

West Midlands
WMCCE
Centre for Constructing Excellence

Energy Efficiency and Demand Reduction: Realising the potential of the West Midlands knowledge base

Contribution of Business and Industry to a regional response to the energy challenge: Buildings and Construction

Michael Thompson
Executive Director, WMCCE

www.wmccce.org

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WMCCE – Brief History

- Developed and managed by University of Wolverhampton
- First contract awarded by AWM / ERDF in 2005
- Second contract (“Building on Advantage”) awarded by AWM / ERDF (2009 – 2011)
- Aim to increase efficiency of West Midlands Construction Industry and therefore competitiveness through Driving Best Practice
- Recognised as needed to reduce fragmentation within the Industry
- Other contracts associated with the Skills agenda (e.g. LSC)
- WMCCE Principal functions:
 - Improve Businesses
 - Drive Sustainability Agenda
 - Promote the Skills Agenda
 - Collect and pass on information through newsletters, events, demonstration projects, construction best practice clubs, the web etc.

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Setting the Scene

The regional CO₂ (e) contribution 2004

West Midlands

A West Midlands Low Carbon Economy means an economy that will underpin a prosperous and thriving region

- For Business, capturing opportunities for old and new to secure reputation for profitable low carbon enterprise
- For People, upskilling to secure benefits from new employment emerging from low carbon economy
- For Place, creating growth by optimising transport networks and developing low carbon environment through energy efficiency and renewables

Total annual regional emissions from sources geographically based within the region are in the order of 44,500 Kt CO₂ (equivalents).

Source: AWM “Evidence of Success” 2009

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Setting the Scene

- Target 80% carbon reduction by 2050, nationally using a 1990 base (Climate Change Act – 2008)
- Logically, cannot be linear between 1990 and 2050 - more ambitious intermediate targets must be met.
- Birmingham target of 60% by 2026 overall, 80% by 2050.
- ‘Beyond Decent Homes’ report proposes for social housing
 - 42% carbon reduction on all stock by 2016,
 - 80% carbon reduction on 90% of stock by 2025

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Building and Construction

- Cannot cover everything today
- Concentrate on
 - New Buildings (particularly housing)
 - Refurbishment
 - Construction of Infrastructure


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NuBuild

- Semi-detached houses, built off-site for Stoke College, launched Summer 2009
- Approaching Level 4 of Code for Sustainable Homes
- Assembled on site in 4 days
- Intended to encourage local industry and to provide new skills



Renew, Stoke-on-Trent College, WMCCE, BRE, Streif, Kier Group, AWM, North Staffordshire Regeneration Partnership

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House in a Day

- Assembled in a matter of hours in a car park at Telford College of Arts and Technology, as demonstration
- Capable of Level 4 and Level 3
- Now planning to manufacture modular houses to meet needs for affordable and sustainable housing



Elements Europe with Shropshire Constructing Excellence Club and others

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Birmingham Library

- Planned for BREEAM rating of 'Excellent'
- Highly energy efficient, carbon neutral, lower than average environmental impact throughout its lifecycle
- Will where possible incorporate new technology developed in Birmingham and WM, supporting Science City profile
- Must be flexible to respond to changing technology
- Due to open 2013



Source: Birmingham City Council and others

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Refurbishment of Buildings

- The 'Beyond Decent Homes' Report (SHAP 2009) shows the proposed timeline for interventions to EPC B:

Timeline for interventions to improve the housing stock to EPC B

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Sandwell Homes Decent Homes

- Refurbishment of homes, low and high rise, 2005 – 2012 (£425m)
- Local employment of 1,000 plus 150 apprentice positions
- Encouraging new local manufacture of products
- SAP performance raised to at least C
- 96% of all non hazardous construction waste recycled
- WMCCE demonstration project

Lancaster House, Oldbury, uses high performance insulation systems externally

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Construction - Infrastructure

- Many of the largest sources of carbon emissions currently associated with construction, O&M, and use of infrastructure – energy, transport, water and waste sectors
- Many of technologies and practices needed already exist but delivery constrained by unfavourable investment and delivery conditions
- Government must create an environment in which the life-cycle carbon impact of infrastructure assets and networks is key to decision making

Institution of Civil Engineers
November 2009

- Infrastructure owners and clients to focus on efficiency and demand management measures, develop clear plans for proven low carbon technologies
- Built environment professionals to develop systems approach to manage carbon impact

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Construction - Infrastructure

- The newly appointed Chief Construction Advisor will lead the Low Carbon Review of the Construction Industry (Lord Mandelson Sept 2009)
- Infrastructure Planning Commission (part of Planning Act 2008) should ensure Low Carbon is addressed
- There is a need for all to consider Low Carbon for infrastructure planning and procurement (e.g. local authorities, clients etc.)
- Coherent policies with clear accountability etc.
- Need to transcend the political horizon between now and 2050 (10 changes of Government?)

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Some Conclusions

- There is much activity in the Building and Construction Sector and there are successes
- But we have a steep hill to climb if we are to meet targets
- We have the capability and the innovation, but we cannot rely on these alone
- We need the partnership of all, Government, Clients and Owners and the Construction Industry to deliver.

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West Midlands Sustainable Built Environment Forum

Stems from the West Midlands Climate Change Action Plan (WMRA 2007) but specifically for Building and Construction

Priorities for action	Aims
<ul style="list-style-type: none"> • Planning and Environment • Economy • Implementation • Leadership • Communication • Targets and Monitoring 	<ul style="list-style-type: none"> • To be leading edge and aligned to other groups • To involve interest groups established around existing / future project streams, from cradle to grave • To disseminate best practice • To provide knowledge exchange forum for practitioners from public and private sectors, academics, policy makers within WM

Due to start early 2010 – further info on website

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m.thompson@wmcce.org

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