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Short-term resilience

It is now accepted that the disruption and economic losses arising as a result of natural hazards are increasing at a significant rate (ABI, 2005). There is also evidence to suggest that these events are increasing in frequency and magnitude due primarily to climate change effects.

In European terms alone, these increases are likely to result in serious damage to the built environment and built infrastructure. For example, it is predicted that by 2080, there will be an increase in "wind-related insured losses from extreme European storms by at least....€25-30bn. This additional cost would be equivalent to the Martin storm in 1999" (ABI, 2005). It is perhaps worth noting that these estimates do not take into account society's increasing expose to extreme events, due to growing populations, wealthier populations and an increasing asset base.

At Birmingham, we have a long history of undertaking research within the areas of Wind Engineering (storms), Hydraulic Engineering (floods) and Engineering Computation (earthquakes). Combined, these areas account for 80% of global natural events (disasters) by number, 92% of deaths, 90% of economic losses and 94% of uninsured losses. We have established capabilities enabling us to examine the resilience of the urban environment to extreme natural events, in addition to strong links with other Schools within the University which are able to provide a social/community dimension to the research.

- **Wind Engineering (/research/activity/civil-engineering/short-term/wind/index.aspx)**
- **Floods (/research/activity/civil-engineering/short-term/floods/index.aspx)**
- **Engineering Computation (/research/activity/civil-engineering/short-term/computation/index.aspx)**

Ongoing and recent research projects

- **The FUTURENET project (Climate Change and Transport: A Robust Infrastructure for 2050) (http://gow.epsrc.ac.uk/ViewGrant.aspx?GrantRef=EP/G060762/1)**
- **The flight of wind borne debris / an experimental, analytical and numerical investigation (http://gow.epsrc.ac.uk/ViewGrant.aspx?GrantRef=EP/F03489X/1)**
- **New approaches to estimating flood flows via surface videography and 2D &3D modelling (http://gow.epsrc.ac.uk/ViewGrant.aspx?GrantRef=EP/E002250/1)**
- WEATHER – Wind Early Alarm System for Terrestrial Transport Handling Evaluation of Risks

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