Technology Strategy Board
Driving Innovation

**UK context and programmes**

Ian Meikle, Head of Low Impact Buildings
Our Strategy

- Accelerating the journey between concept and commercialisation
- Connecting the innovation landscape
- Turning government action into business opportunity
- Investing in priority areas based on potential
- Continuously improving our capability
45% of all carbon emissions come from buildings
Government / industry response

• Climate Change Act (2008)
• Low Carbon Transition Plan
• Construction IGT (2010)
  – few have understanding of ‘sheer scale’
  – disbelief about necessary changes in customer
    behaviour
  – biggest change management since Victoria times.
• New build targets for 2016 and 2019
Work to date

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www.innovateuk.org/buildings
Current situation

• Approx £40m invested / 500 contracts let
  – direct benefits of £420m pa at full projected market penetration

• £10m+ pa for next 4 years

• Digest and disseminate

• Increase EU collaboration
A very exciting project is Retrofit for the Future.

This is the refurbishment of social homes throughout the UK, covering a wide range of different home types and locations as demonstrators of technology.

87 demonstrator homes will be refurbished to provide deep cuts in carbon emissions. They will be put back into use and monitored for two years to find out how well the homes perform.

We hope that local authorities, RDAs and devolved administrations will take up successful designs and roll them out to larger scale regeneration projects.
115 properties

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Minimise waste and save time

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Detailing

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Triple glazed window

- Low U-values:
  - glazing 0.58; frame 0.9
- Response to conservation area requirements
- Sash-style, with tilt/turn opening mechanism
- Identical to regular sash,
  - but with >thermal efficiency & >air tightness
- Prototyping in two properties

Next phase could be PassivHaus certification
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Space!

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Most previous performance monitoring projects have looked into the effects of single measures installed in homes. Energy Saving Trust’s monitoring system is aimed to have a holistic perspective and conduct a whole house carbon and energy evaluation. It uses a combination of short-term measurements and long-term evaluation”.

The protocol will help to determine how the key features of designs – such as enhanced airtightness and improved fabric insulation levels – contribute to the carbon performance of housing.

The data will be kept in a specifically designed database and will show the pre-retrofit information and the post-retrofit outcome as well as information on the performance of the home in use (electricity, gas and water use, internal and external temperature, internal humidity and internal air quality measured in CO₂).

The database will be available online to the general public. This will provide an almost ‘live view’ of performance of the dwellings throughout the 2 years of the monitoring period.

As of early September, the database is very near completion and the Energy Saving Trust is currently testing it with trial data. When this user testing is finished Energy Saving Trust hopes to start collecting data from completed projects in late-September, with the formal 2 year monitoring programme commencing from January 2011.

A physical walkthrough of all properties will also be undertaken to inspect both the technologies and measures installed and also the monitoring equipment.

In depth occupancy evaluation surveys will also be carried out to understand occupant behaviour and experiences to enhance the monitored data.

Technology Strategy Board will make the collected data available to general public to ensure that as many audiences as possible make the most use of it. The groups that will benefit from it the most are builders and contractors, clients,
Retrofit triggers

- Demand-side
- Socio-economic aspects
- Market place interactions
Low Impact Buildings future focus

- Performance in Practice
- Retrofit
- Climate change adaptation
- Links with Sustainable Infrastructure
Climate Change fits into the wider challenge of Sustainability

Our goal is to enable 9.5bn people to live well
In 2008 for the first time in history more people lived in cities than in the country. And by 2050 two-thirds of the population will live in cities.
Thank you

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www.innovateuk.org/buildings

Modern Built Environment KTN
www.mbektn.co.uk