



**MASTER BUILDERS
AUSTRALIA**

**Submission to the
Productivity Commission**

On the

**Draft Report Into
Energy Efficiency**

May 2005

Master Builders Australia Inc ABN 701 134 221 001

building australia



1. INTRODUCTION

- 1.1. This submission is made by Master Builders Australia Inc (Master Builders). This submission responds to the energy efficiency matters dealing with the residential and commercial building sectors.
- 1.2. Master Builders agrees, in principle, with the key findings and recommendations relating to residential and commercial buildings contained in the Productivity Commission's Draft Report. Comment on the specific matters follow.
- 1.3. Master Builders represents the interests of all sectors of the building and construction industry. Master Builders consists of nine State and Territory builders' associations with approximately 28,000 members. The building and construction industry contributes \$81 billion of economic activity annually to the Australian economy.¹
- 1.4. Housing construction is the largest of the three distinct sectors within the industry, undertaking work amounting to around \$32.5 billion; followed by civil and engineering construction with a turnover of \$24.5 billion; and commercial and industrial construction at around \$15.5 billion.
- 1.5. Master Builders has recognised the contribution of its members to pursue environmental and energy efficiencies through its extensive National Energy and Environment Awards which have been supported by both the AGO and Environment Australia. These Awards are now recognised by the industry as a key opportunity to showcase the advances that are being made by contractors and designers to improve the built environment.
- 1.6. Master Builders pursues its environment and energy initiatives using broad policy principles and objectives to facilitate a sustainable built environment.

2. NEED FOR NATIONAL CONSISTENCY

- 2.1. Master Builders is strong of the view that the most appropriate vehicle to deliver energy efficiency measures in the built environment is via the Building Code of Australia (BCA). The BCA allows for national consistency which reduces costs as well as allowing appropriate industry input to the design and stringency levels of any proposed energy measures.

¹ ABS catalogue 8755 "Construction Work Done" November 2004

3. NO ROLE FOR LOCAL GOVERNMENT

- 3.1. Master Builders strongly opposes local government having any role in the development of energy efficiency measures that contradict, override or disregard the performance requirements of the Building Code of Australia (BCA). Increasingly, Master Builders is being made aware of instances where local government planning schemes are introducing measures to regulate energy efficiency that should be dealt with under the technical provisions of the BCA or relevant Australian Standard. The level of additional documentation, plans and specialist reports required to be lodged with local government for planning approval is adding significant costs and delays to the assessment and approval processes by Councils. Many of these local government regulations are often designed in isolation and do not consider how they should fit with other statutory legislation, ie BCA and Australian Standards. They are developed without a regulatory impact statement and the costs are not calculated or balanced against the benefits. The increasing incidence of local government energy measures makes it extremely difficult for designers and builders to keep up-to-date with the rate of change as variations range from Council to Council.
- 3.2. In 2004, Master Builders conducted a national survey which attempted to identify the costs that local government variations place on the construction of a dwelling. This survey was not specifically seeking feedback on energy provisions, but addressed energy costs. A copy of this report is attached at Attachment A.

4. NEED FOR RIGOROUS AND TRANSPARENT ASSESSMENT PROCESS

- 4.1. The BCA in the past has received criticism because of the length of time taken to develop regulations. However, given the technical complexity and the need to ensure any proposed measure is cost effective and warranted, it is appropriate that decisions are not rushed. An example of undue haste are the current proposals for energy measures in Class 5-9 buildings and housing which Master Builders Australia believes are moving too fast without appropriate research and testing being completed prior to the regulations coming into effect. One of the issues is how to effectively insulate under the timber floor of a dwelling. This issue has not been resolved for dwellings in climate zones where insulation is required to insulate against heat and cold. Master Builders suggests that the relatively

simple issues discussed above must be resolved prior to the implementation of any new energy measures.

- 4.2. Where insulation is installed incorrectly, the resultant moisture build-up could cause structural defects and possible cupping and bowing of the timber floor boards which will eventually rot. This will create an unhealthy environment and could render the floor unsafe. Builders will be required to carry out rectification work to repair the damage throughout the statutory warranty period of up to ten years. After the warranty period expires, the owner would then be responsible for continuing maintenance and repairs should these products be installed in appropriately.
- 4.3. Master Builders' is concerned that industry experts at meetings cannot agree on the best way to insulate a dwelling to meet the 5-star energy rating. Currently there are some real life examples of buildings being tested in Tasmania and Newcastle which reflect the abovementioned issues. This work will demonstrate the right and wrong ways of installing insulation. It will provide evidence of the types of insulation that should be used in particular buildings and indicate the locations where specific types of insulation should be used to avoid potential problems such as dampness, possible structural damage and health risks.
- 4.4. Master Builders therefore recommends additional research and testing needs to be undertaken before the community is faced with additional and substantial costs as a result of the proposed energy provisions.

5. ENERGY EFFICIENCY FOR COMMERCIAL BUILDINGS

- 5.1. The ABCB has released a regulatory document (Proposal for Class 5-9 Buildings) for public comment which includes a Regulatory Impact Statement. Master Builders believes that these proposed energy measures go too far and that the stringency levels are set too high.
- 5.2. Because of the high R values proposed for the stringency of the building fabric, in many cases, insulation cannot be installed and fitted into efficient common forms of construction. For example, tilt-panel wall construction will be severely affected under the proposed regulations as will commercial roofing in factories, warehouses, etc where the proposed R values will require a thickness of insulation that would prevent the effective installation of roof sheets. This will force builders to use other methods of installing insulation that could result in increased costs. The cost of additional OH&S requirements, whilst reducing efficiencies could be one outcome. In

summary, the proposed energy efficiency standards for commercial buildings which are likely to be called up in the BCA, will not result in any significant net benefit and may actually result in a net cost. Master Builders supports the re-assessment of the costs of this policy and the costs and benefits of other policy options is recommended.

6. 5-STAR HOUSING

- 6.1. As with the commercial buildings mentioned above, the stringency levels to meet a 5-star energy rating in the fabric of the building is onerous. Master Builders would prefer a holistic approach with further consideration and input be taken to meet these 5-star measures. These measures should incorporate systems and services within the package for the building to meet the relevant star rating.
- 6.2. The current Regulatory Impact Statement has a low benefit cost ratio. Master Builders believes that if more realistic costs were incorporated into this equation, a negative benefit cost ratio would be the result. There are two main issues, the first, is that the figures used in the RIS were taken from a base that the Sustainable Energy Authority of Victoria (SEAV) used in 2002 to incorporate into their RIS to impose 5-star energy ratings for housing in Victoria. Master Builders believes that these figures were grossly under-estimated. Secondly, since those figures were arrived at, the cost of building materials and buildings costs, generally, have escalated by around 20%. This, again, suggests that the figures in the current RIS are under-stated.
- 6.3. Master Builders suggests that, in the future, a more rigorous and transparent process must be used in the development of regulatory impact statements. On too many occasions the lack of transparency has resulted in industry questioning the veracity and accuracy of the costs and benefits.
- 6.4. Based on estimates of greenhouse gas reductions contained in the RIS, Master Builders calculates that the introduction of these proposals would not singularly and significantly contribute to the reduction of Australia's greenhouse gas emissions. In the year 2012 it is estimated that the current proposal to amend the BCA to increase energy efficiency requirements for houses (5-star) would result in a 0.029% reduction in Australia's total greenhouse gas emissions from what they would be in the absence of the regulations.

7. USE OF SOFTWARE

- 7.1. Master Builders supports the use of software to allow building designs to be measured against criteria which delivers a performance solution. However, we would also like to express that the 'deemed to satisfy provisions' are also a key tool in delivering cost-effective and efficient turnaround times for building approvals across Australia, particularly in the remote rural areas where designers or builders may not have the workload to justify the expense of purchasing software and being trained in the use of this software.
- 7.2. Master Builders does not believe that the current protocol is imperative or adds any considerable value in delivering energy efficient outcomes. There are many other areas in the construction and design phase that use numerous software packages, all of which do not have specific protocols.

8. REGULATORY IMPACT STATEMENTS (RIS)

- 8.1. Industry is concerned that the costs, assumptions and validity of Regulatory Impact Statements are becoming more 'grey' and less transparent. Industry continually comments that the costs and formulae used are inaccurate. Regulatory Impact Statements need to be prepared and finalised with additional independent rigour and assessment than currently exists. For example, in 2002, when the SEAV was preparing to incorporate the 5-Star energy rating across Victoria, the regulatory impact bulletin indicated that the average cost of complying with the 5-Star energy rating would be \$3,300. However, builders' estimates suggest that the real added costs would be an average of \$10,000 per dwelling. These costs and issues were raised with SEAV by MBAV in 2002, but were dismissed.
- 8.2. Victoria introduced the 5-star measures in a staged process where 4-star energy measures were required in conjunction with a solar hot water service or rainwater tank. The next year, a purely 5-star house was the minimum regulatory requirement. Victoria is now moving towards a 5-star house plus a solar hot water service or rainwater tank by 1 July 2006.
- 8.3. Builders in Victoria have been building to the 5-star regulations for around 12 months. Prior to the drafting of this submission, we asked MBAV members to provide us with the actual costs for a range of three bedroom, brick veneer homes which they incurred as a result of the new 5-star energy measures. These costs have added between \$13,000 - \$18,000, depending upon the design and location of the dwelling.

- 8.4. In 2002, SEAV supported their costs mentioned in paragraph 8.1 on the basis that once the 5-star measures became mandatory the production price of insulating materials would drop because there would be greater demand. However, this is not the case. There is a vast discrepancy between \$3,300 as an average and the actual additional average cost of \$13,000 - \$18,000, say \$15,000.
- 8.5. Master Builders is therefore very concerned that the assessment of costs of the regulations in the RIS's may be understated. In addition, Master Builders is concerned that the assessment of benefits of the regulations in the recent RIS may be overstated, and there appear to be inconsistent approaches to selecting the discount rate and asset lives that may also bias the RIS's results. Master Builders also believes there is considerable doubt as to whether introduction of the regulations will singularly and significantly contribute to the reduction of Australia's greenhouse gas emissions.
- 8.6. Given the above, Master Builders suggests it is entirely plausible that the RIS's could produce a negative net present value and a negative benefit cost ratio under different assumptions. If this were the case, the benefits of the regulations to the community as a whole would not outweigh the costs. National competition policy states that regulations should not be introduced if benefits to the community do not outweigh the costs.
- 8.7. Master Builders, therefore, believes that there is a strong case for an independent, transparent and rigorous economic analysis to be undertaken in respect of the proposed regulations.
- 8.8. Master Builders agrees with recommendation 8.2 in the Productivity Commission's draft report on Energy Efficiency:

“Energy efficiency standards for commercial buildings should not be introduced without a more thorough evaluation of the costs and benefits of such a policy and a comprehensive analysis of other policy options. In such an evaluation, the Australian Building Codes Board should give greater consideration to:

- *the sensitivity of regulatory impact statement estimates of cost savings to the assumptions used;*
- *the costs of introducing energy efficiency standards, including administration costs and compliance costs; and*
- *the effectiveness of standards in achieving higher actual energy efficiency.”*

8.9. As noted above, Master Builders is concerned that the assessment of the benefits of the regulations contained in the RIS's may be overstated. The approach to calculating energy cost savings appears to be based on a static analysis that may not properly take into account people's behavioral patterns in terms of actual use of air conditioners, hot water systems and other appliances. There appears to be considerable uncertainty about the amount of energy that might be saved given the poor quality of data on patterns of energy and appliance use.

8.10. The commercial RIS concedes as much:

"In summary, it is conceivable that the required design improvements will not deliver on their full potential in the absence of other complementary measures. In other words, changes to buildings may be necessary but not sufficient condition for delivering energy savings promised by energy efficiency regulation." (Page 46)

8.11. Master Builders supports the Productivity Commission's conclusion in Chapter 8 of their draft report into energy efficiency:

"Mandatory energy efficiency standards for commercial buildings which are currently being introduced into the Building Code of Australia are unlikely to result in a significant net benefit, and may result in a net cost. A reassessment of the cost of this policy and the costs and benefits of other policy options is warranted."

8.12. Master Builders strongly recommends that the ABCB be required to review and undertake another independent assessment of the costs and assumptions included in both regulatory impact statements that have been put out for public comment in relation to the New 5-Star Housing Provisions and the other Commercial Buildings Class 5-9.

9. ACHIEVING TOTAL ENERGY EFFICIENCY MEASURES

9.1. The ABCB's current policy is that the BCA should only address the fabric of a building. It touches on regulating services by insulating water pipes and heating/cooling duct work, but, in Master Builders' view, it does not go far enough. We realise the insulating a building can effectively reduce energy consumption and costs, however, the building should be treated as a whole and services and appliances in the building should also be taken into account when assessing the building's energy rating. For example, houses with instantaneous gas hot water systems, are much more energy efficient than electric storage units. Compensations to the fabric in reduced R values should be allowed if the owner or builder includes super efficient services and appliances within the house.

10. CONCLUSION

- 10.1. Master Builders believes that further work needs to be completed and further options need to be explored to deliver the appropriate level of energy efficiency at a minimal cost to reduce energy consumption and reduce greenhouse gas emissions for both residential and commercial buildings.
- 10.2. Master Builders recommends the ABCB adopt a rigorous and transparent assessment framework to ensure cost-effective and efficient energy solutions are achieved.
- 10.3. Master Builders recommends that the ABCB review and undertake another independent assessment of the cost and assumptions in both RIS's recently released for public comment.
- 10.4. Master Builders does not support, under any circumstances, involvement by local government in eroding nationally consistent energy efficiency regulations.

MASTER BUILDERS NATIONAL SURVEY

As part of Master Builders Review of the Building Code of Australia (BCA), in conjunction with the Productivity Commission inquiry, a survey of members throughout Australia was conducted.

A total of 299 replies were received, comprising 211 residential projects and 88 commercial projects.

Builders were asked to respond to a range of questions regarding the work they undertook on either their last or current contract. This provided a snapshot of business activity comprising \$77 million of residential activity and \$87 million of commercial activity.

Results of the survey are presented below, both at the national level and at the State/Territory level.

Figures in brackets for the national results refer to the outcome for the residential sector alone and in interpreting the State results, caution should be used for the results for ACT, SA, and WA, as the survey's sample size was quite small.

DO YOU HAVE ACCESS TO A COPY OF BCA?

Yes hard copy	61.5	(61.1)
Yes electronic	16.1	(13.3)
No	22.4	(25.6)

Overall, 78 per cent of respondents had access to a copy of the BCA with the majority of these possessing it in hard copy form. The results for the residential sector were not significantly different to the overall outcome with not surprisingly a higher proportion of commercial builders having access to the BCA in electronic form.

USE OF BCA

Use regularly	23.7	(21.8)
Never refer to	6.4	(8.1)

At the national level 94 per cent of respondents indicated that they use the BCA at sometime. This result was replicated in the residential sector, where 92 per cent of respondents indicated that they used the BCA sometimes.

As can be seen above the proportion of builders who do not refer to the BCA is very low and around a quarter of respondents indicated that they use the BCA on a regular basis.

IMPACT OF THE INTRODUCTION OF THE BCA

Value added	48	(47)
Detracted value	3	(3)

Respondents were asked about the impact of the BCA on their business. 48 per cent of respondents indicated that the introduction of the BCA had added either a lot or some value to their business, with only a very small 3 per cent indicating that the BCA had detracted value from their business.

EXTRA PLANNING REQUIREMENTS

Extra Planning Requirements	47	(45)
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EXTRA BUILDING LAWS

Extra Building Laws	37	(38)
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Respondents were asked whether in their last contract, the local council had extra planning or building requirements. 47 per cent indicated the existence of extra local council planning requirements and 37 per cent indicated the existence of extra local council building laws. These proportions were similar for the residential sector.

Respondents were asked to provide an estimate of the additional construction costs of these local council requirements over and above the BCA in a range of areas as indicated below. As can be seen major additional requirements were in the areas of energy ratings, termite barriers, insulation and fire safety.

The frequency of these additional requirements across these areas were generally higher in the residential sector than the commercial sector, with the incidence of additional requirements relating to flooding significantly higher in the residential sector. As would be expected additional requirements relating to disability access were lower in the residential sector than the commercial sector.

FREQUENCY OF EXTRA COUNCIL REQUIREMENTS

Energy Ratings	36	(42)
Termite barriers	35	(42)
Insulation	34	(41)
Fire Safety	30	(29)
Glazing	26	(29)
Overlooking/overshadowing	24	(27)
Disability requirements	19	(11)
Gutters and downpipes	17	(21)
Weatherproofing	15	(17)
Construction in bushfire areas	14	(16)
Heating appliances	12	(12)
Flooding	11	(36)
Sound transmission	10	(17)
Swimming pools	10	(10)

ESTIMATED INCREASE IN COST TO BUILD NEW HOUSE

Newcastle	\$3117
NSW	\$2945
Australia	\$2712
QLD	\$1736
VIC	\$1712
SA	\$1357
TAS	\$1121

By comparing the estimated cost of these additional council requirements with the total value of building under construction to which they referred, it is possible to make an estimate of the dollar impact of these requirements on the total cost of building a new house. For the purpose of this exercise it was assumed that the base cost of this construction was \$150,000 in all States and Territories. While clearly building costs do vary across Australia, the standardisation of the new home package to this amount enabled the more potent analysis of these additional council requirements as they vary across Australia.

As can be seen above the impact of these additional council requirements was quite significant with the impact most pronounced in NSW and in particular the Newcastle area where additional council requirements were estimated to add around \$3,000 to the cost of a new \$150,000 house.

The impact of additional was less pronounced in Queensland and Victoria where additional cost was around \$1,700.

STATE RESULTS

COPY OF BCA

ACT	80
NEWCASTLE	71
NSW	81
QLD	73
SA	76
TAS	90
VIC	91
WA	67

USE OF BCA

	USE REGULARLY	NEVER REFER TO
ACT	40	0
NEWCASTLE	29	7
NSW	21	6
QLD	26	5
SA	38	0
TAS	20	10
VIC	24	6
WA	33	0

IMPACT OF BCA

	ADDED VALUE	DETRACTED VALUE
ACT	40	0
NEWCASTLE	64	0
NSW	62	2
QLD	52	1
SA	69	0
TAS	60	10
VIC	49	2
WA	67	33

	EXTRA PLANNING REQUIREMENTS	EXTRA BUILDING LAWS
ACT	60	68
NEWCASTLE	79	57
NSW	65	48
QLD	33	33
SA	31	46
TAS	30	30
VIC	49	21
WA	67	33

IS THE BCA STILL RELEVANT

ACT	100
NEWCASTLE	93
NSW	85
QLD	84
SA	92
TAS	80
VIC	79
WA	67