

## LESSONS LEARNED FOR URBAN REGENERATION

The research identified a key 'window of opportunity' for ecological mitigation at the site scale. Mitigations must be specified early during the design stage. Seeking the inclusion of ecological design features after outline proposals have been prepared may be more difficult and/or expensive.

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## The Socio-Economic Fabric



This work package investigated opportunities and barriers to achieving sustainable regeneration from a socio-economic perspective. The Eastside Land Use Database (2004 and 2008) illustrates the transformation that has occurred and the resulting gap in the area's physical and economic fabric. Collaboration with Eastside's residential and indigenous business communities also shows how the loss of small firms and services can fracture important social and economic networks in regeneration areas. It highlights how planning processes often overlook the critical role that small businesses such as food and drink establishments can play in evolving local economies and it emphasises the importance of supporting such enterprises through difficult transition periods.

Similarly the creative sector can be an important catalyst for regeneration but it must be treated in a manner that respects its unique characteristics and nurtures its growth without generating displacement of artists and start-up companies.



Above all, this work highlights the need for policy makers to develop an early understanding of an area's social and economic fabric, including the use of well designed public participation initiatives, if the regeneration process is to be sustainable in the widest sense.

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## Built Environment and Open Space

This work package has investigated the degree to which environmentally driven urban design parameters, in terms of individual building design and the relationship between buildings and open spaces, have been used to shape the redevelopment of Eastside and whether such an approach has delivered environmentally, socially and economically sustainable redevelopment in the built environment. Research examined the synergies, tensions and trade-offs between environmental parameters and urban design parameters.



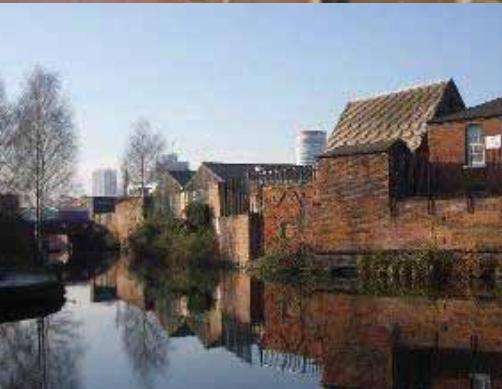
It was found that the use of environmental design parameters would change the nature of the built

environment delivered in areas of Eastside and against these criteria it is possible to assess other parameters that define sustainable performance including aesthetic design criteria where barriers and trade off can be identified.

Timing and sequencing of design decisions are critical to realise specific sustainable solutions and determine the resultant spatial form.

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*This flyer introduces some of the results of the Eastside Sustainability Research project at the University of Birmingham and Birmingham City University. The team welcomes further dialogue with practitioners and stakeholders involved in incorporating sustainability into urban regeneration projects.*

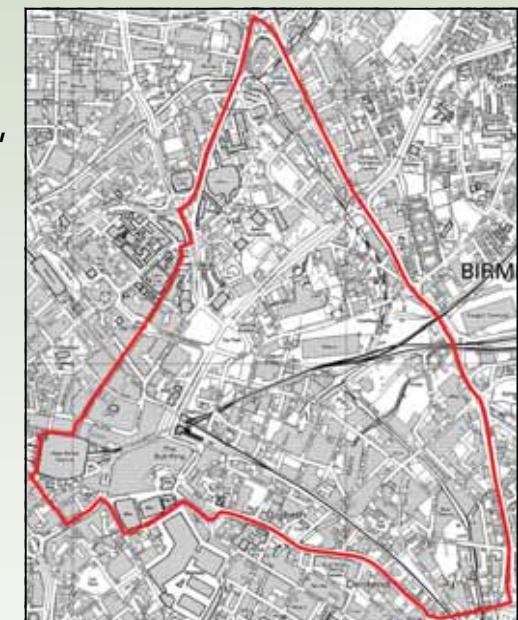
## Sustainable Urban Regeneration

With 90% of the UK population living in urban areas, improving urban sustainability has become a pressing issue. The rise of the sustainability agenda in urban regeneration has required dramatic learning in all sectors of society to cross the 'sustainability divide': moving from a good, albeit nebulous, idea of sustainable development into implementation. This team's research addresses the challenges of implementing sustainability in the Eastside urban regeneration project in Birmingham, UK.

## Birmingham Eastside Regeneration Project

Located in the rapidly changing socio-economic and urban environment of Britain's second largest city, Birmingham Eastside is the largest current city centre redevelopment scheme in the UK.

Eastside's unique urban fabric, history, role in the life of Birmingham, physical condition and location all position it to be an ideal sustainable regeneration demonstrator site.



## The Eastside Sustainability Research Project

The aim of the Eastside Sustainability Research Project is to explore how sustainability is addressed in practice in the regeneration decision-making process, and to assess the sustainability performance of completed development schemes in Birmingham's Eastside against stated sustainability credentials and aspirations. The Eastside Sustainability Research Project started in May 2003 and has been funded by the UK Engineering and Physical Sciences Research Council (EPSRC).

## What is 'sustainable' anyway?

In the past 10 years, the goal of sustainability has been well-integrated into UK policy at a high level. However, people understand the term to mean very different things, and more generally may use the same words to mean different things in a sustainability context. In policy, sustainability often refers to environmental issues.

## What is 'sustainable' is determined locally: local conditions set local priorities

As difficult as the *idea* of sustainability is to define, defining its *implementation* is even more of a challenge. What is sustainable is determined in part by the local conditions: for example, water will always be a part of a sustainability agenda, but must be a higher priority in drought-prone areas. As with energy, managing water sustainably means reducing demand and tapping more sustainable, locally-sourced supplies. Each area will lend itself to different supplies for water and energy – and an assessment of the local conditions will enable the development to identify the solution that makes the most sense for the area.



The social and economic fabric of a place also shape its 'local conditions'. The gritty industrial character and heritage evident in Eastside create a unique sense of place. Its vibrancy and identity have been singled out in the city's Masterplan Visioning exercise as important aspects to preserve and enhance through the regeneration process.

## The past and the present must be incorporated to achieve more sustainable regeneration

The existing cultural richness of an urban regeneration area can play an important role in its regeneration. The arts and creative sector has been an important catalyst for regeneration in Eastside – but there is a risk that the local artists may be displaced in the regeneration process. Existing businesses can also help integrate the new community to the existing community, but they may need support (information, financial, training) to survive the regeneration period.

As with people in a regeneration area, other species in Eastside may not thrive in the new environment if proper plans are not incorporated into the process: most of Eastside's biodiversity is found within brownfield sites and fragments of semi-natural habitat. Replacing brownfield sites with highly managed green spaces delivers less biodiversity, just as losing the existing small independent retailers reduces the economic and social diversity.



## Early involvement in the development process is central to advancing the sustainability agenda

Design specifications are determined iteratively throughout the development process: as the design advances, more and more options are 'locked in' or 'locked out'. If the sustainability objectives are set at the beginning, for example through the incorporation of sustainability indicators and benchmarks, there is a higher probability of their informing the process going forward. Certain (but by no means all) sustainability solutions can be incorporated later, for example in response to planning conditions, but retrofitting sustainability solutions is usually substantially more expensive than incorporating them from the start.

## Individual design decision influence the ability to meet very different sustainability objectives

The 3 pillars of sustainability – economic, social, and environment – may seem unrelated at first glance. However, design specifications such as roof pitch can impact whether a project meets sustainability objectives as disparate as: conserving water (rainwater harvesting is more efficient with a pitched roof); conserving biodiversity (some species require a flat rubble roof); developing a sense of place (what do the other roofs in the area look like); and cultural heritage (historically what roof shape would have been found here).



Sometimes different objectives work together: designing for optimum solar light can reduce energy consumption and improve health and well-being. Until all development professionals are fully trained in sustainability, the incorporation of a sustainability advisor can help to make the connections for the development team – someone who has access to the latest research, and knowledge of the interrelationships between various design specifications and sustainability requirements.

## Sequencing activities correctly in the development process keeps sustainability-related options open

Best practice guidance for delivering a particular sustainability outcome often specifies that a list of actions should be undertaken in sequence. However, it is rarely specified precisely when these activities should take place in relation to key development process decisions.

For example, to deliver ecological enhancement it is necessary to: survey, conduct an impact assessment, then develop and specify the required mitigations and enhancements. If this sequence of activities is completed *after* the outline proposals have been approved, the design may have evolved to a point where the desired enhancements cannot be incorporated. The Development Timeline Framework is a tool being developed by the research team to make these timing issues explicit.

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*Four themed work packages have explored some more specific questions, and individual members of the team are pleased to share more results from their respective areas of research (see contact details below).*

*For further information, visit our website: [www.esr.bham.ac.uk](http://www.esr.bham.ac.uk)*

## Utilities Infrastructure

Lack of information and guidance within the decision-making process was highlighted as a significant barrier to achieving sustainable utility infrastructure. Information on the alternative uses for underground space, including guidance on alternative methods to placing utilities in trenches, was therefore collected and presented to academics and practitioners.



Sustainable indicators were found to provide significant guidance with respect to implementing sustainability within urban regeneration projects and therefore their application in Eastside was monitored.

Indicators for underground space were less well-developed and therefore new indicator systems were subsequently derived. The feasibility of using localised supplies of water (e.g. grey water and rainwater) and energy (e.g. wind power, hydro, combined heat and power, biomass etc) to meet demands (e.g. from offices, commercial, residential) in Eastside were outlined. These supply-demand strategies were used to inform generic management strategies for energy and water. Timing and sequencing of decisions was highlighted as crucial for delivery of sustainable utility infrastructure.

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## Natural Environment and Biodiversity

This work package has considered ecological patterns at the regeneration zone scale, the success of mitigations and the ecological implications of development decisions.



The Biodiversity Audit of Eastside (2003/4) revealed it was home to a wealth of wildlife, including regional priorities for conservation and specially protected species. The most biodiverse areas were brownfield and semi-natural green spaces (e.g. canal side woodland). The loss of these sites and their replacement with traditional landscape planting and amenity grassland would therefore represent a net biodiversity loss. In 2005, the Eastside Biodiversity Strategy was published to provide guidance on how to protect and increase existing wildlife in regeneration areas. A unique database that maps habitat versus developmental change continues to be compiled, and used to evaluate the success of this strategy.

