DIGEST DG 523 Part 1

FLOOD-RESILIENT BUILDING

Part 1: Legislation, planning, flood-risk assessment and performance of buildings

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This BRE Digest sets out an overall approach to flood-resilient building in the UK. The term 'resilience' is used within the Digest to cover a range of measures including resistance, resilience and avoidance. The Digest is in two parts.

Part 1 provides an introduction to flood-resilient building as well as covering legislation and planning, flood-risk assessment and the flood performance of buildings. Part 2 covers building in flood-risk areas, designing flood-resilient buildings and sustainable development and flood risk.

This two-part Digest will be of relevance to a number of users, including developers, designers, planners, regulators (environment and building) and others who need to take into account managing flood risk to new development.

Figure 1: Newbuild design for resilience to flooding and water

INTRODUCTION

This part of the BRE Digest on flood-resilient building provides the background to building in flood-risk areas, and covers the relevant legislation, the principles of flood-risk assessment and the main issues that define the flood performance of buildings. The intention of this Digest is to address the growing range of literature in this area to promote good practice. It seeks to encourage responsible development that fully takes into consideration flood risk and addresses appropriate design and construction solutions.

The risk to the built environment from flooding is accepted to be increasing due to issues such as increasing urbanisation and climate change[1]. The UN has estimated that there will be substantial increases in the world's population in the next 20 years, with over 50% living in urban areas. As a result there is increasing exposure and vulnerability to flooding across the globe.

Problems with urban drainage exacerbate the risk, and in the UK over 40% of flood events are driven by surface and drainage issues (pluvial flooding) as opposed to wider-scale river and coastal flooding. Flooded buildings suffer damage, with the result that substantial time and cost are required to render them habitable again. The impact on the building users, both in domestic and non-domestic premises, is significant. There are direct risks from drowning and collapsing buildings, but there are longer-term health risks, eg from damp and mould growth, as well as potential psychological damage that can be suffered by individuals.

Floods are, however, part of nature and can happen at almost any place where there is too much water at any time. Flood effects may range in scale from the local, affecting neighbourhoods or communities, to large areas, over cities or river basins. There are different types of flood that may be experienced and these have different characteristics, and require different strategies and methods to manage the risk of flooding. Floods may develop slowly, sometimes over a period of days, but flash floods develop quickly and with little visible signs of rain. A distinction should be made between floods that are quite frequent (return period of less than 20 years), rare floods (return period of 20–100 years) and very rare floods (return period of more than 100 years).

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