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

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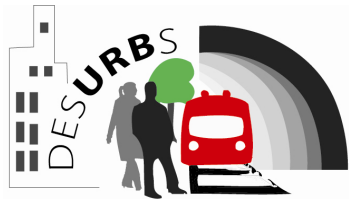
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Presentation Overview

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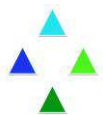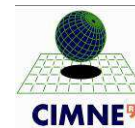- Promising practices
- Conclusions

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

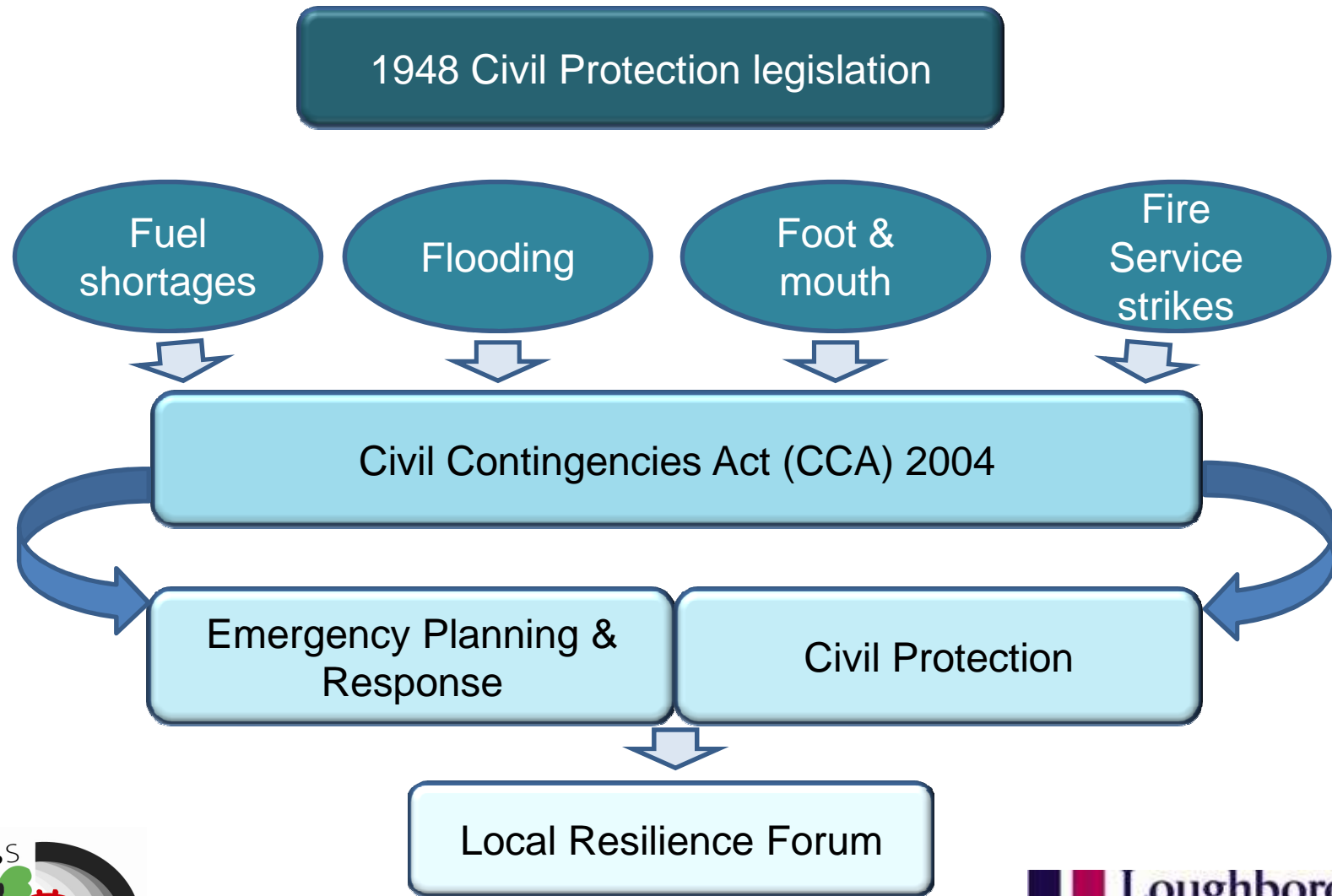- http://www.desurbs.net/

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

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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)

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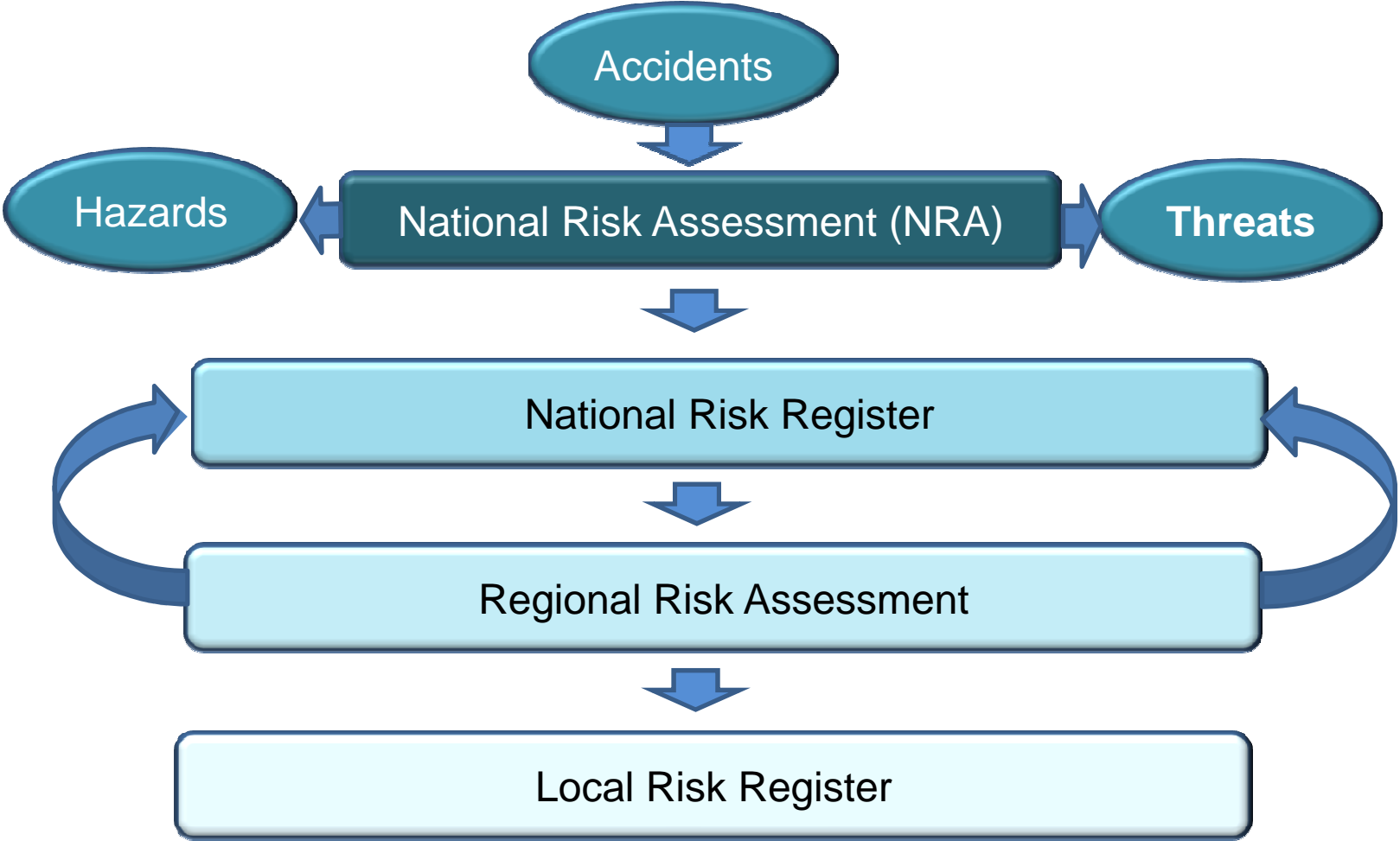
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Responders

Category two 'co-operating' responders:

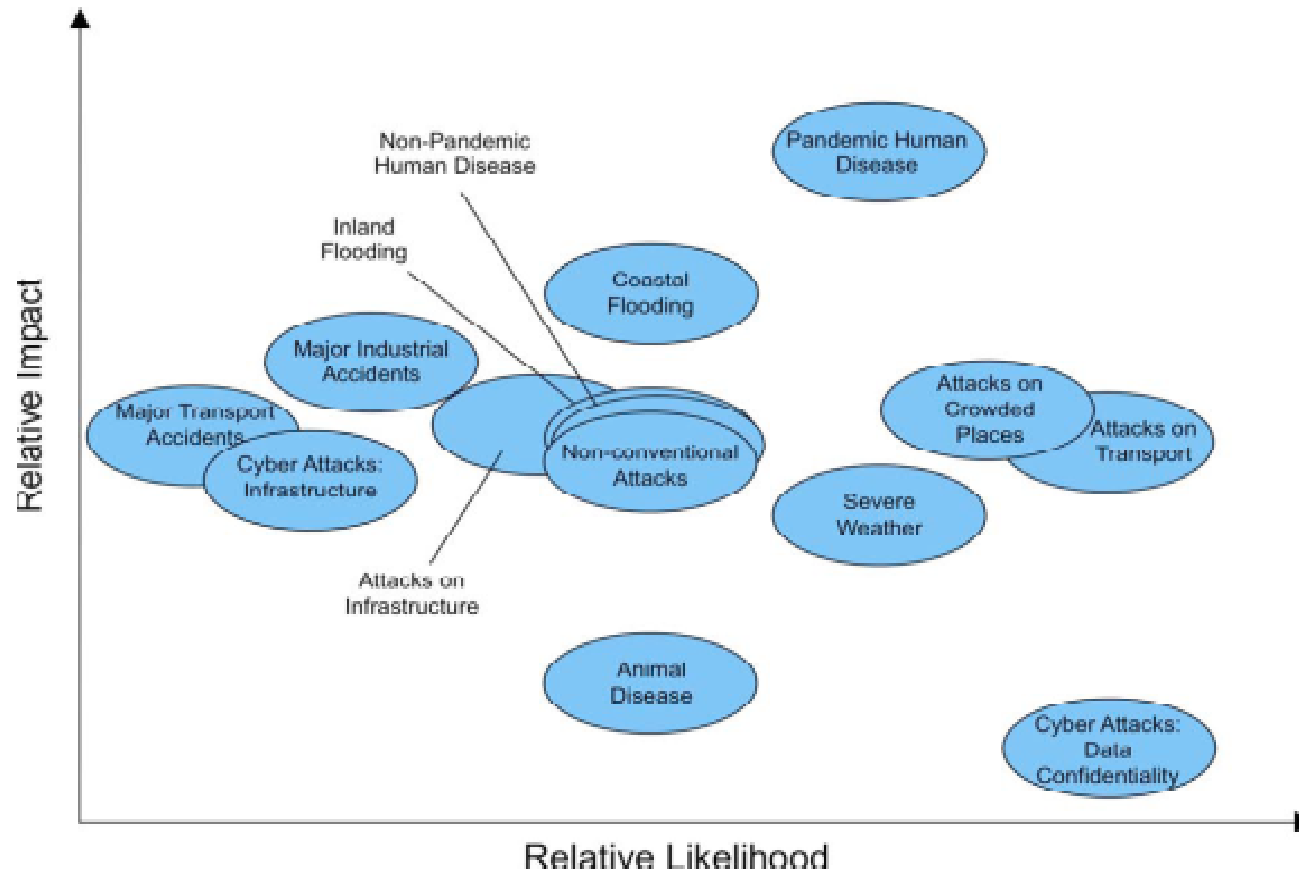- **Utilities** (gas, electricity, water)

- **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

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

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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

Nottingham & Nottinghamshire Local Resilience Forum (LRF) - 1

"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)

Nottingham & Notts LRF - 2

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

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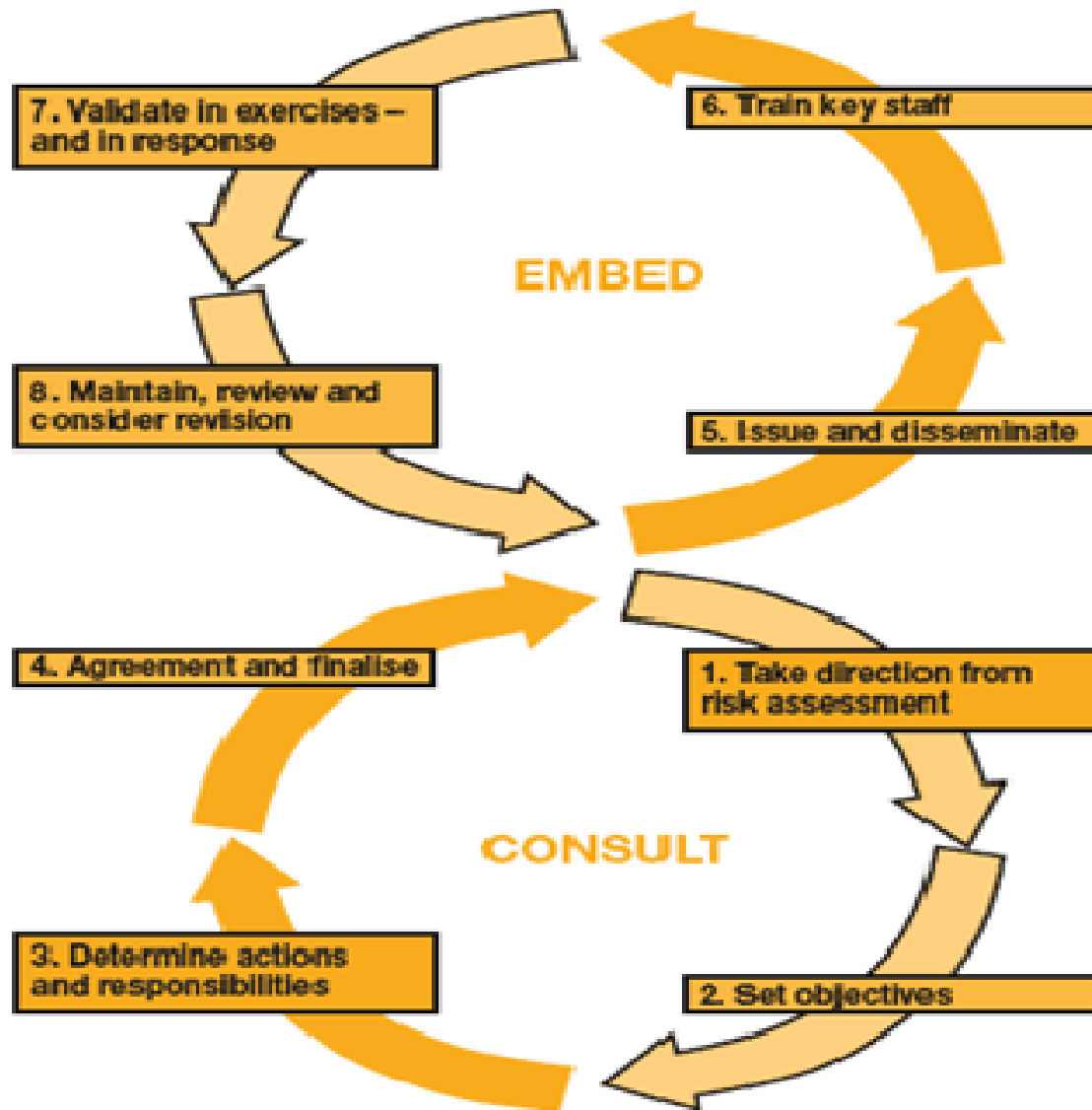Designing Safer Urban Spaces

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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

7. Validate in exercises – and in response

6. Train key staff

EMBED

8. Maintain, review and consider revision

5. Issue and disseminate

4. Agreement and finalise

1. Take direction from risk assessment

CONSULT

3. Determine actions and responsibilities

2. Set objectives

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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

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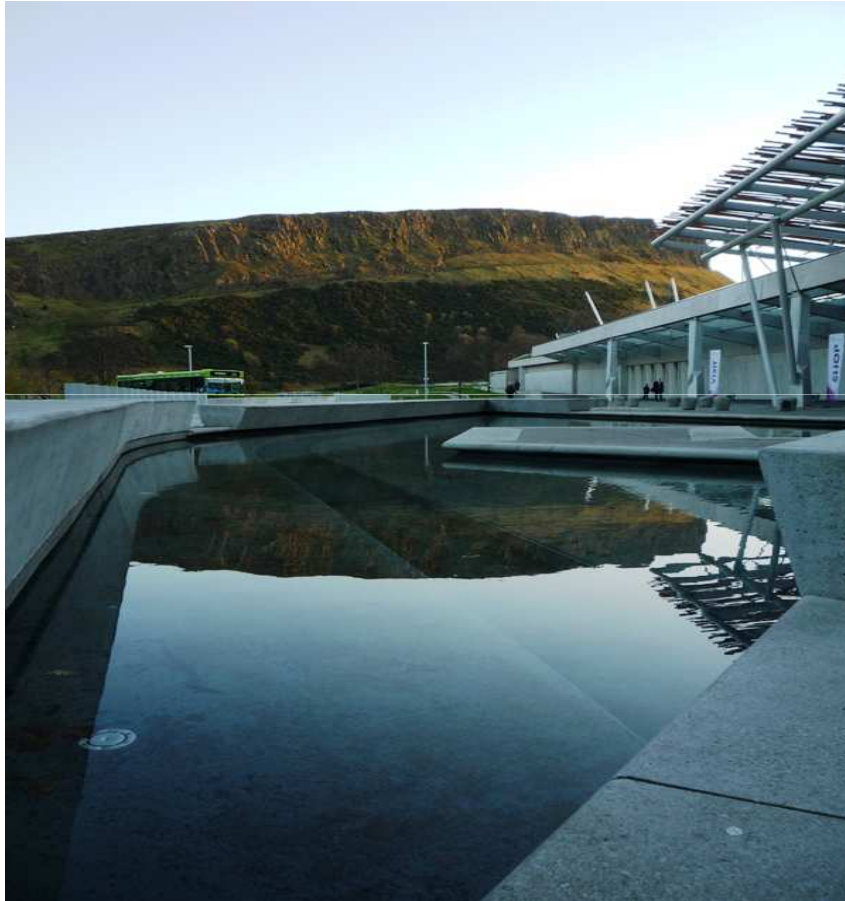
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Promising practice on resilience -2

- 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

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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

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Integrating resilience & sustainability

Integrating resilience & sustainability

Barriers to promising practice

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

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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

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Thank you

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