Flood vulnerability assessment for historic buildings in England

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Floods in England in the past, like the widespread flooding of Gloucestershire and Worcestershire in 2007, have impacted upon large numbers of historic structures. Increasing concern has been voiced on risks posed by flood events to historic buildings, due to varied weather patterns. Preservation of cultural heritage requires greater depth of understanding of the vulnerability of historic structures to flood inundation, and associated extreme rainfall events. Flood loss estimation methods that account for the highly specialised nature of historic buildings' vulnerability to flooding are lacking, however.

The first step in a novel approach to assess the vulnerability of built cultural heritage with respect to flooding includes the assessment of a series of risk indicators of the intrinsic properties that contribute to the value of the asset, and the damage phenomena observed after such natural disasters occur. With this information, the vulnerability of a heritage building can be considered appropriately in the wider scheme of urban flood risk estimation. These risk indicators are: age, listed status, use, footprint, number of storeys, materials and structure, and condition. In the future this method could be applied to other European countries as well, providing that where appropriate the parameters are adjusted to account for local conditions, and that surveyors with strong knowledge of local heritage and hazard factors are used.

Source: Stephenson and D. D'Ayala, 2014. Natural Hazards and Earth System Sciences 14: 1035–1048

Photo: Jamie Taylor (www.flickr.com)