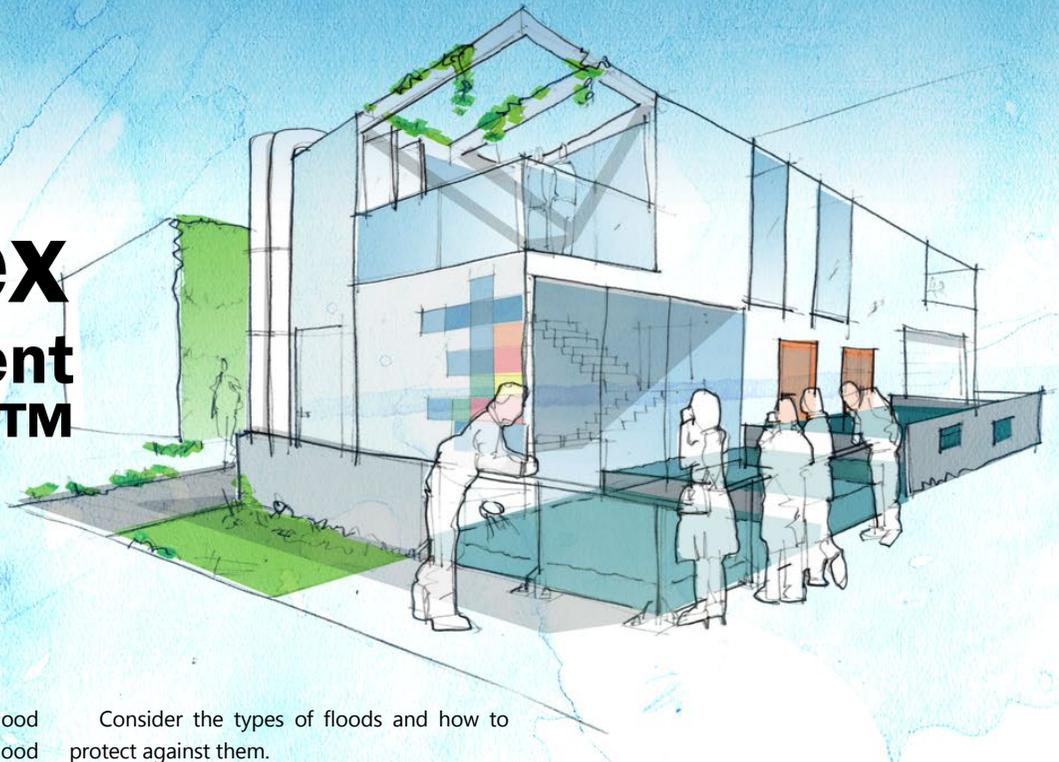


Aquobex Flood Resilient Properties™

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We know we will continue to build on flood plains so let's make sure we do so with flood resistant and flood resilient solutions.

These technologies and building practices are available today and most are robust enough to be affordable and easily integrated into the homes of the future as well as being capable of retrofit into the houses and businesses of yesterday.

The flood resilient property we intend to build at BRE Watford will be a hybrid design to prove that these measures are as applicable to a home as they are to a shop, a factory or a utility premise.

Some of these measures also offer substantial green credentials so that it is possible to build a Sustainable Code 6 property that is also flood proof, with minimal cost impacts especially when bearing in mind the long term cost savings of such properties.

Consider the carbon footprint that is created by drying a flooded property, scraping all the white goods and furnishings, tearing the walls back to the brickwork and disposing of those useless sandbags that were stacked up at the door as a last minute gesture to hold back the floods.

It is an accepted principle that flood waters can be effectively kept out of a building at heights up to 600mm with simple door & window guards, air brick covers and if necessary (for long duration floods) waterproof treatment for walls.

For less than the price of a summer holiday the average home can be protected from simple flash flooding. Ground water flooding and river flooding can be more problematic but within reasonable budgets can be controlled.

Consider the types of floods and how to protect against them.

Flash Flooding

Comes and goes in minutes or hours. Protecting all openings (doors, low level windows and airbricks) is a very simple solution. Because of the sudden nature of the flooding with little or no warning passive and/or automatic barriers should be used – Flood Proof doors and SMART air bricks are the right solution here.

River Flooding

Solutions are the same as above but if long duration flooding then walls will need waterproofing and all holes and pointing repaired to good order.

Coastal Flooding

Usually lasts the duration of the tide with a maximum duration of 6 hours. Solutions are the same as river flooding.

Ground Water Flooding

As well as the steps highlighted above it may be more crucial to consider the construction of the floor and floor/wall joins. Raised wooden floors have a void beneath them where the water level could be contained by pumping out waters and keeping it below inner floor levels.

Concrete floors may be more problematic and tanking may be the only answer in some instances.

In reality a combination of measures are required, with sewer flooding via downstairs toilets also being a major consideration, but all of these will be ascertained by a good quality flood risk assessment of the property.



BitBoy



All of these solutions will be on display in the flood resilient property. These will range from simple manually deployed door and air brick covers through flood doors to automatically rising flood barriers and self-closing roller shutter doors for all building types. Automatic non-return valves will prevent sewer back flow and Flusher will ensure the pipes are cleaned even while we continue to pour inappropriate liquids and solids down our drains.

These are flood resistance measures that will prevent flood ingress into the property up to a pre-determined height.

After this we let the waters in (to prevent structural damage of the property) but into a prepared interior with waterproof walls, floors, doors, skirting boards and Flood Proof Kitchens with electrics, services and meters all placed above the anticipated flood height.

None of these products absorb water so it is a simple matter of flushing the house out, cleansing it and redecorating after allowing it to dry out naturally. With these measures in place people can be back in their homes or back at work in under 4 weeks with little stress and anxiety compared with today's agonies.

Also on show in the flood resilient house will be a Science Museum type area highlighting the good and bad of today's building practices and where and when such measures should be used.

- **Building with engineering bricks up to the flood level in new homes**
- **Not using air bricks in flood plain buildings**
- **Raising finished floor levels (FFL)**
- **Raising power sockets above the flood zone**
- **Using closed cell insulation in cavity wall constructions and not wool or paper!**
- **Ensuring foundations can withstand anticipated hydrostatic loads**

Lots of talk about new homes but all of these measures are also available for the current housing stock, retail shops and factories and warehouses around the country.

Aquobex is working on this property with the assistance of Baca Architects and BRE through an initial grant funding of £50,000 from Defra.

From this grant we will jointly develop an "open standard" design for products and standards that will enable all property developers and home renovators to specify and install measures to flood protect their properties and make them more resilient and INSURABLE.

With some forethought and a little planning the most important asset in people's lives CAN be protected from flooding ■

+ More Information

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Small changes and careful decisions can help make a house flood resilient and reduce cleanup after flooding. For example, choosing a kitchen with water resistant high gloss solid acrylic doors, or raising power sockets above the flood zone.