

Case Study

The Victorian Terrace, BRE Innovation Park, Watford Flood Resilient test home

Client: BRE (Building Research Establishment)

Sub-Contractor: ProTen Services

Overview

A housing unit within the BRE Victorian Terrace demonstration project is being refurbished with a range of materials, products and innovations that will make it flood resilient.

The aim of the project is to raise awareness amongst contractors and householders of the most effective ways to repair and refurbish a house that has been flooded which may be at risk of being flooded again.

Earlier this year... (2016)

A number of very interesting meetings took place regarding flooding & flood resilience. The BRE and PCA attended these meetings along with Delta Membrane Systems Ltd, manufacturers of structural waterproofing systems. Over a series of meetings with John O'Brien, Dr Stephen Garvin & the architectural team it was decided that the Delta System would be incorporated to contribute towards the flood resilience of the building. Specialist contractor, ProTen Services, were commissioned to carry out the installation.



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The BRE recognises the massive disruption and the devastating effects of flooding in our homes and businesses along with insurers who expend millions of pounds surrounding these events. The Environment Agency suggests that over 5.2 million homes in England are at risk of flooding from rivers, sea or surface water. This equates to 1 in 6 homes!

Traditionally after flooding, a loss adjuster is appointed to access the claim and damage resulting in catastrophic circumstances, this leads to the areas of the ground floor being fully stripped out. To this end the owners during this time are relocated into accommodation for many months until their property is dried out at the cost of the insurance industry. Flooding not only brings misery and inconvenience into our lives but also contamination of the fabric and internal surfaces such as masonry and can enter the structure either through openings in the fabric such as doorways and airbricks or through the ground and often independently of each other.



After a flood event, the Delta system may be installed and the walls lined which has two significant benefits.

1. An instant barrier is provided on the face of the wall thus contaminants are sealed allowing fast track reinstatement and reoccupation, literally in weeks instead of months.
2. The Air Gap created by the extruded studded membrane allows the walls to dry out naturally.

Whilst the above is being carried out, a sum not significant may be set aside by insurers to build in resilience. Where solid floors are present, a drainage channel may be set into the slab and will connect to the sump and this would deal with any future affects of groundwater rising up through the structure. This can be enhanced by connecting drainage pipes through the slab that terminate at the finish floor level to further evacuate flood water. This system may also be installed within subfloor voids.

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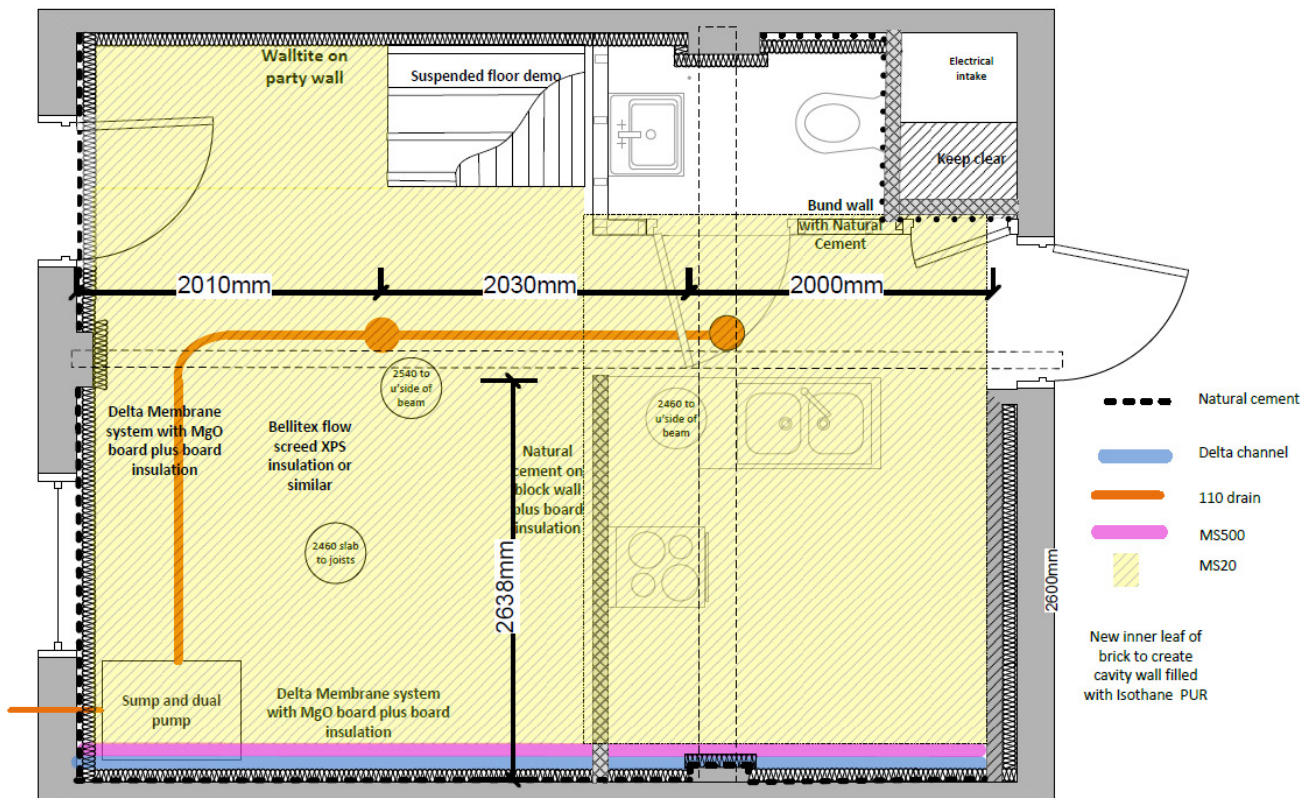
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The main components of the Delta system are the cavity drainage membranes. These are sheets manufactured from virgin HDPE which are extruded into studs which come in various depths (3mm, 8mm and 20mm). The cavity created by the studs contains between 5 and 10 Litres of space respectively. This is known as either the “Air gap” or the “Drained Cavity”, in wet situations. The cavity drain system forms a waterproof inner lining to the walls and floor whereby the water or dampness is collected and managed via a packaged pump station.

This system is typically designed to protect against ground water ingress entering the structure behind the membrane. To make the system flood resilient Delta have re-designed the system in such a way that it will drain flood water entering the property from in front of the membrane (room side/top side). Modular drainage using 110mm drainage pipes are to be cast within the slab with upstands protruding up through the membrane and finishes, with a grated inlet flush with the finished floor. This drains any flood water to a packaged pump system and pumped to a suitable outlet.



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In the news...

Recently Floods Minister Therese Coffey was on Good Morning Britain showcasing what features can be installed to restore flood damaged properties and get residents back into their properties sooner.



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As seen on TV



System Components

- >Delta MS500 Wall membrane
- >Delta MS20 Floor membrane
- >Qwik-Seal Fixing Plugs
- >Delta Double-Sided Tape
- >Delta Corner Strip Tape
- >Delta Drainage Channel



- >Delta Dual V3 Sump Pump
- >AlertMaxx High Level Alarm
- >PowerMaxx Battery Backup

