



AWA Industry Forum
Building Code of Australia - BCA 2010 &
6 Star Energy Efficiency



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**BCA 2010 -
Energy Efficiency**



- On 22 January 2010, the Australian Federal Government announced the new provisions for greenhouse pollution reduction **would be included** in the national Building Code of Australia (BCA) for 2010.
- These new provisions have been developed at the request of the Council of Australian Governments (COAG).
- They further enhance and expand the existing energy efficiency provisions in the BCA.
- Under the COAG agreement, all jurisdictions have undertaken to adopt the enhanced provisions by 2011.
- However, because of the policies of States and Territories and the different transitional arrangements in State and Territory law, not all jurisdictions will adopt the new provisions on 1 May 2010.



**BCA 2010 -
Background of Changes**



Regulatory Impact Statement (RIS)

- Proposed Changes written into the Building Codes by Australian Building Codes Board (ABCB)
- Draft document released in mid-2009 for public comment
- RIS developed from Draft code, public comment and cost analysis of the changes
- The RIS explores:
 - The cost effectiveness of the proposals
 - Refurbishment of existing buildings
 - Industry capacity
- Over 50 submissions received by ABCB
- AWA made comment supporting the changes to 6 star and made the ABCB aware of:
 - The need for industry to invest and
 - Software needs to be up to date and consistent



**BCA 2010 -
Timeframe for BCA 2010 Introduction**

- February 2010
 - Electronic and Hard copy BCA release
- Mid April 2010
 - BCA Information Seminars - Brisbane
- 1 May 2010 - BCA 2010 adoption
 - Subject to States & Territories arrangements
 - Determined by Building Codes Queensland in Queensland
- 1 May 2011 - BCA 2011
 - All jurisdictions should have adopted the enhanced energy efficiency provisions of BCA 2010



BCA 2010 - The Main Energy Efficiency Changes

Enhanced Energy Efficiency Requirements

Whole Building Energy Rating Requirements

- 6 star energy rating or equivalent for housing
- Climate Zone 1 & 2 concession for outdoor living area (0.5 or 1 star)
- 5 star minimum and 6 star average for sole occupancy units
- A significant increase in the energy efficiency requirements for all new commercial buildings

Window Specific Requirements – Glazing Calculators

- New glazing calculator for Deemed to Satisfy (DTS) compliance for Housing
- Separate glazing calculator for shop front and display glazing

Non-window related items

- Inclusion of energy efficiency requirements for hot water and lighting in new homes



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BCA 2010 - Changes to Both Volumes

Both Volumes

- Revised Objective, Functional Statements and some Performance Requirements to recognise that the goal is greenhouse gas emission reduction rather than energy efficiency alone and in doing so, give further credit for renewable energy sources.
- Solution for a dwelling based on a house energy rating has been relocated to the Deemed-to-Satisfy Provisions.
- A general increase in stringency across all aspects.
- A restructuring of tables and clauses as needed for the increased stringency, including more detailed provisions in some cases.



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BCA 2010 - Changes to Volume Two

Housing (Class 1)

- New Part 3.12 as a pathway to the Deemed-to-Satisfy options.
- The glazing formulae and allowances have been modified to allow for the benefit of passive winter solar heating (this means an additional table for winter exposure factors).
- New Glazing Calculator
- Inclusion of "worst case" advisory information on roof lights performance, with and without a ceiling diffuser.
- Recognition of the benefit of an outdoor living area in climate zones 1 & 2.
- Air movement opening sizes have been moderated because reduced glazing allowances may result in designers choosing smaller windows.
- Where an external door is to be sealed, a draft protection device is now required on the bottom of the door.
- Habitable rooms in climate zone 5 are now to be sealed irrespective of whether the space is conditioned.
- The provision for an attached Class 10a building (garage) in climate zone 5 now has an option for reducing the glazing allowance of the Class 1 building.



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BCA 2010 - Changes to Volume One

Multi-Residential (Class 2 sole occupancy units and Class 4) & Commercial Buildings

- A new Part 0 has been added as a pathway to the Deemed-to-Satisfy options including a house energy rating scheme approach for apartments.
- There is no Deemed-to-Satisfy solution for Class 2 sole-occupancy units and Class 4 parts.
- Glazing method 1 in J2.3 has been removed because it was primarily for Class 2 sole occupancy units and Class 4 parts which now must use house energy rating software.
- Class 3 and 9c aged care buildings are to use the glazing method in J2.4.
- Glazing allowances in J2.4 are now based on three separate sets of indices, i.e. one set for Class 3 and Class 9c aged care buildings, another for display glazing in a shop or showroom and another for all other applications.
- The air-conditioning of a Class 3 sole-occupancy unit must cease if an external door to a balcony, patio or courtyard is left open.
- The over-supply permitted of outside air has been reduced from 150% to 120%.



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BCA 2010 - Other Changes

- Other changes
 - Sealing of building envelope
 - Inclusion of AS 3959 - 2009
(Already a requirement in Queensland - effective 1 October, 2009)



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6 Star Energy Efficient Homes

- What does 6 star mean to my business?
 - Knowledge and education
 - Improved performance of frame and glass
 - Access to higher performance products
 - Longer lead times for performance glass
 - Changes to current production
 - Proof of compliance



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6 Star Energy Efficient Homes

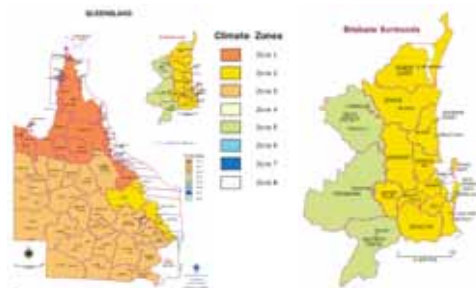
How should I prepare for these changes?

- Ensure access to products that will achieve performance requirements and you can prove compliance
 - U-value and SHGC for whole window performance
 - You must be able to show AFRC/NFRC rating of your product
 - WERS membership is proof of compliance for energy ratings
- Speak to your suppliers
- Look at your current manufacturing
 - Will changes be required
 - Site glazing
- Know where your products are being installed
 - Building Types
 - Climate



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BCA Climates - Queensland



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Outdoor living area

- For Climate zones 1 & 2 with an outdoor living area¹ which has:
 - Fully covered with a insulated roof (min. R1.5 (down) and/or
 - One permanently fixed ceiling fan (min. 900mm blade diameter)
- Reduce the minimum star rating by half a star for each of the above
- The outdoor living area definition includes:
 - adjoins a general purpose living area of a house (eg. living, dining, family room)
 - a minimum area of 12m²
 - minimum length and width of 2.5m
 - minimum opening height of 2.1m
 - at least one side permanently open



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6 Star Energy Efficient Homes

What will I be supplying?

- Climate zones 1,2 & 3 (Most of Queensland)
 - Cooling climate
 - Slightly lower U-values and lower SHGC
 - U-Value (U_w) - may range between 5.0 to 7.9
 - SHGC_w may range between 0.40 to 0.65
 - This means:
 - Glass - low-E, tints, small air gap IGU's
 - Frames with improved thermal performance
 - Ventilation - Windows that open



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6 Star Energy Efficient Homes

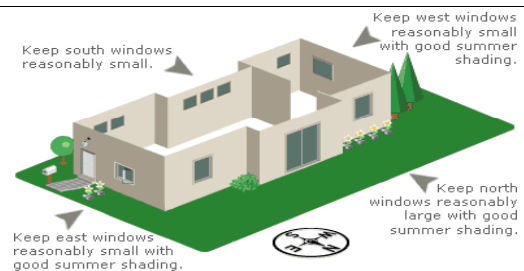
What will I be supplying?

- Climate zones 5 (Toowoomba)
 - Mixed climate
 - Lower U-values and lower SHGC
 - U-Value (U_w) - may range between 3.5 to 7.0
 - SHGC_w - may range between 0.60 to 0.80
 - This means:
 - Glass - a mix of IGU's, Low E, tinted products
 - Frames with improved thermal performance
 - Orientation - location of glazing



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Orientation, Shading, Ventilation & Window Area



Source:
<http://www.energywise.org.nz/yourbuildingdes/windows.html>

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Qld - Sustainability Declaration



The image shows a screenshot of the old Queensland Sustainability Declaration form. A yellow arrow points to the 'Energy' section of the form. The form is titled 'Sustainability declaration' and includes various sections for project details, energy performance, and window treatment. The G. James logo is visible in the bottom right corner.

Sustainability Declaration

1. Energy		Did you know?
Please fill in:		Potential savings in electricity costs per year of up to:
<input type="checkbox"/> 0% out of ___ windows have window treatment (e.g. tinted, double glazing, coated, toned)		\$140 or 10%

The sustainability declaration must be completed before a house, townhouse or unit is marketed or offered for sale from 1 January 2020.
If you are experiencing difficulties completing this form, a reference guide and list sheet are available on the Department of Infrastructure and Planning's website www.dip.qld.gov.au



More Information

- AWA website - Members area
 - www.awa.org.au
- WERS website
 - www.wers.net
- Australian Building Codes Board website
 - www.abcb.gov.au
- Queensland Government - Dept. of Infrastructure and Planning
 - www.dip.qld.gov.au
- BCA 2010

