

Consumer-Appealing Low Energy Technologies for Building Retrofitting (CALEBRE)

UK homes are responsible for 27% of national carbon emissions. Any serious attempt to reduce these emissions must recognise that the rate of housing stock renewal is slow, that space and water heating dominate the usage, and that householder appeal and interaction play a paramount role. This places the emphasis on retrofit solutions, and technologies that relate to energy supply and reduction in demand, plus alignment with user lifestyles.

The CALEBRE project is an E.ON/EPSC funded £2million Midlands Energy Consortium led collaboration between 6 Universities and 8 private partners designed to tackle this issue.

For any new technology to be successful it needs to be accepted by the end user; it must meet their social, emotional, practical and economic needs. For technologies such as insulation or heat pumps, it is critical that they are considered as a coherent, integrated solution in the context of the built environment and the end users / householders.

This project will identify the barriers and opportunities for possible energy saving and low carbon energy supply technologies, primarily from the perspective of solid-wall homes and the householders. Other stakeholders, such as installers, decorators and future home owners will be pertinent to the success of the technologies, so their views will also be considered.

Technologies will be specified and adapted to meet end user needs whilst satisfying the energy efficiency improvements desired. The modified technologies will be trialled in a dedicated, occupied and instrumented test house. It is anticipated that every household will require a suite of energy-related measures that match the limitations of the house and the requirements of the householders. A design and selection tool will be produced for use by householders and installers to identify these measures as a single transaction (a 'one-stop-shop' approach) for deployment. The tool will be available for uptake by industry, and will be capable of expansion to accommodate other technologies in future.

Partners:

- Midlands Energy Consortium (Loughborough and Nottingham Universities)
- Baxi Group Ltd
- Buildings Research Establishment
- CIBSE
- EA Technical Services Ltd
- Edward Cullinan Architects
- Heriot-Watt University
- Inbuilt consulting
- E.ON
- EPSRC (observer)
- University of Oxford
- University of Ulster
- University of

E.ON 2016 House: a replica 1930's semi-detached house built in partnership with the University of Nottingham; it will be used in the CALEBRE project to test new technologies



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