

Building code debate heats up as Australia swelters

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SMART HOME



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In the wake of Australia sweltering through its hottest two months on record – December and January –University of South Australia academics are calling for urgent changes to the country's building codes.

Poorly designed homes are ill-equipped to handle sustained heat and lead not only to soaring [energy bills](#), but also contribute to [global warming](#), says UniSA Professor of Environmental Mathematics, John Boland.

"Our increasing reliance on [air conditioning](#) is causing untold damage to the environment, emitting greenhouse gases and warming the globe even more," Prof Boland says.

"What's needed are brand new building codes which make things like wall insulation, double glazing and restrictions on window placement mandatory for all new homes.

"Simply complying with a 6-star rating (the current requirement) is useless because not only is that energy rating rarely checked; it does not consider climate change.

"Moreover, since the star rating is done on total energy use over the year, a design can be highly rated based on its energy use in winter. The house can still cause a lot of heat stress in summer.

"We need to get away from this idea that everything is voluntary in relation to building codes. Alternative energy sources like solar are great, but nothing beats a good design. We should be designing homes which use the least amount of energy rather than desperately searching for options which allow us to use more energy for less money."

Prof Boland says building energy efficient homes from scratch does not cost a lot more than a standard home, contrary to popular belief.

"Getting the aspect and materials right should be the first priorities. Simple things like ensuring houses have less than a quarter of their windows on the west-facing side; installing wall as well as roof insulation; and double or even triple glazing windows should be considered. The [energy](#) savings will more than offset any upfront costs," he says.

UniSA geospatial scientist Associate Professor David Bruce says even

[solar panels](#) need to be properly designed and located to get the most out of them. A recently published paper which he and others co-authored with recent Ph.D. graduate Humaid Al Badi shows that power output from solar panels is 15-30 per cent less effective in very humid environments when significant dust is present in the atmosphere.

"Dust and humidity are enemies of solar. When [water molecules](#) bind with dust particles, they stick to the solar panels. If there is dust or water on the surface, radiation from the sun cannot penetrate effectively."

Development of self-cleaning solar panels will hopefully overcome this problem in future, Prof Bruce says.

Provided by University of South Australia

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