

top 10 energy efficiency improvement hints

As at 1 September 2003, the Building Code of Australia (BCA) now includes energy efficiency provisions for Class 1 and 10 buildings in New South Wales. Houses now must be built to comply either with meeting a set of regulations termed 'deemed to satisfy' (DTS) (Part 3.12 BCA) OR by achieving a 3 ½ star energy efficiency rating (EER) using the computer thermal simulation tool BERS (V2.6.2.1).

The following suggestions have proven to be the most necessary and acceptable Energy Efficiency improvements to incorporate in a new house to achieve a 'High Star Rating' without changing the basic design. The suggestions are made on the basis of:

- obtaining the most effective energy efficiency improvement,
- ease of incorporation and
- least costly

1. Add R 2.5 (summer / winter) insulation on top of ceiling (not next to roof)

2. Achieve > R 1.0 Insulation in wall cavity via bulk or foil insulations

3. For concrete slab floors, use tiles / slate etc. in living areas (not carpets, coverings)

4. Use tinted / reflective glazing in windows, sliding glass doors, etc.

5. Use eaves or overhangs, at least over glazing, around house (600mm minimum)

6. North side eaves / overhang (up to 1 m) depending on latitude

7. Roof - use light colours if annual cooling needs exceed heating and visa versa

8. Use sarking under tiled roofs

9. Add weather stripping to external doors and internal doors to wet / ventilated areas

10. Fit tight fitting curtains and pelmets to all living and bedroom windows, sliding glass doors, etc

Note: Existing houses can also be improved and obtain a high EER using some of these measures

There may be examples where, after incorporating the above suggestions, the EER is still not high enough. The main design problems are usually:

- No usable thermal mass
- Bad orientation. ie., most of the glazing facing West or East
- Too much glazing primarily in Living areas and / or in Bedrooms

The first corrective step is to reduce glazing areas firstly on the West side, then East and then South. As mentioned, incorporating all the above suggestions may not be necessary to achieve an adequate EER.

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