

A BUSINESS GUIDE TO FLOOD RESILIENCE



Know Your Flood Risk™

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Introduction

The severe floods of the winters of 2015/2016 captured the national media and showed what a devastating impact floods can have on businesses and infrastructure.

With over **300,000 commercial properties** estimated to be at risk¹ across the UK, businesses need to ensure they are not only aware of their flood risk, but also better prepared in case a flood happens.

Climate change is already starting to produce more extreme weather patterns and intense storm events. It is likely that more properties will be hit by surface water flooding over the next 25 years than by river flooding, and most of these will be affected for the first time. Small businesses in particular are at risk of severe financial losses, if flooding prevents / restricts trading over a period of weeks or months.

Effective planning to deal with all kinds of unexpected events makes sound business sense. Chances are you have an intruder alarm fitted to protect your office, and sprinklers in case of fire. Do you have similar solutions to deal with flooding? Do have a flood plan in place? How will you manage a clean-up if you are flooded?

Most businesses can save up to 90% on the cost of lost stock and moveable equipment by taking action to prepare in advance for flooding.

This practical guide has been compiled as part of the **Know Your Flood Risk** campaign, led by Mary Dhonau OBE with support from Landmark Information Group, leaders in flood risk data and. This edition (2016) has been updated by Mary Dhonau and Carly Rose, both of whom have been flooded themselves.

It seeks to help you answer these questions, and provides a single point of reference for you and your business to take proactive steps.

This business specific supplement has been designed to be read in conjunction with the comprehensive Homeowners Guide to Flood Resilience, available here: http://www.knowyourfloodrisk.co.uk/sites/default/files/FloodGuide_ForHomeowners.pdf



Mary Dhonau, OBE

A handwritten signature in black ink that reads "Mary Dhonau".

Chief Executive
Know Your Flood Risk Campaign



Carly B Rose

A handwritten signature in black ink that reads "Carly B Rose".

Researcher
Know Your Flood Risk Campaign

Flood risk at a glance



Over 300,000 business premises across the UK are currently at **risk of flooding** ¹



Flooding is the most likely peril to cause damage and disruption to UK business property ²



One service provider estimates that flooding now account for **33% of all losses to business property** compared to just **17%** for fires ²



Property level flood protection costs on average **£5,000** per property ³

Winter 2015/16 floods:

- **December 2015** was the wettest month in over a century ⁴
- Around **4,600 businesses** were flooded along with 15,000 homes ⁵
- Total claims by businesses estimated at **over £100m** ⁶
- Many firms had **insufficient cover** for the damage and losses incurred ⁶

That's the bad news -

but the good news is that you **CAN do something about flooding!** The next page illustrates some ideas you can consider to reduce the impact of being flooded.

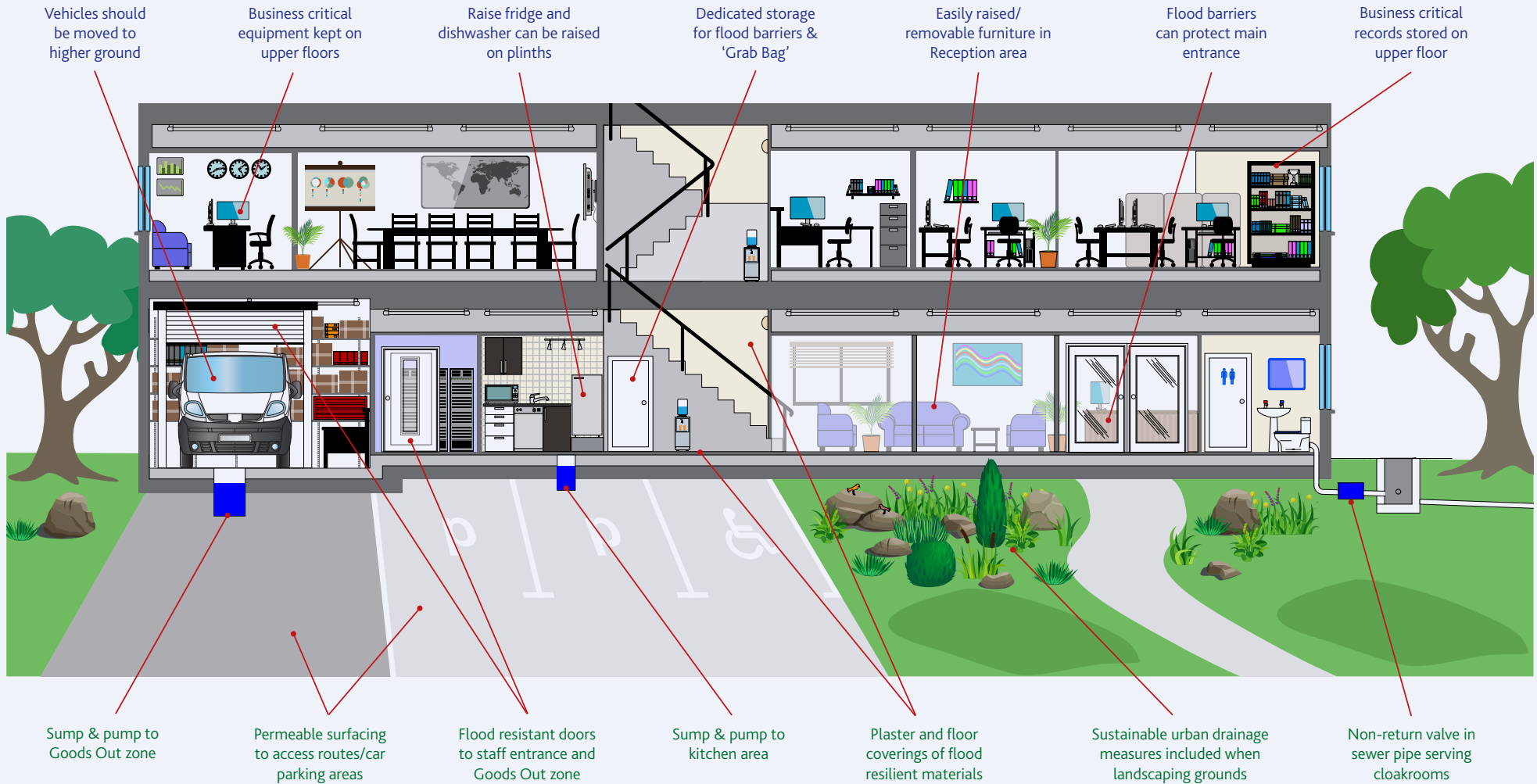


Combined resistance and resilience measures

- keeping water out for as long as possible buys valuable time to raise/move furniture & equipment



Short-term, low/no cost ideas



Longer term investment ideas

Illustration by Nigel Long Design, Winchester

What types of flood risk could affect your business?

There are different types of flooding which can affect your business and this is why it's important to ensure the potential risks are properly assessed.

You may be affected by more than one type.

Surface Water Flooding:

Surface water (pluvial) flooding occurs when heavy rainfall overwhelms the drainage capacity of the local area. It is difficult to predict exactly when and where it will occur, much more so than river or coastal flooding. High quality data can, however, show the areas at risk and indicate likely depths so that you can make suitable preparations.

- However, weather forecasts from the Met Office can give a good generalised indication of the flood risk.
- Most highway drainage systems are designed to deal with commonly occurring storms and rainfall intensities, not these extreme types.
- Flooding can be caused by the sheer volume of water or may indicate a maintenance problem within the system.
- Any flooding should be reported so that the risk can be dealt with and the system checked for problems, such as blockages.

Coastal and River Flooding:

River (fluvial) flooding occurs when a watercourse cannot cope with the water draining into it from the surrounding land. This can happen, for example, when heavy rain falls on an already waterlogged catchment.

Engineering solutions that can be put in place to mitigate coastal flooding are limited, simply because of the huge volumes of water involved and because it is not contained or channelled.

- Both river and coastal flooding can usually be predicted in advance. Refer to the Environment Agency/ Natural Resources Wales/ SEPA websites (for flood risk indications)
- The Met Office website provides severe weather warnings for the whole of the UK



Groundwater Flooding:

Groundwater flooding is most likely to occur in low-lying areas where the underlying rock is chalk or sandstone and water-bearing 'aquifers' are present underground.

Exceptional periods of rain can cause groundwater flooding from springs and seasonal streams (winterbournes) which can inundate roads and overwhelm drainage systems. This type of flooding can last for weeks or months. It is different from surface water flooding caused directly by very high levels of rainfall.

In some areas groundwater flooding can be predicted in advance by the Environment Agency who monitor aquifer levels throughout the year. However, it is very difficult to predict the exact location where this type of flooding will occur, as it is often related to local geology. An early indication of groundwater flooding is often when property cellars start to fill with water.

Sewer flooding:

When sewage escapes from the pipe through a manhole, drain, or by backing up through toilets, baths and sinks this is known as sewer flooding. Sewer flooding can be caused by: a blockage in a sewer pipe; a failure of equipment; too much water entering the sewers from storm run-off (from roads and fields) and rivers and watercourses which overflowed; or the sewer being too small to deal with the amount of sewage entering it. The cause of the problem may be some distance away from where the flooding is happening.

With all the above flood types, up to date information and 'state of the art' mapping are essential if you are to correctly assess the risk to your business – and to take advantage of the available warning systems to give you the maximum possible time to prepare. The next two sections cover these issues in more detail.



Is your business at risk of flooding?

It is a matter of fact that **all businesses are at potential risk of flooding**. Even if you are not located near a river or the sea, you could be affected by sewer overflows, rainwater running off hillsides, a sudden increase in rainfall or groundwater flooding, as well as issues such as burst water mains.

In the UK different agencies are responsible for providing flood information depending on your area.

To sign up for flood warnings (available by telephone, mobile, mail, SMS text message, fax or pager) contact the following:

England:

<http://www.gov.uk/sign-up-for-flood-warnings>

Wales:

<http://naturalresources.wales/flooding/flood-warning-service/?lang=en>

OR

<http://naturalresources.wales/flooding/flood-warning-service/?lang=cy>

Scotland:

<http://floodline.sepa.org.uk/floodingsignup/>

Northern Ireland:

No warning service currently operates, but the Met Office works closely with partners to raise awareness of weather events which may result in flooding impacts on people and property.

Flood Alerts App (England, Wales and Scotland only)

The 'FloodAlerts' service is a free to use application developed by the Environment Agency and SEPA (in conjunction with a company called Shoothill). This provides individual users with flood warnings via email and/or Facebook:

<http://www.floodalerts.com/>

Other information:

England, Wales and Scotland only:

The Floodline service (0345 988 1188) is open 24 hours (calls are charged at local rate).

By taking your postcode, operators will check and see if your business is in flood risk area.

Sitecheck Flood

With approximately 300,000 ^a commercial properties at risk across the UK, and 4,600 ^b of those affected by the winter 2015 floods, an accurate and comprehensive flood risk assessment for commercial properties is essential to ensure that you and your clients avoid the potential cost and inconvenience of flooding.

What's included



Front page 'at-a-glance' summary



Consultant's Professional Opinion



Insurability Assessment



River and Coastal Flood data from EA,
Surface Water data from JBA



GeoSmart Information Ltd Groundwater
Flood Risk data

Key features

- Fully interpreted flood risk report providing commercial advice
- Market-leading risk model designed by experienced consultants
- Analyses the latest data from JBA Risk Management, GeoSmart Information Ltd, Ordnance Survey, Environment Agency, and British Geological Survey – used by insurers and regulatory bodies

If you require any assistance please contact our customer services team on **0844 844 9966** or by email at helpdesk@landmark.co.uk

“ ... (we were) severely affected and not ready for the hidden challenges to our business. Since then we have taken steps to make sure we are better prepared. ”

**Mark Issitt – Depot Manager,
Plantool, Kettering**

(quotation courtesy Northamptonshire
County Council Pathfinder project)

a. RICS: <https://goo.gl/7yiqPt>

b. Environment Agency: <https://goo.gl/4NINuu>

Preparing your business for flood

According to the Environment Agency, most businesses can save up to 90% on the cost of lost stock and moveable equipment by taking action to prepare in advance for flooding.

Preparing your business for a flood.

could help to:

- Protect you and your staff
- Significantly reduce financial losses
- Limit damage to your property, stock and equipment
- Minimise business disruption and continuity, helping retain clients and contracts
- Maintain customer, supplier and business records
- Obtain insurance cover
- Compliance with regulatory requirements such as the Occupier's Liability Act 1984

Draw up your Flood Plan:

The chances are, as a business, you will have various plans and policies already in place such as Health and Safety and Business Continuity Plans. **But have you also made a Flood Plan** to outline what steps you need to help prepare your business, your ability to quickly respond to a flood however unexpected, and to keep you and your staff safe?

See page 16 for your Flood Plan template.

Once you have a plan, ensure it is communicated to your staff and that a **printed** copy is in an accessible place at all times (if the power goes off, any battery operated tablets and phones may shut down at inconvenient times).

A good idea is to create a 'grab bag' or 'battle box' containing essential information - this is useful for all kinds of emergency or evacuation situations, not just flooding.

Larger businesses may find it useful to designate some staff as 'flood wardens' with responsibility for (eg) managing the emergency flood plan, and actions such as moving vehicles, or fitting flood products.



Reduce potential flood damage:

However high or low your flood risk, there are various measures you can take to help reduce the damage to your business.

Storing valuable items higher up, and making your property more resistant to flooding, will not only help protect you and your premises but may also reduce your insurance costs (see section 7) and could make the clean-up process quicker and easier.

- **Prevent flood water entering your building as far as possible** by installing permanent or removable barriers to protect doors, windows and openings such as airbricks and vents. There are special 'bung' available for drains and toilets, as well as non-return valves for pipework. Such measures can hold back flood waters up to 600mm high, allowing you time to take the other steps highlighted in this guide.
- Reduce damage flood water causes if it does enter your building by:
 - (i) raising electrical sockets, electrical wiring and controls for ventilation systems
 - (ii) raising equipment and machinery on plinths
 - (iii) using materials that can withstand flooding, for floors and the lower part of walls and staircases.

See the illustration on page 08 for more ideas!

Your flood preparation does not need to be a costly exercise.

- Back up your customer data on a regular basis.
- Store your customer files and supplier contracts safely .
- Keep your insurance policy in a secure, accessible place, as well as a copy in a 'Grab bag' or 'Battle box'.
- Ensure drains from your premises are running efficiently.

Modern **alternatives to sandbags** are available which are lightweight and more effective than traditional sand-and-hessian types. Some types can be sanitised and re-used, while Gel-filled sandbags can absorb up to 20 litres of water each.

For further information, visit:

<http://www.centre4resilience.org/flood-guidance-archive/how-to-prepare-for-flooding-and-protect-your-business-premises/>



Advice for your business after flood

The first priority after any flood is the safety of yourself, your employees, contractors and members of the public who may enter your premises. Never re-enter premises until you are certain they are safe. As well as possible contamination by sewage or fuels, there is risk of damaged electrics and potential damage to the structure of your building.

Firstly, If you are insured, contact your provider as soon as possible.

You must also ensure you comply with your duties under the Health and Safety at Work Act 1974 if

staff are carrying out work activities that they would not usually undertake in normal circumstances.

Clean up:

Health risks can be minimised by taking general hygiene precautions. Throughout this difficult time, it is vital that the health and safety of you and your staff is not put at risk. You must ensure:

- Your staff are aware of precautions whilst carrying out the clean-up and wear suitable protective clothing.
- Debris from furnishings, equipment, the river etc. must be handled with great caution to avoid coming into direct contact with contaminated rubbish or sharp objects.

- Do not dispose of any equipment before discussing this with your insurers. Information on the roles of Loss Adjusters and Loss Assessors is available here:

<http://www.centre4resilience.org/flood-guidance-archive/how-the-loss-adjuster-controls-the-insurance-claim/>

- Ensure surfaces are disinfected, in accordance with the manufacturers recommended instructions.
- To begin drying out your premises, introduce as much ventilation as possible, apply gentle heat and you may need to use a dehumidifier.
- If using a petrol or diesel generator to power such equipment, ensure it is placed outside the building to avoid harmful fumes building up.

Rodent infestations:

flood water may have disturbed rodents, leading to damage to electrics and furniture. A pest control contractor should be engaged. Installing non-return valves (NRVs) in sewer pipes stops rodents gaining access via downstairs toilets, as well as preventing raw sewage flooding.

Electrical safety:

electrical equipment and cabling can pose major risks if they have been flooded

- Switch off the electrical supply at the mains, if safe to do so, then individual items of equipment if you have not already done so.
- Enlist an approved electrical contractor before using damaged equipment.
- If you are concerned about mains, contact your electricity supplier.
- Once power is safely restored, do not operate electrical equipment in or near any remaining water, unless it is specially designed for the purpose (eg submersible pumps).

Gas safety:

gas equipment and installations pose significant risks if they have been damaged.

- **Call TRANSCO immediately** if you smell gas, or suspect gas has escaped - **0800 111 999**.
- Turn off the gas control valve (usually by the gas meter) **if safe to do so**.
- Ensure all gas appliances are turned off.
- Arrange for a **Gas Safe Registered** engineer to inspect gas appliances before using the equipment again.

Water supply:

the quality of your drinking water supply may have been affected. If unsure contact the supplier for your area. Ensure any taps that have been submerged in contaminated flood water are cleaned up using bleach solution and run for a few minutes prior to the water being used. Special consideration must be given to facilities such as lifts, hoists, swimming pools and chemicals.

Don't forget to discuss with your insurer and landlord (if any) what flood resilience measures (as illustrated in the diagram on page 08) can be built in as part of your repairs. For more detail, see the Homeowners Guide to Flood Resilience here: http://www.knowyourfloodrisk.co.uk/sites/default/files/FloodGuide_ForHomeowners.pdf

Insurance

Once you have assessed your level of flood risk, you need to check that you are sufficiently insured as **flood damage is not always included as standard business insurance.**

Remember it is not just your damaged stock and premises that will affect you, but interruption to business continuity. Check your insurance cover includes this. You can usually obtain this as part of a business insurance package or added to an existing policy.

The cost of your policy will depend upon the type of business, location and length of disruption. By taking risk-reducing measures you may be able to cut your premium or excess.

When considering your insurance, you need think about how your business would cope if there was no or restricted turnover whilst your premises are drying out or being repaired.

Ensure you keep your insurance documents in a safe place that is easy to find in the event of a flood. To make the process of submitting a claim easier, keep an inventory of your important possessions and make a photographic record as evidence. In the event of a flood contact your insurer immediately as they maybe able to help give advice on repairs and contacts.

You should also seek guidance before disposing of anything. We would also advise the use of photography and/or video capture.

It is also now possible for businesses to insure the excess element of their policy: for more details visit <http://floodexcess.com/>

New flood insurance scheme for businesses – available from December 2016 from the British Insurance Brokers Association

“ **This policy, with state of the art mapping technology sitting behind it, and recognition of resilience and resistance measures already in place, will be simple to use and fair. ... If a flood does occur, claims cost neutral repairs can be made including resilience measures that will allow business customers to get up and running more quickly if another flood occurs.** ”

Graeme Trudgill, Executive Director at BIBA

note – the 'Flood Re' scheme you may have heard about is for domestic properties only

Case Study:

Flooding in Kendal during December 2015 affected a shop which also has the family kitchen on the ground floor and living accommodation above.

The shop is on a busy road, and cars continued to drive through the floodwaters, sending additional waves into the building. As the location is at a low point within the town, the owners knew there was no point trying to exclude water, particularly as they expect more intense rainstorms owing to climate changes. To combat this problem, the owners first built a low wall (using sympathetic local materials) in front of their premises, to help deflect the water from passing vehicles (Figs 1 and 2).



Fig 1
Shop frontage during
2015 flooding



Fig 2
Low stone wall to deflect
'bow-waves' from passing vehicles in
any future floods



Fig 3 -
Resilient (and very attractive) steps
to upstairs flat (replaced standard
wooden staircase)



Fig 4
Wood-burning stove, housed
within body of stone staircase
(German 18kw design)

As this is a listed building, the repair process raised some additional challenges – however, the alterations made were carefully chosen to complement the style of the building and is an illustration of what can be done with ingenuity!

All the electrical sockets were raised, and the cabling to them now drops from the upper floor. The resilient flooring is of wood-effect ceramic tiling.

The flood water reached the fourth tread of the original wooden staircase, causing permanent damage, so this was replaced by a hand-built flight of stone steps, topped with 'rainbow sandstone' treads (Fig 3). Housed within the steps is a wood burning stove, providing much-needed heat to assist with the drying-out process (Fig 4).

Template Flood Plan

The top priority in any flood is the safety of staff, customers and any visitors on site. There are steps you can take, however, to minimise damage and costs. The Flood Plan below is a suggested template to complete and keep in a safe place to ensure you have vital information to hand in the event of a flood.

Remember to review and update your Plan regularly – this should include:

- any lessons learned after a flood event or drill
- any changes to the flood warning process, or risk level
- changes of personnel / policy

Business details _____

Company name: _____

Registered address: _____

VAT number: _____

Insurance Policy number(s)
(buildings/contents/business
interruption/motor vehicles): _____

Date form completed: _____

If you prefer to create your plan digitally and then use 'cloud' storage, you need to ensure appropriate security precautions are followed (eg data encryption) for sensitive data. But please bear in mind electrical power may not be available and battery powered devices may be useful for limited periods only in the aftermath of flooding. It is recommended you always have a printed copy to hand.

Staff details (to be continued on separate sheet if necessary)

In case of out-of-hours incidents, business owners should keep an up-to-date copy of this information in a secure place at home.

Name	Address	Telephone	Emergency contact name	Emergency contact telephone	Special assistance required in event of flood	Key Holder

Staff evacuation plan complete

Staff briefed

Staff aware of responsibilities /roles & specific training undertaken

Location of important documents / equipment (to be continued on separate sheet if necessary)

Name	Owner / holder	Location
Evacuation plan		
First Aid Kit		
Insurance policy		
List of contacts (see SECTION 9)		
Staff files (hard copies and / or electronic)		
Customer files (hard copies and / or electronic)		
Suppliers' details (re suspending deliveries)		
Map / Floor Plan of building		
other		

Utilities

Supplier	Contact number	Meter number	Description of (office) location
Gas			
Electricity			
Water			
Telephone			
Broadband			

Protecting your building and equipment

Think about items of stock, equipment and machinery that will need special flood protective measures, and the actions you will take. Actions you can take in the short term need not be expensive and could include:

- Raising items above ground level
- Moving items to another site/higher level in existing site
- Keeping copies of important information in a safe place

You should always ensure that any items of flood protection equipment you have (eg door barriers) are deployed as soon as possible when a flood warning / other severe weather warning is received.

Complete the list on the following page to show actions required for specific items.

Item	Steps taken to protect	Location
Computers and printers	Move computer to upper floor	From Reception Desk to Boardroom
Other business critical items		
Photocopiers / other electrical items		
Chemicals (eg cleaning products)		
Company vehicles	eg – move to higher ground	
Staff vehicles		
Filing cabinets		
Paper documents / stationery stocks		
Tables, chairs	eg - stand legs on bricks/blocks inside plastic bags	
Customer stock		
Exhibition stands / sales brochures		

Flood advice for Businesses

Please fill in those contacts relevant to your business in case of the event of a flood, and keep in a safe place.

Gas Emergency	0800 111 999	Local builder	_____
Floodline (England, Wales and Scotland only)	_____	Security services	_____
Local authority emergency services	0345 988 1188 (24 hours)	Water pumping services	_____
Local electrician	_____	Emergency power suppliers	_____
Local plumber	_____	Other	_____
Gas Safe Register (plumbing and heating engineers)	0870 401 2200		

References

1. <http://www.rics.org/uk/knowledge/consumer-guides/guide-to-flooding/>
2. <http://www.fmglobal-touchpoints.co.uk/pr-fire-threat-uk-businesses.htm>
3. <http://wwtonline.co.uk/features/digging-deeper-watertight-strategies#.WG4xABuLSyl>
4. <http://www.metoffice.gov.uk/news/releases/2016/december-records>
5. <https://pbs.twimg.com/media/CZ4hZctWEAEZGQR.jpg:large>
6. <https://home.kpmg.com/uk/en/home/media/press-releases/2015/12/flooding-economic-impact-will-breach-5bn.html>



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