

Ecological Buildings and Sustainable Technologies

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ABSTRACT: Energy used in buildings represents about 40% of national energy consumption. It is therefore important that energy efficient methods are developed in this sector. The first part of the paper describes the latest development in ecological building projects worldwide. Eco-buildings in the UK include the Millennium Eco-House, the Jubilee Campus, Bed Zed and the Oxford Solar House are presented. The design and construction of the creative low energy homes at the University of Nottingham are also described. These innovative homes will function as tools to address the challenges facing the construction industry in its endeavour to create a sustainable urban environment.

By year 2015, half of the world's new building construction will take place in China. The world's first sustainable/carbon neutral city in Dongtan, China and other eco-building projects in Beijing and Shanghai cities are discussed. Other examples of eco-building projects such as the Berkeley, USA eco-house, Airdrie Straw Bale House, Canada and Energy Research Centre, Netherlands are presented.

The second part of the paper describes innovative sustainable technologies for the built environment. The establishment of a unique Centre of Sustainable Technologies at the University of Nottingham Ningbo Campus, China is discussed. The Centre is housed in an exemplar low energy building and will be used to train Chinese students in all aspects of sustainable development.