SWITCH in Birmingham

A final review

Jennifer Chlebek

ARUP

Overview

- **Introduction**
- **About Birmingham**
- **Intervention logic**
- **Key results**
- **Lessons learnt**

ARUP

About Birmingham

- **1 million population; about 5 million including the surrounding area**
- **Regulated water supply and sewerage system**
- **Responsibility for water management lies with**
  - Birmingham City Council
  - Environment Agency
  - Severn Trent Water Ltd

The Learning Alliance

- **Key members:**
  - Birmingham City Council
  - Severn Trent Water
  - Environment Agency
  - Consumer Council for Water
  - Birmingham Environmental Partnership
  - University of Birmingham
  - Middlesex University
  - Abertay University
  - .....

Intervention logic

- **Managing risks relating to rising ground water below the city and opportunities for its use**
- **Promoting sustainable urban drainage systems in the context of changing climate and increasing run-off, and the Eastside regeneration project**
- **Promoting an informed multi-stakeholder approach to water management, including planning for the longer term**

Interventions- Rising polluted groundwater – risks & future uses

- **Groundwater-surface interactions**
  - In conjunction with the Environment Agency on the River Tame that runs through north Birmingham and crosses the major aquifer beneath Birmingham.
  - Aims to identify the extent of natural remediation taking place at the stream aquifer interface and the conditions under which this happens.
  - Further understanding of the possible beneficial remediation that takes at the stream-aquifer interface when groundwater that is contaminated by pollutants enters the stream.
- **Reuse of groundwater**
  - In association with the UK Environment Agency.
  - Occurrence and mobility of viruses in groundwater and their potential risks to health.
  - This is in view of the fact that there is the potential for groundwater to be used as a city water source.
  - It therefore is important to qualify and quantify the risks before exploitation of underground reservoirs can be carried out.

Impact?

Interventions-Sustainable drainage systems and the brown roof demonstration

- **Brown roof demonstration**
  - Led by the University of Birmingham working with a range of other interested agencies.
  - An experimental array for exploration of different brown roof materials and their impact on biodiversity and urban hydrology has been erected on the University campus.
  - The potential benefits for sustainable drainage are reduced run-off during heavy rainfall, with enhanced biodiversity as a general environmental benefit.
  - There are also two brown roof demonstration projects, supported by Birmingham City Council:
    - Birmingham's city centre the BVSC (Birmingham Volunteer Service Council) brown roof
    - ICC (International Convention Centre) brown roof with a third still to be constructed.
  - Monitoring of biodiversity at all the sites is part of the research and demonstration effort.

Interventions-Sustainable drainage systems and the brown roof demonstration

- **Assessing flash-flood risks**
  - This research is being undertaken by the University of Middlesex Flood Hazard Research Centre and aims to develop a whole range of best management practices for stormwater management.
  - This is being encouraged by the City Council for the Eastside regeneration area and SWITCH is assisting in defining the risks and uncertainties and helping to create a "Vision for Surface Water Management for 2030" in Eastside.
  - This study will help to inform the City Planning Department and the Drainage Department, British Waterways, the Environment Agency and Severn Trent Water Company in planning, reviewing and implementing this vision as developments are brought-forward through the planning process.

Interventions-planning models for processes for sustainability

- **Scoping model (City Water Model)**
  - Capable of assessing the interaction between water supply, waste water and stormwater.
  - Water supply, wastewater and storm water are viewed as three distinct areas in the conventional urban water system, which are inter-related.
  - The model will support the assessment of options for reducing waste, minimising costs and decreasing energy demand, and is dependent on a quantified overview of the whole urban water cycle. Although it is benchmarked against data from Birmingham, it will be general enough to be applied to other towns and cities.
- **Eastside utilities study**

Impact?

Interventions-other and LA activity

- **Institutional mapping**
- **Visioning and planning**
- **Young SWITCH**

Impact?

Interventions-LA impact on the city

- **The city LA influence on the agenda for SWITCH research and demonstrations,**
- **The city LA influence on shorter term planning processes,**
- **The city LA influence on longer term planning**
- **General influence on stakeholder's attitudes and behaviour,**
- **Influence on national policy**

Lessons learnt

- **Research seen as slow/early engagement/sustaining interest over time**
- **Difference between research and application of research (adaptive research?)**
- **Finding/including the right people/Core group? /finding the missing people**
- **Idea-based LA**
- **Many different platforms**
- **Size and focus of platforms – need for a strategic focus/strategic alliances?**
- **Ownership of the LA – who should host and sustain it?**