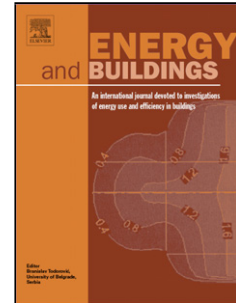


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Heat stress-resistant building design in the Australian context

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Highlights

- Energy simulation of dwelling types was conducted to assess heat stress resistance
- Cooling consumption, peak cooling demand and indoor overheating were compared
- Excess heat factor and adaptive comfort model were used to test indoor overheating
- Energy efficient design did not necessarily increase heat stress resistance
- Changes in the Australian Nationwide House Energy Rating Scheme are proposed

Abstract

In Australia, heatwaves are the deadliest natural hazard and a major driver of peak electricity demand. The disproportionately high peak demand increases electricity prices, causes occasional blackouts and exacerbates energy poverty, all of which limit one's ability to use air conditioning. Meanwhile, increased energy efficiency of dwellings may decrease their heat stress resistance. This paper challenges whether the current Australian Nationwide Energy Rating Scheme encourages heat stress resistance.

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