



# Research Directions

Office of Research Services

## **HOUSING CONSTRUCTION AND WIND SPEED**

**Associate Professor Graham Miller, School of Engineering, is working in partnership with James Cook University, with funding from Geoscience Australia, to undertake a survey of forty five residential houses under construction to determine the extent to which they are wind speed resistant.**



The wind classification of a building depends on the combination of factors such as location of the site within Australia and the terrain and topography surrounding it. The houses being surveyed are in Sydney and have an N2 wind speed classification, which has a permissible wind speed of 40 m/s (metres per second) based on the Standards Australia ten band wind classification system.

'The homes to be surveyed will be of timber framed brick veneer construction, with manufactured truss roof structures, plasterboard lined and supported on a concrete slab on moderately sloping terrain' explained Professor Miller. 'The wind speed resistance testing will be done on houses at different stages of construction, for example fifteen will be tested at framing only stage, fifteen at brickwork stage and fifteen at roof installed stage. Observation details will be documented with digital photographs and sketches to capture the variability of construction practice.'

The results will be incorporated into an engineering model representing building behaviour, similar to one developed by the Cyclone Testing Station of James Cook University for Northern Queensland residential construction. The survey details will be used for predicting vulnerability of housing to both extreme wind loading and tsunamic impact. This is important because of the possibility of climate change affecting the likelihood of such events occurring in areas where they are not currently allowed for.

The researchers will also make recommendations for future vulnerability model development and associated laboratory strength testing.

**Project Title:** *Survey of residential houses under construction located on sites with N2 wind speed rating for Geoscience Australia.*

Funding has been set at: \$24,200.  
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### Contact Details:

[g.miller@uws.edu.au](mailto:g.miller@uws.edu.au)

<http://www.uws.edu.au/about/acadorg/schools/engineering>

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