



BUILDING CODE OF AUSTRALIA – 2010

ENERGY EFFICIENCY PROVISIONS



AUSTRALIAN BUILDING CODES BOARD



CURRENT BCA STRINGENCY

- Housing (Class 1)
 - 5 star
- Apartments (Class 2 & 4)
 - Zones 1 to 3 - Average 3.5 stars
 - Zones 4 to 8 - Average 4 stars
 - 3 star minimum
- Commercial buildings
 - \approx 20% reduction in pre 2005 energy use

PROPOSED BCA STRINGENCY

- Housing (Class 1)
 - 6 star, or equivalent, in all jurisdictions
- Apartments (Class 2 & 4)
 - 6 stars average or equivalent, nationally
 - 5 stars minimum
- Commercial buildings
 - Significant but not formally quantified
 - 2:1 benefit-to-cost ratio as guidance
- Subject to Regulatory Impact Assessment

REGULATORY IMPACT ASSESSMENT

- Tenders are being sought
- RIS(s) to comply with COAG/OBPR rules
- From the perspective of the community (COAG) including the impact on the building owner, business & industry
- RIS to explore:
 - The cost effectiveness of the proposals
 - Housing affordability & transportable houses
 - House star rating v prescriptive approach
 - Commercial building's amenity & ambience
 - Refurbishment of commercial buildings

DELIVERY MILESTONES

- Early June 2009 - BCA text released (6 wks)
- Early September 2009 - RIS released (6 wks)
- Early December 2009 - Decision to proceed
- January 2010 - Electronic BCA release
- February 2010 - Hard copy BCA release
- Early 2010 - Awareness seminars
- 1 May 2010 - BCA 2010 adoption:
 - Subject to States & Territories arrangements



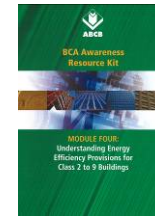
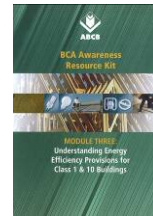
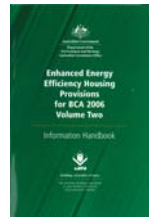
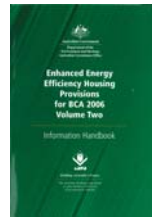
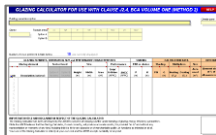
STAKEHOLDER CONSULTATION

- Today's information session is the start
- Draft BCA changes public comment
- Regulatory Impact Statement public comment
- ABCB conference - day theme with workshop
- ABCB publications:
 - Australian Building Regulation Bulletin
 - ABR on-line
- Proposal-for-change post 1 May 2010



AWARENESS AND TRAINING

- ABCB awareness seminars (early 2010)
- Glazing & lighting calculators
- Revised handbooks
- Education modules
- Guide to BCA Volume One
- Education & professional institutions role



AUSTRALIAN BUILDING CODES BOARD





PROPOSED TECHNICAL CHANGES

BOTH VOLUMES



AUSTRALIAN BUILDING CODES BOARD



RECENT ABCB & DEWHA STUDIES

- Review of Verification Method J3
- House energy rating modelling & costings
- Apartment energy rating modelling
- Review of downlight compensation values
- Review of roof lights provisions
- Optimum window size for energy efficiency
- Air flow modelling of open front shops
- Review of fan power allowances
- Review of pump power allowances
- Review of Part J6 lighting

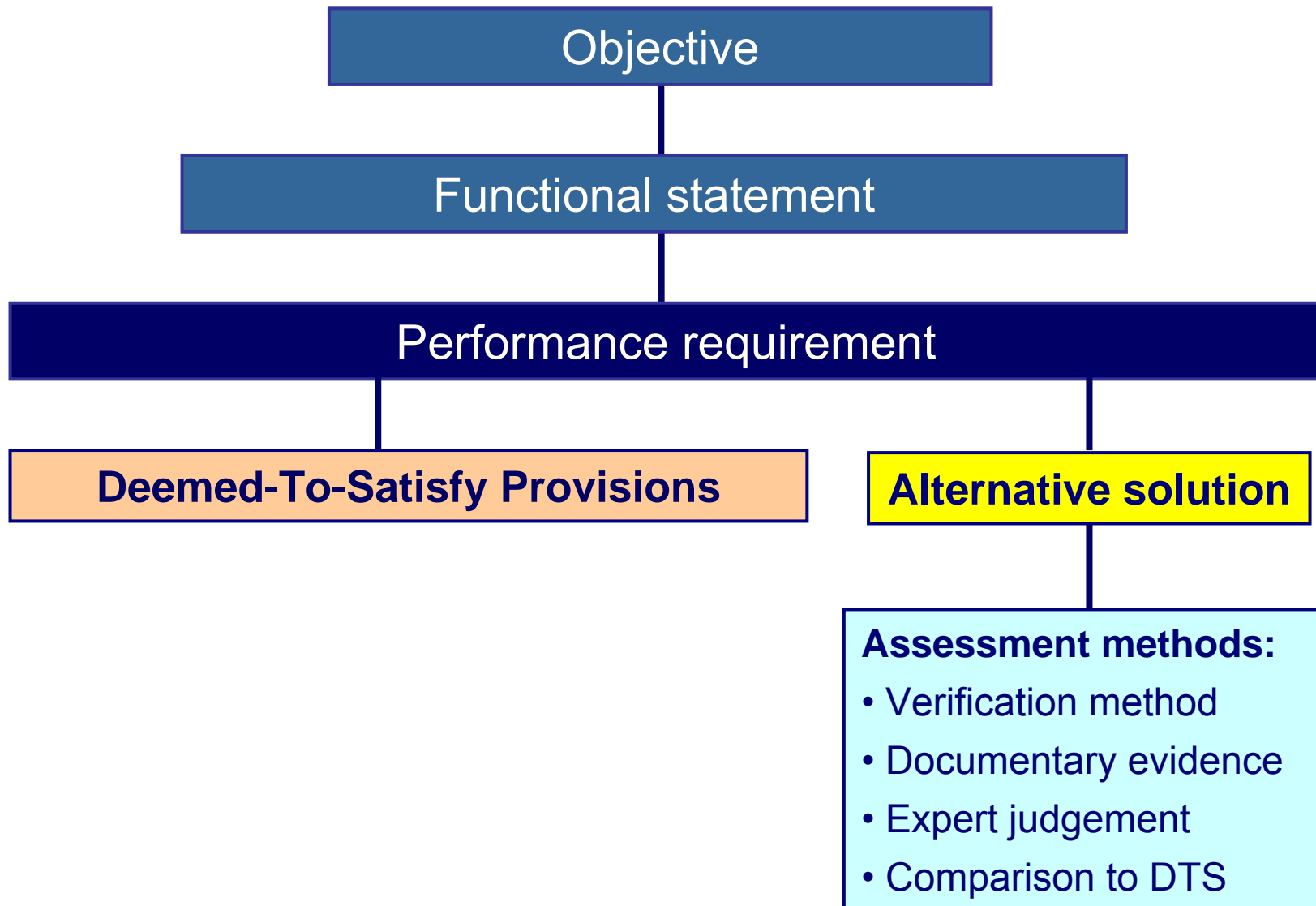
RECENT ABCB & DEWHA STUDIES

- Options for residential lighting provisions
- Space heating energy source, pools and spas
- Clauses & RIS for domestic water heaters
- Review of building R-Values in specifications
- Review of ductwork & piping specifications
- *Study re an alternative to the wall thermal break*
- *Review of thermal plant provisions*
- *Study on the cost effectiveness of leakage testing*
- *Review the alignment of BCA & NABERS Energy*



www.abcb.gov.au



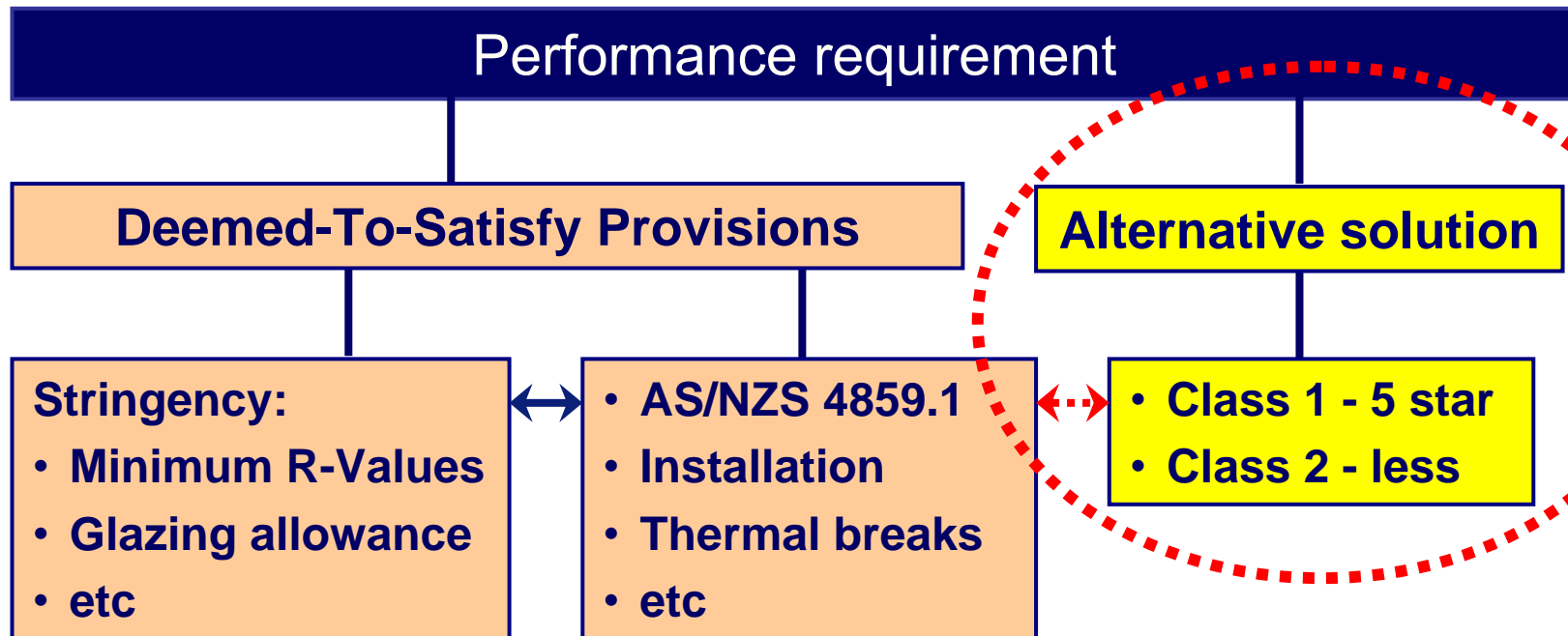


BCA PERFORMANCE HIERARCHY

AUSTRALIAN BUILDING CODES BOARD

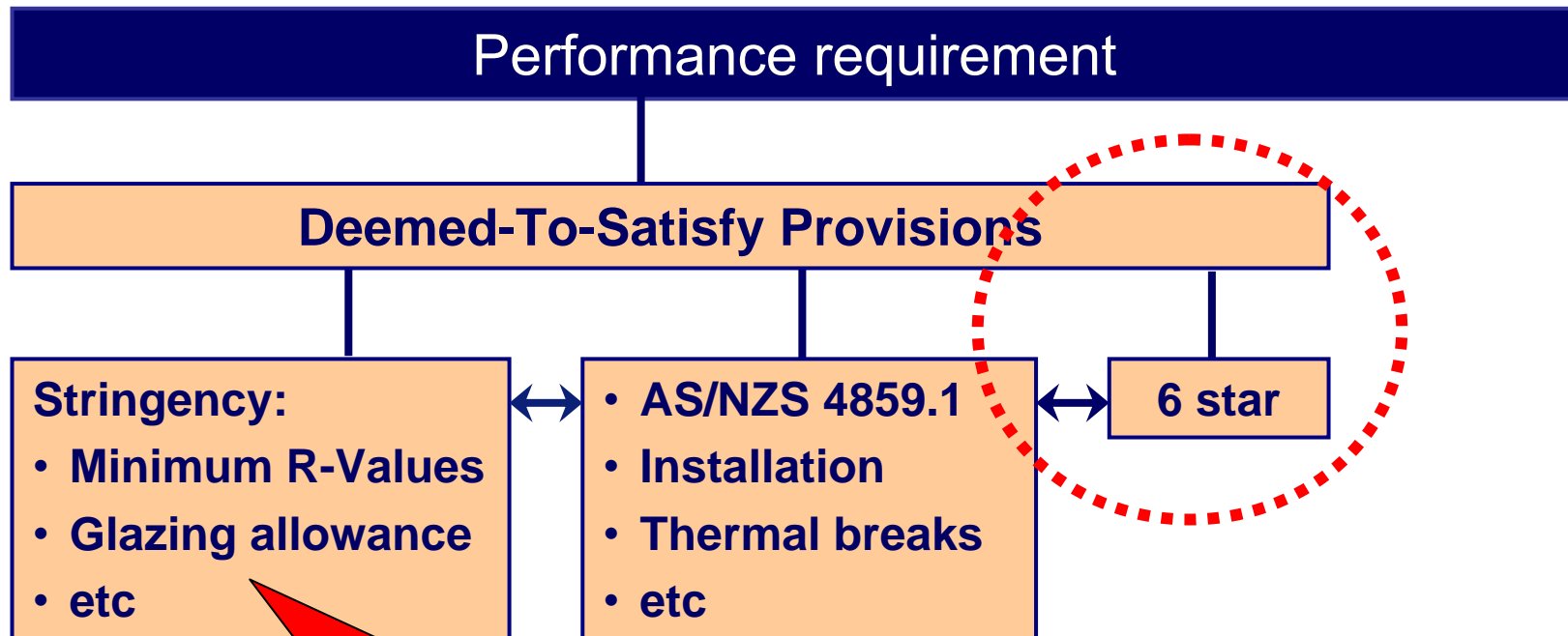
COMPLIANCE PATHS

BCA 2009 – ALL DWELLINGS



COMPLIANCE PATHS

BCA 2010 – VOLUME TWO

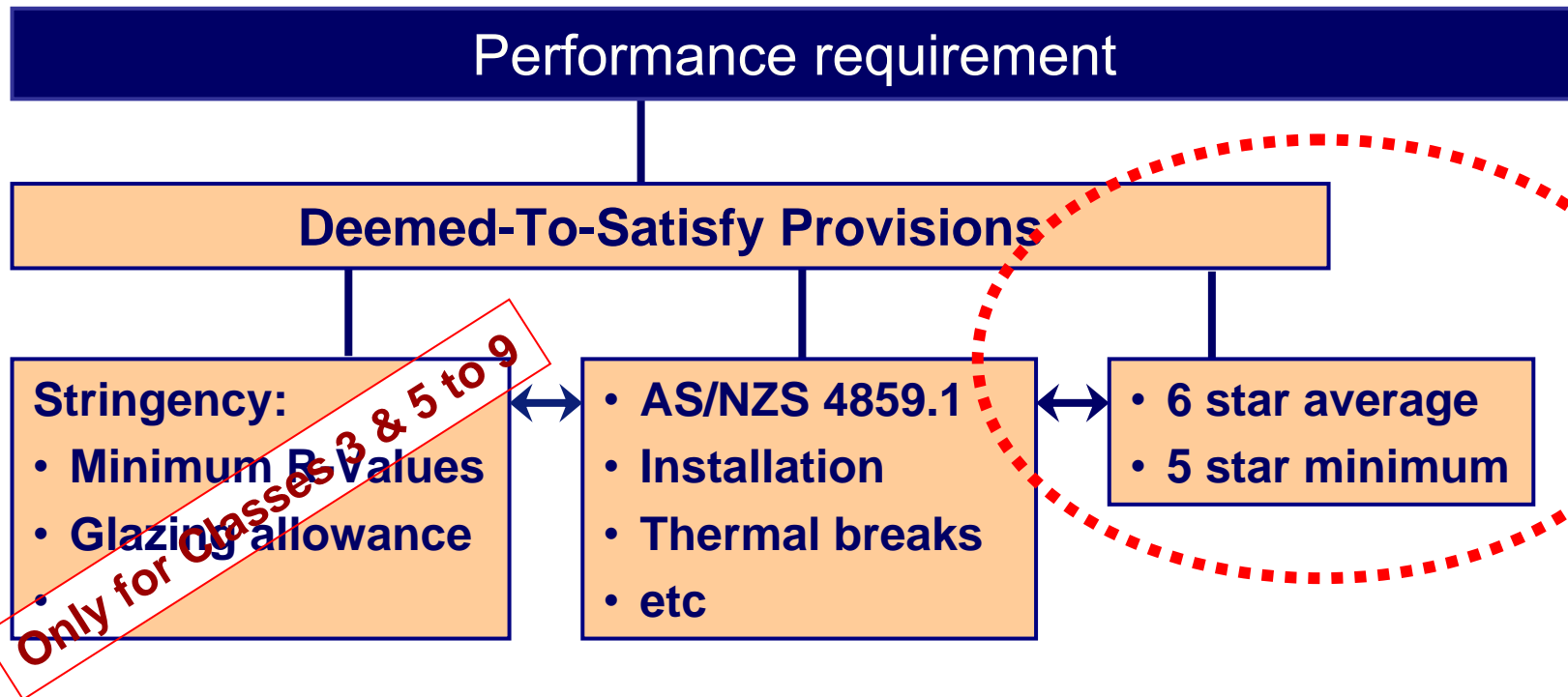


Increasingly difficult to develop – future?



COMPLIANCE PATHS

BCA 2010 – VOLUME ONE



PROPOSED CHANGES

BOTH BCA VOLUMES

- **Objective**
 - Reduce greenhouse emissions
- **Performance requirements**
 - Use operational energy efficiently PLUS
 - Use energy from-
 - a renewable source; or
 - a low greenhouse intensity source
- **Verification Methods**
 - New for water heaters (Initially Volume Two)

PROPOSED CHANGES

BOTH BCA VOLUMES

Both now have a DTS “road map” to:

- The star rating provision for dwellings
- Prescriptive requirements not in the software:
 - The testing and labelling standard
 - The installation of insulation
 - Thermal breaks
 - Compensating for lost ceiling insulation
 - Extra insulation for floor heating systems
 - Building sealing
- Part J0 Volume One & Part 3.12 Volume Two



PROPOSED CHANGES

BOTH BCA VOLUMES

- General toughening across all provisions
- Concession for the colour of roofs & walls
- Tightening of exemptions & concessions
- Table for downlight insulation
- Additional sealing of door & window frames
- Limiting of heating system energy sources
- Increase in ductwork and piping insulation
- Swimming pool & spa heaters, covers etc
- More clarification & explanatory information

AUSTRALIAN BUILDING CODES BOARD





VOLUME ONE

MULTI-RESIDENTIAL & COMMERCIAL BUILDINGS



AUSTRALIAN BUILDING CODES BOARD

PROPOSED CHANGES

BCA VOLUME ONE

- Revised Volume One Verification Method JV3
- Basement walls included with external walls
- New table specifically for internal walls
- $\approx 20\%$ lower glazing allowances
- Removal of open-fronted shop concession
- Reduced over-supply outside air allowance
- Reduced fan & pump power allowances
- Outside air cycle in most climate zones



PROPOSED CHANGES

BCA VOLUME ONE

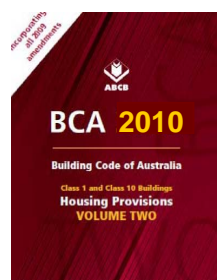
- Removal of Part J4 – Air movement
- Include refrigerant & steam pipe insulation
- Include Class 2 lighting allowance
- Some commercial lighting allowances lower
- Modelled energy reductions of \approx 20 to 30%
- Require facilities for metering
- Require services to be commissioned
- Require settings & maintenance manuals





VOLUME TWO

HOUSING PROVISIONS



AUSTRALIAN BUILDING CODES BOARD

PROPOSED CHANGES

BCA VOLUME TWO

- **NEW** - Include domestic water heaters:
 - Performance of the heaters
 - Restrictions on the energy source
- **NEW** - Include lighting power allowances
- **Option 1 approach - Star rating:**
 - Achieve 6 stars
 - Possible flexibility with an outdoor living area
 - Applicable prescriptive clauses



PROPOSED CHANGES

BCA VOLUME TWO

- **Option 2 approach – Prescriptive:**
 - All provisions significantly toughened
 - Have we hit the 6 star? More testing needed
 - Insulation levels based on current values
 - Location of roof insulation; roof or ceiling
 - Floor insulation in most climate zones
 - Reduced opening areas for air movement
 - Roof lights
 - Revised allowances
 - “Worst case” values

