closing the energy “performance gap” in housing

making partnerships work...

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Building a low-carbon economy – the UK’s contribution to tackling climate change

- emissions 21-31% below 2005 levels by 2020
- 80% reduction in UK emissions by 2050
- but, CCC recommendations not consistent with avoiding dangerous climate change
a mountain to climb

- emissions 21-31% below 2005 levels by 2020
- 80% reduction in UK emissions by 2050
- but, Commission on Climate Change recommendations not enough to avoid dangerous climate change
Commission recommendations

by 2020:
• 9-18 MtCO$_2$ reduction from existing housing
• 4 MtCO$_2$ from new housing
• carbon content of electricity to fall by $\approx 40\%$
  (and by $\approx 90\%$ by 2030)
the projects

- LowCarb4Real – new housing
- Low Energy Victorian House – the existing stock
Figure 6.10  Residential sector MACC – technical potential in 2020

Source: CCC
The goal:

- zero carbon new build by 2016
- significant reductions in heat loss in existing dwellings including older solid walled houses
Low Energy Victorian House

target - 80% reduction in CO$_2$ emissions

WINNER of the 2008 Sustainable Housing Award
insulation going in...

lots of insulation and training...

(courtesy Chit Chong, Camden Council)
• problem definition
• discussion
• solution generation
• measurement
• evaluation
CO2 relative to 2006

- heating + lighting
- reality?

Stamford Brook

reality gap?
What outcomes can we achieve?

Level 1: Learning from ST technical outcomes

Level 2: Onsite management process

Level 3: System transformation

Level 4: Policy support and constraints

Awareness and perceptual change
stakeholder constellation…

Consumers…

AECB

GHA

LMU, UCL, Leeds

CLG etc.

Construction skills

LC4R

Taylor Redrow

Supply Chain

Building Control…

HBF
what have we done?

run 5 workshops with:
• large and small housebuilders
• senior management, site management, trades
• architects, building services engineers
• building control
• client organisations
• training organisations

total of >125 attenders altogether
our strategy

• transferring technical knowledge and insights from Stamford Brook and GHA
• reflecting on the “gap”
• discussing the feasibility of the House Building Industry meeting ever tougher carbon targets
• teasing open the reasons why things are as they are and what might be done to change them
• feeding these back to decision makers and key stakeholders as a guide to action
the outcome

the Lowcarb4real project has given us the opportunity to look at this from the bottom-up, through the eyes, opinions and insights of people who work in the construction industry, as they are confronted with empirical evidence on the performance of new housing.
partnerships

are essential to tackling the process and context-bound problems of technology deployment
take time and care to construct and maintain
can be challenging for all partners
Energy Efficiency

Follow me....

...it's easy

(courtesy of Joe Isle, Taylor Wimpey)
Help - it's more complicated than you said
partnerships

CO₂ emissions in housing cannot be reduced just by better hardware

needs:

- feedback on performance
- commitment to quality
- development of human capital
- systems that foster learning and retention and application of learning
www.cbes.ucl.ac.uk
http://www.leedsmet.ac.uk/as/cebe/projects/lowcarb4real/
www.levh.org.uk
Thank You