Knowledge transfer between the business and universities worlds?

A Welsh case study: The WEST Project and its context

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- Case study: WEST project
- Knowledge transfer initiators
- Enablers
  - Cardiff University
  - Funding strands
  - Welsh Government
- Other examples
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Main objective:

to develop skills to aid the utilisation and uptake of new technologies developed through the industrial research projects of the Low Carbon Research Institute Convergence Energy Program (LCRI CEP)
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Themes:

Large Scale Power Generation
Cardiff University – Engineering

Hydrogen Technologies
University of South Wales

Solar Photovoltaics
Glyndŵr University

Marine Energy
Swansea University

Low Carbon Built Environment (LCBE)
Cardiff University - Architecture
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- Develop & pilot training modules
- Engage participants within the Welsh workforce
- Enable achievement of qualifications (CQFW Level 4 and above)
- Continued delivery of modules developed
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LCRI LCBE Research projects

- Sustainable Building Envelope
- Energy Efficient Lighting
- Timber in Building Construction
- Monitoring Energy Performance
- Low Carbon Building Design
- Urban Scale Energy Demand and Supply
- Innovation, Technology Deployment & Market Development

Academic and Industrial Partners:

[Logos of the Academic and Industrial Partners]
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Understanding the sector’s needs

- Drivers for skills demand
- Welsh Built Environment Sector training needs
- Interest of Welsh industry in training arising from LCBE research
- Appropriate training delivery methods
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**WEST Course Suite**

<table>
<thead>
<tr>
<th>Collaborative module development:</th>
<th>Low Carbon Economy &amp; Policy</th>
<th>Enterprise in a Low Carbon Economy</th>
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*Collaborative module development, Low Carbon Economy & Policy*

*Enterprise in a Low Carbon Economy*

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**WEST Course Suite**

**Collaborative module development:**

- **Low Carbon Economy & Policy**
  - CPD unit
  - 10 credit module

- **Enterprise in a Low Carbon Economy**
  - CPD unit
  - 10 credit module

**Introductory module in each LCRI Theme:**

- **Holistic Approach to Low Carbon Buildings**
  - 10 credit module
- **Low Carbon Buildings Principles**
  - CPD unit

**In depth modules in each LCRI theme:**

- **Active Building Envelopes**
  - Transpired Solar Collectors

- **Building with Timber in Wales**
  - Welsh Timber in Building Construction.

- **Energy Simulation: Building & Urban Scale**
  - Energy Simulation: Sketchup plugin

- **10 credit module**
- **CPD unit**
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Delivery mechanisms
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Delivery mechanisms

Wood has the lowest carbon footprint of any commonly used building material. (Forestry Commission 2014 (1))

...is less energy intensive

Materials frequently used as alternatives to timber in construction such as steel and concrete imply highly energy intensive processing methods in order to turn their constituent raw materials into usable construction products.

In comparison, timber is only affected by primary processing (harvesting and initial lumber conversion), secondary processing (into required products) and drying (Jones et al. 2010; Dean 2010; Forestry Commission 2014 (1)).

...means less waste

...is a renewable resource

...reduces energy use thanks to an Energy efficient fabric
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Knowledge transfer initiators
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The Way Forward 2012-2017
Our focus

**Research and innovation**
We will be firmly positioned in the top ten UK universities in REF terms with success judged by the effect on our reputation.

**Education**
We will educate our students to the very highest standards and support them through the transition to independent learning.

**International**
We will form a tight-knit collaboration with two other outstanding international universities.

**Engagement**
We will demonstrate our commitment to the communities of Cardiff and Wales through knowledge exchange projects.
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Knowledge transfer enablers

RIS enables links with businesses in different ways:

• Consultancy
• Training: CPD
• Placements
• Innovation meetings
• …
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Knowledge transfer enablers: EU funding

European Regional Development Fund
Investing in your Future

European Social Fund
Investing in jobs and skills

Convergence Regions
Phasing-out Regions
Phasing-in Regions
Competitiveness and Employment Regions

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EU funded Examples
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Government and Industry funded programmes

SIP
Strategic Insight Programme

EngD
Engineering Doctorate

WG through HEFCW (Higher Education Funding Council of Wales)

- In place for almost 40 years
- Managed by TSB (Technology Strategy Board)

- Short-term placements
- Cross-sector relationships
- Collaborative projects

- PhD w strong industrial focus
- Based on sponsoring company
- Efficient technology transfer

UK gov. / Company

Sponsoring company

Knowledge Transfer Partnerships
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Knowledge transfer enablers: Welsh Government

‘Science for Wales: A strategic agenda for science and innovation in Wales’

• To build upon Wales’ scientific strengths “...support a better economic future...”

• Three Grand Challenge priority areas:
  • Life science and health
  • Low carbon, energy and environment
  • Advanced engineering and materials

• Commitment
  “...work to deepen academic-business partnerships and encourage collaboration...” including consideration of proposals for:
  ▪ closer integration of the research
  ▪ innovation
  ▪ commercial development
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Thank you!