Understanding the Relationship between Resilience and Sustainability: Emergency Planning & the Design of Urban Space

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Presentation Overview

- The DESURBS project
- Methodology
- Resilience in the UK
- Nottingham & its Local Resilience Forum
- Promising practices
- Conclusions
The DESURBS project

Consortium partners:

- Research Management AS, Norway
- Loughborough University, UK
- The University of Birmingham, UK
- The Hebrew University of Jerusalem
- Technical University of Crete
- Centre Internacional de Metodes Numerics en Enginyeria
- University of Southampton, UK
- Bezalel, Academy of Arts and Design

- [http://www.desurbs.net/](http://www.desurbs.net/)
Methodology

• State of the art review of the literature:
  • Documentation, legislation
    (local and national government websites)
  • Academic database search

• Semi-structured interviews:
  – 11 key stakeholders
    • members of Nottingham and Nottinghamshire Local Resilience Forum
Resilience in the UK

– Resilience is the ability to:
  • **cope** with disruption
  • **maintain** essential operations
  • **return** to normal operations after disruption
  • **elevate** to a more informed & robust state.

– Urban space and the built environment has to be resilient through:
  • Emergency planning
  • Urban and building design
Emergency planning in the UK

1948 Civil Protection legislation

- Fuel shortages
- Flooding
- Foot & mouth
- Fire Service strikes

Civil Contingencies Act (CCA) 2004

Emergency Planning & Response

Civil Protection

Local Resilience Forum
Responders

Category one ‘core’ responders:

- **Emergency services** (Police, Fire and Rescue, Ambulance)
- **Local authorities** (City and County)
- **NHS bodies** (Health Protection Agency, Hospitals)
- **Key government agencies** (Environment Agency)
Responders

Category two ‘co-operating’ responders:

- **Utilities** (gas, electricity, water)
- **Transport organisations** (rail, Highways Agency)
- **Strategic health authorities** (Hospital Trusts, Health Protection Agency)
- **Voluntary agencies** (British Red Cross, Salvation Army, St John Ambulance, Benefits Agency, Religious organisation)
Risk Assessment

National Risk Assessment (NRA)

Hazards

Accidents

National Risk Register

Threats

Regional Risk Assessment

Local Risk Register
An illustration of the high consequence risks facing the UK (Cabinet Office, 2010)
Urban and building design in the UK

Key elements:

• Advancing resilience against terrorist threat
• Regulation, restriction and control of access, and surveillance coverage
• Improving safety and security within overall aim of creating attractive public places
• Increasing resilience at the design stage leads to better and more long lasting improvements
Nottinghamshire & Nottingham
Hazards and risks in Nottingham

Hazards: ‘very high’ (primary or critical risks requiring immediate attention):
- Influenza pandemic
- Major flooding

Risks: ‘high’ (significant):
- Local flooding
- Very cold and very hot weather
- Toxic chemical releases
- Industrial explosions and major fires
- Technical service failure – gas/water
- Local road accidents
“to establish and maintain multi-agency arrangements to respond to major emergencies, and to minimise the impact of those emergencies on the public, property and environment of Nottingham and Nottinghamshire”
(Nottingham City Council, 2009)
Command and control

- **Strategic (gold) level:**
  - Chief Constable
  - Deputy Chief Executive of the City Council
  - Local Director of the Environment Agency
  - Chief executives from emergency services

- **Tactical (silver) level:**
  - Middle management personnel
  - Senior emergency planners
  - Head of City Council

- **Operational (bronze) level:**
  - Responding agencies to emergency situations
Nottingham & Notts LRF - 3

Task and Finish Groups include:

- Risk Advisory Group
- Resilience Working Group
- Critical Infrastructure Group
- Communicating with the Public Group
- Community Resilience Group
- Industrial Hazards Group
- Training Sub Groups
Cycle of Risk Assessment & Emergency Planning

1. Take direction from risk assessment
2. Set objectives
3. Determine actions and responsibilities
4. Agreement and finalise
5. Issue and disseminate
6. Train key staff
7. Validate in exercises – and in response

Designing Safer Urban Spaces
Promising practice on resilience -1

• Relationships within the LRF
  – Inclusive approach → wide ranging sub-groups
  – Good governance → effective working relationships
  – Individual personalities → working well together
Promising practice on resilience -2

- Response of the LRF
  - All LRF partners can activate command and control procedures
  - Response protocols are well known and rehearsed → fast operationalization
  - Mutual aid can be invoked from outside the region
Promising practice on resilience -3

• Input into urban design
  – Police, Fire Service and Environment Agency input into design and planning of urban buildings and environments
  – Counter Terrorism Security Advisers (CTSAs)
  – Architectural Liaison Officers (ALOs)
  – Fire regulations
Integrating resilience & sustainability
Integrating resilience & sustainability
Barriers to promising practice

- Fiscal constraints & budget cuts
- Strategic sign-up
- Communicating with the public
- Tools and hardware
Conclusions

- LRF is a useful multi-agency response model
- Promising practices are central to this – need cost-effective solutions
- In new urban space
  - ensure resilience and sustainability through design, construction, management & operation
- In existing urban space
  - effective emergency planning & maximise resilience
- Resilience increases and is integral to sustainability of urban space
Thank you

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