

The 1930s semi goes green

Three million of them were built; they stimulated a boom in employment and turned a nation of shop keepers into a nation of home owners. The 1930s semi is an icon of its age but 80 years on it is about to undergo a green revolution.

Experts at The University of Nottingham together with the energy company E.ON have been granted special planning permission to build an original 1930s property. The house will be used to assess how to make best use of natural resources such as the sun, wind and rain, as well as for trialling the effectiveness of new carbon energy reducing technologies and materials.

The house will be built on University Park as is part of the School of Built Environment's Creative Energy Homes Project. It is one of six eco-homes being constructed as part of a prestigious study to stimulate sustainable design ideas and promote new ways of providing affordable, environmentally sustainable housing.

Dr Mark Gillott, research and project manager for Creative Energy Homes said: "The E.ON Research House project is an important addition to our site. 21 million homes in England (86% of the current stock) will still be in use by 2050. It is therefore vitally important that we identify and research technologies aimed at reducing the energy consumption associated with existing homes, these are issues that the vast majority of us can identify with."

Construction of E.ON UK's 2016 research house is expected to be completed in August this year.

Once built the 1930s replica will be upgraded in several stages over three years to meet the highest green building requirements.

The central element of the design is a lightweight extension built from modules which will have a roof positioned to maximise the potential of solar panels. Low carbon technology will also be used to generate and manage energy within the house. The additional living space this provides could be used as additional work or family areas.

Reshaping today's 1930s housing stock for 21st century sustainable living will be a huge task. But Dave Clarke, Head of Research and Development at E.ON UK said: "Homes are big contributors to the causes of climate change, as they currently account for almost a third of the carbon dioxide emitted in the UK. The average house emits enough carbon to fill six hot air balloons full of CO₂ in a year.

"Even with the Government's target for all new homes to be zero carbon from 2016, we'll have to retro-fit low carbon measure to existing homes in order to significantly reduce our carbon emissions."

Dwellings in the UK account for approximately 28% of the UK total of carbon dioxide emissions through the burning of fossil fuel for heating, lights and appliances. This includes combustion on the premises, mainly natural gas for heating and cooking, and combustion in power stations to produce electricity for homes. Space heating accounts for 57%; water heating a further 25%; cooking 5% and lights and appliances 13%. The demand for energy to run heating/hot water systems and other home appliances such as refrigerators, cookers, lighting, etc is expected to be 13% higher in 2010 than it was in 1990.

As part of the project students will live in the house to assess the effectiveness of each stage in the eco-upgrade and monitoring equipment will be installed to measure the effectiveness of each of the upgrades.

Four of the new Creative Energy Homes have already been designed. The BASF house is now finished and the Stoneguard house, which is being constructed by students, is nearing completion.

Source: University of Nottingham

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