Risk assessment and risk management for small urban catchments

Technical Summary: FD2603

Joint Defra / EA Flood and Coastal Erosion Risk Management R&D programme

Background to R&D project

This work undertaken for Defra by the University of Manchester and its subcontractor, the Building Research Establishment was part of the wider ERA-Net CRUE collaborative research project on non-structural measures to improve flood risk management in small urban catchments at a European level using case studies in England, Germany, France and Scotland. This case study covers flood management in Heywood, Greater Manchester, where storm-induced surface water flooding in Summers of 2004 and 2006 affected 200 homes. There was no previous history of flooding in the area and the most likely causes of these two events are urban infill, an ageing drainage system, two culverted urban streams and high intensity storms. The non-structural aspects of tackling these floods were studied by undertaking 44 personal interviews with homeowners who experienced flooding inside their properties, attending public meetings, and by holding detailed discussions with the Environment Agency at local and national level, concerned officers within various local authorities in Greater Manchester, United Utilities, OFWAT, the Association of British Insurers (ABI), and elected local and national government officers.

Results of R&D project

This project identified the following key issues with dealing with urban flooding in England:

- **Institutional barriers** – Elected and unelected stakeholders from local government, the utility company, the insurance industry ,the Environment Agency, environmental consultants and flood victims supported the development of a national policy to determine and co-ordinate more effective working relationships between the Environment Agency, local authorities, water companies and the insurance industry, so that a coherent voice and strategic guidance could be provided by an overriding agency or by allocating responsibility to an existing agency. The predominant opinion was that local authorities, because of their local knowledge and connections to the public, should be empowered to accept a leading role. Many suggested that one possibility was that the overriding agency should provide operational guidance to a new dedicated flooding expert within all local authority planning departments where there is any risk of urban flooding.

- **Better planning** - there is still a tendency for flood risk to be assessed and managed on a site by site basis thus inhibiting the potential for strategic solutions and involvement by the local community and key stakeholders. Better data needs to be made available to planners and utility companies, who are not statutory consultees on individual development applications. Strategic Flood Risk Assessments should include surface water flood risk and address strategic storage issues and options.

- **Informing the public** - The public are confused about who is responsible for urban flood risk management and are ill-informed about how best to protect their properties. Most would like a single contact covering all issues relating to flooding, including resilience measures. Based on the findings of this research, this could come under the auspices of the proposed new flood expert within local authorities who could also initiate practical issues, such as instigating localised urban flood risk mitigation schemes (such as SUDS and drainage routes).

- **Availability of data** - The lack of robust data adversely affects flood risk management. Much data on past flood events is in the hands of private companies (utilities and insurance) and there is no compulsion for them to make this data available to public bodies. Sharing data should be encouraged and robust local data could be collated by the proposed dedicated flooding expert. The water companies' own register (DG5) is limited by the severe weather clause and also by home owner's reluctance to report events because of the risk of property blight.

- **Sustainable Urban Drainage Systems (SUDS)** - SUDS are an effective mechanism to control local surface water problems, but are only rarely used because of a variety of issues such as their installation and on-going maintenance. SUDS should be promoted in public open spaces, along roads or in parking areas. This research indicates that SUDS can help alleviate surface water flooding and where appropriate the Local Authority should take the responsibility for ongoing maintenance.

R&D Outputs and their Use

The findings from the case study have informed the House of Commons Environment, Food and Rural Affairs Select Committee inquiry into flooding. The research received the full collaboration of the staff and elected members of the Local Authority, the sewage undertaker United Utilities, officers of the Environment Agency, and in particular the local residents who experienced the flooding. Researchers attended local community meetings as participant observes in the aftermath of the 2006 flood. The outputs will be integrated in to the findings of the wider ERA-Net CRUE collaborative research project. The findings will be presented at flood risk management conferences and meetings (FLOODrisk 2008, COST C22) and will be reported in peer reviewed academic journals (Journal of Flood Risk Management).

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