Blueprint for Innovation in Property Flood Resilience (PFR)

Identifying Gaps and Opportunities in Product Development

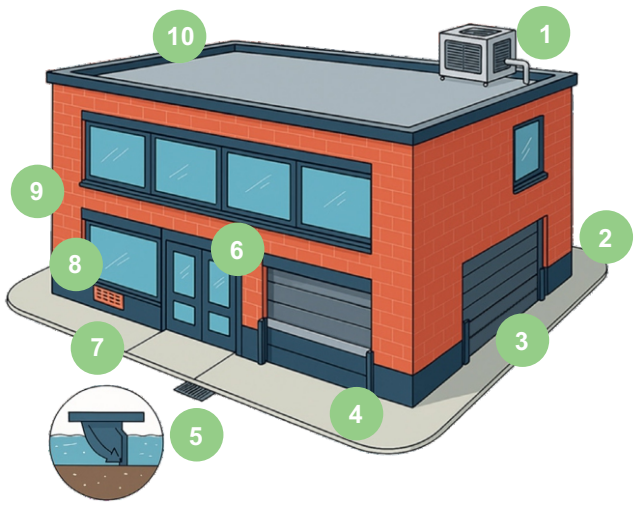
This report, part of a research partnership between the University of Hull and Intact Insurance, identifies strategic innovation gaps and proposes actionable solutions to improve the design, usability, and regulation of PFR products. It is intended to guide stakeholders in developing inclusive, multifunctional PFR solutions. The analysis considers three primary categories: Product Innovation, Usability and Transferability, Policy and Regulatory Innovation in PFR. The report highlights the need for interoperability in products that combine flood resilience, fire safety and accessibility, and smart systems that can deploy passively or via sensors. The report identifies misalignments that create barriers to innovation and uptake and proposes a phased planning framework to develop inclusive and scalable PFR solutions.

A Blueprint for innovation in Property Flood Resilience (PFR).

PRODUCT INNOVATION
PFR helps protect people and property from flooding by reducing damage and speeding up recovery and reoccupation (CIRIA Code of Practice [C790], 2021).

Flood doors	Develop multifunctional doors combining flood resistance, fire safety, and accessibility compliance	**Portable solutions**	Develop modular, retrofit-friendly PFR products for leased or temporary premises
Passive systems	Expand passive deployment mechanisms for flood doors and gates	**Smart monitoring**	Integrate sensors, connected alarms, and predictive activation into PFR systems
Automation	Create automatic sliding flood doors that meet BS 851188, BS 476, and accessibility standards	**Certification reform**	Establish new frameworks for multifunctional and modular products; expand UK testing facilities
Heritage compatibility	Design heritage-sensitive flood doors with modular, reversible installation and low thresholds	**Policy & Finance**	Introduce commercial Build Back Better scheme, parametric insurance, and fast-track planning

Reducing Flood Risk in Commercial Properties: A Visual Guide



1. **Roof mounted critical infrastructure:** Essential systems placed above flood level.
2. **Water repellent paint:** Exterior coating that reduces water absorption and protects building materials.
3. **Roller Shutter:** Protective shutters that can be deployed to shield doors and windows from floodwater and debris.
4. **Demountable barrier:** Temporary flood barriers that can be quickly installed during flood warnings.
5. **Non-Return Valve (NRV):** Prevents sewage or floodwater backflow.
6. **Flood Door:** Watertight doors designed to resist water pressure and prevent internal flooding.
7. **Raised ground:** Elevated surroundings reduce the likelihood of floodwater reaching the building.
8. **Air brick cover:** Temporary or permanent covers that block floodwaters from entering through ventilation bricks.
9. **Flood defender window:** Sealed window units for water ingress prevention.
10. **Flood Evacuation Plan (FEP):** Move occupants to upper floors during flooding.

WHY PFR MATTERS?

Risk Reduction | **Faster Recovery** | **Builds Business Resilience**

Scan the QR code to read the full report.