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Green Law in the As-Built Environment

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The Building Code of Australia

The principal medium for the promulgation of sustainability regulations in the country is the Building Code of Australia. The BCA is a uniform technical code published by the Australian Building Codes Board. The ABCB is an intergovernmental body comprising the 9 Australian state/territory governments.

The BCA has no force of law unless it is called up by the state and territory acts of parliament, such as the Building Act in Victoria, the Environmental Planning and Assessment Act in NSW or the Building Act in Queensland.

As the BCA is really about minimum levels of compliance in itself it cannot be regarded as the most potent illustration of energy efficient regulation. There are thus a number of state and territory variations to the BCA; the Five Star Rating System in Victoria is one such variation. It is fair to say however that there is no uniform approach; hence some states in their anxiety to embrace the sustainability challenge have forged ahead with their own variations.

Interestingly there is no water management at a federal level.

Residential - NSW

New South Wales has its own unique regulatory requirement system which is inconsistent with the building code. The energy and efficiency or sustainability regime in NSW differs considerably to the Victoria 5 star regime. The NSW system is different in compliance as it has a planning system/regime as a Web-based system of self assessment. It includes landscaping and plug-in appliances. It is a fairly comprehensive system.

The stringency is less than Victoria (probably around 3 1/2 stars in comparison). The system refers to efficiency in use of energy and requires a rainwater tank or a water heater. The relevant issues relate to orientation of the residence, insulation and windows. It is a question of getting the design right at the outset with a focus on five-

star outcomes.

There is the BASIX system where there is a computerized modeling package that is in a sense postcode driven. It focuses on water consumption, and energy use. Considerations that drive the postcode zone will be topographical, climatic and meteorological factors.

Thermal performance is a key consideration. Interestingly it is a do-it-yourself modus operandi where the consumer is responsible for the BASIX modeling and there is no formal accreditation regime to ensure that the BASIX certificate is accurately or even honestly generated. This leaves accredited certifiers in an invidious position in the need to check and double check the accuracy of the information and the input variables.

Craig Hardy, the President of the Association of Accredited Certifiers, was happy to be quoted as saying that it is a pity that there is no Australia wide uniform system. He considered that the BCA should be the germane instrument without state and territory variation. Craig is not in a club of one in expressing these sentiments. Craig added that there is no level playing field and that is problematic and anecdotally there are those that are somewhat cynical about the BASIX system.

Certifiers would prefer to have a level playing field for all 'starts', this is the easiest way to comply with the BCA.

Victoria- the 5 Star Standard

Victoria has a five star rating system which essentially covers energy efficiency. The rating system is for class 1 buildings. All new houses have to comply with the 5 star energy rating system.

Simply put the 5 star system is about orientation, insulation and windows and everything has to be designed or fashioned to achieve a 5 star outcome.

There is computer software that has been designed to generate a 5 star design outcome. The system is called First Rate Version 5 and is produced by Sustainability Victoria. It assists architects achieve an optimised design

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outcome. This software helps assess the relationship of the performance of the building shell (with less reliance on air-conditioning and heating) and to keep the structure warm with a heating load from natural sources.

There are mandatory ingredients which include the thermal performance of the building envelope or shell. This includes:

- Type of construction to assess the building fabric/materials to be used
- The size and location of windows, with big windows facing to the north and to limit glazing to the south. This includes for example the reducing of gaps and cracks and penetrations and ensuring the structure is sealed. Many new homes these days are leaky with gaps in cracks and penetrations.

Compliance in Victoria

The law in Victoria is such that a building surveyor could not issue a building permit for a new home unless the 5 star standards have been adhered to. If he or she were to fail to ensure that the designs complied with the standard negligence would crystallise.

Likewise for Builders; once the building permit is issued with the contemplation of the standard being met, the Builder would need to ensure that the home was built in accordance with the standard.

Architects and draftsman alike in so far as they are retained to design a home would have to ensure that the standard is adhered to.

What would be the damages for non compliance?

If the standard was not adhered to the measure of damages may not be easy to quantify. The plaintiff would need to establish that the compromise was such that it generated costs or economic loss. If it could be established that energy inefficiencies flowed from the compromise and those inefficiencies would translate into high energy bills then that would form the basis of the damages.

Also there may be a sum that would be allocated against the idea that a theoretical future purchaser may not wish to

pay the same amount of money for a building that is not five stars compliant. Again this is theoretical loss and might not be considered a "go to war sum of money".

But in theory non compliance is actionable but such action will be attended by defences that foster a rigour upon the plaintiff, a rigour of actually justifying by way of expert assessment the costs of non compliance with the standard.

What about prosecution?

If the building permit makes it quite clear that the house must be built in accordance with the standard, then a failure on the part of the builder to construct in accordance with that permit could be construed as breaching a condition of the permit. This would be prosecutable under the Victorian Building Act 1993.

Commercial buildings: Section J of the BCA

Section J contains the provisions for commercial buildings and the measures have to include that which achieves the prescribed level of energy efficiency for the building category and its services, such as heating, ventilation and air conditioning (HVAC).

The objective of section J is to reduce greenhouse gas emissions by efficiently using energy. The building surveyor is relied upon to ensure that designs that are approved by the building surveyor comply with either the 'deemed to satisfy' provisions or there is an alternative solution that meets the performance benchmarks under the BCA.

HVAC relates to energy efficiency requirements for commercial buildings and its services. It is based on a prescriptive system of the deemed to satisfy provisions, or alternative solutions if a building surveyor is satisfied that performance requirements are met. There is no benchmark and no simple number or ratings or targets. This is consistent with the building code philosophy.

The practical implementation of section J will most likely require use of a skilled consulting engineer. The 'Neighbours' website is a good reference point for information on the energy rating for office buildings and the New South Wales rating scheme energy component.

It is a qualitative rather than quantitative system and there

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are no “numbers” in the Code as such and therefore no benchmarks or targets in Section J

The system requires certain levels of insulation, certain glazing performance, and certain technical requirements for the building must be met.

A Commercial rating tool: Green Building Council Australia

The GBC essentially provides a de facto rating system, with certified rating committed to achieve a standard rating. It is also an environmental rating system with a range of a minimum 4-star to 6-star.

The Green Star Rating System

One of the most effective mechanisms for generating building ‘greenification’ is through the green star rating system established by the Green Building Council of Australia (GBCA).

The green star system is about holistics, i.e. ‘whole building’ concepts. It is far more comprehensive, and covers a greater range of sustainability – water, heating, building materials, transport to and from building, impact on local ecosystem and more.

It is also very much about the generating of an optimum workplace ecosystem, an environment that is designed not only for energy efficiency but also the creation of an ideal environment for people to work in.

The GBCA has come up with a commercial rating tool for non-residential buildings which now includes office buildings.

It goes far further than anything contemplated in the BCA or the 5 star rating system in Victoria. There is a star rating system. The minimum standard recognised is 4 and maximum is 6.

There are a number of buildings that have high star ratings such as:-

- “Good Shed” building has been designed to achieve a 5 star rating;
- Council House 2 (CH2) is 6 star, New Melbourne

Convention Centre is 6 star, 40 Albert Rd is 6 star, and ANZ new building at Docklands is aiming for 6.

One can get Green Star credit through your management and organisational structures, rather than the building itself.

Water Management

The Building Code of Australia doesn’t really address water management. The BCA has yet to address water management and/or water conservation.

The 5 star systems have some water management requirements that have been introduced through plumbing regulations:

- Install water efficient taps and shower heads
- Install pressure reduction valve to limit incoming water pressure to 500kpa

The Victorian variation to the BCA i.e. the 5 Star Standard, has some water management requirements which are technically specified in the plumbing regulations and partly called up in Victorian variations to the Building Code. Section 9 comprising the Victorian additions is located in Volume 2 of the BCA. The code requires either a solar water heater or rain water tank installed; plumbing regulations tell you how you do this.

Green Leasing

This is very much a virgin territory arena. But is something that landlords and tenants have to be live to also. A great many new buildings are endeavouring to attract premium tenants by way enticement via the ‘green workplace’. It therefore axiomatic that what is advertised as fulfilling the green expectation does indeed do so.

Where there may be an element of novelty in the green leasing space is the need to have a landlord and tenant shared philosophy of maintenance of the ‘green work place’ ecosystem.

As the green work place paradigm is very much at the cutting edge of design and building maintenance, much thought will need to be afforded to the generating of lease conditions that are fashioned to ensure that the holistic environment is maintained.



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There will be a greater emphasis on air quality and the traditional reliance on mechanical air-conditioning as the principal means of air control will be revisited. Much green building technology is very much about air quality and the use of natural air quality. Studies have revealed that natural air rather than air-conditioning or recycled air culminates in less occupationally related ill health. Hence on the one part the lease will spell out the landlord's obligations in the air quality space and various KPI'S will reinforce this. But by the same token there is little doubt that tenants will have lease conditions that are foisted upon them in terms of maintenance and upkeep.

There is also a far greater emphasis on enlightened 'green architecture', and upon vegetation and the use of gardens and internal flora to assist with the improvement of air quality through photosynthesis. The increased use of internal flora will on the one part increase internal air quality with the above-mentioned corresponding benefit of better general employee health, but equally then there is more photosynthesis then there will be less carbon emission migrating out of the building.

Enlightened green design will require a building to maximise air quality in both common areas and internal tenanted areas, because the building will be operating as a whole environment, hence by definition all tenants will be contributing to the part and the whole. In so far as one tenant compromises its maintenance obligations it could compromise the integrity of the holistic system particularly with regards to air quality and carbon emissions.

If flora proves to be a key air quality medium then leases will need to articulate the vegetation health regime as a lease condition.

In so far as the building is aiming to become a model citizen intent on reducing carbon emissions, then the energy conservation habits of all tenants will need to be exemplary. In large shopping centre complexes with low carbon emissions, it may be possible to sell carbon credits under the carbon emissions trading scheme.

The Carbon Pollution Reduction Scheme Bill

This segment of the paper is extracted from an article published by Lovegrove & Lord in August 2009.

The Bill and its core obligations

The Carbon Pollution Reduction Scheme Bill ("the Bill") aims to reduce Australia's greenhouse gas emissions to between 5% and 15% below 2000 levels by 2020. The scheme proposed by the Bill begins in 2011 and sets out the following core obligations to liable entities:

Liable entities are required to report the emissions to an Authority called the Australian Climate Change Regulatory Authority ("the Authority") once every year; and Liable entities must surrender one eligible emissions unit for each tonne of carbon dioxide equivalence of the gas.

The Government remains committed to meeting its long-term target of a 60 per cent reduction in greenhouse gas emissions from 2000 levels by 2050.¹

STEP 1:

- The Government sets a total carbon cap for the Australian company.
- Emitters of greenhouse gases of over 25,000 tonnes need to acquire a carbon pollution permit for every tonne of greenhouse gas emitted.

STEP 2:

- The quantity of emissions produced by firms will be monitored and audited by the Authority.

STEP 3:

- At the end of each year, each liable firm/entity would need to surrender a carbon pollution permit for every tonne of emissions they produced in that year.
- The number of carbon pollution permits issued by the government in each year will be limited to the total carbon cap for the Australian economy.

STEP 4:

- Firms compete to purchase the number of carbon pollution permits that they require. Firms that value carbon permits most highly will be prepared to pay most for them in auction. For other firms, it would be cheaper to reduce emissions than to buy permits.

Liable Entities

In this Act, a "person" is defined as an individual, a body corporate, a trust, a corporation sole, a body politic, or a local governing body.

Generally, liable entities are persons or facilities that:

- are responsible for the direct emission of greenhouse

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gases that exceed 25,000 tonnes of carbon dioxide equivalence;

- import or manufacture synthetic greenhouse gases that exceed 25,000 tonnes of carbon dioxide equivalence;
- import, produce or supply fuels which result in the emission of greenhouse gas;
- apply the fuel for its own use which result in the emission of greenhouse gas.

A person can be responsible for greenhouse gas emitted from the operation of a facility because:

- (a) the person is a controlling corporation of a group, and a member of the group has operational control of the facility; or
- (b) the person is not a member of a controlling corporation's group, but has operational control of the facility; or
- (c) the person is the holder of a Liability Transfer Certificate in relation to the facility.

The definition of and the requirements for a Liability Transfer Certificate are set out in Sections 69 to 81 of this Part. Essentially, Liability Transfer Certificates will allow liability for a particular facility to be transferred from a controlling corporation to one of its subsidiaries, or from the entity with operational control over a facility to the entity with financial control over a facility.

It is possible that a large shopping center facility could emit more than 25,000 tonnes of CO₂ equivalence, and if that were the case then the center would be a liable entity. Power Stations are more commonly perceived as large CO₂ emitters. If per chance a major shopping center facility were implicated then the owners and those with operational control of the facility would be liable entities.

Liability of Executive Officers of Bodies Corporate

If a body corporate contravenes a civil penalty provision; and

- (a) an executive officer of the body corporate knew that, or was reckless or negligent as to whether, the contravention would occur; and

- (b) the officer was in a position to influence the conduct of the body corporate in relation to the contravention; and
- (c) the officer failed to take all reasonable steps to prevent the contravention; then

the officer contravenes this section and is liable to a civil penalty.

Section 325 sets out what the Federal Court may have regard to in determining whether the executive officer failed to take reasonable steps to prevent the contravention.

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