



For some years now, the Australian government has been working towards reducing national Greenhouse Gas (GHG) emissions, of which approximately 23% are attributed to residential and commercial buildings. In 2003 the first energy efficiency provisions were introduced into the Building Code of Australia (BCA) titled 'Section J - Energy Efficiency'. In May 2006 the range of buildings affected became complete, covering Classes 1 to 10. The objective is to reduce GHG emissions attributed to the built environment. These energy efficiency requirements, particularly in relation to heating and cooling loads of buildings, have impacted building design.

Stimulated by Section J, a new industry of assessors and consultants has emerged who specialise in the thermal envelope, resource efficiency and sustainability of buildings. The industry encompasses a variety of roles of which the Thermal Performance Assessors (TPA) and, to a lesser extent, Home Sustainability Assessors (HSA) have become involved with the design profession. The role of TPAs in assessing plans/designs for anticipated thermal performance has become firmly connected to the industry, as design considerations are necessary to meet energy efficiency requirements, which are now heavily influenced by the TPA rating systems.

Efficient design and good thermal performance go hand in hand. The

design profession now works closely with a TPA, generally early in the design stage, in order to ensure minimum thermal performance ratings are met on any relevant building design. Whilst some find it an onerous task, many designers have grasped the opportunity, when working with the TPA, to make adjustments to windows, insulation levels, building materials etc on the rating tool and note the effect on the rating before the final documents are drawn up. This enables 'cause and effect' simulation which can be invaluable when working towards meeting – and ideally – exceeding minimum requirements. This collaboration is key to meeting compliance obligations and identifying early in the process where efficiencies can be gained.

HSAs on the other hand provide a more holistic approach to building efficiency. When a building is designed (and built) with sustainability and resource efficiency in mind, significant savings can be achieved in terms of cost and environmental impact. When used correctly, the trifecta of a good design, worked through with a TPA and using the guidance of a HSA, can result in a highly efficient building with a low, or even carbon positive environmental footprint.

The points below clarify the difference in services and benefits that Building Designers can leverage through working with TPAs and HSAs during the building design process:

- Obtain and improve the required thermal performance rating for compliance (TPA);
- Assist with layout, insulation values, window options to increase thermal ratings (TPA);
- Provide ideas and solutions to minimise energy and water usage whilst maintaining a comfortable living environment (HSA);
- Reducing the environmental footprint of a building through materials selection, waste reduction and garden options (HSA);

- Advice and guidance on appliances for the building (HSA);
- Guidance on non-toxic indoor environments (HSA); and
- Design options that support building liveability and sustainable lifestyles (HSA).

The BDAV has recognised and embraced the benefits that can be obtained for its Building Designer members and their products through the use of TPAs and HSAs – benefits which are becoming more desirable as energy efficiency targets become more stringent, costs continue to rise, and the consumer becomes better educated.

*Danielle King*

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