

RESEARCH DIRECTIONS

The cost of going GREEN

Associate Professor Vivian WY Tam and Dr Khoa N Le from the School of Computing, Engineering and Mathematics are working together with Professor Li-Yin Shen from the Chongqing University in China to explore the cost-effectiveness of green building implementation and evaluate their greenhouse-gas emission. This research project is funded by the Australian Research Council through a Discovery Projects Grant.

'Greenhouse-gas (GHG) emissions have become one of the most impacting environmental issues in today's society', says Associate Professor Tam. 'In Australia, the average temperature has risen 0.9 degrees Celsius since 1910 and is even warmer in the surrounding oceans. The residential and commercial building sectors contribute to about 23% of the national GHG emission that comes from gas and electricity consumption for lighting, heating and the operation of different appliances and machinery. Green buildings are designed to have minimum adverse impact on the built and natural environment. The status of "green" is awarded by the Green Building Council of Australia. Industries however, have not fully understood that green buildings can also be cost effective and produce low GHGs. Therefore, this project aims to explore the cost effectiveness of green building implementation and evaluate their GHG emission as well as develop a scoring model to identify the most suitable construction method.'

A life-cycle analysis will be undertaken by identifying all possible construction methods to achieve a maximum green star rating, identifying the costs involved and evaluating the GHG emissions. Software will then be developed using this data that will allow companies to compare the costs and GHG emissions of different building methods in order to achieve a green building rating.



This is the first time that cost effectiveness and GHG emissions in green building implementation will be examined. This may improve the confidence level of the Australian construction industry in leading companies to realise the financial and environmental benefits of green buildings. This is the first of two ARC Discovery Projects awarded in the Field of Research Code 1202: Building in History.

Project Title: Life-cycle cost and emission analyses of green-building implementation

Funding has been set at: \$187,324

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