GBPN
Global Buildings Performance Network

Building Policies for a Better World

Australian Experience with Implementation & Compliance with Building Energy Codes

IPEEC – BEET 3 Webinar

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Partner:

Towards a Global Alliance
for Buildings and Construction
BUILDINGS DAY
At COP 21
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Building Code, Energy & Sustainability

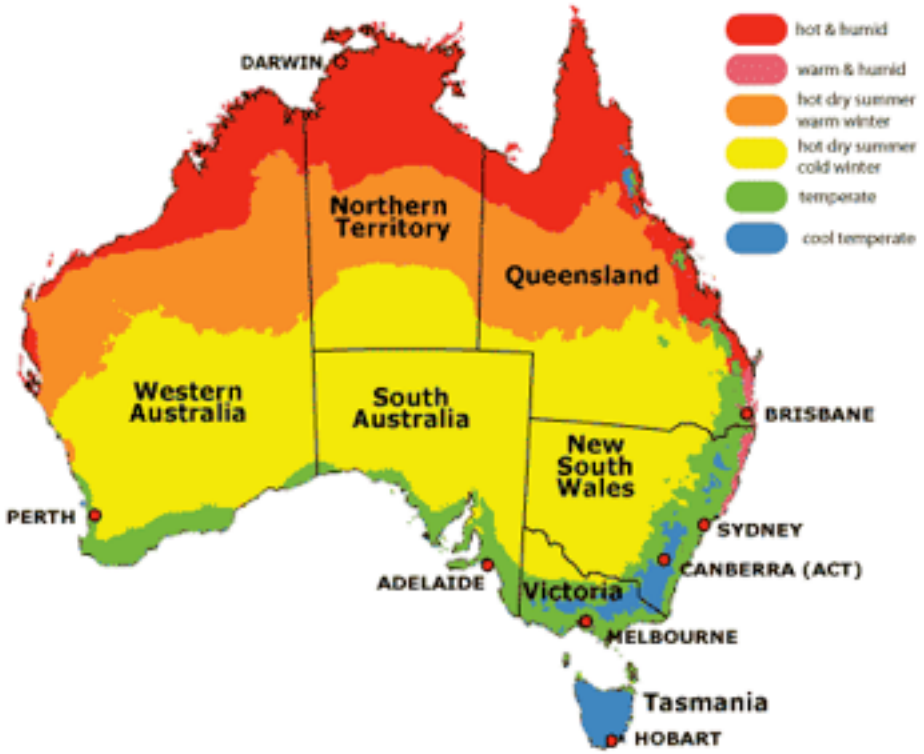
Federal Government – Develops the National Construction Code

Adopted by States and Territories

Implemented and enforced by Municipalities

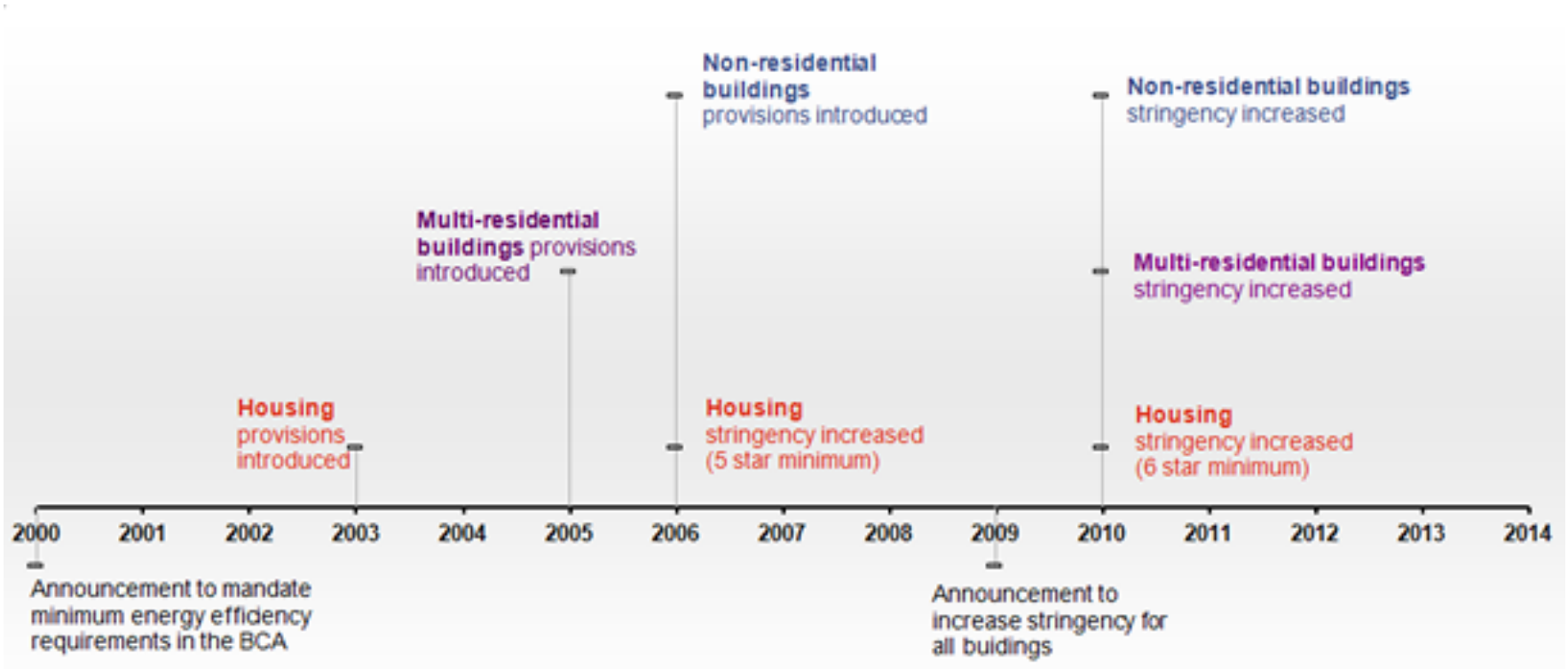
Section J of the Building Code sets out the Mandatory Energy Performance Provisions

Applies to all new residential and non-residential buildings and renovations



National Construction Code Overview – Energy Efficiency Provisions

The NCC energy efficiency requirements began implementation in 2003 with detached housing and now applies to all classifications of buildings covered in the NCC. The next revision is planned for 2019.



Source: acbc.gov.au

NCC – Scope of EE Provisions

Residential Housing

Performance Requirement:

'6 Star' NatHERS mandatory since 2013

Includes performance of the house and its domestic services

Compliance Pathways:

Performance: Energy Rating of design using approved simulation/rating software (accredited through 'NatHERS' www.nathers.gov.au)

Prescriptive: Elemental provisions for building fabric (walls, floors & roofs), external glazing & shading, sealing of the building and effects of air movement

NCC –Scope of EE Provisions

Multi-family Residential & Non-Residential

Performance Requirement:

- Reduce heating & cooling loads (verified by energy rating software) to achieve an average '6 Star' for overall building with min. 5 stars for individual apartments
- Complying with specific deemed to comply provisions.

Compliance Pathway:

Performance or Deemed to Comply by comparison with reference building

Elemental provisions for building fabric (walls, floors & roofs), glazing & shading, sealing of the building, HVAC, lighting, heating & pumps for swimming pools, access for maintenance, and facility to monitor energy use.

Rating & Disclosure

NABERS

The NABERS rating tools

COMMERCIAL BUILDING DISCLOSURE

Mandatory disclosure of EE performance at sale or lease for commercial office space >2000m² (Building EE Disclosure Act 2010). Issuance of a Building EE Certificate before sale, lease or sub-lease.

Voluntary Ratings

greenstar

CITYSWITCH GREEN OFFICE

GRESB

Code Compliance Issues

Key Findings
Along the construction cycle in 2014

Planning: Little attention to orientation or master planning for energy efficiency.

Design: Designs not optimised for energy performance or low running costs. Issues with rating schemes and rater errors. Low detail in plans.

Certification: Sign-off culture, with no physical inspections.

Construction: Poor practices (insulation, sealing, etc.). Product substitutions and divergence from approved designs.

Commissioning: Not a Code requirement and not done well.

In use: Actual energy use often higher than designed. Low awareness of energy issues among building users.

Knowledge management: Skill and knowledge gaps throughout the chain. No mandatory accreditation or CPD in most jurisdictions.

Strategies for Change

Being clear what's at stake
Remake the case in public policy for effective energy performance regulation of buildings, and communicate this to stakeholders.

Getting the incentives right
Clarifying the Code's intent. Lifting ambition levels. Closing gaps in Code coverage and addressing stakeholder concerns with performance of tools.

Delivering quality outcomes
Increase training and knowledge – mandatory accreditation and CPD. Product register, labelling and testing.

Empowering the community
Strengthening and widening awareness of consumer protection frameworks. Information campaigns on all aspects of building energy performance.

NEEBP's Vision
The construction cycle in 2020

Planning: Explicitly recognises energy efficiency.

Design: Energy efficiency a core design objective and quality attribute. Enhanced skills and product quality.

Certification: Evidence based and drawing on cost effective new technologies.

Construction: Practices reflect new skills and awareness. Building performance lifted as a result.

Commissioning: Routinely achieved with excellence, and a culture of continuous improvement.

In use: Building users adopting energy efficient practices based on heightened awareness.

Knowledge management: Whole industry is approaching world best skills, knowledge & practice.

"Full compliance with the energy performance requirements of the NCC are rare."

Source: Pitt & Sherry, 2014

Barriers to Compliance

- There is a lack of understanding and awareness by many practitioners of what the requirements are, particularly for more complex buildings.
- For some clients, particularly at the lower end of the commercial market, there is limited incentive to achieve full compliance.
- Lack of capacity to audit and enforce compliance with the code.
- Energy is perceived by some as nice to have, but not essential and no that it is hard for authorities to monitor because once building is complete, it is hard to look behind walls to see if what needs to be done has been done.
- EE compliance is a second order issue for regulators and indeed code writers when considered against public health and safety issues. This is where the bulk of resources are allocated.
- Although compliance is a concern, analysis does show a decline in building energy consumption, despite increased building stock. This can be due to a number of factors, but compliance with code energy provisions is considered as a contributing factor.

Opportunities and Synergies

- For clients chasing the discerning tenant, exceeding the energy performance requirements of the code can attract better paying tenants.
- NABERS, and with the added support of the Green Building Council of Australia, is generally well regarded and effective in respect to thermal energy performance.
- For many achieving NABERS and Greenstar ratings is a mark of distinction. This works well in tandem with the Code's minimum performance requirements.
- While there is no evidence to indicate that BASIX (NSW rating tool) is resulting in higher levels of compliance than in the other States, but it does enable the NSW administrative to better evaluate what is happening based on the information being inputted to the on-line system.

Key Actions to improve compliance

- Achieving compliance with current requirements is equal to, if not more important than considering the next level of stringency in energy efficiency.
- If full compliance with what is currently required can be achieved, this will be at least equal to whatever might be achieved through a lift in stringency.
- More importantly it will mean that we have established the necessary understanding and cultural base with which to ensure that any increased level of stringency will have a higher likelihood of being complied with.
- Addressing culture is critical and involves designers, certifiers and builders, clients, consumers and regulators.
- Education and training, from tertiary courses through to CPD are critical opportunities to inform practitioners on what is required and what some of the options are.

Key Actions to improve compliance

- Section J (Energy Provisions) has been the subject of review to consider its useability and parts have been revised as a pilot to apply different language and format in order to increase the level of compliance.
- Non-regulatory advisory or practice notes, handbooks, You Tube clips and resource kits are also being developed to improve knowledge and build capacity.
- The ABCB is quantifying its performance measures, which in parts are written as a narrative, which makes knowing what the target is difficult to establish.
- Increasing the use of Performance Solutions rather than the Deemed to Satisfy pathway. This will encourage innovation, which in turn can translate into cost savings.
- This also enables new technologies to be employed in situations that the Deemed to satisfy provisions have not contemplated and can't keep up with.

Key Actions to improve compliance

- If auditing and ensuring that energy efficiency is included as part of the building inspection process can be lifted, then this should have the effect of increasing compliance, but it is a capacity and prioritisation issue for the State and Territory regulators
- Certificate of occupancy (issued by 3rd parties) should represent full compliance. Proposal for a building energy passport being considered.
- Digital Information Management technology has the potential to increase level of compliance for more complex buildings that use this technology, because there is complete transparency in the documentation of as built for the purpose of transfer to owners and facility managers.
- Reducing product substitution is another area being looked at.

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Thank you!

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