Opening day for a home of the future

January 28 2008

The first of six properties designed to show case state-of-the-art energy efficient housing will be officially opened on Wednesday January 30 2008 at The University of Nottingham.

The house built by BASF, a major supplier of raw materials to the construction industry, is part of the Creative Energy Homes Project on University Park. The project was set up by the School of Built Environment to stimulate sustainable design ideas and promote new ways of providing affordable, environmentally sustainable housing.

Several companies including Stoneguard, Roger Bullivant Ltd, E-on, BASF and Tarmac agreed to fund the project and come up with their own innovative ideas.

There are 6 houses in the Creative Energy Homes project. Two additional houses will be built by Tarmac.

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

Brian Ford, Professor of Bioclimatic Architecture and Head of the School of Built Environment, said: “The Creative Energy Homes project, initiated by Professor Saffa Riffat, provides a platform for the School's partnership with industry to explore different approaches to low carbon house design. The BASF House is a very significant step towards the Government's goal of all new housing being zero-carbon by 2016,

underlining the importance of cross-sector collaboration and the School's leading role in this process."

As well as initiating the project Saffa Riffat, Professor of Sustainable Energy Systems, secured funding for the project which is now starting to take shape. Professor Riffat said: "My colleagues and I are delighted to work with BASF on the passive solar/sustainable research house. This visionary and exciting project shows the commitment of the University and BASF to achieving a sustainable urban environment. I would like to thank BASF for funding the project and my colleague Dr Mark Gillott for his excellent technical contribution. Our aim is to replicate the concept of the Creative Energy Homes constructed in the UK at the University of Nottingham Ningbo China so that we can promote sustainable homes in China."

Collaboration between the School of Built Environment and BASF began during a European research project which explored the application of the German 'Passivhaus' Standard to other countries in Europe. It has developed from a shared desire to explore how the results of the Creative Energy Homes project might be applied in the UK to achieve an affordable low carbon house and how that could lead to the design and construction of affordable zero-carbon housing.

The UK Government is committed to reducing carbon dioxide (CO2) emissions by 20 per cent by the year 2010 but this is set against the projection of a further 4.2 million new houses being constructed between now and 2016.

Dwellings in the UK account for approximately 28 per cent 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

per cent; water heating a further 25 per cent; cooking 5 per cent and lights and appliances 13 per cent. 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 per cent higher in 2010 than it was in 1990.

The Creative Energy Homes are being designed to various degrees of innovation and flexibility to allow the testing of different aspects of modern methods of construction, including layout and form, cladding materials, roof structures, foundations, glazing materials, thermal performance, building services systems, sustainable and renewable energy technologies, lighting systems, acoustics and water supply.

Architect Derek Trowell said: “The two most significant aspects of our brief have made the house different in appearance from more conventional housing. Firstly, the house is intended to be extremely energy efficient and to have as near as possible zero carbon emissions. Secondly, the house is intended to be extremely economical and affordable. The key effect of these two important briefing considerations is that the house has a compact floor area and relies as much as possible on passive solar design to keep costs down.”

In designing the house BASF has taken into consideration a number of issues currently affecting the construction industry. A low carbon emissions target has been set for the house. Energy efficient products are being used to create a thermally efficient home and renewable fuel will be used for heating. The cost of construction is being balanced against the requirement to make the house affordable to a first time buyer and with available building land in short supply. The BASF House design has the flexibility to be used for semi-detached or terraced houses.

Energy effiency will be carefully monitored once the house is occupied by university staff or students.

Source: University of Nottingham