



Project Part-Financed  
by the European Union

European Regional  
Development Fund



The University of  
Nottingham

# Accelerating a Low Carbon Economy

and

## How you can collaborate with Universities

## Melanie Watts



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# Energy Technologies Building

- Energy RD&D, DTCs, labs, exhibition space
- Low carbon exemplar: BREEAM Outstanding
- 2100m<sup>2</sup> on award winning Jubilee Campus
- c. £9.5 M investment: £5.5M UoN, £2.8M ERDF, Wolfson application




Design for Energy Technologies Building



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# ALCE: What will it do?

- Accelerate a low carbon economy in the region
- By catalyzing increased regional business innovation
- Enhancing university-business interaction



Pellets capturing CO<sub>2</sub> using amine polymer



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## ALCE: Targets

- Businesses\* in new engagements with UoN
- Graduates placed in SMEs
- Businesses\* improving performance
- Jobs created
- Businesses created or locating in region ...

\* SMEs in East Midland region

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SCORE stove generating heat and electricity



# Connecting to businesses

- Information and networking events
- Annual conference
- Technical seminars
- Showcase & Demonstration events
- Referrals



Light pipe in university's Eco House



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# Graduate Placements

eg:

- MSc dissertation\*
- Vacationships\*
- KTP  
([www.ktponline.org.uk](http://www.ktponline.org.uk))
- Sponsored PhD/EngD

\* Graduate Placement Fund



Students involved in construction  
of Creative Energy Homes



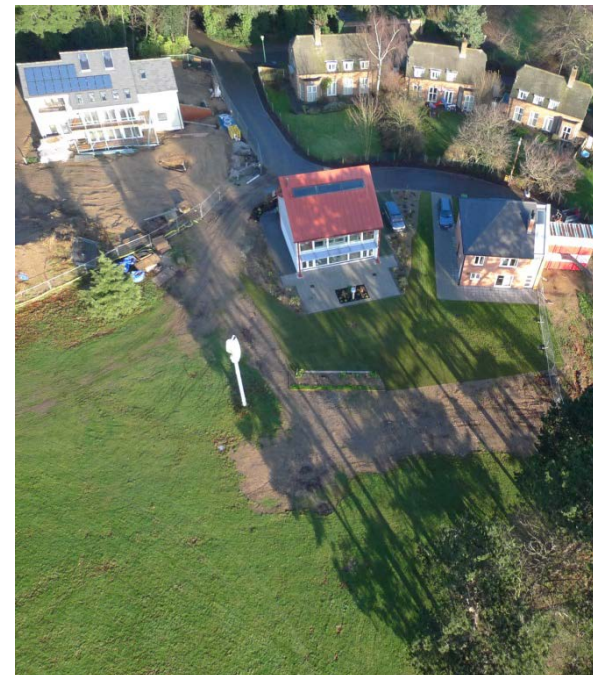
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# The building and facilities

- BREEAM Outstanding
- Energy technologies eg:  
H refuelling station,  
electric vehicle charging,  
energy storage, H fuel  
cell, biomass CHP, pv...
- 700m<sup>2</sup> Labs  
600m<sup>2</sup> prototyping hall  
500m<sup>2</sup> offices (60 staff,  
60 PGRs)  
300m<sup>2</sup> amenities



Creative Energy Homes, University Park



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# R&D Facilities

## Key topics:

- Clean fossil energy eg CCS
- Renewables and storage
- Flexible electrical systems
- Hydrogen
- Biofuels
- Low carbon buildings
- Social aspects



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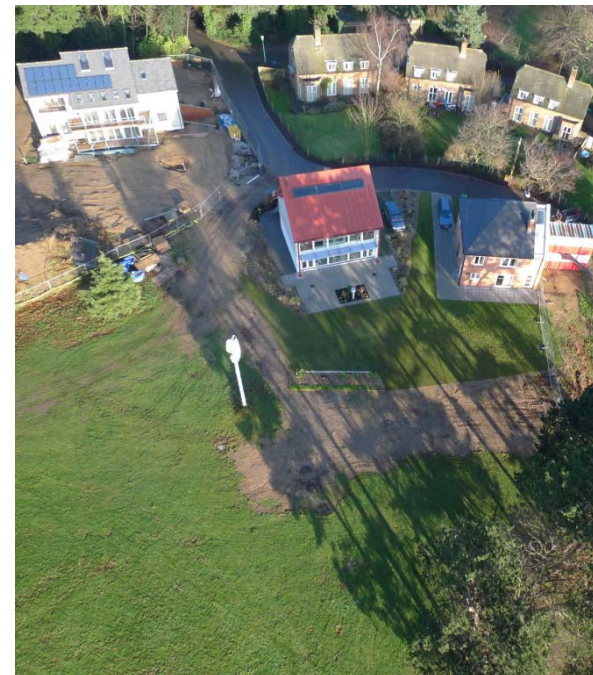


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## Topic: Renewables and storage

- Advanced, insitu testing of building integrated renewables and new façade technologies
- Prototyping Hall for construction and testing of facades (400m<sup>2</sup> + 200m<sup>2</sup>)
- Materials & Building Physics Laboratory (55m<sup>2</sup> climate controlled)
- Climate simulator 70m<sup>2</sup>



Creative Energy Homes, University Park



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# Smart energy community

- Smart networks RD&D
- Initially energy building + creative energy homes
- Expand after 2-3 years
- HEI: socio & techno R&D
- Industry: test devices in operating conditions
- Government: showcase capability



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First virtual energy community?

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# Smart energy community event

- Building a Smart Energy Community
- 15 April
- Promote the smart grid concept and practical applications.
- Energy communities, green energy and small scale energy producers and technology providers.
- ***Free exhibition space available.***



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# Timescales

Launch event held  
September 2010

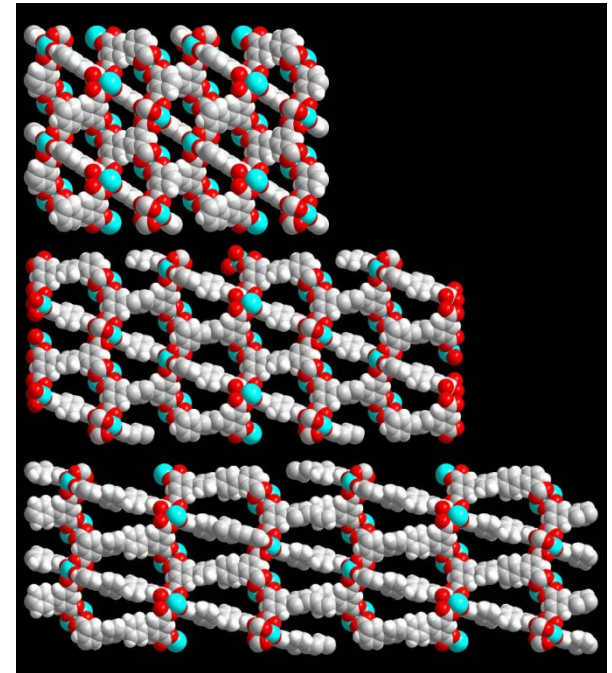
Events, placements from  
October 2010

Energy building ready  
January 2012

Project duration to March  
2013



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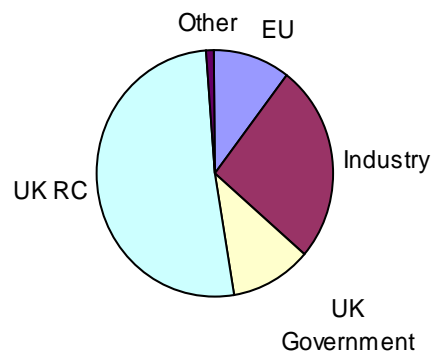
MOF polymer for world-record H storage





# ALCE builds upon the University of Nottingham's Energy Technologies Research Institute (ETRI)

- Major international centre for energy RD&D across a range of themes
- £50M current portfolio
- > tripled in 3 years



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University of Nottingham Innovation Park



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# Energy Technologies Research Institute (ETRI)

- 60 researchers as PIs or Co-Is on current grants
- 3 Faculties, over 13 disciplines

*Engineering:* electrical, mechanical, chemical, civil, buildings

*Science:* chemistry, biosciences, physics, maths, computing

*Social science:* geography, economics, business



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David Wilson Millennium Eco-House





# Midlands Energy Consortium (MEC) Partnership

- Nottingham, Birmingham, Loughborough,
- Wide collaboration on energy research and teaching
- Unrivalled concentration of energy related RD&D within the UK
- Hosts Energy Technologies Institute (ETI)
- Midlands Energy Graduate School (MEGS)
  - *training next generation of highly skilled personnel for energy industry and academia*



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# How to engage with the Universities

## Examples,

- Birmingham – funded PhD Scholarships
- Birmingham - EPSRC knowledge transfer secondments
- Loughborough - A graduate internship programme providing skills to low carbon companies
- Loughborough - Access to collaborative research in specialist areas such as Fuel Cell technologies
- MSc Projects, Case awards



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# Contacts

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