Re-engineering the city 2020-2050: urban foresight and transition management

**Aims** To develop the knowledge and capability to overcome the separation between the "what" and "how" of urban scale retrofitting in order promote a managed socio-technical transition in built environment and urban infrastructure.

**Vision** To deliver a 'step change' in current knowledge and capacity to underpin the transition to urban sustainability, by working with key stakeholders to illuminate challenging but realistic social & technological options and pathways for systemic retrofitting of two core UK city regions (Greater Manchester and Cardiff/SE Wales)

**Objectives:**

1. Explore and advance both theoretical and practical understandings of processes of systems innovation and transition in an urban context;
2. Analyse through case studies, modelling and international comparison, the technical and social processes underpinning such transitions;
3. Identify and characterise prospective disruptive technologies and systems innovations which will underpin a transition to sustainability in the built environment (over the period 2020-2030);
4. Articulate and appraise regionally specific visions and prospective pathways for urban scale retrofitting of the built environment.

**Deliverables:**

- Improved societal understanding of long-term transitions (energy, water & waste) for sustainable urban retrofitting;
- Mobilise expectations around clearly articulated roadmaps, pathways & scenarios for prospective disruptive technologies and systems innovations;
- Integrated urban scale modelling and evaluation tool to support improved decision-making and implementation;
- Practical knowledge exchange framework cities can apply to drive forward systemic retrofitting;
- National & internationally leading centre on future of urban retrofitting.

**Figure 1: schematic of research methodology**

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