NWG living water

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Blue-Green Cities

Demonstrating the multiple benefits of blue-green infrastructure

Photo credit: Northumbrian Water Group

Blue-Green Cities is:

- Mitigating flooding
- Reducing water scarcity
- Enhancing ecosystems
- A platform for stakeholder engagement

Image from CityCAT (City Catchment Analysis Tool) urban flood model

SUSTAINABLE DEVELOPMENT GOALS

6 CLEAN WATER AND SANITATION

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Blue-Green Cities

Demonstrating the multiple benefits of blue-green infrastructure

What is it?

Blue-Green Cities research pioneers integrated strategies for tackling urban flood risk focusing on modelling, monitoring and blue-green infrastructure, combining social with technical approaches to water management.

Why is it important?

We not only evaluate the benefits of blue-green infrastructure but quantify their impacts on urban environments, and engage with stakeholders in industry, policy and communities, using the city of Newcastle as a unique testbed for flood mitigation.

What is it good for?

Our work provides advanced, integrated and high resolution modelling that gives realistic scenarios of how blue-green infrastructure interacts with grey infrastructure to help decision makers plan for flood risks. In collaboration with Northumbrian Water Group (NWG) and Newcastle City Council, BGI has been installed at Science Central, including a Sustainable Drainage Systems Facility for testing blue-green approaches to flood mitigation. With city stakeholders, Northumbrian Water Group and Newcastle University have created a Blue-Green Vision for Newcastle that stakeholders have committed to follow and work in partnership to implement blue-green solutions.

Photo credit: Northumbrian Water Group

Why Newcastle University?

The University Estate is a blue-green laboratory for developing innovations in blue-green infrastructure. Newcastle University is a founding member of the UK Collaboration for Research on Infrastructure and Cities (UKCRIC), demonstrating blue-green solutions for flood management at Science Central in Newcastle. Newcastle University is the only university involved in all three strands of UKCRIC: National Laboratories for research; National Observatory of networked 'urban labs'; and Multi-level Modelling and Simulation environment.

What does Blue-Green Cities research offer?

- Developing advanced, at-scale Sustainable Drainage Systems (SuDS) coupled with advanced sensing networks.
- Evaluating the long-term performance and wider interactions of infrastructure within the greater urban system.
- A whole systems approach to understanding how extreme weather will affect cities in future and implementing measures for adaptation on the ground.
- Open platform for stakeholder engagement on blue green infrastructure involving all actors in industry, policy, SMEs and communities.
- Finding ways to optimise blue-green and grey infrastructure to deliver multiple benefits to cities.
- Overcoming barriers to innovation for achieving urban flood resilience.

6 CLEAN WATER AND SANITATION

Working towards Goal 6: Clean Water and Sanitation of the 17 UN Sustainable Development Goals (SDGS).