

Urban Living Research



More than
250
researchers

Introduction

With more than half of the world's population now estimated to live in cities, the way our urban areas are developed affects more people than ever before. The places in which we work, play and make our homes are constantly developing, driven by cutting edge research into every facet of urban life, from transport, to energy, to the future of the urban economy.

The N8, comprising the Universities of Durham, Lancaster, Leeds, Liverpool, Manchester, Newcastle, Sheffield and York, is at the forefront of this agenda supporting world leading academics across the breadth of urban activity that has secured research funding worth over £1.2billion since 2010.

This activity also mirrors the work undertaken through the 'Foresight: Future of Cities' programme, which sought to outline the imperatives and choices facing UK cities over the next 50 years. This work identified five themes, each reflecting the different elements of urban life. They are:

- Living in cities
- Urban economy
- Urban form
- Urban infrastructure
- Urban governance
- Urban metabolism

Building on the five foresight themes, this booklet outlines the array of activity currently being undertaken by the N8 and, in doing so, demonstrates the vital contribution that N8 academics can make in building the urban spaces of the future.

As the Government's 'Northern Powerhouse' agenda continues to develop, the real world applications of N8 research is brought into sharp focus. Now, the time is right to combine these agendas as a means to demonstrate the value that N8 research can make to the development of our urban spaces.

Living in cities

For the first time, more people live in the world's cities than in rural areas. With an ageing population, and the continued trend of migration, this ever-growing urban population faces significant challenges.

THE AGE-FRIENDLY CITY



The World Health Organisation has a mandate for age-friendly cities, which globally encourages active ageing by optimising opportunities for health, participation and security; to enhance quality of life for people as they age. Newcastle University is investigating how local services tackle inequalities, helping them challenge what constitutes 'a working life', and assisting them with committing to age-friendly agendas as part of core strategies for those services.



WELFARE & ASYLUM



The University of Sheffield is carrying out a project to systematically map the political discourses, both for and against, limiting asylum seekers access to paid employment within the context of the wider political economy in order to disentangle how and why policy is made in this area. The project also aims to determine whether limiting asylum seekers' access to paid employment is (a) cost-effective and (b) deters potential asylum seekers from coming to the UK. Having identified the major rationales, the project will then identify possible policy solutions and share these findings with policymakers and the third sector who can then use them to influence policy decisions.



The University of Sheffield.



CULTURE & HERITAGE



Durham University is researching the future of historic buildings. They are studying how renovation and retrofitting for energy efficiency can work sensitively with the perceived values of the building - original fabric, period features, and the patina of wear and weathering.


Over
730
projects

Urban economy

At the heart of every urban success story is a healthy economy. How will tomorrow's cities identify and meet the economic challenges of the future? How will they support their citizens and businesses to innovate and grow to remain competitive in a global economy?

DATA AND THE DIGITAL ECONOMY



 Colleen Morgan

The Digital Creativity Hub at the University of York is creating a world centre of excellence for impact-driven research, focusing on digital games, interactive media and the rich space where they converge. The Hub has a growing group of more than 80 collaborative partners and it is bringing together researchers, industry, government, the third sector and the general public to co-create the means for interaction and expression in the future digital society.

UNIVERSITY *of York*

INNOVATION



 Pablo Fernández

Research funding worth over
£1.2bn

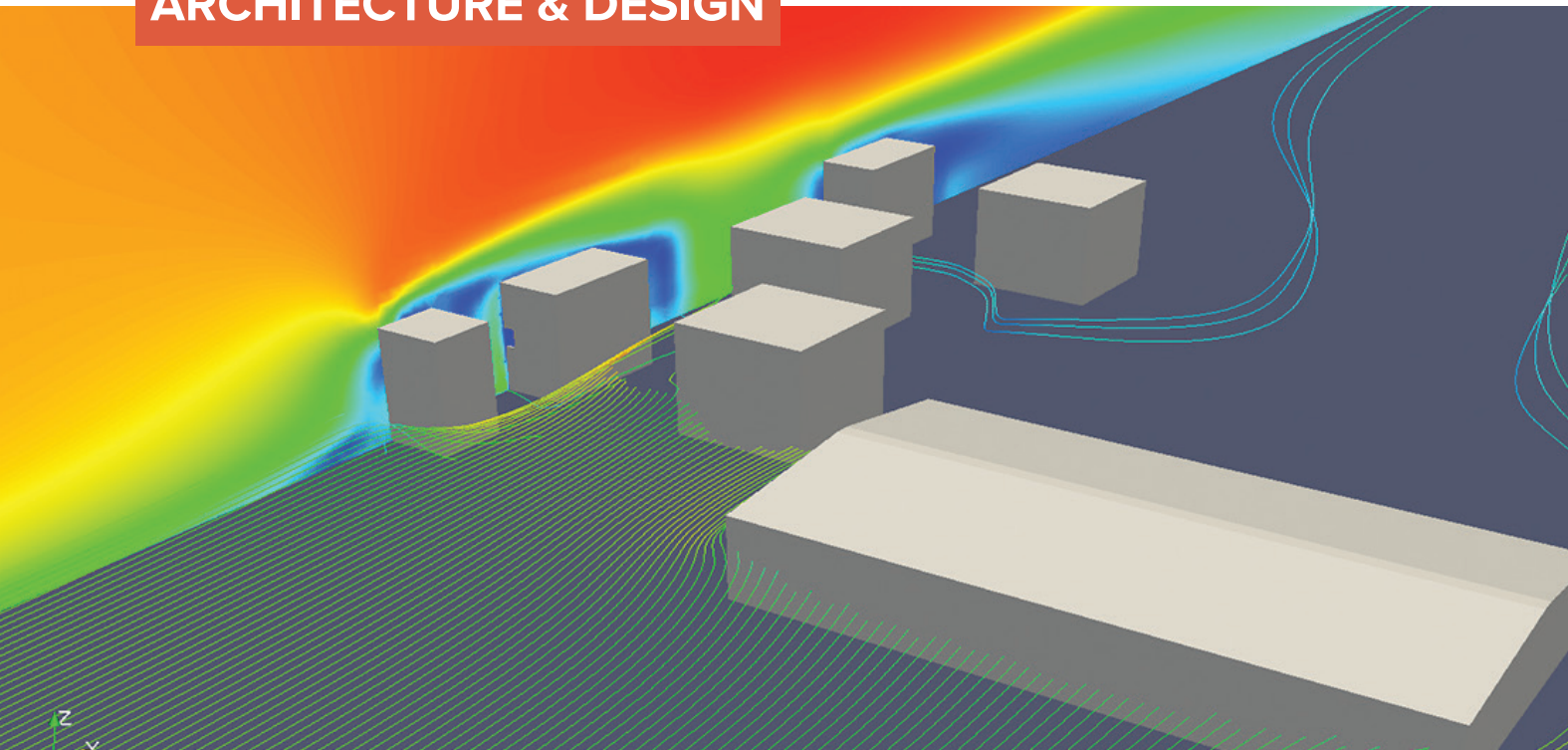
The Cre8tv.eu research project with The University of Manchester aims to make a substantial step forward in the study of creativity, and its role in innovation. The project will substantially enhance the state of knowledge and understanding of the nature and characteristics of creativity and innovation, the cultural and creative industries, and their role in shaping the future European economy and society.

MANCHESTER
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Urban form

How our cities look and feel, and how we move around them are as important as its activities. For those who call the city home, a sense of civic pride stems from its appearance. For those whose economic performance relies on ease of movement, and the ability to attract new clients, urban design plays a vital role.

ARCHITECTURE & DESIGN



There is a growing body of evidence that points towards a relationship between a poor indoor environment and a reduction in cognitive performance. The Refresh project is a collaboration between the universities of Leeds, Reading and Southampton looking at several different areas where buildings can affect performance, including temperature, layout and pollution. The project is also looking at the practice of retrofitting older buildings for energy efficiency, and the effect of those practices on productivity.



UNIVERSITY OF LEEDS

HOUSING



© Housing People, Building Communities

The self-building of homes is being promoted as one solution to the shortage of affordable houses in Britain. Currently, self-build projects account for 14% of the new homes built, a percentage equivalent to or greater than that of any single housebuilding firm. This project, started at the University of York, aims to investigate who is using self-build, what their characteristics are and to what extent they succeed in their aims, as well as exploring how the selfbuild market is structured.

UNIVERSITY of York

More than
4,500
research papers

Urban infrastructure

The very backbone of our cities – urban infrastructure is a key player in any discussion of urban futures. Alongside transport challenges such as electric and driverless cars, the Smart City and the incorporation of the digital world will be at the heart of the city of the future.

THE SMART CITY



Sensors are the crucial link between technological devices and the world around them, capturing data on a whole host of areas such as temperature, humidity and pressure. They can be used in everything from home security systems to medical technology and high value manufacturing. 'Sensor City' from the University of Liverpool is helping inventions go from the lab to the factory floor even faster and acting as a shop window for foreign investment into the city's high tech start-ups.

TRANSPORT



Researchers from Newcastle University are working on the MERLIN rail project with partners all over Europe. The project aims to investigate and demonstrate the viability of an integrated management system to achieve a more sustainable and optimised energy usage in European electric mainline railway systems.

Newcastle University leads the team developing an strategic decision architecture. Based on this, a tool has been developed intended to be a decision support system for optimisation of energy use in different railway systems, specifically targeting the strategic decisions required when designing new railway systems or carrying out significant modifications to existing systems, such as timetable changes, new rolling stock, electrification infrastructure, energy storage systems or revising contractual arrangements for the supply of electricity.

World leaders

in economic development

Urban governance

More than ever, the way that our cities are run remains in the spotlight. From devolution debates, to the role of the European Union in British life, understanding how decisions are made, and affect the workings of every aspect of urban life is a central element to making sense of the urban world.

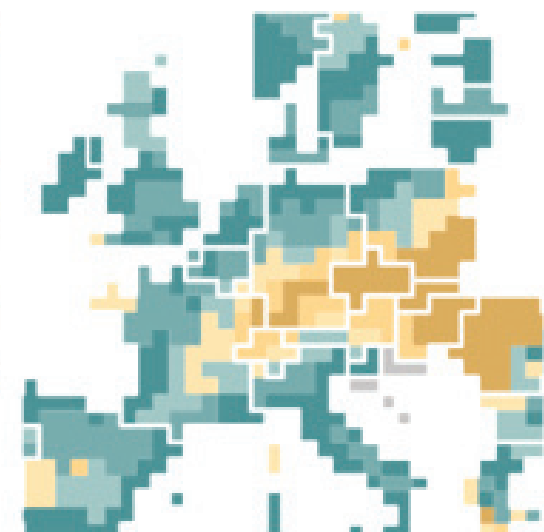
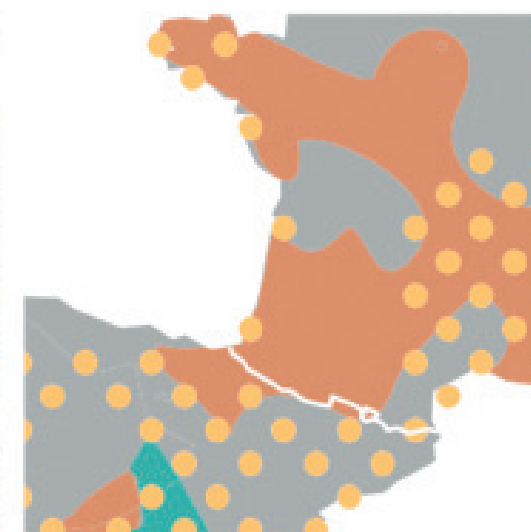
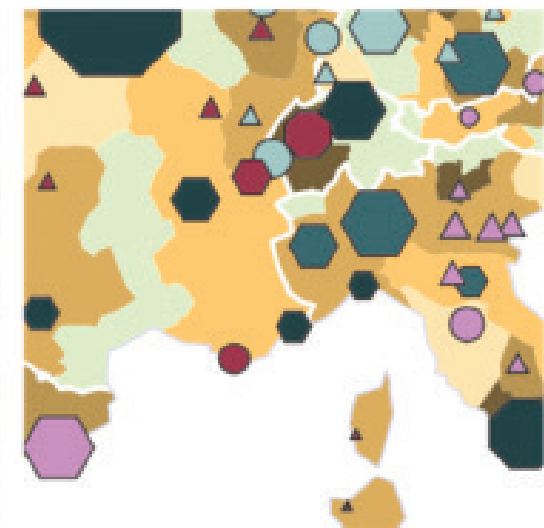
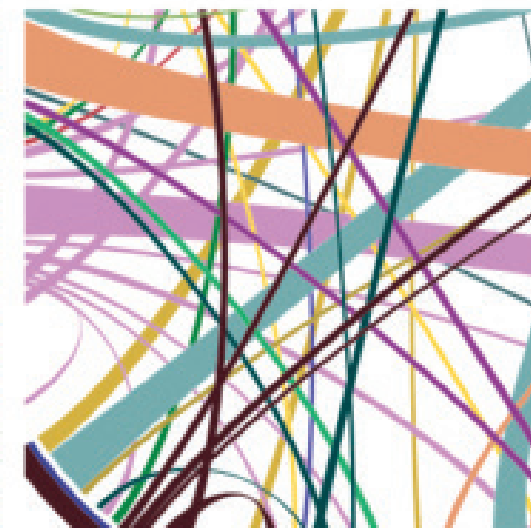
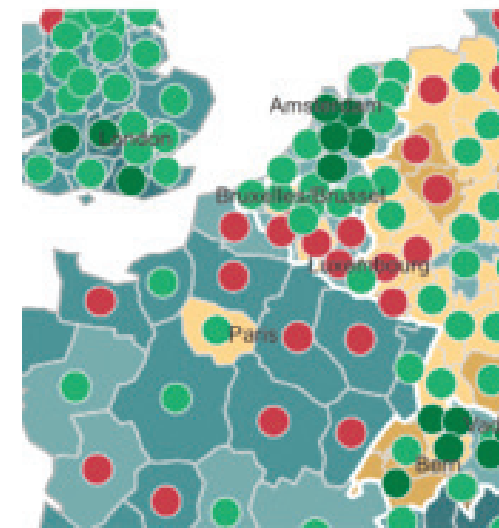
URBAN PLANNING

The Heseltine Institute for Public Policy & Practice, based at the University of Liverpool, focuses on a crucial contemporary challenge: the development of successful, sustainable city regions in an unstable global world.



REGIONAL GOVERNANCE

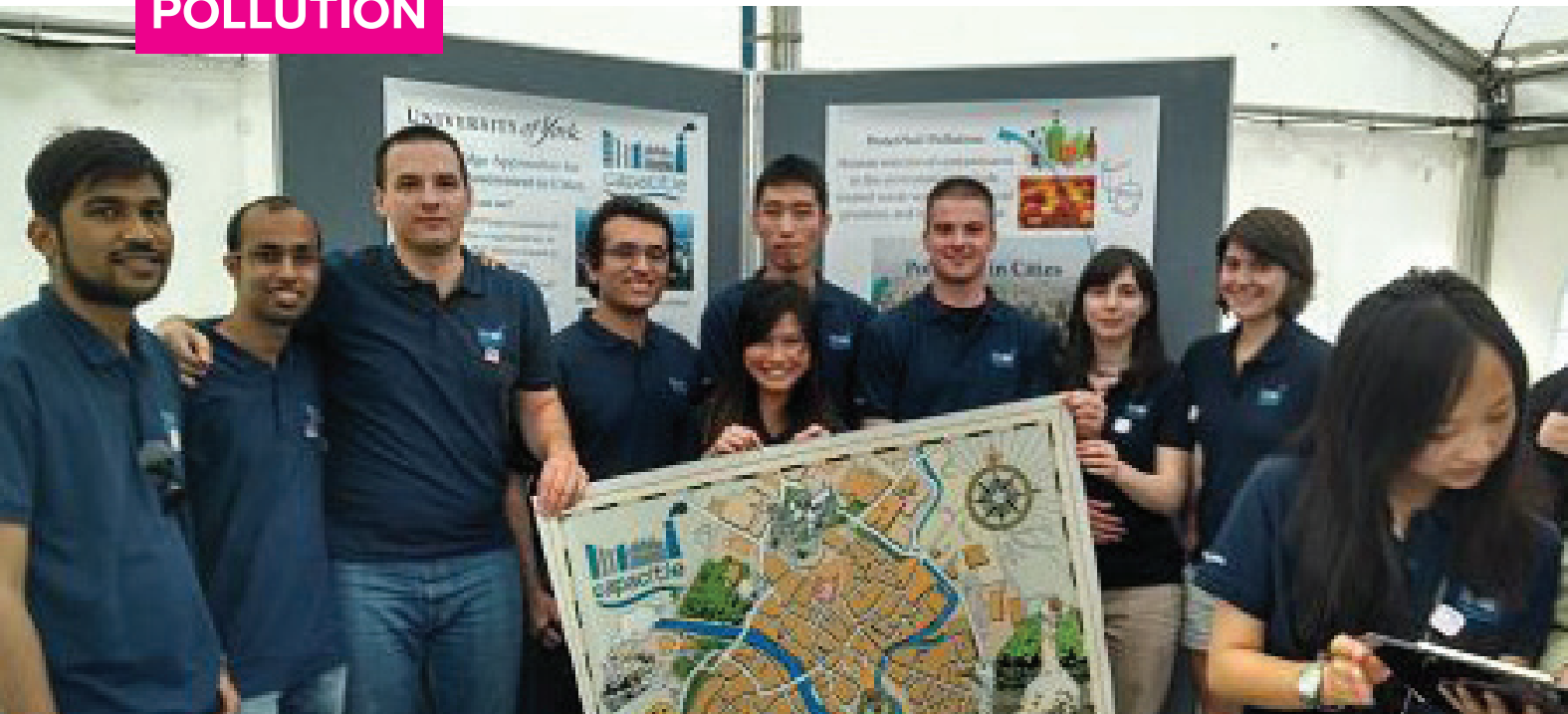
The Universities of Manchester & Liverpool have helped a large research consortium examine what the quantitative and qualitative factors are which allow regions to move faster out of economic downturn, what elements in economic structures and policy responses made a difference for territories in order to be able to recover from the crisis, and what types of regions and territories turned out to be more resilient and successfully adaptive to the latest economic downturn. This aims to discover what regional policymakers can do to complement macro-economic measures stimulating at economic recovery and enhance the resilience of the regional economies for future economic downturn.



Urban metabolism

Cities have a major role to play in the battle against global climate change. From reducing emissions through more effective energy futures, to increasing our resource efficiency, there are a multitude of ways in which our urban metabolism can be made more efficient.

POLLUTION



More than half of the world's population lives in cities and nearly two billion extra urban residents are expected in the next 20 years. Many of the fastest growing cities in the world are highly polluted, resulting in adverse effects on human health. Urban pollution can also impact the health of the natural environment which will affect the delivery of a range of ecosystem services.

There is therefore an urgent need to better understand the factors and processes affecting the pollution of cities and the potential negative impacts of this on human health and the environment. To achieve this, improved approaches for monitoring different forms of pollution (air, water, noise) are needed. The CAPACITIE Project from the University of York will explore just that.

LOW CARBON

The success or otherwise of low-carbon initiatives is dependent on society's response and the degrees to which they deliver an acceptable quality of life. Lancaster University as part of the Liveable Cities consortium is examining this urgent challenge for our urban environments. They are reconsidering how we define cities, neighbourhoods and places, and to embrace an approach that balances conflicting demands of resource efficiency and wellbeing.

ENERGY



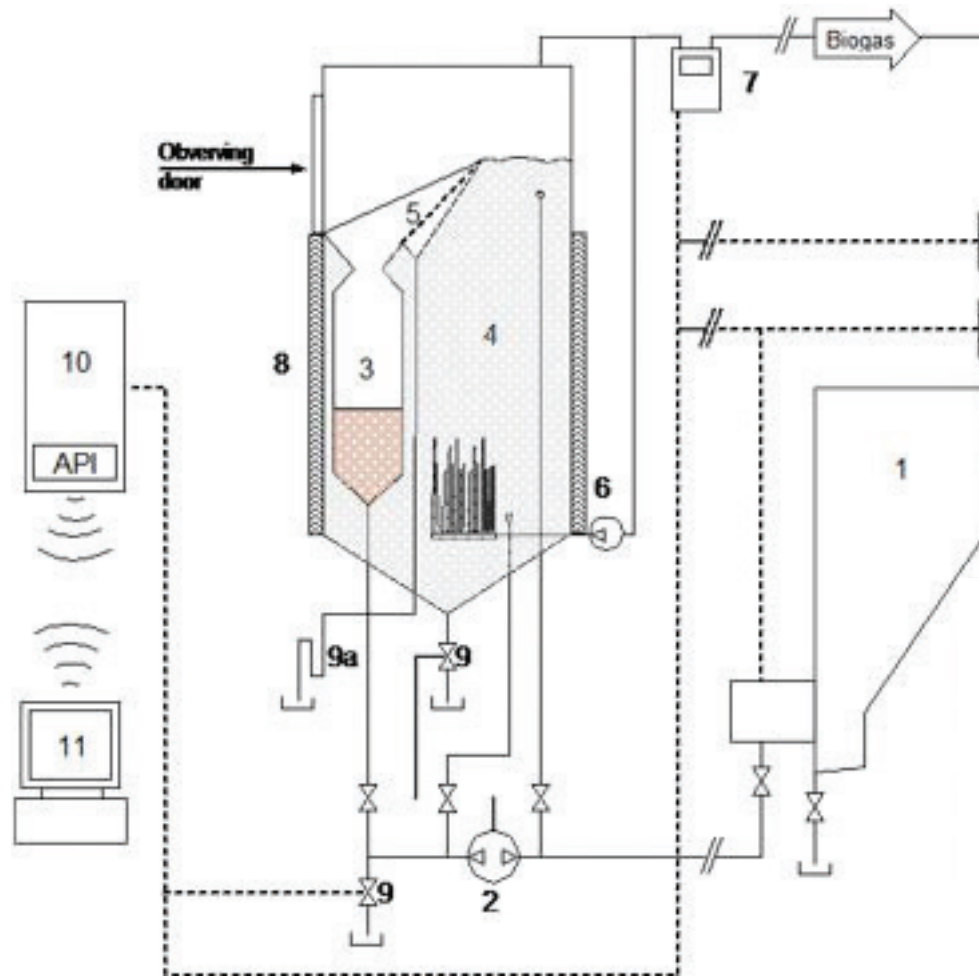
One of the University of Sheffield's many sustainable energy projects, SWIP involves designing and developing cutting-edge technology wind blades, which maximize the wind energy conversion. The new blades will also reduce vibration and noise, so they can be used successfully in urban environments.



Liveable Cities

RESOURCE EFFICIENCY

The ORION project at the University of Manchester allows the vast majority of SMEs to manage their organic waste by themselves, in order to decrease their treatment costs (storage, transport landfill or incineration) and increase on-site hygiene conditions.



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FLOODING



Tony Armstrong

WATER

Research at the University of Sheffield on urban water governance seeks to support a transition to a more socially orientated water system.

FloodMEMORY at Newcastle University is investigating the effects of the way flood events cluster in time on natural and built environments and socio-economic systems in order to identify critical vulnerabilities, better allocate resources for protection and recovery, and improve flood resilience. Never in British history has such work had more relevance.

The
University
Of
Sheffield.

Newcastle
University

N8 RESEARCH PARTNERSHIP

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 The
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Of
Sheffield.


UNIVERSITY OF LEEDS

 Newcastle
University

 UNIVERSITY OF
LIVERPOOL

UNIVERSITY *of* York