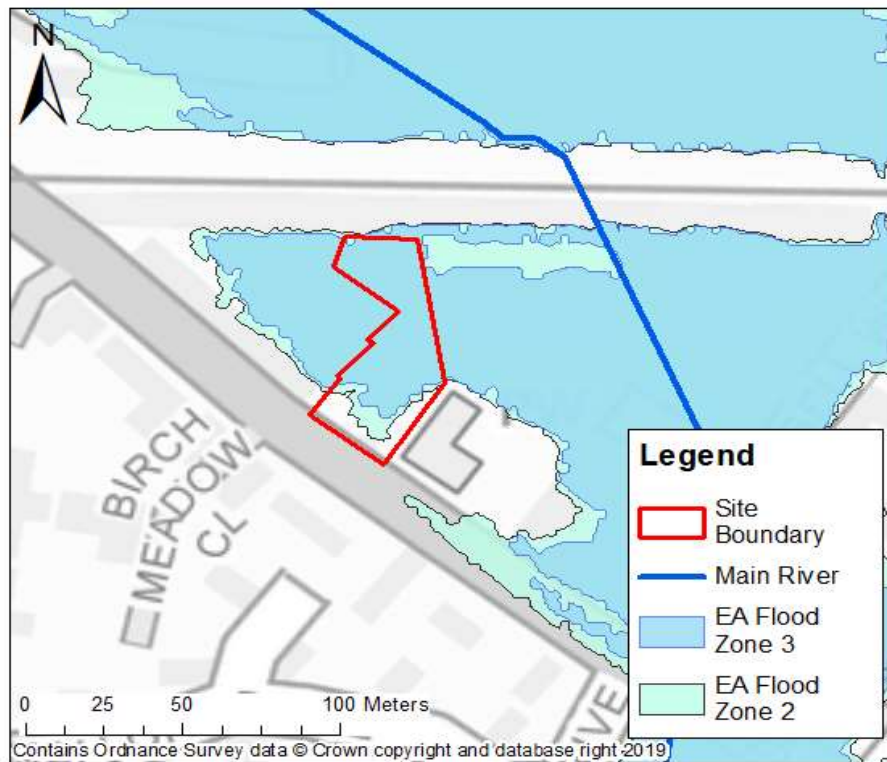


Figure 3-2: Environment Agency Flood Zones

### 3.4 JBA Consulting modelled flood risk

Using the model obtained from the Environment Agency, JBA Consulting calculated the flood risk at the site from river flood events and calculated both these risks using climate change adjustments.

#### 3.4.1 River flooding

A copy of the EA model was obtained and updated using site-specific topographic survey data and the upgraded model was then run for the following scenarios:

- 20-year (5% AEP) flood event - existing condition scenario
- 100-year (1% AEP) flood event - existing condition scenario
- 100-year (1% AEP) with Climate Change (35%) - existing condition scenario
- 100-year (1% AEP) with Climate Change (70%) - existing condition scenario
- 1,000-year (0.1% AEP) flood event - existing condition scenario

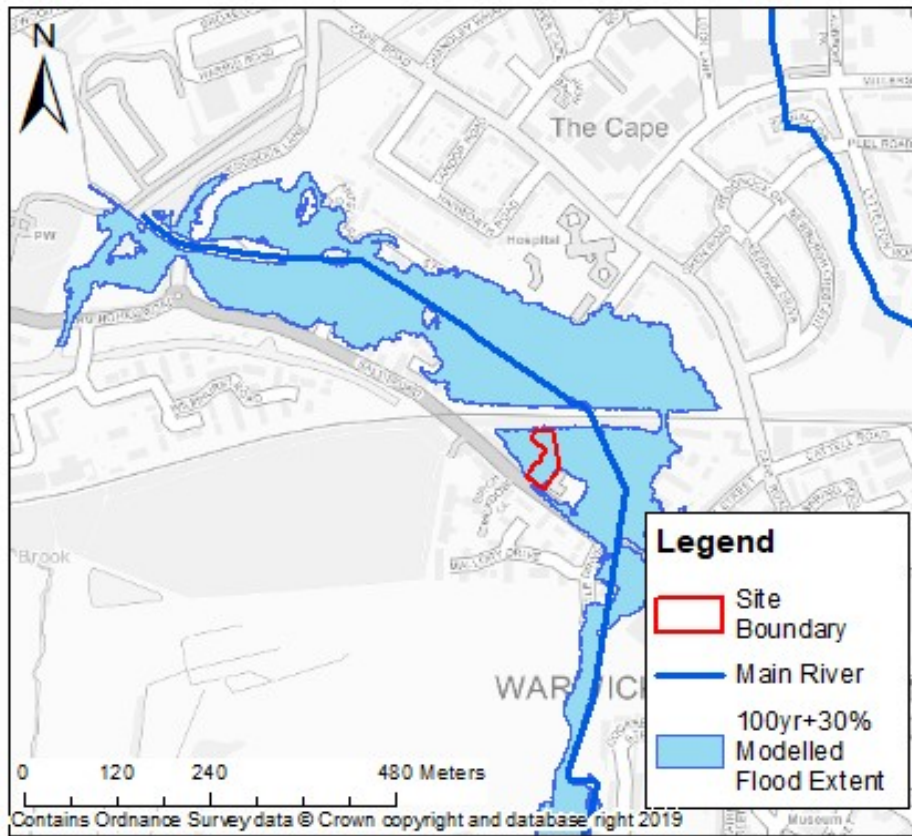


Figure 3-3: Modelled flood extent during the 100-year with Climate Change (35%) scenario

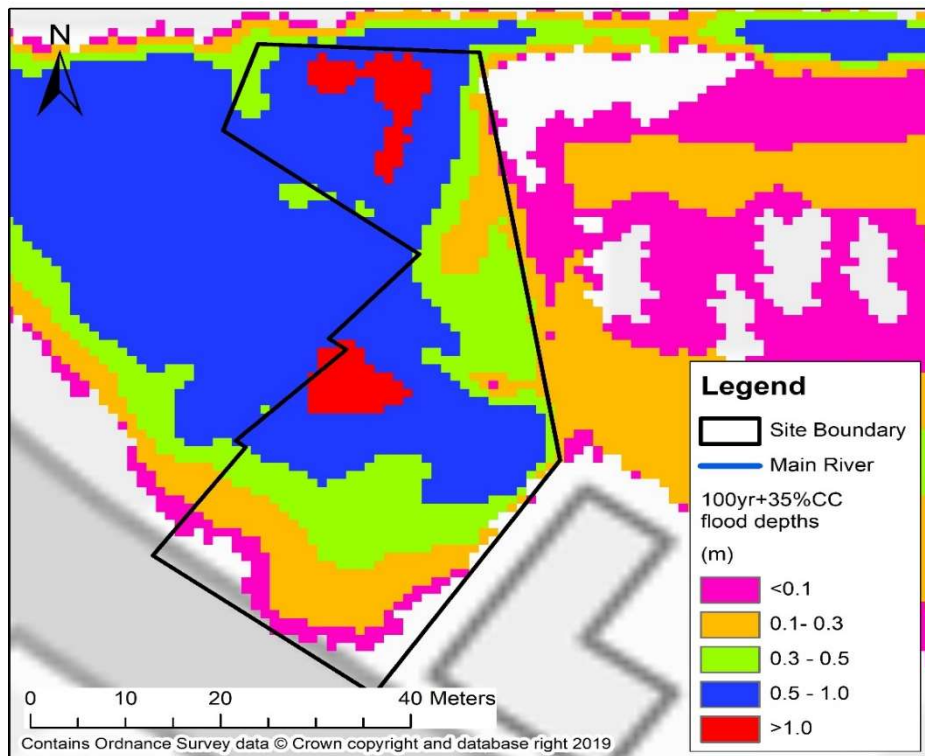


Figure 3-4: Flood depths during the 100-year with Climate Change (35%) scenario

Flooding is concentrated to the north of the site adjacent the Saltisford Brook and the site is impacted by the climate change scenario. There is a good correlation between the EA Flood Zones and the modelled flood extents from the culverted watercourse.

Figure 3-4 shows the flood depths across the site are similar with peak depths of >1.0m mirroring the underlying topography, with the deepest depths in the west side of the central part of the site and an area in the north of the site. Flood depths decrease towards the south of the site and east from these zones of deeper flood depths. The depth of majority of the flooding across the site is between 0.3m -1.0m, in the 35% climate change event.

There is, however, a flood storage area in Saltisford Common, approximately 1km upstream of the development site. The flood storage scheme was designed to prevent flooding downstream up to a 100 year plus climate change level of protection and to allow development of Council owned land including the current former fire station and gas works site. The flood storage area was formally adopted by the Environment Agency and the Saltisford Brook was “enmained” following completion of the works.

Downstream of the flood storage area, the Saltisford Brook is culverted in 1.05m diameter pipe for a short distance then in 1.35m diameter pipe. The brook is daylighted for a short distance immediately upstream of the railway line then historically culverted again through and past the site.

### 3.5 Access and egress routes

As can be seen in Figure 2-1, there is one vehicular access point to the site, which leads on to the A452 main road.

Safe access and egress to the site is maintained via the A452, informed by Environment Agency early warning to / from the development site will be towards the front of the site and via the A452, travelling north. It is not recommended to travel southbound along the A452, as partial sections are also at risk from flooding. Flooding of the site in a climate change event raises a risk of isolation to the proposed development, with a significant risk shown across the centre of the site.

The hazard to people classification classifies the risk at the main road to be low and as such, will not impact access and egress out of the site. During the 100-year with 35% climate change modelled event, there is a section in the south west of the site that is within danger for some / danger for most.

#### 3.5.1 Evacuation arrangements and safe retreat

Early evacuation of the site should be considered and, once evacuation becomes unsafe, the proposed new block of flats will be used as a safe refuge. Due to the unsuitability of the current flood alert (with the last three alerts lasting between 5-6 days), Waterloo Housing Group are in discussions with the Environment Agency regarding a small financial partnership contribution to help improve off-site mitigation measures, such as a water level monitoring station at the Saltisford Common Play Area, or to contribute into the possible EA-led alleviation scheme in order to improve the alerts in this area, so that an early evacuation for this site can be considered.

A flood marker board should be installed along the evacuation route. This flood marker board could mark levels including:

- When safe pedestrian access is lost.
- When safe vehicular access is lost and residents and persons on site should contain themselves on site.

JBA Consulting suggest that residents can remain in their apartments as a safe retreat for the duration of any flood and that the resilience measures recommended for the Master’s House will ensure workers on-site are safe.

#### 3.5.2 Off-site mitigation

The flood storage area, approximately 1km upstream of the development site, was designed to prevent flooding downstream up to a 100 year plus climate change standard of protection. The flood storage area was formally adopted by the Environment Agency and the Saltisford Brook was “enmained” following completion. The area is therefore afforded a high (when built) standard of protection to the Saltisford area and excess fluvial flows are stored upstream of the site.

There is a potential flood risk management scheme to reduce the risk of flooding to properties along and within the Saltisford Brook area. The feasibility of these options is likely to be carried out in due course and several funding streams will need to be explored by the Environment Agency and Lead Local Flood Authority, should a preferred option be identified. This will include gaining external contributions, if needed, for the scheme to go ahead.

### 3.5.3 On site mitigation

The Chapel and the Master's House are sited at the front of the site, therefore building a boardwalk to enable permanent safe access and egress during the peak of the 100-year with (+35%) climate change flood event to / from the proposed new building is not possible as may affect the external Grade II\* listed building characteristics. As an alternative, early evacuation of the site should be considered and, once evacuation becomes unsafe, the proposed new building will be used as a safe refuge.

Therefore, a flood marker board should be installed along the evacuation route. This flood marker board could mark levels including

- When safe pedestrian access is lost in a climate change flood event;

When safe vehicular access is lost and residents and persons on site should contain themselves on site, in a climate change flood event.

In 2018 Waterloo Housing Group merged with Fortis Living to create a new Group, called Platform Housing Group. Waterloo is an operating Association within Platform Housing Group. Waterloo is currently in discussions with the Environment Agency regarding a small financial partnership contribution to help improve off-site mitigation measures, such as a water level monitoring station at the Saltisford Common Play Area, or to contribute into the possible EA led alleviation scheme in order to improve the alerts in this area, so that an early evacuation for this site can be considered. This is subject to agreeing the level of contribution sought and with consideration for the future use of the site as affordable housing – as a sizeable contribution would affect viability of the site. Any one-off contribution could help maintain, and feasibly, help improve the provision and efficiency of the storage area and flood alert service in order to provide a flood warning service. The storage area and provision of flood alerts already offers wider benefits to the existing area and if the development goes forward, will provide additional benefits to any approved dwellings on the Saltisford site. Waterloo are willing to work alongside the relevant flood risk management authorities as this development would offer additional wider sustainability benefits and assist with safeguarding properties.

## 4 Flood awareness and warning

### 4.1 Raising resident awareness

It is essential that all residents at the Saltisford site are aware of the flood risk from the Saltisford Brook, and the action they should take before and during a forecasted, imminent, or current flood event.

Listed below are ways in which the flood awareness of residents should be raised by Waterloo Housing Group:




1. In Appendix A, a one-page information sheet named the Residents' "Flood Action!" Information Sheet has been produced for residents. This should be included with any documentation and/or packs provided to residents upon moving into their accommodation and posted onto any public notice boards. It is also recommended that the one-page information sheet is laminated and stuck onto the back of the front door of dwellings (alongside fire evacuation procedures) so it is easily accessible to residents.
2. In Appendix B, a Residents Flood Pack published by Warwickshire County Council (2007) offers useful local information regarding staying safe in a flood, cleaning up after a flood and frequently asked questions. This should also be included to residents.
3. Residents should be directed to the Government's Flood Information Service webpage for further information on preparing for a flood and be encouraged to prepare an Individual Flood Plan:

[flood-warning-information.service.gov.uk/plan-ahead-for-flooding](https://flood-warning-information.service.gov.uk/plan-ahead-for-flooding)

### 4.2 Flood warning service

The government offers a free flood warning service for properties located in areas at risk of flooding from main rivers and/or the sea. Different warning levels are issued based on the severity of the forecasted flooding. See Table 4-1 for further information.

Table 4-1. Flood Warning Service

	<p><b>Severe Flood Warning</b></p> <p>Severe flooding - danger to life.</p>
	<p><b>Flood Warning</b></p> <p>Flooding is expected - immediate action required</p>
	<p><b>Flood Alert</b></p> <p>Flooding is possible - be prepared.</p>
Warning No Longer in Force	<p><b>Warning No Longer in Force</b></p> <p><b>No further flooding is currently expected in your area.</b></p>

The site lies within the "Middle Avon Rugby to Bidford" Flood Alert area, and so individuals registered to the service will receive a "Flood Alert" when river flooding is forecasted for the area and a "Warning No Longer in Force" when no further flooding is expected in the area.

The Waterloo Housing Group and the site residents should register to this service, as receipt of a Flood Alert will inform Platform Housing Group and Waterloo Housing Group and the residents of a forecasted or imminent river flood. This will also serve as a trigger to put into action the relevant flood response procedures.

All the residents should register with the service (even those residing on the first floor and above, who are unlikely to experience internal flooding in their flats) as flooding can affect the site's access and egress routes, and cause damage to vehicles parked on site.

Further information on the service and details of how to register can be found online at: [www.gov.uk/sign-up-for-flood-warnings](http://www.gov.uk/sign-up-for-flood-warnings)

The residents of the Saltisford site will be required to register with the Environment Agency (EA) to receive free flood warnings via Floodline Warnings Direct (FWD). The EA issue warnings when river and / or tidal flooding has been forecasted for main rivers and coastal areas. The EA does not forecast or issue warnings for surface water, groundwater, reservoir or any other source of flooding.

The site lies within the EA: "Middle Avon Rugby to Bidford" Flood Alert area,

And one level of warning is provided for the site (see Figure 4-1)


	<p><b>Flood Alert</b> Flooding is possible - be prepared.</p>
<p>Warning No Longer in Force</p>	<p><b>Warning No Longer in Force</b> No further flooding is currently expected in your area.</p>

Figure 4-1: The EA flood alert for the area

Registration details: [Waterloo Housing Group - on behalf of Platform Housing Group](#)

Included in Table 4-2 and Table 4-3 are a resident template with registration details with the Environment Agency to receive free flood warnings for the Saltisford site.

Table 4-2: Registration details for Residents

Customer reference number:		*****
Title:		Mr / Mrs / Miss / Ms / Dr / Mx / Mre
First name:		
Last name:		
If we need to write to you about your account, we will use this address:		House No, Saltisford, Warwick, Warwickshire, CV34 4TD
If we need to send you an email (one that isn't a flood warning) we will use this email address:		
When we write to you we will use this language:		English / Other
The contact numbers and addresses we will use to send you messages about flooding.		
What the contact is called:	How we'll send the message to you:	The number or address we'll use:
Main	Phone number	01926 *** **
Alternative	Phone number	
Main	Email	xxxx@xxxxx.
Alternative	Email	xxxxl@xxxxx



Table 4-3: Registration details for Jeff Plant (Assistant Director)

Customer reference number:		xxxxxxx
Title:		Mr
First name:		Jeff
Last name:		Plant
If we need to write to you about your account, we will use this address:		Platform Housing Group c/o Waterloo Housing Group, 1700 Solihull Parkway, Birmingham Business Park, Solihull B37 7YD
If we need to send you an email (one that isn't a flood warning) we will use this email address:		jeff.plant@platformhg.com
When we write to you we will use this language:		English
The contact numbers and addresses we will use to send you messages about flooding.		
What the contact is called:	How we'll send the message to you:	The number or address we'll use:
Main	Phone number	0345 600 6055
Alternative	Phone number	
Main	Email	jeff.plant@platformhg.com
Alternative	Email	kevin.carl@platformhg.com

Upon the creation of these accounts, an email should be sent from FWD to the Resident and to Platform Housing Group. The email should include their individual customer reference number and password.

The FWD account details can be amended at any time by phone (through ringing 0345 988 1188) or online (through visiting <https://www.gov.uk/sign-up-for-flood-warnings>). The customer reference number and password will be required to amend the FWD account details. Receipt of flood warnings issued through the FWD service will inform the Residents of a forecasted or imminent fluvial flood. This will also serve as a trigger to put into action the relevant flood procedures.

#### 4.2.1 Registration details: Saltisford Residents

It is a requirement of this Flood Response Plan, for all residents at the Saltisford site to register with the FWD service and receive free local flood alerts from the EA. All the residents should register with the service (even those on upper apartments on the first and second floors, who are unlikely to experience internal flooding in their flats from the brook or surface water) as flooding could affect the site's access and egress routes, and cause damage to vehicles parked on site.

Any future residents at the Saltisford site should be registered with the service. However, the residents must be informed of the service by the Waterloo Housing Group, and the need and benefits of the service.

Residents can register by;

- phone (through ringing Floodline on 0345 988 1188) or
- online (visiting: <https://www.gov.uk/sign-up-for-flood-warnings>)

#### 4.3 EA Twitter Alerts

It is also recommended that residents, Assistant Director of Platform Housing Group and any other relevant Waterloo Housing Group staff, sign up to receive EA's Twitter Alerts at @FloodAlerts\_WAR.

The EA aim to use Twitter Alerts to send critical warning information to customers via Twitter when there is significant risk to life or the environment across Warwick, as a result of flooding or environment incidents. Twitter Alerts will be sent to share warnings about;

- imminent flooding to homes and businesses,
- failures of waterway structures presenting a hazard to the public or property, and
- pollution that presents a risk to people.

## 5 Flood risk planning and monitoring activities

### 5.1 Flood risk planning

### 5.2 Daily flood risk monitoring activities

To maintain awareness of any potential flooding, the Assistant Director or an appointed member of staff is required to monitor weather, and flood forecasts weekly or in the event of experiencing poor weather (preferably at the start of each working day). If a flood has been forecasted, the frequency of these monitoring activities should be increased (e.g. hourly).

It is recommended that the services provided by the organisations included in Table 5-1 should be monitored.

Table 5-1: Weather and flood related services for daily monitoring activities

Organisation:	Services:	Look out for:	Website:
<b>Met Office</b>	National Severe Weather Warnings	A severe weather warning for rainfall	<a href="https://metoffice.gov.uk/public/weather/warnings">metoffice.gov.uk/public/weather/warnings</a>
	Weather forecast	Poor weather forecasted	<a href="https://metoffice.gov.uk/public/weather/forecast">metoffice.gov.uk/public/weather/forecast</a>
	Flood Warnings & Alerts	Flood warnings in force	<a href="https://metoffice.gov.uk/public/weather/flood-warnings">metoffice.gov.uk/public/weather/flood-warnings</a>
<b>Gov.UK Flood Information Service</b>	5-day weather forecast	Notification of severe weather	<a href="https://flood-warning-information.service.gov.uk/5-day-flood-risk">https://flood-warning-information.service.gov.uk/5-day-flood-risk</a>
	Flood Warnings	Notifications of flood alerts and warnings	<a href="https://flood-warning-information.service.gov.uk/warnings">https://flood-warning-information.service.gov.uk/warnings</a>
<b>Warwickshire Police</b>	Advice to the public	Notification of flooding	<a href="https://www.warwickshire.police.uk">https://www.warwickshire.police.uk</a>
<b>Local and National News</b>	Weather warnings	Notification of flooding	BBC Coventry and Warwickshire <a href="https://www.bbc.co.uk/bbccoventryandwarwickshire">https://www.bbc.co.uk/bbccoventryandwarwickshire</a>
<b>Warwick District Council</b>	Advice to the public	Notification of flooding	<a href="https://www.warwickdc.gov.uk/info/20143/floods">https://www.warwickdc.gov.uk/info/20143/floods</a>
	Flooding Information Packs	Online guidance and advice	<a href="https://www.warwickdc.gov.uk/downloads/download/54/flooding_information_pack">https://www.warwickdc.gov.uk/downloads/download/54/flooding_information_pack</a>

## 6 Notification of flooding and actions

Action will be required by the Assistant Director or nominated individual upon receipt of a Flood Alert and Warning No Longer in Force, or if there is flooding reported along the Saltisford Brook. The action required for the different warning levels and sources are summarised below.

A decision aid flow chart is provided in section 6.5. This will help the Assistant Director or nominated deputy to identify when to utilise each procedure. It is recommended that the flow chart and each of the procedures are printed, laminated, and kept in a central place so these are easily accessible to staff.

All the procedures below should be used in conjunction with Waterloo Housing Group's Disaster Recovery Plan which includes details of mitigation measures as well as maintenance plans and response expectations.

### 6.1 Receipt of a Flood Alert

Upon receipt of a Flood Alert for the **"Middle Avon Rugby for Bidford"** Flood Alert area, the Assistant Director or nominated deputy should activate the:

**Flood Alert Procedures in section 7.1.**

### 6.2 Warning No Longer in Force

Upon receipt of a Warning No Longer in Force, the Assistant Director or nominated deputy is required to activate the:

**Warning No Longer in Force Procedures in section 7.4.**

### 6.3 Saltisford Brook Flooding

Upon notification that the Saltisford Brook is flooding or anecdotal reports of flooding, the Assistant Director or nominated deputy is required to activate the:

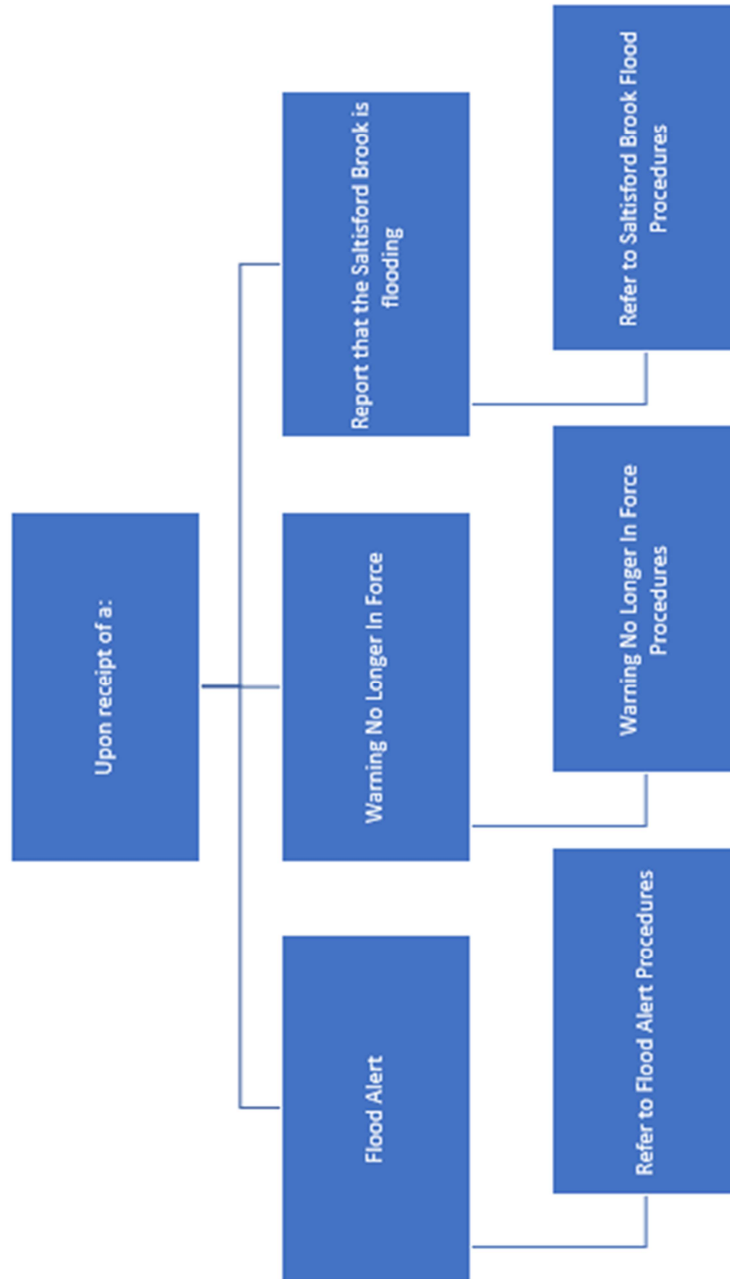
**Saltisford Brook flood procedures in section 7.5.**

### 6.4 Health and safety

It is a requirement that the Assistant Director or nominated deputy acknowledges the following:

- if there is a risk to life, a member of staff is to call the emergency services on 999, request their assistance and wait their instructions.
- individuals should assess each situation to check it is safe to proceed and request help if required. Members of staff are not trained members of the emergency services, and at no time should a member of staff be asked to carry out anything that could put their life at risk.
- throughout each stage of the procedures, the Assistant Director or nominated deputy is to assess the health and safety risks.

6.5 Decision aid flow chart



## 7 Procedures for flooding

### 7.1 Flood Alert Procedures

<b>Flood Alert Procedures</b>			
<b>To be used upon receipt of a Flood Alert for the: Middle Avon Rugby to Bidford Flood Alert area</b>			
<b>Priority</b>	<b>Action:</b>	<b>To be completed by:</b>	<b>Action completed:</b>
<b>1.</b>	<p><b>MONITOR</b></p> <p>Continue to monitor the services offered by the organisations listed in section 5.2 for worsening conditions.</p> <p>Increase the frequency which these services are monitored if considered necessary.</p>	<p>Assistant Director, or appointed member of staff / Residents</p>	
<b>2.</b>	<p><b>REMAIN VIGILANT</b></p> <p>Remain vigilant of the current and forecasted conditions.</p>	<p>Assistant Director, or appointed member of staff/ Residents</p>	
<b>3.</b>	<p><b>AWAIT INSTRUCTION</b></p> <p>If there is an emergency or danger to life, please call 999 and await instruction from the emergency services</p>	<p>All</p>	

**Throughout this process if there is:**

- any risk to life, or
  - any visible threat to the structural integrity of the building,
- then any individual should call 999, request the emergency services and await their instruction.**

## 7.2 Warning No Longer in Force Procedures

Warning No Longer in Force Procedures			
To be used upon receipt of a Warning No Longer in Force from the Environment Agency			
Priority	Action:	To be completed by:	Action completed:
1.	<p><b>ASSESS IMPACTS</b></p> <p>Assess the flood impacts through a visual inspection of the site. If the site experienced internal inundation, refer to Waterloo Housing Group's Disaster Recovery Plan for business continuity measures. Refer to Section 8 for further information.</p>	Assistant Director, or appointed member of staff / Residents	
2.	<p><b>REMOVE FLOOD PROTECTION MEASURES</b></p> <p>If <b>ANY</b> flood protection measures were implemented to protect the site from flooding (e.g. sandbags), remove these once the floodwaters have subsided.</p>	Assistant Director, or appointed member of staff / Residents	
3.	<p><b>REVIEW EMERGENCY PLANS AND PROCEDURES</b></p> <p>Review the;</p> <ul style="list-style-type: none"> <li>• Flood Response Plan,</li> <li>• Incident Management Plan,</li> <li>• Loss of Property - Housing Recovery Plan, and</li> <li>• Loss of Property - Assets Recovery Plan</li> </ul> <p>and update/amend as necessary.</p>	Assistant Director, or appointed member of staff / Residents	

## 7.3 Saltisford Brook Flood Procedures

<b>Saltisford Brook Flood Procedures</b>			
<b>To be used if the Saltisford Brook is flooding without a prior Flood Alert and threatening to flood the site.</b>			
<b>Priority</b>	<b>Action:</b>	<b>To be completed by:</b>	<b>Action completed:</b>
<b>1.</b>	<p><b>INFORM STAFF</b></p> <p>Inform staff at Waterloo Housing Group that the Saltisford Brook is threatening to flood the <b>Saltisford</b> site.</p>	Assistant Director, or appointed member of staff / Residents	
<b>2.</b>	<p><b>INFORM RESIDENTS</b></p> <p>Inform all residents of Saltisford that there have been reports the Saltisford Brook is flooding and they should;</p> <ul style="list-style-type: none"> <li>• refer to the Residents' "Flood Action!" Information Sheet</li> <li>• consider activating their Individual Flood Plan, and</li> <li>• await further information from the Waterloo Housing Group.</li> </ul>	Assistant Director, or appointed member of staff / Residents	
<b>3.</b>	<p><b>VISUAL INSPECTION</b></p> <p>If safe to do so, carry out a visual inspection of the Saltisford site, the immediate area, and the access routes to assess the situation and local flood risk.</p>	Assistant Director, or appointed member of staff / Residents	
<b>4.</b>	<p><b>INFORM WARWICK DISTRICT COUNCIL &amp; ENVIRONMENT AGENCY</b></p> <p>Based on the information received in point 3, consider informing WDC that the Saltisford Brook is threatening to flood the Saltisford site.</p> <p>Request and await further information from NPTCBC on the situation.</p>	Assistant Director, or appointed member of staff / Residents	
<b>5.</b>	<p><b>ACTION EMERGENCY PLANS</b></p> <p>Based on the results of the visual inspection Refer to Waterloo Housing Group 's Disaster Recovery Plan for further details on the actions which should be undertaken by the Assistant Director, or appointed member of staff during an emergency.</p>	Assistant Director, or appointed member of staff / Residents	
<b>6.</b>	<p><b>FLOOD PROTECTION MEASURES</b></p> <p>Consider implementing flood protection measures (e.g. sandbags or bespoke flood protection products) at the site if safe to do so and considered necessary.</p>	Assistant Director, or appointed member of staff / Residents	

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7. **ONCE THE FLOOD RISK HAS PASSED**

Once the flood risk to the site from the Saltisford Brook has passed - information obtained either through a situation update by **WDC** or through site reports by Waterloo Housing Group Staff - refer to the procedures listed in section 6.11: **Warning No Longer in Force Procedures.**

Assistant  
Director, or  
appointed  
member of staff /  
Residents



## 8 General considerations

Listed below are general precautionary actions, tasks and considerations the Assistant Director, or appointed member of staff and Residents should take to remain vigilant, and ensure residents and staff remain vigilant of the flood risk to the site.

### 8.1 Vulnerability of site users

The vulnerability of residents at the site should be known by Waterloo Housing Group. It is assumed that a portion of the residents will be vulnerable (e.g. elderly, disabled). Further consideration should be given to these more vulnerable groups as they may require assistance before, during or after a flood.

### 8.2 Communication

#### 8.2.1 Informing staff about the flood risk to your site

The Assistant Director, or appointed member of staff should raise awareness of the flood risk to the Saltisford site, and the Flood Response Plan, to relevant residents at Saltisford. The main objective of raising awareness is to ensure staff and residents have a thorough appreciation and understanding of the flood risk at the site.

#### 8.2.2 Informing residents about the flood risk at the site

It is a requirement of this Flood Response Plan for all residents at the Saltisford site to register with the FWD service and receive free local flood alerts from the EA. However, the EA do not issue warnings for surface water flooding, therefore if the Saltisford Brook flooded by virtue of blockage, residents may not receive a warning for this event. If the Waterloo Housing Group become aware that the Saltisford Brook is threatening to flood the site, the residents (especially those with apartments on the ground floor) should be informed. Residents can be informed by phone or through visiting the site and corresponding directly with the residents.

#### 8.2.3 Social Media

Flood forecasts and the notification of flooding at the site can be made instantly available on social media platforms. The Waterloo Housing Group social media accounts (including Twitter and Facebook) should be utilised to communicate this information with its followers. The residents of Saltisford should be encouraged to follow these social media accounts to keep up to date with forecasts and site notifications.

#### 8.2.4 Website

The Waterloo Housing Group internet and intranet website could be used to communicate weather and flood forecasts, as well as notification of flooding to staff and/or residents of the site.

## 9 Actions following internal flooding

The Flood Response Plan is not a business continuity plan. The intention of this section is to provide a list of actions for the Assistant Director, or appointed member of staff to consider in the immediate aftermath of a flood event if internal flooding has been experienced, to maintain site safety. This list is not exhaustive and only seeks to list generic recovery actions.

- It is recommended that advice is sought from either of the following organisations following internal flooding:
  - i. Your insurance company, and
  - ii. The local and district council;
- Assess the damage and decide whether it is safe for staff and residents to remain on site;
- Speak to your insurance company. Take photographs or video flood damage to site. List the damage caused to property and belongings;
- Contact third parties / external partners to notify of any disruption to services and input any business continuity plans;
- Remember hazards associated with floodwater, particularly the electricity supply and electrical appliances (get a qualified electrician if needed). Ensure staff have appropriate protection if they are involved with the clear up operations, and undertake necessary health precautions (e.g. washing hands, decontaminating footwear);

The Government website contains flooding guidance including what to do if a flood happens and advice on clearing up after a flood:

[gov.uk/government/collections/flooding-health-guidance-and-advice](https://www.gov.uk/government/collections/flooding-health-guidance-and-advice)

Refer to the Waterloo Housing Group Disaster Recovery Plan which would include details of mitigation measures as well as maintenance plans and response expectations following a flood event for further details.

## 10 Training and Exercising

Under the 'Contingency Planning' sections of the 2004 Civil Contingencies Act, it stated that emergency plans should be maintained, and it is a requirement that such plans include the provision to carry out exercises and the training of staff.

The Assistant Director, or appointed member of staff are to ensure that all commercial staff employed at Waterloo Housing Group are aware of, and fully understand the Flood Response Plan. A review of the Flood Response Plan should be included as part of all new staff inductions.

It is recommended that all staff employed at Waterloo Housing Group take part in an emergency exercise on an annual basis, to test and rehearse procedures.

Waterloo Housing Group should ensure that the Director of Assets or Assistant Director of Assets are suitably trained and competent to maintain and action the Flood Response Plan.

## Appendices

### A Residents' "Flood Action!" Information Sheet

(See attachment: 2019s0054- Saltisford Flood Response Plan - Residents Flood Action Information Sheet)

# Flood Action!

This site is at risk of flooding from the Saltisford Brook

## General Flood Information

- **Contact the emergency services on 999 if there is a flood and you are in immediate danger.**
- Do not walk or drive through floodwater.
- It is recommended you prepare an Individual Flood Plan. For more information on this, and other actions you should take to prepare for a flood, visit <https://www.gov.uk/prepare-for-flooding>
- Contact Waterloo Housing Group on 0345 600 6055 for more information on flooding at the site.

## Flooding from the Saltisford Brook

If floodwater is threatening to flood the site from the east:

1. Report the flooding to Environment Agency on **0345 988 1188**
2. Report the flooding to **Warwick District Council** on **01926 450 000**.
3. Alert **the Waterloo Housing Group** on **0345 600 6055** (Monday to Friday: 8.30am to 5pm) - also available out of hours.
4. Activate your Individual Flood Plan and stay in your home.
5. Remain vigilant and await further information from the Environment Agency, Warwick District Council or the Waterloo Housing Group.

## Flooding from the Saltisford Brook- Flood Alert issued

- The government issue free flood warning for the Saltisford Brook.
- To receive these warnings, visit <https://www.gov.uk/sign-up-for-flood-warnings> or ring **Floodline on 0345 988 1188**.
- There is only one level of flood warning issued for your area; a Flood Alert.
- Upon receipt of a Flood Alert, the procedures you ought to follow are listed in the table below.
- To find out which flood warnings are currently in force, visit <https://twitter.com/EnvAgency> or <https://flood-warning-information.service.gov.uk/warnings/>



**FLOOD ALERT**

### Flooding is possible. Be prepared.

You should:

1. Review your Individual Flood Plan.
2. Monitor flood related services offered by the Environment Agency.
3. Remain vigilant. Remain indoors and / or move to first floor of the building.
4. Monitor flood related services offered by the Environment Agency.

**Contact the emergency services on 999 if you are in immediate danger.**

**WARNING  
NO LONGER  
IN FORCE**

### No further flooding is expected in your area.

You should:

1. Review any changes required to your Individual Flood Plan. If your house has flooded, or your possessions damaged by floodwater;
2. Contact your contents insurance company as soon as possible.

**Contact the emergency services on 999 if you are in immediate danger.**

## Appendices

### B Residents' Flood Pack (Warwickshire County Council)

A.1 (See Word attachment: Residents' Flood Pack (WCC) 2007)

**WARWICKSHIRE COUNTY COUNCIL**

# **RESIDENTS FLOOD PACK**

**IMPROVING THE LOCAL RESPONSE  
TO FLOOD INCIDENTS  
IN WARWICKSHIRE**



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## INTRODUCTION

In an effort to improve the response to flood incidents within Warwickshire, the Emergency Planning Unit has been involved with Parish Councils to look at initiatives which could be put in place for Parishes who have a river on the flood warning scheme and which are prone to flooding. These included:

- An Environment Agency Flood Plain map for each Parish to enable them to use local knowledge of flood events to both validate and update the information shown.
- Production of Residents Flood Packs containing information on flooding Issues.
- Application forms to go onto the Environment Agency Automatic Voice.
- Messaging (AVM) service.
- Details of local sandbag suppliers.
- Details of companies providing other flood prevention products
- Print outs from the Environment Agency Website on flood plans, how to use sandbags, etc.
- Advice from the Association of British Insurers on flooding
- Relevant contact numbers for local authorities, Environment Agency, utilities, etc.

This document, 'A Resident's Flood Pack' is a result of those consultations. I hope that you find it of use should you be faced with a flood in the future.

Jeremy Lee  
Manager of the Emergency Planning Unit

*Revised and amended 2007*



*The following is information provided by the Environment Agency*

## **FLOOD WARNINGS**

Flooding. You can't prevent it but you can prepare for it.

Flooding is a natural process that can happen suddenly. To help in preparing to respond to a flood, the Environment Agency has the role of principal flood defence operating authority in England and Wales. It is responsible for providing flood defences and issuing warnings to the public, spending approximately £300million per annum on its core flood defence activities.

Following the severe flooding during Easter 1998, the Agency established a National Flood Warning Centre (NFWC) to provide a central focus for improving flood forecasting, flood warning and communications in order to help protect people and property in flood risk areas.

While the Environment Agency provides advance warning of flooding wherever possible, and local authorities may provide assistance, it is your responsibility to protect yourself and your family.

If you live in a flood risk area do what you can now to prepare for a flood. Don't wait until it happens, you may not have time.

To find out if you are at risk from flooding use the Environment Agency Floodplain maps on their website: [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

### **Environment Agency - Flood Risk Maps**

The Environment Agency's Indicative Floodplain Maps provide an overview of flood risk in England and Wales, but do not distinguish degrees of risk, which will be higher in undefended, low-lying areas near rivers or the sea.

The fact that a property lies within a floodplain does not mean that it will definitely experience flooding, nor does it denote any particular degree of risk. Further advice about risks of or levels of protection in particular areas, or to particular properties, can be obtained by contacting your local Agency offices as follows:

#### **General Enquiry Line**

08708 506 506 (Mon-Fri 8-6) *Call this and we'll put you through to your local office.*

#### **Emergency Hotline**

0800 807060 *Call this for emergencies, like reporting a pollution incident.*

#### **Floodline**

0845 9881188 *Call this to get information on flooding.*

## Email

[enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)

To view the Environment Agency Flooding information Log onto the website:  
[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk) click on 'Flood' from the menu on the left handside.

To access 'Floodplain maps', follow the steps below on the environment agency website:

- Enter your postcode or place name in the flood map box on the right hand side of the page, and click 'GO'.
- Click on 'view map of these results'.
- To view further detail about flood maps, click on 'Flood maps more', more on the right hand side.

The floodplain areas shown include all areas known to face at least a 1 in 100 (or 1%) chance of flooding each year.

The maps show:

- Flooding from rivers or the sea without defences (coloured blue)
- Extent of extreme flood (coloured turquoise)
- Location of flood defences (coloured turquoise with purple shape in)
- Areas benefiting from flood defences (coloured grey with dark lines through)

Remember that just because an area hasn't flooded in years, doesn't mean it never will. Scientists believe that climate change will lead to more frequent floods so it is important to be aware and prepared.

## Environment Agency -Floodline

Floodline 0845 988 1188 (this is a 24 hour 7 days a week facility) provides a single national number for the public to ring regarding flooding. This service provides current flood warning information and general advice for the public in England, Wales and Scotland. All calls are charged at local rate.

You can listen to the service in English or Welsh and there is a Minicom number 08702 422 549 for hearing impaired people.

When you first call Floodline, you will be offered these options:

OPTION 1 – To hear pre-recorded information on flood warnings currently in force (Press 1).

OPTION 2 – For road and traffic information (Press 2).

OPTION 3 – To report flooding, to order a flood pack or to make a general enquiry (Press 3 or hold).

OPTION 4 – To connect to Welsh language service (Press 4)

### Information on Roads

To find information on roads affected by flooding tune into radio traffic and weather bulletins. Also see ITV Teletext BBC Ceefax pages.

The AA ([www.theaa.com](http://www.theaa.com)) provides road flooding information through their 'Roadwatch' telephone service:

- Telephone **09003 401 100** (calls at 60p a minute, rates vary from a mobile phone) or **401 100** from you mobile phone.

### Environment Agency -Flood Warning Codes:



Flooding of low lying land and roads is expected. Be aware, be prepared, watch out!

- Watch water levels
- Stay tuned to local radio TV
- Ring Floodline on 0845 988 1188
- Make sure you have what you need to put your flood plan into action
- Alert your neighbours, particularly the elderly
- Check pets and livestock
- Reconsider travel plans



Flooding of homes and businesses is expected. Act now!

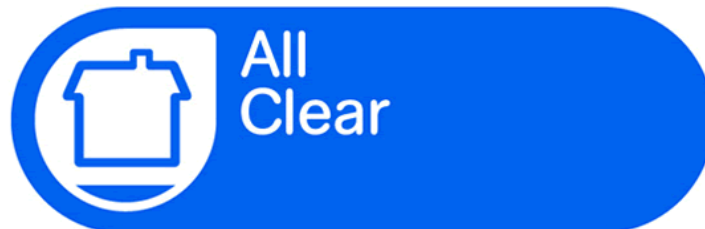
As with 'Flood Watch' plus:

- Move pets, vehicles, food, valuables and other items to safety
- Put sandbags or floodboards in place
- Prepare to turn off gas and electricity
- Be prepared to evacuate your home
- Protect yourself, your family and others that need your help



Severe flooding is expected. There is extreme danger to life and property. Act now!  
As with Flood Warning plus:

- Be prepared to lose power supplies – gas, electricity, water, telephone
- Try to keep calm, and to reassure others, especially children
- Co-operate with emergency services and local authorities
- You may be evacuated



Flood Watches or Warnings are no longer in force for this area.

- Flood water levels receding
- Check all is safe to return
- Seek advice

### **Preparing For A Flood**

The **Environment Agency** website ([www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)) has produced several documents which you can download to provide some simple steps you can take to protect yourself and your property from the worst effects of flooding.

From the Environment Agency homepage:

- Click on 'Flood' on the left hand menu
- Then click on the 'Online Flood Library' on the left hand side

The online flood library offers:

- Advice guides
- Flood fact sheets
- Fact sheets in other languages
- Information in alternative formats (Braille, large print and cassette format)
- Links to other flood information sources

The **National Flood Forum** - a community-based network set up by people who have been through the experience of flooding and suffered the distress, losses and frustration that follow - have a comprehensive website ([www.floodforum.org.uk](http://www.floodforum.org.uk)) detailing services and assistance for people affected by flooding. In particular its' 'Blue Pages Directory' provides a comprehensive list of flood protection products and services that can be used to protect your home against flooding.

*The following is information provided by the Environment Agency*

## **WHO TO CONTACT**

### **Organisations roles and responsibilities:**

#### **Fire Brigade**

The Fire and Rescue service has responsibility primarily for saving life. If someone is in immediate danger call 999 and ask for the Fire Brigade. Do not use the 999 system for services that are not urgent. They can also help by pumping out properties following flood, which will aid drying out. Sometimes a charge is made for this service.

#### **Police and Ambulance**

The Police and Ambulance services continue to provide their normal services. If you have to leave your property following a flood notify the local Police station (if they have not already contacted you). The Police can give advice on securing property following flood damage.

#### **Health Services -GPs, Clinics, Hospitals**

Flooding presents many health hazards: immediate risk of drowning, contamination of water, respiratory problems from mould, stress and even long-term psychological or mental health problems. Visit your local GP or clinic whenever you have concerns over health issues and inform the doctor that you have been flooded. In an emergency (e.g. severe illness or injury) go to the casualty department at your local hospital -if necessary call an ambulance (dial 999).

#### **Local Authorities**

Flooding is a complex issue with Local authorities being only one of several key groups at work during and after such an event. However, some problem areas which many people think are the responsibility of the local authority actually fall under the remit of other agencies.

The various levels of local authority (County Council, District or Borough Council and Parish or Town Council) each have different responsibilities as do the other agencies involved. The following are a few examples:

Flooding of drains and sewers should be directed to Severn Trent Water Ltd.

Flooding of the highway should be directed to County Highways.

Flooding of council houses or District premises should be directed to the relevant District Council.

If there is a need for rest centres for people who are evacuated or stranded the County Emergency Planning Unit will set them up.

The local authority will advertise helplines following any major flood – this will give details of assistance available and reliable advice on issues such as insurance and building matters.

### **Environment Agency**

The Environment Agency is responsible for issuing flood warnings and arranging flood defence in England and Wales. In Scotland, this responsibility lies with Local Authorities.

The Environment Agency operates Floodline (0845988 1188) to give information on flood warnings. Call Floodline for detailed flood warning information for your area. You can also visit the Floodline Website [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk) for information on flood warnings, flood maps and emergency actions in the event of flooding.

### **Insurance Broker/Insurance Intermediary**

Your insurance broker may operate an emergency 24-hour telephone helpline which you should call as soon as you are able to do so. Insurance brokers will give advice on making a claim. They may handle notification to the insurance company, arranging emergency accommodation, visits by a loss adjuster and other specialists.

Remember to give them your temporary address and phone number if you move out of your house.

### **Insurance Company**

You may deal with your insurance company or companies through your broker, or directly if your insurance is arranged that way. All insurance companies operate an emergency 24-hour telephone helpline, which you should call as soon as you are able to do so. Insurers will normally handle most aspects of a claim. In the case of flooding they will usually appoint a loss adjuster to act as their agent in handling the details of a claim. They will then normally arrange builders and other repair work. They will also help arrange emergency accommodation and other support. It is vital that you consult your insurance company before undertaking repairs on your property and it will be very useful to them if you can take photographs of all parts of the building that are damaged.

A list of helplines of the major insurance companies is available on the Association of British Insurers' website: [www.abi.org.uk](http://www.abi.org.uk).

Remember to give insurers your temporary address and phone number if you move out of your house. Although most claims are settled satisfactorily, occasionally you may need to make a complaint. This can be done through the Association of British Insurers, Lloyd's and the Insurance Ombudsman. **See your insurance policy for details of how this must be done.**

### **Loss Adjuster**

Loss adjusters are specialists in the control and repair of damage. They are usually appointed by insurers to act as their agents in handling claims, particularly those of potentially high value. On a day-to-day basis you will probably be dealing with the

appointed loss adjuster. Loss adjusters should be members of the Chartered Institute of Loss Adjusters.

### **Structural Engineers, Surveyors and other professionals**

If your property is more seriously damaged, the services of professional engineers and surveyors may be needed. Usually loss adjusters or builders commission these experts. Very occasionally, your local authority may inspect your property to see if it is fit for habitation. These specialists should be a member of one of the recognised professional bodies, such as the Institution of Structural Engineers, the Royal Institute of British Architects, the Royal Institution of Chartered Surveyors or the Institution of Civil Engineers. The British Damage Management Association (BDMA) may be able to advise on flood recovery and restoration practitioners.

### **Landlords**

Dependant on the property contract, you or another party may be responsible for repairs and/or re-accommodation. You should consult your contract. The Citizens Advice Bureau may be able to advise. Water, electricity, gas and telephone companies. Following a flood, you should always turn off the building's power supplies, get technical advice from the supplier and get your system fully checked. Usually your suppliers, such as water, electricity, gas, telephone (including cable services etc.), will need to be notified to cut off and/or restore services to your property. Suspension of some services may be needed during the flooding period and/or during clear-up and re-building work.

### **Meteorological Office**

The Met Office is the national organisation that produces weather forecasts for broadcast by national and local television and radio. The Met *Office* does not deal directly with the public and does not issue flood warnings. Keep an eye on the weather forecasts and on further flood warnings -floodwaters can return a few days or weeks after an initial flood.

### **Television, radio, and newspapers**

Flood warnings are issued to the broadcast media by the Environment Agency (in England and Wales) or local authorities (Scotland). Keep an eye out for new flood warnings on the local television and radio news during the cleanup and repair of properties.

### **English Heritage**

If your property is a listed building your local English Heritage office may be able to advise you on the correct repair and restoration of the property.

*The following is information provided by Ciria*

## **DAMAGE TO PROPERTY**

### **Re-occupation**

It is important to remember that if a building is seriously flooded it may be a case of several months before it becomes habitable again and it can be many weeks before it dries out. Do not move into the building until it is structurally safe, sufficiently clean and,

preferably, reasonably dry. Damp surfaces are good breeding grounds for mould and other fungi, so it is best to minimise the potential for fungal growth by drying them as quickly as possible. If you do re-occupy the building prior to this, ensure that the building is well ventilated and that an effective heating system is running at all times, preferably with a de-humidifier. From the point of view of security, it is generally advisable to reoccupy the building as rapidly as possible. The local council's environmental health department may be able to assess whether the building is ready for re-occupation. Once the building has been reoccupied, make provisions in case of any further floods.

### **Damage?**

Your insurance company's Loss Adjuster or a structural engineer are the most appropriate people to identify structural damage to a building. However damage may become apparent following a flood and you may need to recontact your insurers.

### **A structural assessment of the building can be made by:**

- Checking roofs -roofs are a very good indicator of the presence of structural damage. Look at the ridge of the roof and assess whether it has changed - this should be viewed from a distance rather than close up.
- Checking the walls to verify that they are as before -this can normally be done by eye or with a spirit level.
- Looking for bulging or dislodged sections of the building fabric/structure.
- Looking for deep scouring which has led to the foundations being exposed.
- Checking for any new cracks bigger than 5mm (or 1/4 ") above doors or windows.

If any of these features are observed, a building professional must be called in to assess the property. It is important to make regular checks for damage, at least once a day, as it may take a while for some damage to become apparent.

*The following is information provided by the Environment Agency*

## **EMERGENCY ACCOMMODATION**

Various different people can assist in finding you Emergency accommodation during and immediately after a flood. It may be covered by your home insurance and you should check your policy carefully for details. Often your insurance company will pay for emergency accommodation up to a certain percentage of the value of your insurance. If you rent accommodation and your home insurance does not cover emergency accommodation, then you will have to rely on your local authority to re-house you (if you have been flooded you will have priority for re- housing). In such a case, you should contact your local council's housing department as soon as possible.

If it is not possible for you to re-occupy the property immediately, for example while the property is being repaired, your insurance company or local authority may arrange temporary accommodation for you.



*The following is information provided by the Environment Agency*

## **FAMILY FLOOD PLAN AND POINTS TO CONSIDER**

### **Immediate action**

During a period of flooding the water levels may rise and fall over a period of several weeks, dependent upon rainfall and drainage. It is pointless to carry out all restoration work until you are fairly confident that the floods have gone. However, do carry out any immediate work to make the structure safe if you can. Continue to monitor the weather and flood warnings.

If further floods are forecast, concentrate first on preparing for this eventuality before attempting property repairs. Sandbags can help prevent silt entering a property, although they are seldom completely effective in preventing damage.

- Empty sandbags can be obtained from your local authority which you can fill with either sand or soil. You could also improvise these yourself by using tights, strong plastic bags or pillow cases filled with sand or earth.
- Follow any general flood preparation advice.
- Move valuables to the highest position possible (first floors or higher).
- Seal important documents, photographs and similar in plastic bags.
- Keep your insurance documents somewhere safe, with a list of useful phone numbers (Floodline, your local council, your insurance company and the emergency services)
- The following are useful items to have available: a torch, a mobile phone (if possible), a first aid kit, a radio, wellington boots, rubber gloves, disinfectant, soap, towels, bottled water and any necessary medication.
- Make plans for where and when to meet family members in the case of a flood and for what to do with any domestic animals (either moving them to a safer area or keeping them in an upstairs room).
- If possible, move motor vehicles out of the area onto higher ground.

After a flood, always clean and disinfect everything that has potentially come into contact with the floodwaters before using them, to avoid potential infections or other illnesses and open doors and windows to ventilate your home.

*The following is information provided by the Environment Agency*

## **FAMILY FLOOD PLAN**

It's easy to lose each other during flooding. Preparing a family flood plan will help you through a serious situation. Creating the plan with your children, explaining what to do and even practising the plan will prepare them for the time when you may need it.

A flood plan should contain:

- A **List of Useful Numbers** e.g. your local council, the emergency services, your insurance company and the Environment Agency's Floodline 08459 881188.
- Flood Kit - Make up your flood kit and make sure everyone knows where to find it.

- Children's Essentials - Make a list of the vital items you will need. For example, milk, baby food, sterilised bottles and spoons, nappies and wipes, nappy bags, spare clothing, comforter, favourite toy or best teddy
- Medication - Would you need to take any family medication?
- Valuable and Sentimental Belongings - Get into the habit of storing them upstairs or in a high place downstairs.
- Flood Boards & Sandbags - Have a few flood boards or sandbags prepared to block doorways and airbricks.
- Gas and Electricity - Do you know where to turn them off, even in the dark?
- Car - Where would you move it to?
- Evacuation - If the flooding is severe, you may be evacuated. What would you need to take with you and what provision can you make for family pets? If you choose to leave the house, do you know where you would go and how you would you get there? If you decide to stay in the house, but decamp upstairs, make a list of all the things you will need.

**Don't wait for a flood to find out whether your plan works. Try it now!**

*The following is information provided by the Environment Agency*

## **WHAT TO DO WHEN YOU HEAR A FLOOD WARNING**

- Listen out for warnings on radio and TV and phone Floodline on 08459 88 1188 for more information.
- Move pets, vehicles, valuables and other items to safety.
- Alert your neighbours, particularly the elderly.
- Put sandbags (actual or improvised) or flood boards in place - but make sure your property is ventilated. Plug sinks/baths and put a sandbag in the toilet bowl to prevent backflow.
- Be ready to turn off gas and electricity (get help if needed). Unplug electrical items and move them upstairs if possible.
- Co-operate with emergency services and local authorities - you may be evacuated to a rest centre.
- Do as much as you can in daylight. Doing anything in the dark will be a lot harder, especially if the electricity fails.

## **STAY SAFE IN A FLOOD**

- Floods can kill. Don't try to walk or drive through floodwater - six inches of fast flowing water can knock you over and two feet of water will float your car. Manhole covers may have come off and there may be other hazards you can't see.
- Never try to swim through fast flowing water - you may get swept away or be struck by an object in the water.

- Don't walk on sea defences, riverbanks or cross river bridges if possible - they may collapse in extreme situations or you may be swept off by large waves. Beware of stones and pebbles being thrown up by waves.
- Avoid contact with floodwater - it may be contaminated with sewage.

## **CLEANING UP AFTER A FLOOD**

### **First Steps**

- Call your insurance company's (24 hour) Emergency Helpline as soon as possible. They will be able to provide information on dealing with your claim, and assistance in getting things back to normal.
- Keep a record of the flood damage (especially photographs or video footage) and retain correspondence with insurers after the flood.
- Commission immediate emergency pumping/repair work if necessary to protect your property from further damage. This can be undertaken without insurer approval (remember to get receipts).
- Get advice where detailed, lengthy repairs are needed. Your insurer or loss adjuster can give advice on reputable contractors / tradesmen. Beware of bogus tradesmen and always check references.
- Check with your insurer if you have to move into alternative accommodation as the cost is normally covered under a household policy.
- Make sure your insurance company knows where to contact you if you have to move out of your home.

### **Cleaning Up**

- Find out where you can get help to clean up. Check with your local authority or health authority in the first instance or look under 'Flood Damage' in Yellow Pages for suppliers of cleaning materials or equipment to dry out your property. It takes a house brick about one month per inch to dry out.
- Open doors and windows to ventilate the house, but take care to ensure your house and valuables are secure.
- Contact your gas, electricity and water company. Have your power supplies checked before you turn them back on to make sure they have dried out. Wash taps and run them for a few minutes before use.
- Don't attempt to dry out photos or papers - place them in a plastic bag, and if possible store them in the fridge.

- Throw away food which may have been in contact with floodwater - it could be contaminated. Contact your local authority Environmental Health department for advice.
- The Citizens Advice Bureau and other organisations may be able to help if you feel under pressure, their numbers can be found in the phone book.
- Don't think it can't happen again. Restock your supplies.

*The following is information provided by the Association of British Insurers*

## **FREQUENTLY ASKED QUESTIONS RELATING TO INSURANCE MATTERS**

This section sets out questions and answers relating to insurance matters, divided into the categories below:

- **Domestic and Commercial**
- **Motor**
- **Caravans**
- **General**
- **Further Information**

### **Domestic and Commercial**

#### **1. My house has been flooded. What should I do?**

A. Personal safety is very important, think about your actions carefully. If safe to do so, move items to a higher level, switch *off* all services and when leaving your property leave it as secure as possible. If advised to leave your property by the authorities, listen to their advice and follow any instructions they give. Contact your insurer as quickly as possible.

#### **2. Will my property be covered for flood damage?**

A. The overwhelming majority of household policies provide cover in respect of flood. Under commercial policies flood cover is normally provided as an option at additional premium.

#### **3. Will both my Buildings and Contents be covered?**

A. If you own your own house and you have taken out buildings and contents insurance with the same or a different insurer you will be covered. If you have not taken out buildings and/or contents insurance then you will have to pay for any flood damage to uninsured property. If you are a tenant and have taken out contents insurance you will be covered in respect of your contents and any fixtures and fittings which belong to you. Buildings insurance is normally the responsibility of the landlord.

#### **4. I do not know the name of my insurance company.**

A. ABI does not hold a database of policyholders and their insurance companies. Speak to your broker, insurance advisor, mortgage lender or bank (direct debit/standing order

payments can be used by them to identify your insurer) who may be able to provide details. If you are in rented accommodation, speak to your landlord or local authority where you pay your rent.

**5. I know the name of my insurance company but I cannot find my policy.**

A. Ring directory enquiries or look in telephone directory for your insurer. When you ring them give them as many details as you can. The insurer is likely to be able to find your policy details from your personal information and your postcode.

**6. What do I need to report to my insurer about my claim?**

A. Some insurers will take details by telephone. Claims staff will be able to give advice on the actions you need to take. In certain circumstances, helpline staff may be able to give you the go-ahead for repair work to be commenced. Most helplines operate 24-hours a day.

**7. I had to leave my house and I am living in alternative accommodation.**

**How long will be able to stay here?**

A. In most incidences there will have to be "damage" to your home or its contents to trigger the alternative accommodation cover.

Cover in respect of alternative accommodation would generally be a percentage of your sum insured up-to a maximum amount.

You should ensure that you are aware of the costs of the alternative accommodation you are living in and you should speak to your insurer to make sure they will continue to pay the costs incurred. In the unlikely event of the alternative accommodation portion of cover being used up, it will be your responsibility to make your own accommodation arrangements and to pay for them.

Alternative accommodation must be reasonable and in keeping with your normal lifestyle. Always obtain your insurer's approval before incurring any costs.

If you prefer to be near your property when the flood waters have gone some insurers, depending on the circumstances, may arrange for a mobile home to be placed in your garden.

**8. How long will it be before I am back in my property?**

A. Once the flood water has been removed from the property it will need some initial cleaning up and drying out. Where possible, advice should be sought as to how walls, furniture and carpets should be cleaned before any work is undertaken. Professional advice should be sought as to how long drying out of a property will take. You will not be able to carry out redecoration before the property has thoroughly dried out. Insurers have experience of the time it takes to dry out property in a correct way. Depending on the degree of damage it could be between a few weeks and several months before a property is habitable.

**9. How long do I need to keep the goods that have been damaged?**

A. Do not eat any food that has been exposed to flooding. Throw it away and keep a note of the items disposed of. If you have any recent receipts for food that was

purchased for the freezer retain them as part of your claim. Fridges and freezers should be cleared out as soon as possible.

Material goods:

It is a good idea to take photographs of the damage. Any carpets, furniture or other goods that have been removed from your home should be retained until your insurer has agreed that they can be disposed of. If it is not possible to store or retain goods, every effort should be made to contact your insurer or their representative (loss adjuster) to obtain their agreement to the disposal of goods.

#### **10. Can I use my own builder?**

A. You can use your own builder if you choose to do so. You may find it beneficial to use a builder recommended by your insurer from their "approved list". As the standard of work from such a builder will be known and have been monitored, it will be acceptable to your insurer. By using an approved builder if any problems do arise it will be easier for you to raise the matter with your insurer.

If you do decide that you would like to choose your builder to undertake your repair work, you will most likely be asked to obtain 2/3 estimates in order that your insurer has a proper understanding of the work that will be needed and the likely costs.

You will need the insurer's confirmation that they have agreed an estimate before any work commences. You will also need to refer any problems with reinstatement work, involving increases in costs, to your insurer and obtain their agreement before any such work goes ahead.

Any complaints arising from work undertaken by builder of your own choice, which is not sanctioned by your insurer, will ultimately be for you to resolve.

#### **11. Flooding has damaged my garden. Can I make a claim?**

A. Your household policies will generally cover damage to outbuildings, garages and sheds. They do not normally cover storm or flood damage to gates, fences, hedges and garden plants and shrubs.

#### **12. Will I have to pay an excess (i.e. the first part of any claim)?**

A. Unless you have chosen a different amount you will have to pay the standard policy excess (usually £50).

#### **13. Why has a loss adjuster been appointed?**

A. A loss adjuster is appointed to confirm the circumstances of the claim, to make sure the claim is covered by the policy and to ensure that the full value of the claim is agreed with you.

#### **14. I have a complaint about the way my claim is being handled by my insurance company and/or loss adjuster.**

A. Insurance company:

Every insurer has a complaints procedure that you will find with your policy documents. As a first step telephone or write to your insurer keeping a note of what you have said. If the problem is not resolved to your satisfaction you can contact the Insurance Ombudsman or the PIAS who will investigate the complaint within their terms of reference. Any Ombudsman decisions are binding on the insurer but not on the policyholder. Ultimate redress for the policyholder is to choose to take action through the Courts.

Loss Adjuster:

As a first step speak to your insurer. You can also try to resolve the matter with the loss adjuster handling your claim or with a senior member of the firm overseeing your claim. If this is not possible then you should contact the head office of the firm which employs him or her. In this respect you should contact the Chartered Institute of Loss Adjusters at the address below. All loss adjusters will have formal complaint procedures. If you are still unable to resolve the matter, you should contact your insurance company. They will handle complaints against loss adjusters according to their (the loss adjusters) written complaints procedure.

**15. Where can I get more information about adjusters?**

A. You should contact either of the following organisations.

The Chartered Institute of Loss  
Adjusters (CILA)

Association of British Insurers  
(ABI)

Peninsular House  
36 Monument Street  
London EC3R 8LJ  
51 Gresham Street  
London EC2V 7HQ

Website

[www.cila.co.uk](http://www.cila.co.uk)

Website

[www.abi.org.uk](http://www.abi.org.uk)

Tel 020 7337 9960 Tel 020 7600 3333

Email [info@cila.co.uk](mailto:info@cila.co.uk) Email [info@abi.org.uk](mailto:info@abi.org.uk)

**16. I have a complaint about the builder appointed by my insurer to undertake my repair work.**

A. Telephone the claims department of your insurer as soon as possible to report your concerns. Keep a note of what the problems are. If they are not resolved to your satisfaction write to the claims manager of your insurance company.

**17. I believe there to be a fraudulent aspect to the work being undertaken by my repairer.**

A. Speak to your insurer immediately. Alternatively, if you wish to deal with it in a confidential manner, consider contacting your local Trading Standards Department.

**18. How long will it be before I get my claim settled?**

A. Domestic:

Much will depend on the extent of the damage to the property. If it is a relatively simple claim and the loss adjuster/company representative has reached a final settlement figure, a cheque should be with you normally within 10 working days of agreement being reached.

In respect of larger, more involved claims, interim payments may be made. In some circumstances direct settlement may be made with, for example, the proprietor of temporary accommodation providers.

Commercial:

Commercial claims may require more specialist investigation which will take a longer period of time. There may also be complications due to consequential losses that require more complex assessment.

In dealing with any claim large or small the insurer will be looking to settle the claim as soon as possible as this is in the interests of all parties.

### **19. I know I am underinsured. How will my insurer deal with my claim?**

A. The onus is always with you to make sure that your sum insured is correct. Insurers have traditionally supplied household rebuilding and consumer durable index linking information to help policyholders keep their sums insured up-to-date. Any approach you make to your insurer regarding your claim, where there is an element of under-insurance, will be considered on its merits. It is unlikely that there will be an across the board approach by insurers to such claims. Some may choose to take a sympathetic view where the policyholder has been with them for some considerable time and where they can demonstrate that they have made efforts to keep their sum insured up-to-date. Where it is clear that there has been "deliberate" under-insurance and a policyholder has made no attempt to increase their sum insured, despite accumulating high value goods or adding extensions etc, then it is probable that an insurer will look to settle any claim under the "strict" policy terms and conditions which may mean that you have to meet part of the claim yourself.

### **20. Will my insurance premiums increase as a result of my having made a claim for flood damage?**

A. Not necessarily though they may. It is too early to say what impact the cost of the recent flooding will have on household premiums. Many factors affect premiums and they may rise for several reasons. Insurers are still working to establish the cost of the flooding and it will be several months before the full impact is known. The likelihood is that some insurers will increase their rates but, generally speaking, the cost of weather related events fluctuate over a number of years. The longer-term experience has a more significant influence on home insurance premiums.

### **21. Will my insurer refuse to renew my policy next year?**

A. Insurers are keen to continue providing insurance to those people who already have policies with them.

### **22. My house may be about to be flooded. What should I do?**

A. Look to move property to higher rooms in your house. Take care and do not try to lift any heavy items without assistance. When leaving your property switch off all services.



Leave your property in a secure manner. Close windows and doors and lock them where possible. Make sure you have your insurance contact numbers and reference details.

## **Motor**

### **1. My vehicle has been damaged in a flood what claim can I make under my motor policy?**

A. If you have a comprehensive policy you can make a claim. The severity of the water damage will determine how the claim is handled and whether your car can be repaired or is a total loss. Factors which the insurer will take into account are the depth of immersion and the contamination of the water. If you have third party only, or third party, fire and theft there is no cover in place and you will have to arrange and pay for any repairs you undertake.

## **Caravans**

### **1. My caravan has been damaged. Can I claim on my household insurance policy?**

A. "Caravan" cover is not automatically provided under household policies. But if you have extended your cover to include your caravan you can claim. In some circumstances cover may have been provided by organisations such as the Caravan Club. If you are unsure as to the supplier of your cover a call to your insurer will confirm whether it is with them.

## **General**

### **1. How much will the floods cost?**

A. It's too early to say. The picture won't be clear until all the claims are in. It could be hundreds of millions of pounds.

### **2. What is ABI doing?**

A. We have been working hard on research on flooding in recent years and talking to the Government and the Environment Agency about how the research can best be used. We will be talking to the Government about what can be done in the short and longer-term to improve the flood defence system and to make sure flooding is considered when deciding where new houses can be built.

*The following is information provided by the Environment Agency*

## **USEFUL TELEPHONE NUMBERS, WEBSITES & EMAIL ADDRESSES**

### **AA Roadwatch**

Tel: 0870 600 0371

Email: [customer.services@theAA.com](mailto:customer.services@theAA.com)

Website: [www.theaa.com](http://www.theaa.com)

### **ABI (Association of British Insurers)**

Insurance advice

Tel: 020 7600 3333

Email: [info@abi.org.uk](mailto:info@abi.org.uk)

Website: [www.abi.org.uk](http://www.abi.org.uk)

### **BIBA (British Insurance Brokers Association)**

Tel: 0901 814 0015

Email: [enquiries@biba.org.uk](mailto:enquiries@biba.org.uk)

Website: [www.biba.org.uk](http://www.biba.org.uk)

### **CIRIA (Construction Industries Research & Information Association)**

Tel: 020 7549 3300

Email: [enquiries@ciria.org](mailto:enquiries@ciria.org)

Website: [www.ciria.org](http://www.ciria.org)

### **Citizens Advice Bureau**

Tel: (local public advice lines)

Atherstone 0870 120 2464

Nuneaton & Bedworth 02476 311 119

Leamington 01926 457900

Rugby 01788 541000

Stratford upon Avon 01789 293299

Website: [www.citizensadvice.org.uk](http://www.citizensadvice.org.uk)

### **Environment Agency**

Information on flooding, flood warnings, flood maps and emergency actions

Tel: 08708 506 506

Flood line: 0845 988 1188

Email: [Enquiries@environment-agency.gov.uk](mailto:Enquiries@environment-agency.gov.uk)

Website: [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

### **Homecheck UK**

Guide to flooding, subsidence, pollution, landfill sites, etc in your neighbourhood

Tel: 0844 844 9966

Email: [Info@landmarkinfo.co.uk](mailto:Info@landmarkinfo.co.uk)

Website: [www.homecheck.co.uk](http://www.homecheck.co.uk)

**Met Office**

Tel: 0870 900 0100

Email: [enquiries@metoffice.gov.uk](mailto:enquiries@metoffice.gov.uk)

Website: [www.metoffice.gov.uk](http://www.metoffice.gov.uk)

**National Flood Forum**

Tel: 01299 403055

Website: <http://www.floodforum.org.uk>

**North Warwickshire Borough Council**

Tel: 01827 715341

Website: [www.northwarks.gov.uk](http://www.northwarks.gov.uk)

**Nuneaton & Bedworth Borough Council**

Tel: 024 76 376376

Website: [www.nuneatonandbedworth.gov.uk](http://www.nuneatonandbedworth.gov.uk)

**RAC Travel**

Tel: 08705 722722

Website: [www.rac.co.uk](http://www.rac.co.uk)

**Rugby Borough Council**

Tel: 01788 533533

Website: [www.rugby.gov.uk](http://www.rugby.gov.uk)

**Severn Trent plc**

Tel: 0121 722 4000

Email: [customer.relations@severntrent.co.uk](mailto:customer.relations@severntrent.co.uk)

Website: [www.severn-trent.com](http://www.severn-trent.com)

**Stratford on Avon District Council**

Tel: 01789 267575

Website: [www.stratford.gov.uk](http://www.stratford.gov.uk)

**Warwickshire County Council**

Contains links to all Warwickshire District/Borough Councils and Emergency Planning Website. Local Media can also be accessed via the website home page

Tel: 01926 410410

Email: [emergencyplanningunit@warwickshire.gov.uk](mailto:emergencyplanningunit@warwickshire.gov.uk)

Website: [www.warwickshire.gov.uk](http://www.warwickshire.gov.uk)

Emergency Planning website: [www.warwickshire.gov.uk/epu](http://www.warwickshire.gov.uk/epu)

**Warwick District Council**

Tel: 01926 450000

Website: [www.warwickdc.gov.uk](http://www.warwickdc.gov.uk)

## **LOCAL RADIO AND TELEVISION**

**BBC Coventry & Warwickshire** (94.8, 103.7 & 104 FM)

Switchboard 02476 551000

**BBC Midlands Today**

Newsdesk 024 7643 8888 (24 hrs)

**Radio WM** (95.6 FM)

Switchboard 0121 567 6000

**Heart FM** (100.7 FM)

0121 695 0000

Fax 0121 696 1007

**Mercia FM** (97.0 & 102.9 FM)

024 7686 8200

**Fox FM** (97.4 & 102.6 FM)

Newsroom 01865 871000

**Touch FM** (102 FM)

01789 262 636 or 10789 414102

Fax: 01789 263102

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[www.jbaconsulting.com](http://www.jbaconsulting.com)