

# Newcastle University Collaborative Approach to Flood Management

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# The University Estate

- **The University Estate**
  - academic, commercial, residential
  - listed status, conservation areas.



# Flooding affecting the University

**Three major flooding events in Newcastle in 2012**

- June, August and November
- The 'Toon Monsoon' 28th June 2012



# The 'Toon Monsoon' 2012

- **Flooding affecting**
  - Teaching and learning facilities
  - Critical infrastructure
  - Building entrance areas
  - Basements
- **In excess of £1M damages**



# The University's Response

## ESS implemented Flood Risk Management programme

- Flood Risk Manager
- Risk assessment



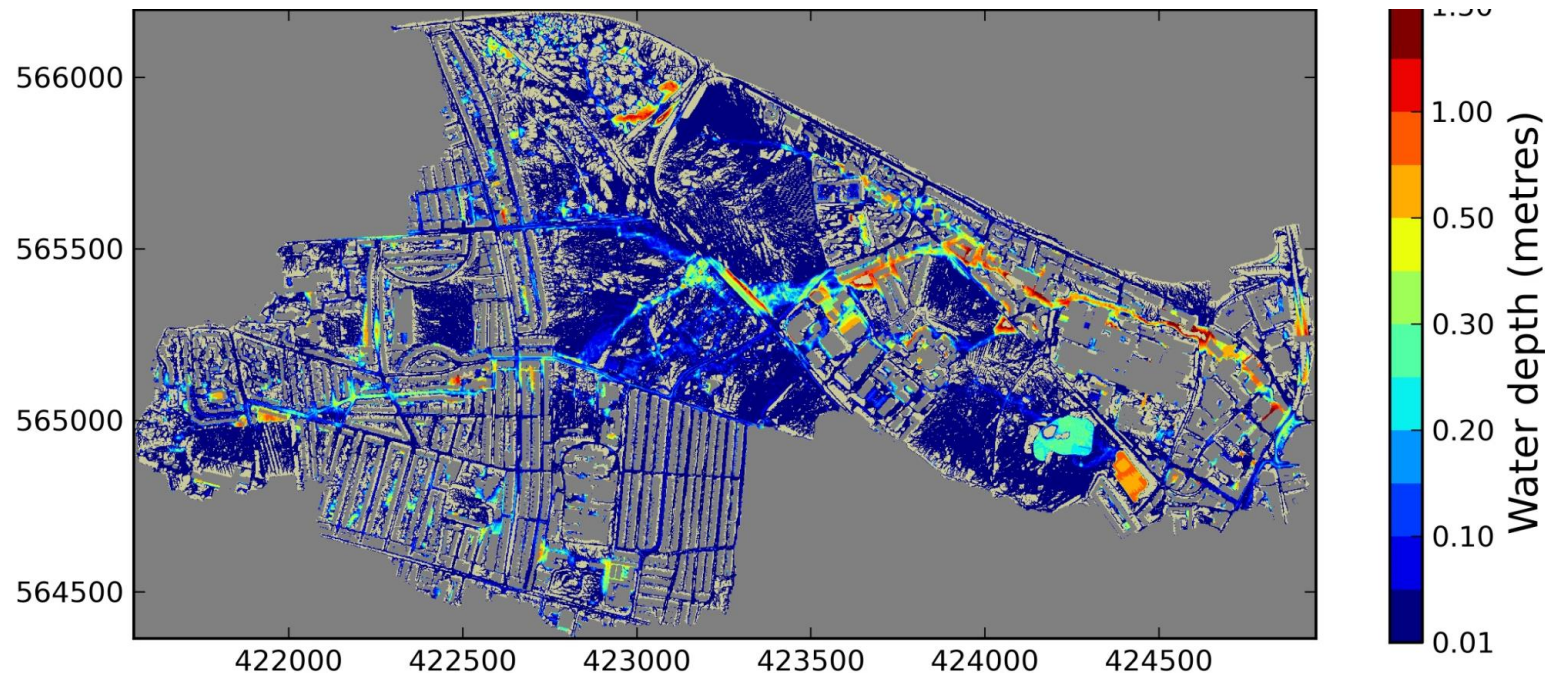
# The University's Response

## Lidar survey of buildings and terrain with Civil Engineering and Geosciences



# The University's Response

## Hydrodynamic modelling for risk assessment with Civil Engineering and Geosciences



# The University's Response

- Protection and warning measures
- Landscape design
- Engagement with local stakeholders





# Ongoing Response

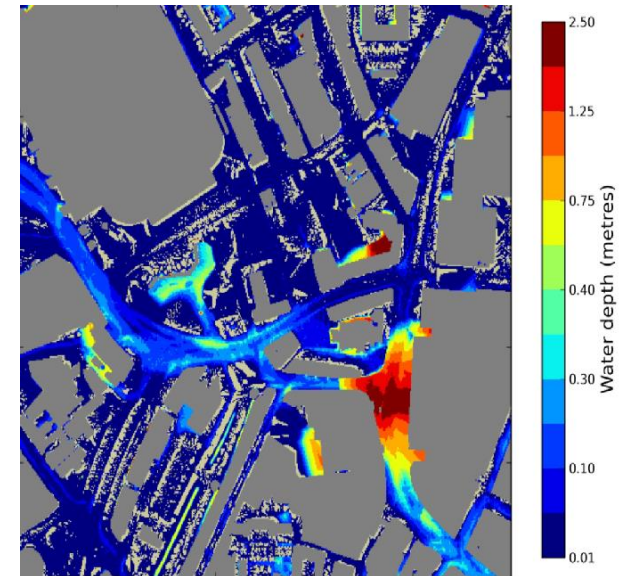
- **Development planning for the Campus**
  - **Urban Sciences Building £60million**
  - **Richardson Road £130 million.**
  - **Landscape design**
  - **Science Central master planning**



# Research

Longstanding capability for flood research in Civil Engineering and Geosciences

- Flood modelling – hydrology and hydrodynamics
- Fieldwork – building and monitoring runoff attenuation features



# Research

## Societal and stakeholder research

- **Blue Green Cities Research Project**
- **Learning Action Alliance (LAA)**

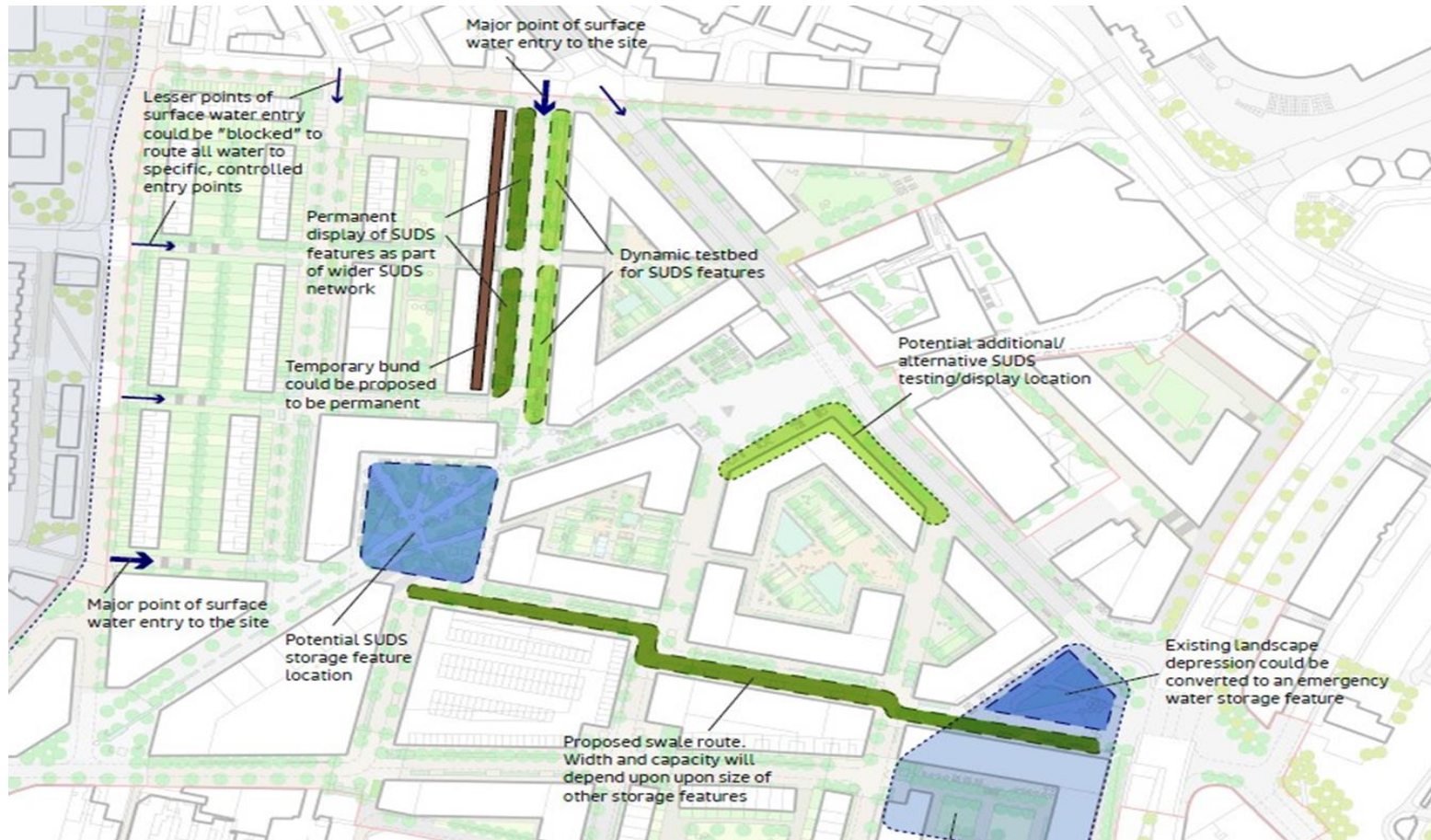


# Research Informed

- **Working with ESS with a focus on Science Central**



# Research informed master planning



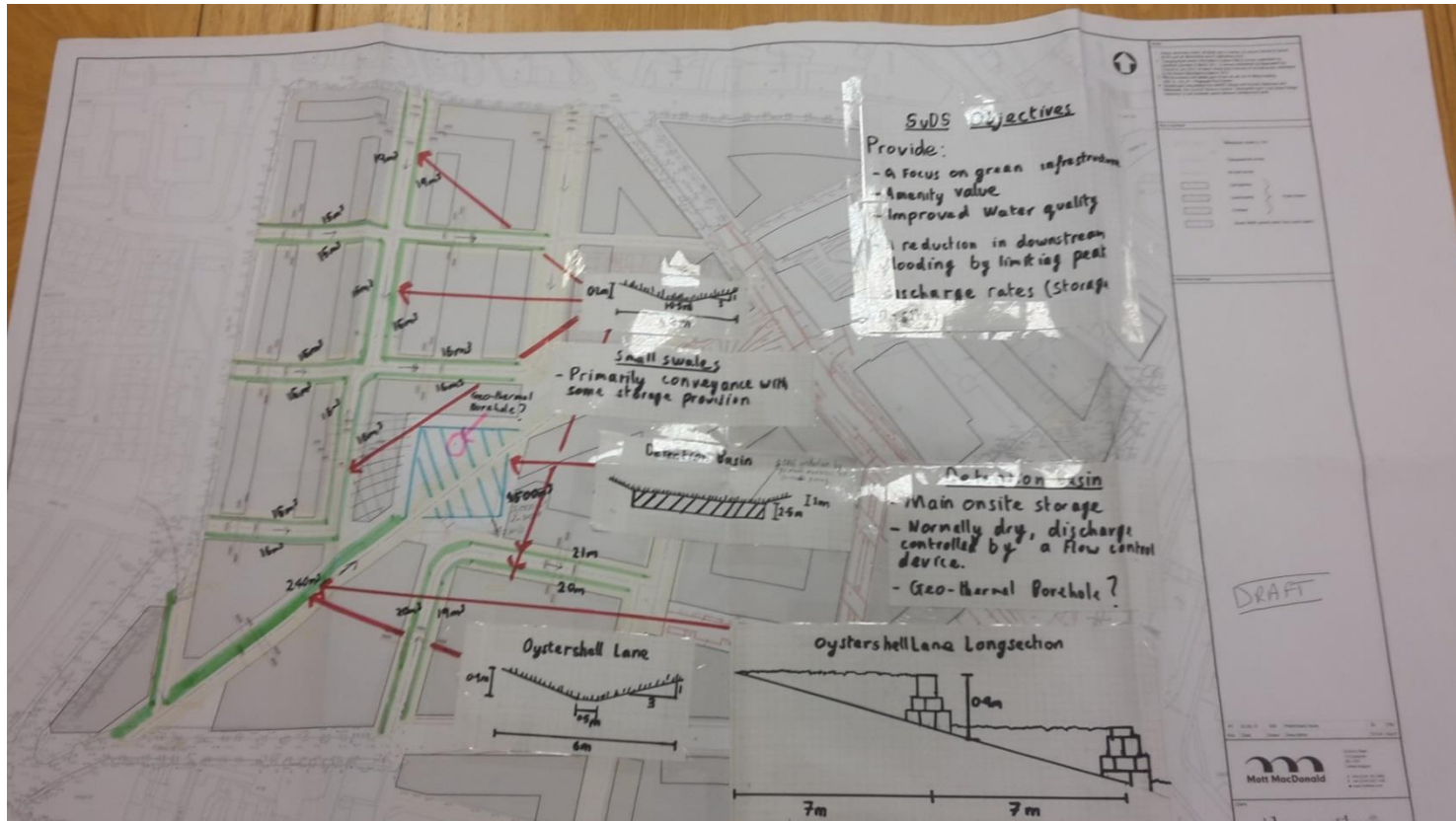
Concept

# Research informed master planning



Hydrodynamic modelling

# Research informed master planning



Master plan design

# St James Boulevard

**Future vision.....**

**-Swale to River Tyne: multiple benefits**

