

Award-winning paper in 2010

Papers published in *Engineering Sustainability* are eligible for awards from the Institution of Civil Engineers. Papers from any of the ICE journals can be nominated for several awards. In addition, each journal has awards dedicated to their specific subject area.

On Monday 24 October 2011, ICE president Peter Hansford presented an award to the following paper published in *Engineering Sustainability* in 2010. The editorial panel nominated their best papers and an awards committee chaired by Barry Clark allocated the awards.

The Trevithick Prize was awarded to: Gillott M, Rodrigues LT and Spataru C (2010) Low-carbon housing design informed by research. *Proceedings of the Institution of Civil Engineers – Engineering Sustainability* **163(2)**: 77–87, <http://dx.doi.org/10.1680/ensu.2010.163.2.77>.

Abstract

The UK government is committed to cutting greenhouse gas emissions by 80% by 2050 in a bid to tackle climate change. Dwellings in the UK account for approximately 27% 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. In order to address the climate change contribution from the domestic sector, the UK government has stated that every new home needs to be zero-carbon by 2016. This paper outlines the proposed line of research which will be undertaken on a number of experimental eco-houses constructed at the University of Nottingham. The on-going work will trial and test different construction solutions and sustainable energy technologies. The paper investigates the role that post-occupancy evaluation will play in ensuring that design aspirations are actually met once the dwellings are inhabited. The work also describes the role that phase change materials and earth air heat exchangers may play as thermal mass substitutes in constructive solutions for housing in a warming climate. These solutions and technologies for ensuring occupant comfort and preventing summer overheating in super-insulated dwellings are likely to become increasingly important as UK temperatures rise owing to man-made climate change.



ICE president Peter Hansford presents the Trevithick Prize to winners Mark Gillott, Lucelia Rodrigues and Catalina Spataru