

## ENHANCING THE QUALITY OF CITIES FOR 'PEOPLE AND NATURE' TOGETHER

## THE CHALLENGE OF SMART AND NATURAL

- By **2050, 68 %** of the world's population is projected to be urban; cities can potentially play an important role in addressing global trends in degradation to biodiversity.
- Doubtful that any improvement in quality of life can be demonstrated to have resulted (to date) from most of the developments related to the establishment of smart cities.
- Smart city initiatives must develop an improved understanding of cities as trans-boundary, multisectoral, multiscalar, social-ecological-infrastructural systems.
- Information Communication Technology (ICT) is predicted to produce **14%** of global greenhouse gas emissions by **2040**; 'Green ICT' has usually been thought of as having a focus on energy and carbon savings .
- Role of Green IT as part of the wider need to deliver public services in new, more inno-

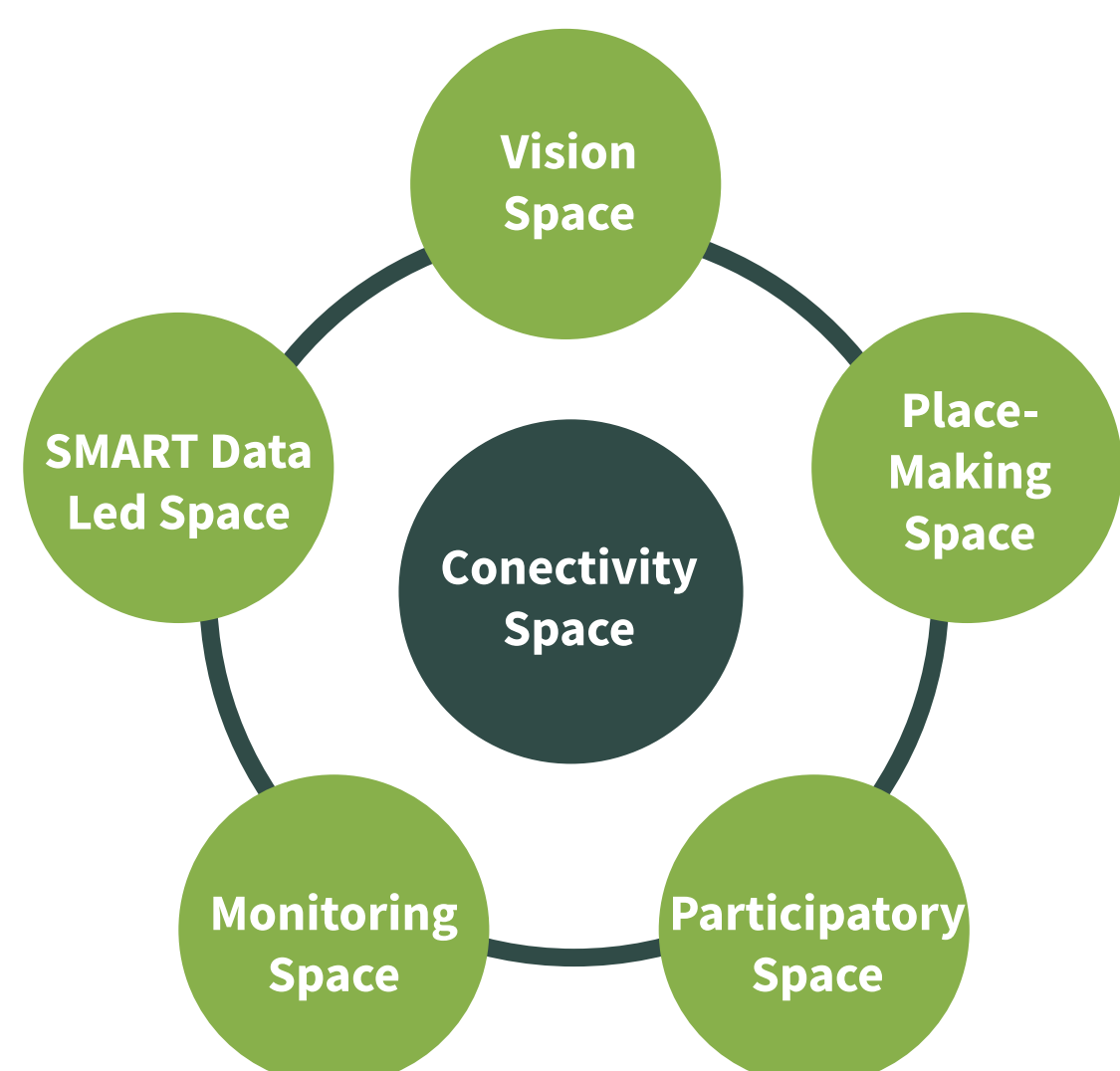
## DIGITAL TECHNOLOGY AND NATURE CONSERVATION

- **Five dimensions of ‘technoecology’ or ‘digital conservation’**- data on nature, data on people, data integration & analysis, communication & experience and participatory governance.
- **Increased flows of data and information** on people will provide greater insights into environmental perceptions whilst embedded sensors and Internet of Things may help our understanding of use of the environment and resources.
- **Smart city authorities and businesses** will require expanded urban remote sensing applications and context-aware approaches to deliver better quality of life.
- Significant scope for improving communications and participatory governance, leading to behaviour change; **democratisation through using the force of IT**.
- At a city systems level, **making ‘technoecology’ relevant** to an increasingly urbanised population living in cities that aspire to be smart is crucial. This requires a framework for good practice.

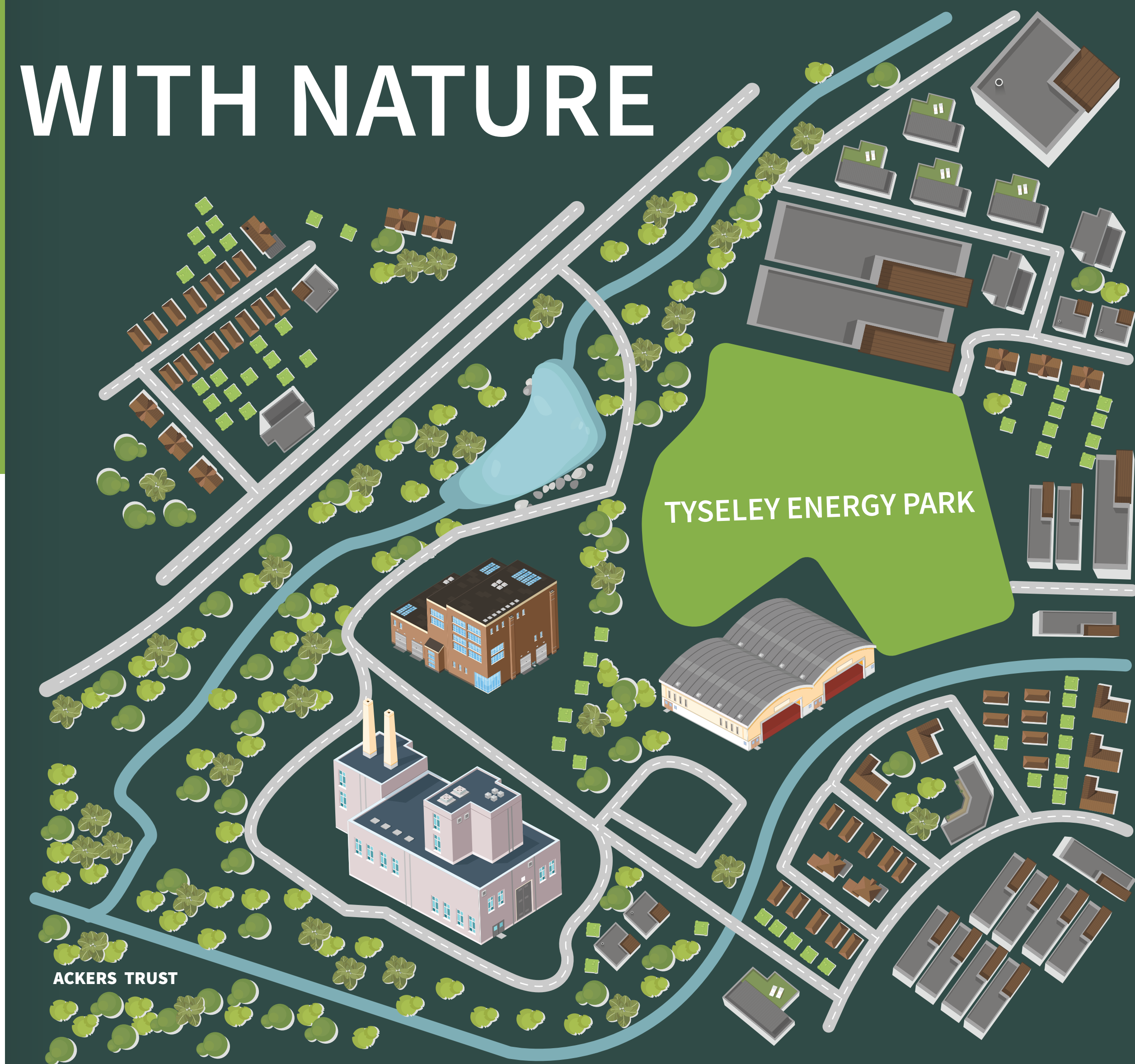
## INTEGRATING SMART AND NATURAL CITY FUTURES

The Smart-Natural Hybrid Interface is a fertile innovative space that can help drive greater interdisciplinary thinking around managing urban challenges. Six 'innovation spaces' have been identified.

- **A connectivity space** where people, digital technology and nature connect across each other and places to improve performance; where grey and green infrastructure evolves into 'silver green' to generate multiple benefits.
- **A visionary space** where we visualise data through interactive technology to engage people and communities in making choices and decisions for the city and its spaces.
- **A place-making space** where we combine living, learning, working and recreating functions as part of integrated smarter natural solutions to political and environmental challenges driven by the value of natural capital.
- **A SMART data led space** where citizens are given the necessary data to help them make decisions and influence change through interacting with data in real time; the city and its system designed and managed in improved and connected ways.
- **A participatory learning space** where the flow of information means citizens can directly engage with service providers and suggest innovations helping to integrate policy and delivery, leading to service re-design.
- **A monitoring space** where we can use ICT and smart applications to measure, track and monitor progress of our shared vision and our common purpose; helping to identify accountabilities for the delivery of more integrated and better services



### The characteristics of the SMART-Natural interface with connectivity at the hub.



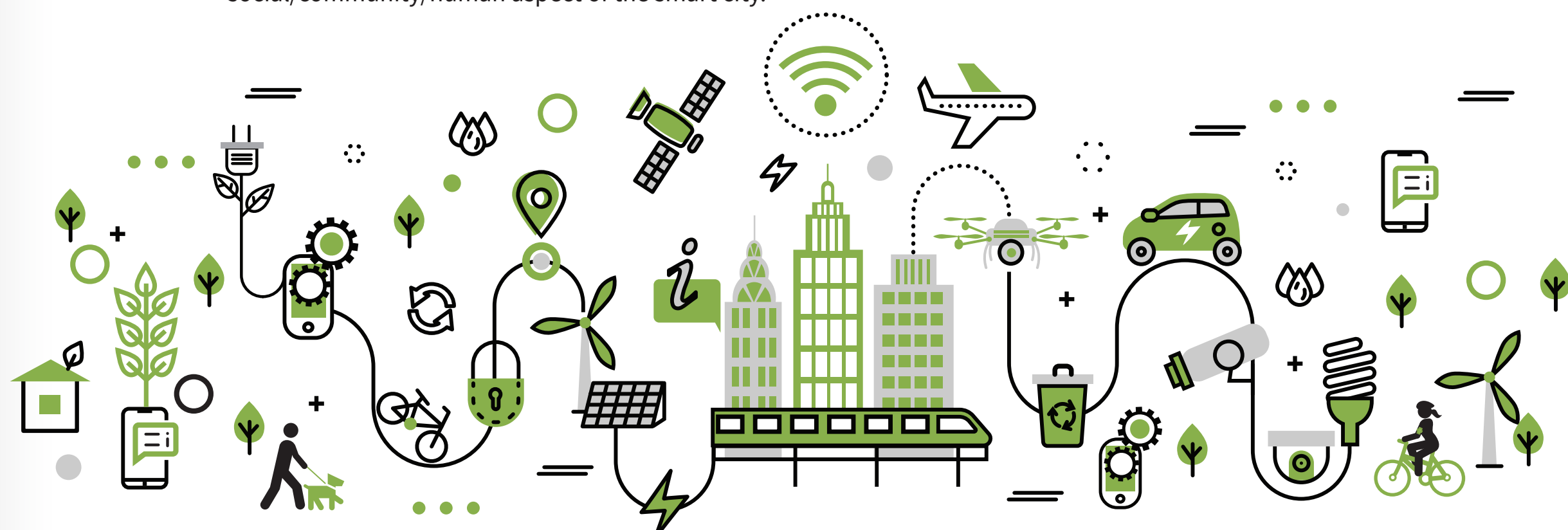
**TYSELEY: a historic industrial area, active regeneration for a low carbon economy with natural assets embedded**

## PEOPLE, NATURE AND TECHNOLOGY - OPPORTUNITIES FOR SMART-NATURE PRINCIPLES AND DIGITAL CONSERVATION IN TYSELEY, BIRMINGHAM

- Inspired by the local leadership of key business stakeholders, especially Webster & Horsfall Ltd, established for almost 300 years, aiming to enhance the role of smart citizens in Tyseley.
- Substantial opportunity in Tyseley area to work with business, community and public agency partners to develop new future ways of creating an urban landscape.
- Complementing the Tyseley Energy Park <https://www.tyseleyenergy.co.uk/> and city ambitions for low carbon, low pollution economic futures with innovation hubs that can encourage local entrepreneurship, skills development and jobs.
- Through 'The Ackers Trust' <https://www.ackers-adventure.co.uk/> engaging the local community for access to improved green spaces, the canal and River Cole.
- Exploring the ideas behind the vision for an urban West Midlands National Park; the creation, retrofitting, connecting and enhancement of Blue and Green Infrastructure.

*Innovative place making connecting people, digital technology and nature as a focus for interdisciplinary teaching (Planning, Computing and Landscape) and research outputs for how the benefits of B&Gf can be embedded;*

- Applications to help people engage with green spaces, connecting physical infrastructure in and around Ackers/Tyesley, creating a more productive and smarter use to meet community needs.
- Exploit social media/big data and provide real time feedback, use remote sensing and other local sensing techniques to measure ecological quality.
- Create a platform for sharing data to enable local citizens, businesses, organisations and experts to collaborate on management decisions and expand the capacity for citizen co-production in the public sector.
- Application of technology as an important part of a wider socio-ecological systems approach to the area; integrating social/community/human aspect of the smart city.



## Connecting People, Nature and Technology

Birmingham City University is working with its academic, business and community partners to fulfil its corporate commitments to Transforming Birmingham and the Region and Transforming Practice.

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