



Future Resilient Urban Infrastructure

- Modelling Experts workshops

Morning in 5th and Afternoon in 12th June 2013, Cardiff

Urban infrastructure systems: buildings, water, waste, heat and electricity networks face intertwined challenges, for example, ever increasing water and energy consumption, climate change, ageing physical assets and diminishing natural resources. A number of initiatives have been proposed or implemented, such as heat networks, sustainable transport, smart cities, sustainable drainage and retrofitting buildings. However, fragmented plans and designs of individual facilities may not offer effective pathways towards long term sustainability goals. An integrated modelling approach is sought, to generate insights for policy makings.

Integrated modelling approaches are very complex phenomenon that cuts across many spatial, temporal, institutional and disciplinary boundaries. The Retrofit 2050 project team are organising an interdisciplinary modelling workshop to help modellers to investigate an integrated/simplified systemic model to investigate future visions, and to share data and information about the tools being used. The background research for this workshop has been carried out as a part of Engineering and Physical Science Research Council (EPSRC) funded project. A conceptual framework has been created and will be used as starting point for discussions, which will help modellers from different disciplines to work together for future resilient urban infrastructure planning. The major outcome of the workshop is a simplified model which will be tested with different policy makers from local authorities to national governmental bodies.

Two half-day workshops will be formed of four parts: 1) pre-workshop phase, 2) model conceptualisation, 3) Model creation and 4) Model refinement (see appendix A Workshop Plan). In order to form a team for future collaboration, we have three planned three outcomes from this workshop:

1. A list of modelling tools used in each organization presented;
2. A list of challenges and visions for future integrations;
3. A simplified operational model for future collaborations.

Validation and integrations of top and bottom-up models will be investigated. Iterative policy making process based on modelling exercises will be examined. An academic paper and article in a trade journal will be published based on this workshop in which all participants will be acknowledged.

As places are limited, please contact Paula Mullins, MullinsPJ@cardiff.ac.uk (Tel: 029 20 870003), or Dr. Yangang Xing, yxing@cardiff.ac.uk as soon as possible.