



UNIVERSITIES
WEST MIDLANDS

The role of Universities ?

Richard Riley

Director, Universities West Midlands

Universities West Midlands

Not for profit membership organisation

Strong partnerships leading to collaborative solutions

Strategic Board of Vice chancellors and Principals

Policy then Action or not...

Intelligence and foresight – tuning in to low level signals

Celebrate Diversity and Partnership



UNIVERSITIES
WEST MIDLANDS

Don't do democracy and brokerage

Universities West Midlands

Aston

Birmingham City

Coventry

Keele

Staffordshire

Worcester

Birmingham

Univ College Birmingham

Harper Adams

Newman

Warwick

Wolverhampton



Universities: Which regional universities have strengths in the area and what could their role be?

AWM summary ...

- *This is not clear as many of the leading universities are outside the region. Potential at some ...*

- *Potential: Midlands Energy Consortium Birmingham, Loughborough and Nottingham universities - capability in sustainable building technology*

» **Import Export model**

- *Skills providers - local colleges ...*

» **HEI Progression to Higher level skills**

... Barrier: Relatively low fuel prices ...

Green Housing Development Model: The University Contribution

- Financial models that will inspire confidence
- Governance models for council and provider collaboration
- Carbon-reducing housing design and technology
- Manufacture of energy-saving construction materials
- Simplified regional supply chains and Complex contracts
- Appropriate skills for sustainable building technologies
- Employment in the local economy
- Reduction in fuel poverty
- Export of new technologies



Financial models that will inspire confidence in financial institutions

This is covered within the Community Green Deal report. Expertise exists within local authorities but it could be supported by Aston University's Centre for Performance Measurement & Management (CEPMMMA) (contact Professor Pawan Budhwar, Associate Dean Research, ABS, for further details)

Governance models for inter-council and registered provider collaboration

INLOGOV, University of Birmingham (Professor Chris Skelcher or, alternatively, Tony Bovaird)

Carbon-reducing housing design

BCU, Centre for Low Carbon technology ([Prof David Durling](#) - design methodologies, design management - for Dr Lubo Jankovic - complexity, retrofit and sustainability in the built environment)

[Also, University of Wolverhampton, School of Technology, Architecture and product design research Department//Virtual Design Enterprise Centre (David Heesom)// Construction and Infrastructure research]

Carbon-reducing housing technology

Aston University, Sustainable Environment Research Group: Micro Combined Heat and Power Systems Group (Professor G Tansley with PhD student Alistair Clay)

Birmingham University, School of Civil Engineering, (Professor Chris Rogers, for Dr Gaterell, Director of Sustainable Engineering, who works on sustainable construction practices in social housing.)

University of Warwick, School of Engineering , Sustainable Energy Engineering and Design (SEED) (Professor Robert Critoff)

Staffordshire University, Staffordshire Centre for Energy Efficient Systems (SCEES) (Professor Sarath Tennakoon)

BCU, Centre for Environment and Society Research (Professor David Boyd)

Manufacture of energy saving construction materials

Coventry University, Construction Materials Applied Research Group (Professor Peter Claisse - Professor in Construction Materials)

University of Warwick, School of Engineering Sustainable Energy Engineering and Design (SEED) (Professor Robert Critoff)

Simplified regional supply chains - Research Menu

Staffordshire University, RESCO - Renewable Energy Supply Chain Opportunities (Professor Stephen Williams, not clear who the expert is)

BCU, Institute for Digital Experience & Applications (Professor Keith Osman)

Complex construction contracts

There is expertise in this area in the School of Property Construction and Planning of BCU, but the people who know about it are not research active. Wolverhampton offers an MSc in Construction Law. Need to investigate further.

Appropriate skills for sustainable building technologies

This will probably be provided by FE, possibly in collaboration with university departments of construction.

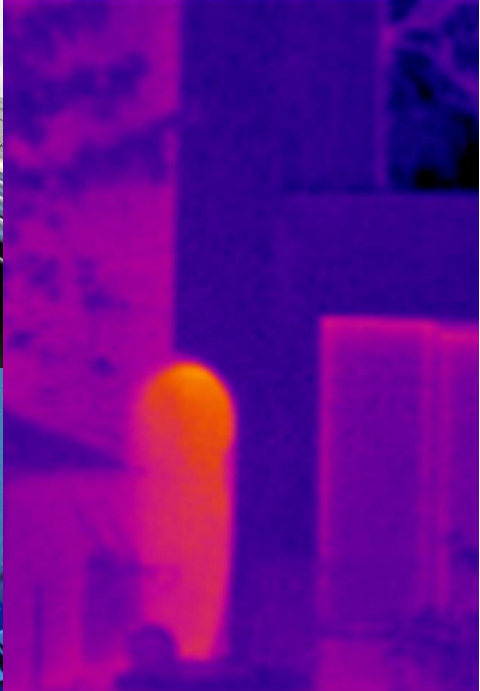
Employment in the local economy

CURS may have a contribution to make here but it can be done through the University of Birmingham's, Resilience and Urban Living Research Group, which includes the School of Geography (Professor John Bryson), CURS (Prof John Coaffee) and the School of Engineering (Prof Chris Rogers). This would bring together a number of specialisms from Birmingham University.

Reduction in fuel poverty

Aston's Centre for Critical Infrastructure and Services (for telecoms, electricity and water) ([Professor Paula Jarzabkowski](#), Aston Business School)

Zero Carbon Retrofit



Birmingham Zero Carbon House ONLY retrofit zero carbon house in the UK

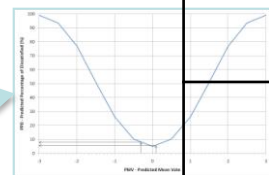
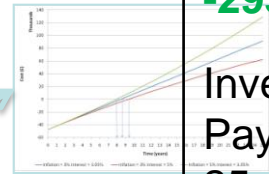
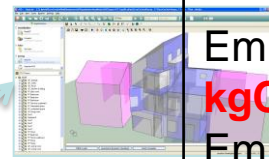
BCU Centre for Low Carbon Research conducting performance Analysis

A Zero Carbon Retrofit method:

Simulation analysis

Economic analysis

Comfort analysis



Emissions before = **+26,422 kgCO₂/annum**

Emissions after = **-295 kgCO₂/annum**

Investment = **£ 27,200**

Payback = **5 years**

25 years gain = **£ 48,600**

Dr Lubo Jankovic
Centre for Low Carbon Research at BCU

Sustainable Building Futures

Coventry University

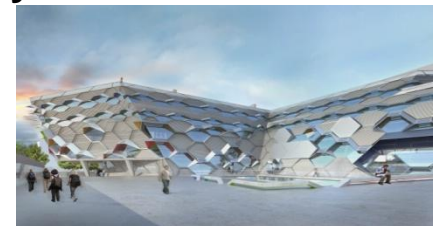
ERDF funded programme from 2011 to 2015 to provide West Midlands businesses with:

- Facilities to **test and demonstrate** innovative **products**, software/control **systems**, **services, and best practice**
- Real-time monitoring data will allow analysis of the impact of both product and human behaviour on environmental performance.

Housed within a new £52m BREEAM Excellent Engineering and Computing building operational from early 2012 and will provide support in three main areas related to:

- Business engagement and product development support for SME's
- Designated spaces for 'plug and play' product development/comparison
- Accessible Building Instrumentation/Data and performance/occupancy monitoring

Exemplar installations include **biomass boiler, server room heat recovery systems, and lighting/surface energy saving strategies, solar thermal/photovoltaic panels, green roof, rainwater harvesting and waste water recycling systems.**



Research and expertise

ARBOR Project: The ARBOR project (Accelerating Renewable Energies through valorisation of Biogenic Organic Raw Material) looks at the whole biomass energy supply chain from manufacturing to energy production, focusing on improving the implementation of technology available into sustainable supply chains.

RETS: Renewable Energies Transfer System is a three year RETS project funded through the INTERREG IV programme and is a partnership of 12 organisations in nine countries. The aim of the project is to improve the knowledge and competencies of local and regional policymakers in renewable energy systems and facilitate a greater deployment of effective renewable energy policies at local and regional levels.

RESCO: The Renewable Energy Supply Chain Opportunities programme has been established to provide businesses in the West Midlands with the support they need to enter or expand into the supply chain markets of low carbon and renewable energy technologies

CORE: Centre of Refurbishment Excellence will be the first centre of expertise for sustainable refurbishment in the region, raising the regional profile, assisting it in taking a lead and attracting national organisations, their expertise and resources such as BRE, Construction Skills and BASF. It will contribute towards energy efficiency, global warming, urban regeneration, community regeneration, innovation and knowledge transfer, business support and inward investment, employment creation and the provision of modern workforce skills.



The European Bioenergy Research Institute

**EBRI does world class research in all aspects of bioenergy research
Research will start from fundamental research through development
to development of innovative technology in collaboration with
industry**

**EBRI will offer unique opportunities for joint activities between
researcher and industry from all over Europe**

**EBRI will promote and manage the implementation of bioenergy
technologies at local, national and European level**

**EBRI will provide operational test facilities up to demonstration scale
for industry, at the same time it will provide heat and power to the
local Aston Science Park**

What research, applications and courses do you need from us?

What collaborative solutions do we need to build?

What International and national partnerships do we need to bring to the region?