

Applying flood resilience technologies

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This Good Building Guide outlines steps that can be taken to protect buildings or communities against flooding by means of flood resilience (FRe) technologies, that is, flood protection products which can provide resistance or resilience to flooding impacts.

It covers two particular types of FRe technologies, aperture barriers (or property level protection) and perimeter barriers, and provides information on:

- types of flooding
- flood risk management strategies
- flood survey
- types of FRe technologies
- design and testing standards
- installation procedures
- maintenance requirements.

This practical guidance will help developers, planners, designers, construction managers and operatives to identify flood risk, plan for flood risk management, and correctly design, install and maintain FRe technologies.

Introduction

Recent flooding events worldwide have shown that existing flood defence structures do not guarantee a sufficient level of protection for people and properties. Climate change and rapid urbanisation mean that the situation is likely to become more severe. In this unfavourably changing environment, a shift from the traditional approach is required to cope adequately with future flooding events. This Good Building Guide outlines steps that can be taken to protect buildings and communities against flooding using flood resilience (FRe) technologies, that is flood protection products which can provide resistance or resilience to flooding impacts.

The Good Building Guide covers the key points to be considered when selecting FRe technologies as part of a flood risk management strategy. It describes two types of FRe technology



Figure 1: One of many flooded streets after the River Thames burst its banks near Windsor in February 2014 (image courtesy of www.shutterstock.com)

which can help to protect a building or series of buildings against flooding:

- perimeter barriers to prevent water reaching a building
- aperture barriers to prevent water getting inside.

Figure 2 shows the process that should be followed when planning to reduce flood risk for a building, or series of buildings. The steps are to:

- identify flood risk
- plan for flood risk management
- correctly design, install and maintain FRe technologies.

A similar process was adopted in guidance, *Six steps to flood resilience*^[1], produced by BRE and the University of Manchester as part of the SMARTeST project*. Two versions of the guidance

* The SMARTeST Project was an EU FP7 funded research project focusing on smart and innovative flood resilience technologies, systems and tools. For more information, visit: <http://floodresilience.eu>.