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Flood resilience technology, systems and toolls

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In recent years there has been a general acceptance that the risk from flooding is increasing, primarily due to increased urbanization and the impact of climate change (Zevenbergen et al, 2010). Flood resilience technology (FRe T) is a term used to describe a collection of technologies, materials and products that are used to protect and allow recovery of buildings, communities and infrastructure from flooding. River or coastal flooding is the focus of the legislation, regulation and guidance that is intended to control development and ensure the risk to new properties is low. However, the cost of building and maintaining primary flood defense systems for rivers and coasts is becoming prohibitive and as such future flood management needs to consider a range of measures to manage risk, in particular improving the resilience of buildings, infrastructure and communities. Surface water flooding is now known to cause as much damage as coastal and riverine flooding combined and is as likely to be experienced by both existing and new developments. Therefore FRe T solutions need to be adaptable and flexible.

Previous research has shown that barriers exist to the acceptance and use of FRe T by a range of stakeholders. This includes the need to deploy household level items in time, the uncertainty over the performance of FRe T in actual flood situations or reluctance to adopt new or unknown solutions. Investment by public authorities in FRe Technology in recent years has typically increased in countries such as the UK. However, there has been to date little consideration of the system within which the technology has been employed and there is a lack of tools to assist decision makers.

The SMARTeST project (an EU FP7 research project) is addressing the issues involved in FRe technology implementation. The findings of the research will be presented, including case studies where the integrated approaches of technology, systems and tools have been considered.

SMARTeST seeks to create an environment for innovation in FRe technology, using new approaches that will reduce the risks involved in function, deployment, performance. The paper will describe how alliances of manufacturers, test houses and research organizations can bring about innovation.

(Reference; Zevenbergen C, et al, C22 Book, Urban Flood Management, 2010)