Retrofit2050

Re-engineering the City 2020–2050

urban foresight and transition management

Retrofit City Futures: Contextual Scenarios for Urban Sustainability

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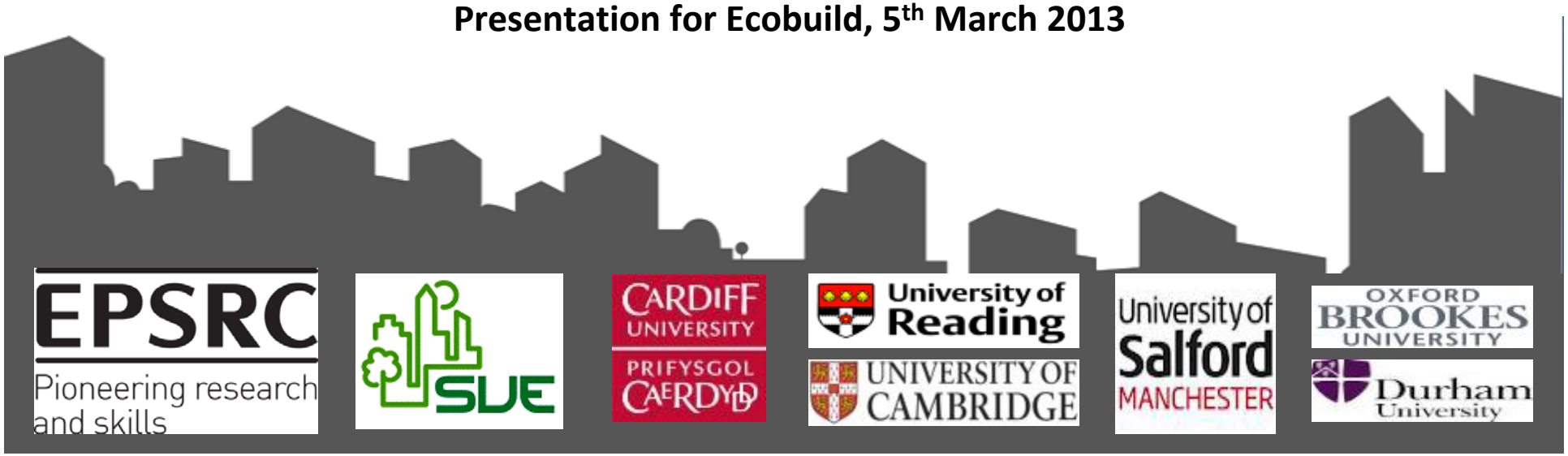
Presentation for Ecobuild, 5th March 2013



Outline

1. **EPSRC Retrofit 2050 Project**
2. **Our Scenario Backcasting Process**
3. **The Retrofit 2050 Visions**

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Re-engineering the City 2020–2050

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- **Funded under EPSRC Sustainable Urban Environments (III) Programme**
- **£2.9M project**
- **October 2010 – March 2014**
- **6 universities + 12 non-academic partners**

Cardiff University / Prifysgol Caerdydd

University of Salford Manchester

Oxford Brookes University

University of Reading

University of Cambridge

Durham University

carillion

TATA

ARUP

bre

Llywodraeth Cymru Welsh Government

Core Cities www.corecities.com

RICS

Cardiff Council Proud Capital

Manchester City Council

Asiantaeth yr Amgylchedd Cymru Environment Agency Wales

EPSRC Pioneering research and skills

SUE Sustainable Urban Environment

Neath Port Talbot Castell-nedd Port Talbot County Borough Council Cyngor Bwrdeistref Sirol

defra Department for Environment Food and Rural Affairs

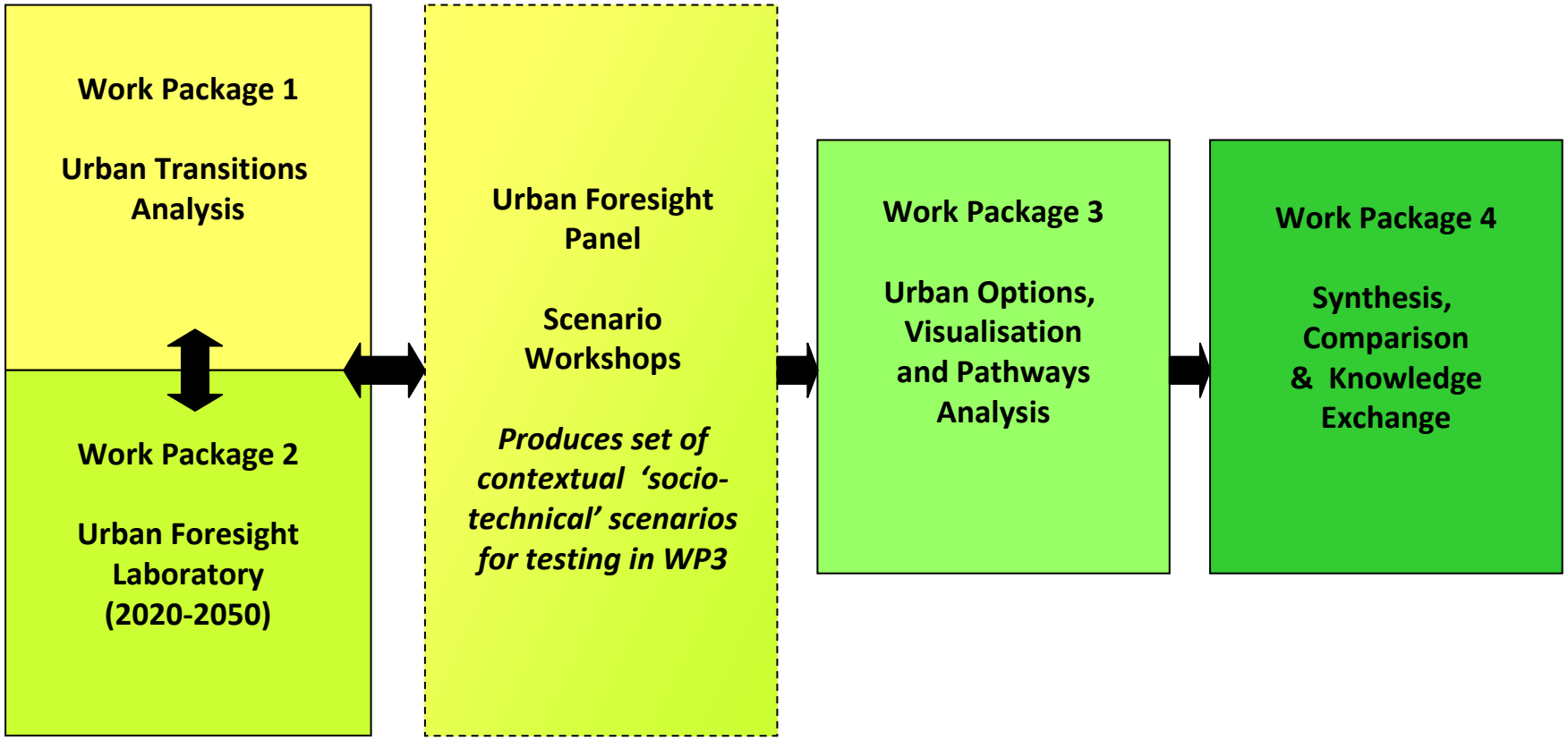
Project Vision

- **To deliver a 'step change' in current knowledge and capacity to underpin the transition to urban sustainability, by working with key stakeholders to illuminate challenging but realistic social & technological options and pathways for systemic retrofitting of two core UK city regions (Greater Manchester and Cardiff/SE Wales) by 2050**

What we seek to deliver

- **Improved societal understanding of long-term transitions (energy, water & waste) for sustainable urban retrofitting**
- **Mobilise expectations around clearly articulated, pathways & scenarios for prospective disruptive technologies and systems innovations**
- **Integrated urban scale modelling and evaluation tools to support improved decision-making and implementation**
- **Practical knowledge exchange framework which cities can apply to drive forward systemic retrofitting**

Project Structure



What kind of city?

- ***…the question of what kind of city we want cannot be divorced from the question of what kind of people we want to be, what kind of social relations we seek, what relations to nature we cherish, what style of life we desire, what aesthetic values we hold..*** **(Harvey 2012: 4)**

Developing the conceptual framework for urban retrofit

- Participatory backcasting approach
- To develop and test set of socio-technical transitions scenarios/visions for systemic urban retrofitting of core UK city regions (for period to 2050)
- Initial work with interdisciplinary panel of 32 national experts

http://en.wikipedia.org/wiki/File:Emerald.JPG

The Retrofit 2050 Scenarios Process

	Step	Focus	Participants
Phase 1 October 2011 – September 2012	**1. Problem Framing & Structuring**	**Practices, drivers and expectations**	**Urban Foresight Panel of national experts**
	2. Visioning	**Long-term (2030-2050) visions of retrofit sustainable city futures**	
	3. Pathway Analysis	**Transition dynamics, roadmaps & innovation stories**	
Phase 2 October 2012 – June 2013	**4. Regional Implementation**	**Grounding and visualisation**	**Key regional stakeholders**
Phase 3: June 2013 – September 2013	**5. Evaluation & Appraisal**	**Sustainability and resilience under multiple perspectives**	**Wider sample of regional stakeholders & societal interests**

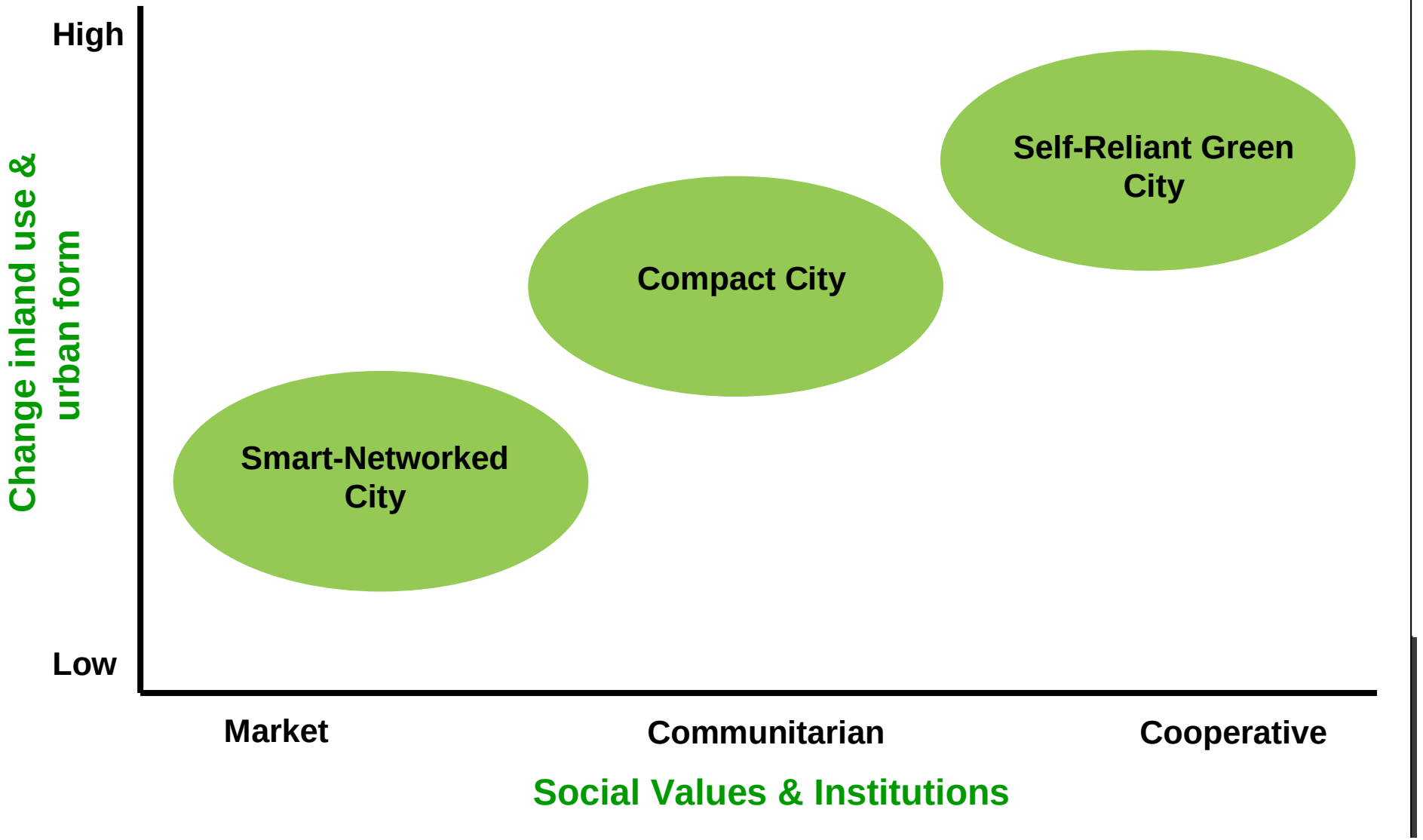
The Retrofit 2050 Visions

- Not predictions. But illustrate possible futures & prospective societal choices
- Provide narrative storylines integrating across scales & domains
- Highlight three distinctive & competing articulations of urban sustainability
- Associated each with differing governance structures & changes in land use/urban form
- Describe alternate portfolios of technological and social innovations in energy, water and resource-use

Structure of the Retrofit 2050 Visions

- Title
- Guiding vision
- Narrative account of
  - Basis/rational for each vision
  - Key social and technological innovations in energy, water and waste & resource use sectors
- Indicative indicators
  - For economic growth, population, urban density
- Key dimensions of change
  - Social values/institutions vs. Change in land use/urban form

Locating the Retrofit 2050 Visions



The Retrofit 2050 Visions

Vision I: Smart-Networked City:

A hub within a highly mobile and competitive globally networked society

Pervasive, information-rich virtual environments integrated with the physical world, driving efficiencies through automation with market oriented solutions.

Vision II: Compact City:

A site of intensive and efficient urban living

Urban land-use and infrastructure provision are optimised into dense urban settlement forms to reduce demand and improve use of energy and resources.

Vision III: Self Reliant-Green City:

A self-reliant bio-region, living in harmony with nature

A self-reliant system of circular metabolism, where resources are local, demand is constrained and the inputs and outputs of the city are connected (cradle to cradle).

Key Characteristics & Indicators

	Smart-Networked City	Compact City	Self Reliant-Green City
Change in land-use and urban form	**Low – moderate**	**Moderate** (densification)	**High** (extensification)
Social Values & Institutions	***Market*** oriented values, with emphasis on private consumption. Light touch, networked governance with public sector, local authority and intermediary organisations acting as facilitators for business.	***Communitarian*** and localist values expressed at a city and neighbourhood level, coupled with strong local governance and planning systems and an emphasis on social investment.	***Cooperative*** and collectivist values underpin new models of participation and shared ownership, in which mutualism and local self-reliance are coupled with strong concerns for social equity and a questioning of materialism.
Economic Growth	3.0% pa	2.3% pa	<1.6% pa
UK Population by 2050	86.4 million	76.4 million	66.8 million
Urban Density (2050) (assuming a large city)	No significant change 40 dwellings per ha (or 160 people/ha)	Dense 70 dwellings per ha (or 275 people/ha)	Less dense 30 dwellings per ha (or 120 people/ha)

Notes: i) Under each of the visions we start with a working assumption that the UK will meet its 80% carbon reduction target by 2050 (against a 1990 baseline), alongside very significant improvements in water use and waste and resource efficiency.
ii) Economic growth and population projections are in line with scenarios developed by the UK Infrastructure Transitions Research Consortia (Hall et al, 2012).

Using the Retrofit 2050 Visions

- Intended to ‘open-up’ governance and strategic navigation of urban sustainability transitions
- The visions are not entirely mutually exclusive – elements could co-exist at different scales
- Provide a socio-technical frame to address the what, who, why and how of change within complex urban systems
- Make explicit competing expectations & framings of both the city and sustainability

Regional Case Studies: Transitions in Place

Greater Manchester

Cardiff/South East Wales

Issues / Questions

- Responses to the Retrofit 2050 visions
  - Do they sufficiently capture the range of possible futures & societal perspectives?
- Relevance to informing longer-term policy?
- Role of ‘guiding visions’ in governance of long term socio-technical transitions

For more information

www.retrofit2050.org.uk

BR & I Special Issue (September 2013)
Earthscan Book (2014)

Thank you!