



SIX STEPS TO PROPERTY LEVEL FLOOD RESILIENCE

Guidance for property owners



The work leading to this guidance was undertaken as part of the SMARTeST project, which looked at technologies, systems and tools that can improve the safety of the built environment in relation to flood events. It received funding from the European Community's Seventh Framework Programme under grant agreement no 244102.

Many people contributed information and support during production including the National Flood Forum, Defra, The Environment Agency, the Flood Protection Association, HR Wallingford and members of the SMARTeST national support group that included representatives from the insurance industry, manufacturers and policy-makers.

Brochure design by Nick Scarle, University of Manchester.



HOW THIS DOCUMENT CAN HELP YOU

Your property may have been flooded before or you may have seen recent news reports where property has been flooded that was not previously considered to be at risk. Understandably, you might be worried about your home, your family and your belongings.

Manufacturers have developed new technologies that can be fitted to your property. When correctly installed and maintained these measures can increase the ability of your property to cope with floods or limit the damage, so allowing you to return much more quickly to your property than if you had no protection.

We outline the six essential steps, shown below, that will help you to navigate the process of installing flood resilience measures in your property.

Each step is accompanied by a checklist. At the end of the document are links to organisations that can provide more information and advice.

Six steps to make your property more resilient to flooding

<i>STEP 1: Understanding the Risk</i>	<i>Page 2</i>
<i>STEP 2: Planning – First Considerations</i>	<i>Page 4</i>
<i>STEP 3: The Property Survey</i>	<i>Page 6</i>
<i>STEP 4: Product Supply</i>	<i>Page 8</i>
<i>STEP 5: Product Installation</i>	<i>Page 10</i>
<i>STEP 6: Operation and Maintenance</i>	<i>Page 12</i>

STEP 1

Knowing the level of risk is important in order to make a decision on whether or not you want to protect your property. The Environment Agency has maps (1) that demonstrate the risk from rivers, sea, and, in some places in England, from groundwater. They are updated on a regular basis and should be periodically reviewed; for example, when your home insurance policy is due for renewal.

Some of the most recent floods experienced in England do not take place anywhere near a river. These types of flooding occur after heavy rainfall and where drains or land do not allow the water to escape quickly.

In England, Lead Local Flood Authorities (LLFAs) are responsible for managing flood risk locally and they can give you information about the risk from ground and surface water or direct you to who is responsible. You can find out who your LLFA is by contacting the Environment Agency (2).

Other people living in the area can be a source of knowledge on previous flood incidents. Alternatively, the local library, place of worship, or community centre may have people who know the area well. Have there been previous floods? What are they doing and why? Your local councillor may also know the right person to ask. The website www.gov.uk helps you to find your local authority and councillor by postcode (3).

A fee can be paid for a commercial property search. For advice on providers of these services please see the Council of Property Search Organisations (CoPSO) (4).

UNDERSTANDING THE RISK

If you tick all of the boxes on the checklist below then it will be a good idea to find out more about flood resilience technologies.

<i>Has the area been flooded before?</i>	<input checked="" type="checkbox"/>
<i>Is there a significant risk of flooding (sea, rivers, brooks, open drains, pipes, rain, groundwater)?</i>	<input checked="" type="checkbox"/>
<i>Given the type(s) of flood risk – have I contacted organisations who know where to go for more information?</i>	<input checked="" type="checkbox"/>
<i>Have any of my friends, family or neighbours installed flood resilience products?</i>	<input checked="" type="checkbox"/>

Notes

- (1) The Environment Agency's Flood Maps and guidance are available at: <http://www.environment-agency.gov.uk/homeandleisure/37837.aspx>
- (2) Contact details for the Environment Agency's Regional and Local Offices are here: <http://www.environment-agency.gov.uk/contactus/36324.aspx>
- (3) Find your Local Authority here: <https://www.gov.uk/find-your-local-council>
- (4) CoPSO: <http://www.copso.org.uk>

STEP 2

At this point, you might want to find out what types of products are available and how they might be funded. There are a number of organisations that can help you to find out more about the technology such as the National Flood Forum, through their Blue Pages Guide (1), and the Flood Protection Association (2).

If the up-front cost prohibits installation then individual property owners can contact their local authority or their local Environment Agency (3) office for more information on the types of funds that may be available.

Some communities have come together to try to find funds that the Government might be able to match. The Environment Agency (4) has examples of such community partnerships. Your local authority might also be able to help, particularly if they can divert funds from the local levy (raised from your council tax).

You will need to check with your insurers what their policy is in regards to property level flood resilience technologies. Recent research indicates that a reduction on insurance premiums is not guaranteed (5). However, more companies may be willing to provide a quotation. It is good practice to contact a range of insurers to ask for a quote. The Association of British Insurers (6) or the British Insurance Brokers Association (7) may be able to suggest insurers that specialise in flood risk cover. The Department for Environment, Food and Rural Affairs (Defra) has published guidance on insurance for property owners who live in areas that are at high risk of flooding (8).

PLANNING – FIRST CONSIDERATIONS

<i>Are any of my neighbours interested in installing flood resilience technology?</i>	
<i>Can we raise some money in the local community?</i>	
<i>Can my local authority, local councillor or the Environment Agency help with funding?</i>	
<i>Have I contacted a range of insurers to ask for a quote?</i>	
<i>What is my insurer's position on this risk?</i>	

Notes

- (1) <http://nationalfloodforum.org.uk/> and <http://www.bluepages.org.uk/>
- (2) <http://thefpa.org.uk/>
- (3) <http://www.environment-agency.gov.uk/contactus/36324.aspx>
- (4) <http://cdn.environment-agency.gov.uk/flho0312bwdn-e-e.pdf>
- (5) <http://nationalfloodforum.org.uk/?p=538>
- (6) <http://www.abi.org.uk>
- (7) <http://www.biba.org.uk>
- (8) <http://www.defra.gov.uk/publications/files/pb13082-flood-insurance.pdf>

STEP 3

Once you have explored the possible costs and sources of funding, the next important step will be a survey of your property. This will check for all possible points where water can easily seep in, such as doors, windows, air bricks and even the toilet.

You can either go direct to a manufacturer who provides a survey as part of their overall package. However, most people choose to have an independent survey. If you want an independent survey, try to look for a firm who are locally based or who has previously worked in the area. You can contact your local authority planning department (1) or the Royal Institute for Chartered Surveyors (RICS) has a list of professional chartered surveyors that you can search by postcode (2).

Be aware that any surveyor that recommends only one product has probably not surveyed correctly: most properties need a combination of measures, such as door guards and air brick covers, along with other remedial work. A good surveyor will also take into account other nearby properties, previous flooding and the location of drains. Defra has published a template for those undertaking surveys as part of its funded schemes (3). You can expect to receive a report that:

- provides an assessment of the flood risk (depth, duration, type(s), frequency);
- provides a comprehensive assessment of all possible points where water could enter a building and how it might affect a building based on its existing envelope and internal systems;
- the specification of measures that can be adopted to protect a building.

In some cases, two surveys may occur before installation. The first will provide a risk assessment. However, a manufacturer, particularly if it is a bespoke solution, may wish to carry out a detailed measured survey of the property during Step 4.

THE PROPERTY SURVEY

You may need to talk to your neighbours as your investment in flood resilience might not work if your neighbours do not have similar protection.

<i>Is the surveyor accredited by a professional organisation such as RICS?</i>	<input checked="" type="checkbox"/>
<i>Have I asked the surveyor whether all possible points of entry have been covered?</i>	<input checked="" type="checkbox"/>
<i>Has a report been provided that gives a comprehensive assessment along with a specification of measures?</i>	<input checked="" type="checkbox"/>
<i>Will these products be compromised because my neighbours have not installed similar measures?</i>	<input checked="" type="checkbox"/>

Notes

- (1) <https://www.gov.uk/find-your-local-council>
- (2) <http://www.ricsfirms.com/>
- (3) <http://archive.defra.gov.uk/environment/flooding/documents/manage/survey-template.pdf>

STEP 4

The survey will recommend a combination of products. Organisations such as the National Flood Forum (1) and the Flood Protection Association (2) will be able to direct you to reputable companies who can fulfil the specifications.

You can check the National Flood Forum's Blue Pages (3) for a list of products and manufacturers. A good manufacturer should also be able to provide testimonials from people who have previously purchased their products.

However, make sure that the products suggested are right for you. For example, flood doors may need to be activated in a particular way. People who are mobility impaired may not be able to do so. Other people have installed garage doors that only one member of the household is of sufficient height to activate.

You need to make sure that everyone in your property is capable of using the product and checking that it works or else can easily access someone to help. Very often there is little time between hearing a flood warning and making sure that the protection measures are in place and fully operational.

The British Standards Kitemark (PAS 1188) is a rigorous standard to which some products will have been tested to (4). As a rule, the Environment Agency recommends Kitemark tested products. Please note that the Kitemark allows for a small amount of water leakage when products are tested (1 litre of water per hour per metre of seal under a designated maximum water depth).

Some websites or brochures indicate that a manufacturer is covered by the Kitemark but please be aware that this might NOT apply to ALL of their products. The Kitemark also does not cover all items, for example, non-return valves or sealants.

<i>Am I clear about what the products do?</i>	<input checked="" type="checkbox"/>
<i>Am I confident that I or another member of my household could use the product?</i>	<input checked="" type="checkbox"/>
<i>Have I been provided with information about the product such as sample materials, or installation and maintenance?</i>	<input checked="" type="checkbox"/>
<i>Do the products have the PAS 1188 Kitemark?</i>	<input checked="" type="checkbox"/>
<i>If the products are not covered by the PAS 1188 Kitemark, have I asked for evidence that they are suitable (e.g customer testimonials)?</i>	<input checked="" type="checkbox"/>

Notes

- (1) http://nationalfloodforum.org.uk/?page_id=54
- (2) <http://thefpa.org.uk/members/>
- (3) <http://www.bluepages.org.uk/>
- (4) <http://www.kitemark.com/products-and-services/building/flood-protection.php>

STEP 5

Some manufacturers will install their own products. However, it can often be the case that products will be installed by a third party. Here, the manufacturer is responsible for providing the installer with the necessary instructions.

You should ask who an installer works for and who pays their fee. Some manufacturers belong to the Flood Protection Association (FPA) (1) who have a code of practice and so, if there are any complaints, then contact the FPA to help.

It is good practice for the property owner to inspect the installation once it is completed. If the initial property survey was carried out by an independent surveyor then they may come out to inspect whether or not the product has been installed to their specifications.

If the works have been completed under an Environment Agency or local authority scheme, they can provide you with a revised flood risk mitigation assessment on the basis of the installed products. The template is available from the Environment Agency (2). Alternatively, you may ask for this as part of the post-installation survey although you may have to pay an additional fee. This survey may be useful in the future when obtaining quotes from insurance companies.

<i>Does a survey need to be arranged to check the quality of the installation?</i>	<input checked="" type="checkbox"/>
<i>Does the product come with a guarantee?</i>	<input checked="" type="checkbox"/>
<i>Do I know where to go if I am not happy with the product?</i>	<input checked="" type="checkbox"/>
<i>Have I asked for, and received, a revised risk assessment that takes account of the installation?</i>	<input checked="" type="checkbox"/>

Notes

(1) <http://thefpa.org.uk/>

(2) <http://www.environment-agency.gov.uk/research/planning/129526.aspx>

STEP 6







All products – even automatic ones (often described as ‘fit-and-forget’) – will need to be periodically maintained. During periods when the property is unoccupied, it is worth making alternative arrangements for someone else to fit the products or, if they are automatic, to check whether they have been activated if a flood warning is issued.

Property owners are ultimately responsible for ensuring that the installed products are maintained in accordance with the product manufacturer’s recommendations. You should be given a maintenance manual and contact details for the manufacturer. Typically, maintenance should be annual or biannual, or else whenever a flood warning is issued.

Please be wary of any supplier that tries to sell you an expensive maintenance deal. If in doubt, you can contact the Flood Protection Association (1) or the National Flood Forum (2) who will be able to advise you.

If any neighbours have already installed similar technology then it is good practice to talk to them about how they maintain it. Also, if possible, it is good practice to see if there are others in your community who you can help if they are less able to maintain or operate certain products. Your own protection may be compromised if other properties do not activate, or fail to maintain, the products.

OPERATION AND MAINTENANCE

<i>Have I been provided with guidance for maintenance regimes that I need to follow?</i>	
<i>If temporary, is there somewhere to store the product correctly and safely, in accordance with the instructions?</i>	
<i>Do I have emergency plans in place if there is more severe flooding than the products can cope with?</i>	
<i>Do I know where to go for advice if a product fails?</i>	
<i>Is there anyone else in my community that I can help to make sure that their products work too?</i>	
<i>Have I made arrangements for someone else to check the products are activated if there is a flood alert when I am away from the property?</i>	

Notes

(1) <http://thefpa.org.uk/>

(2) <http://nationalfloodforum.org.uk/>

Some final words ...

The types of products that we are talking about should increase the ability of your property to be more resistant to flooding and, in the case of larger floods, minimise damage so that your property can be reinstated and returned to much more quickly than would otherwise be possible.

They are not a guarantee that your home will be completely protected from any and all flood events. The products referred to here can generally protect your property to depths of between 60cm and 90cm. You should check what depth you are protected to. Floods over 90cm are likely to cause structural damage to your property.

If you are flooded then you will need to consider drying out techniques. In this case, you should try The British Damage Management Association (1). Look out for the Kitemark again but with the code PAS 64.

You should also prepare for emergencies. The Environment Agency has a dedicated website to help you plan and prepare for floods (2). You can also contact your local authority emergency planner who should be able to advise you and to provide local contact details for support in an emergency. There may also be a local community resilience or flood group that you could join, which can provide mutual support and help you to prepare for a flood and to respond and recover during and after a flood.

Please note that there will be special considerations if you own a listed building or you are located in a conservation area. In this case please refer to the English Heritage guide, *Flooding and Historic Buildings*, that will direct you to specialist advice (3).

Notes

(1) <http://www.bdma.org.uk/>

(2) <http://www.environment-agency.gov.uk/homeandleisure/floods/31624.aspx>

(3) <http://www.english-heritage.org.uk/publications/flooding-and-historic-buildings/flooding-and-historic-buildings-2nd-ed.pdf>

Key contacts ...

The following organisations can provide advice during the process of having flood resilient technology fitted to your property:

The Association of British Insurers. Visit <http://www.abi.org.uk>

The Environment Agency. You can sign up to their Floodline here:
<http://www.environment-agency.gov.uk/homeandleisure/floods/38289.aspx>
– or telephone 0845 988 1188.

The Flood Protection Association. Visit <http://thefpa.org.uk/>
– or contact Mary Dhonau by phone at 033 33 23 87 01 or mobile on 0775 459534.

The National Flood Forum. Their 'Blue Pages' guide is a directory of flood protection products and services that advise on how to protect your property against flooding. Visit <http://www.bluepages.org.uk/> – or telephone 01299 403055.

Royal Institute of Chartered Surveyors (Find a Surveyor): <http://www.ricsfirms.com/>

The British Damage Management Association (BDMA) advise on flood recovery, and restoration practitioners. They can be contacted on 07000 8432362. See <http://www.bdma.org.uk/>

The Meteorological Office weather forecast: <http://www.metoffice.gov.uk/public/weather/forecast/?tab=map&map=SignificantWeather>

The Citizens Advice Bureau may provide assistance.
Visit <http://www.adviceguide.org.uk/england.htm> – or telephone 08444 111 444.

Recommended guides ...

We have spoken to people who have been flooded before and they have recommended the following guides:

The Environment Agency's flood advice can be accessed here:

<http://www.environment-agency.gov.uk/homeandleisure/floods/default.aspx>

Two Environment Agency documents that might be particularly useful are:

Protecting your home: <http://cdn.environment-agency.gov.uk/geho1009brdl-e-e.pdf>

and *Temporary and Demountable Defences*: <http://evidence.environment-agency.gov.uk/FCERM/en/FluvialDesignGuide/Chapter9.aspx?pagenum=10>

Homeowners guide to flood resilience:

<http://www.knowyourfloodrisk.co.uk/pdf/protection-guide.pdf>

The National Flood Forum. *Ready for flooding*:

<http://nationalfloodforum.org.uk/wp-content/uploads/Ready-for-flooding.pdf>

The British Insurance Brokers Association (www.biba.org.uk). *Guide on getting insurance for high risk flood areas*:

<http://www.biba.org.uk/UploadedFiles/600floodguide.pdf>

The Royal Institute of Chartered Surveyors. *A clear guide to flooding for property owners*: http://www.rics.org/Global/Downloads/A_clear_guide_to_Flooding_for_property_owners.pdf

The Association of British Insurers. *A guide to resistant and resilient repair after a flood*:

http://www.abi.org.uk/Publications/ABI_Publications_A_guide_to_resistant_and_resilient_repair_after_a_flood_670.aspx

If you have any comments or want to make us aware of anything that we have not included then please contact us:

By email: angela.connelly-2@manchester.ac.uk

By post: Dr Angela Connelly,
Department of Planning and Environmental Management,
The University of Manchester,
Oxford Road,
Manchester M13 9PL

This Guidance is endorsed by the following organisations:

The Association of British Insurers

The Department for Environment, Food and Rural Affairs (Defra)

The Environment Agency

The Flood Protection Association

The Local Government Association

The National Flood Forum





This guidance has been written by researchers at The University of Manchester and Manchester Metropolitan University in collaboration with the Building Research Establishment. Please refer to it as White, I., O'Hare, P., Lawson, N., Garvin, S., and Connelly, A. 2013. *Six Steps to Property Level Flood Resilience – Guidance for Property Owners*. Manchester, UK.

ISBN: 978-1-905469-82-6



The University of Manchester



Manchester
Metropolitan
University