

Barriers to low carbon retrofit in the domestic built environment

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Outline

- What is retrofit?
- Low carbon retrofit
- Retrofitting the domestic built environment
- Policy landscape
- Drivers for retrofit
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- Role of local authorities
- Conclusions

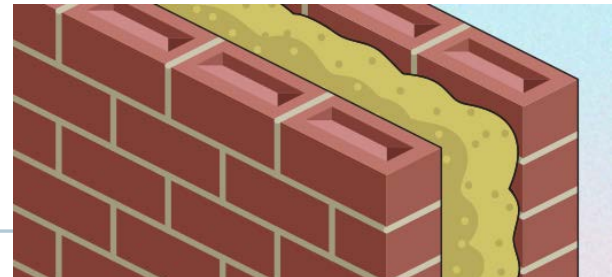
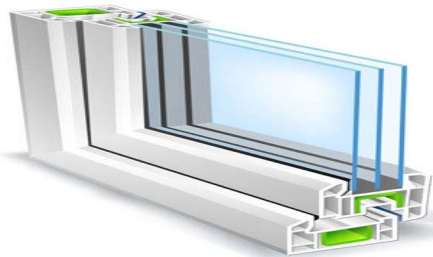
What is retrofit?

- The upgrade of a property's physical characteristics to improve its performance
- Refers to the addition of a new technology or feature to an older system
 - Home, power plant etc.
- Retrofit, refurbishment and renovation are used interchangeably
- Partial retrofit
- Deep retrofit



Low carbon retrofit

- Integration of 'low carbon' element into the retrofit process
- The agenda for retrofit has to be broadened from just low carbon to integrate;
 - Regeneration
 - Ageing population
 - Fuel poverty
 - Healthy urban living
 - Climate change
- Offers economic, social and environmental opportunities
- Occurs on a very small scale
 - Most commonly understood as a one-off activity rather than 'over-time'



Policy landscape

- Carbon reduction targets are set in the UK Climate Change Act 2008
 - 80% carbon emissions reduction by 2050 against the 1990 baseline
- Feed-in-Tariffs (FiTs), Renewable Heat Incentives (RHIs)
- Energy Company Obligation (ECO)
- Energy Performance Certificates (EPCs)
- Green Deal scrapped
- The national government and the EU policies have given rise to low carbon retrofitting
- Local policies and targets



Why domestic built environment?

- Improving the energy and carbon performance
- UK's housing stock is poorly insulated and energy inefficient
- Domestic energy estimates for more than a quarter of UK energy consumption
- In 2008, UK's 26 million dwellings were estimated to be responsible for 27% of total CO2 emissions
- Around 20m homes in the UK are in need of energy efficiency retrofit
- 75–85% of the UK's current building stock will still be in use by 2050
- Retrofit market is estimated to be £200bn over the next 40 years

Drivers for retrofit (1)

- Climate change mitigation and carbon reduction
- Energy security and independence from fossil fuels
- Policy instruments
- Reducing energy bills
 - Significant rise in energy prices
 - Cost savings
- Improving home comfort
 - Better insulated, better ventilated and draught-free



Drivers for retrofit (2)

- Increased property value
- Indoor air quality and well-being
- Awareness, knowledge and personal interest
- Low carbon retrofit is crucial for bringing about a radical environmental and social change



Barriers to retrofit (1)

- Upfront capital cost and payback period
- Lack of knowledge and understanding
- Lack of interest and time
- Lack of adequate advice and support
 - e.g. Homeowners awareness of grant schemes
- Lack of confidence in suppliers, contractors and technologies
- Split incentives between landlords and tenants



Barriers to retrofit (2)

- Physical structure, conservation and heritage
 - Technical complexity of measures in hard to treat properties e.g. solid walls and glazing which is not cost effective
- Inconvenience and disruption
- Absence of robust policy and regulatory framework
 - Long term plans and a roadmap
- Cumbersome planning process
 - Planning delays for solid wall insulation
- Multiple-occupancy buildings
 - Collective decision-making



Role of local authorities (LAs)

- LAs are encouraged to take a leadership role in energy and carbon reduction
 - Representatives of the common good
- Fundamental role to plan retrofit and put forward solutions having a wide impact in terms of
 - Employment
 - Microeconomic viability
 - Energy and environmental benefits macro scale
- Impressive case studies in domestic sector exist
 - A long way to go
- Need more facilitation in social and private housing
- Facilitate community energy initiatives
- Combinations of technical, policy and economic analysis of housing stock

Conclusions

- Scale up retrofit demand
- Understand and unpack the barriers
- Deep retrofitting is challenging and costly.
 - Robust policy and strategy framework is needed
- Advise and support mechanism
- Innovative funding models
- Sharing best practice
 - Finance; procurement; supply chain; technologies
- The UK is well placed to show excellence in retrofit innovation
- A strong network of cities which has political drive is needed
- Capacity building and training of demand and supply side

Questions or comments?



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