GIW environmental SOLUTIONS

195 Lennox St,
Richmond VIC 3121
(T) 61 3 8420 0692
(F) 61 3 9421 1220
www.giw.com.au
info@giw.com.au

5th March 2012

Mr. Ivan Donaldson
General Manager
Australian Building Codes Board
PO Box 9839
CANBERRA CITY, ACT 2601

Dear Mr. Donaldson,

PROPOSAL FOR CHANGE – NATIONAL CONSTRUCTION CODE 2014 -
VOLUME ONE: SECTION J ENERGY EFFICIENCY

Thank you for the opportunity to provide the following Proposal for Change to the National Construction Code (NCC) 2014. GIW Environmental Solutions Pty Ltd ("GIW") is an Environmentally Sustainable Design (ESD) consultancy specialising in NCC Section J Energy Efficiency Compliance Reporting.

This submission identifies a number of Proposal(s) for Change under the NCC Section J: Deemed-to-Satisfy (DTS) Provisions - Part J0 Energy Efficiency; Part J1 Building Fabric and Part J2 Glazing. We seek to address these items by modification or further clarification. This will ensure the Provisions are continuously improved for clarity, workability and national consistency.

GIW work closely with industry professionals to achieve specific project ESD objectives. This Proposal for Change is supported by the valuable feedback from industry peers which can be found under the "Consultation" sections of each Proposal. GIW have delivered presentations to the industry on the optimised application of Section J, including major architectural, services engineering and building surveying consulting firms. We continuously seek to improve the implementation of ESD solutions within the built environment.

We look forward to the opportunity to work with the Australian Building Codes Board, COAG, and State and Territory Regulators to improve the NCC.

Yours sincerely,
GIW ENVIRONMENTAL SOLUTIONS PTY LTD

GARY WERTHEIMER
Director

PROPOSAL FOR CHANGE – SUMMARY OF ITEMS

The following summary is provided to outline the Proposal for Change initiatives:

1. BCA PART J0 - ENERGY EFFICIENCY:

Item Number	Specific DTS Provision	Proposal for Change	Page Number
A.	Part J0.2: "Heating and cooling loads of sole-occupancy units of a Class 2 building or a Class 4 part".	Integrate Part J0.2 – Clauses (b) - (f) under NatHERS in order to streamline industry wide implementation.	4

2. BCA PART J - ENERGY EFFICIENCY – PART J1 BUILDING FABRIC:

Item Number	Specific DTS Provision	Proposal for Change	Page Number
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B.	Part J1.3: "Roof and ceiling construction".	Rationalise Table J1.3a: "Roofs and Ceilings – Minimum total R-value for each climate zone" increasing by an average figure derived from Table J1.3b: "Adjustment of minimum R-Value for loss of ceiling insulation". Subsequently delete Table J1.3b.	8-9
C.	Part J1.3: "Roof and ceiling construction".	Guidance required for suitable configuration of roof/ceiling insulation when a plenum air return is implemented.	10
D.	Part J1.5: "Walls".	Address consistency issues between the heat flow directions as provided in the BCA and those provided by the ICANZ Insulation Handbook.	11
E.	Part J1.5: "Walls".	Suitable design detail for spandrel glazing sections to take consideration of the thermal bridging effect.	13-14

3. BCA PART J - ENERGY EFFICIENCY – PART J2 GLAZING:			
Item Number	Specific DTS Provision	Proposal for Change	Page Number
A.	Part J2.1: "Application of Part".	Clarify the application for NCC Part J2 Glazing for Class 2 Building unconditioned "Common Area".	15
B.	Part J2.4: "Glazing".	Update ABCB Glazing Calculator Method No. 2 for additional functionality and consideration of design elements.	16
C.	Part J2.4: "Glazing".	Update ABCB Glazing Calculator Method 2 to provide suitable cross referencing between the Glazing Calculator and the Windows Energy Rating Scheme (WERS).	17
D.	Part J2.4: "Glazing".	Clarification for "Façade area" with respect to the calculation of area extents.	18
E.	Part J2.4: "Glazing".	Building Classification 9C –"Aged care building" to have an increased energy index figure.	19-20

PROPOSAL FOR CHANGE – DETAILED DESCRIPTIONS OF ITEMS

BCA PART J0 - ENERGY EFFICIENCY:

Item No. 1. A.	**Part J0.2: "Heating and cooling loads of sole-occupancy units of a Class 2 building or a Class 4 part". Integrate Part J0.2 – Clauses (b) - (f) under NatHERS in order to streamline industry wide implementation.**

THE PROPOSAL

- Certification of architectural drawings under the National House Energy Rating Scheme (NatHERS) is to be intrinsically linked to the application of DTS Part J0.2 (b) – (f). These Provisions under Part J0.2 (b) – (f) are to be suitably reflected in the energy rating modelling parameters and on the architectural drawings. We recommend that these requirements be administered by The Construction and Property Services Industry Skills Council (CPSISC) who we understand has been commissioned to develop the new NatHERS qualification on behalf of the National Framework for Energy Efficiency - Residential Buildings Implementation Committee.

- Adequate training for new and Accredited Energy Raters.

- Industry education seminars for architects and building designers to include discussions on Part J.02 (b) – (f) Regulatory obligations and application thereof.

- Registered Building Surveyors (RBS) to specifically request suitable compliance reporting and implementation of Part J0.2 (b) – (f). State and Territory Regulators to adequately enforce these requirements.

THE CURRENT PROBLEM

Part J0.2 Provisions dictate that an assessment include both an energy rating in accordance with NatHERS, and a DTS Assessment of Provisions under Part J0.2 (b) - (f). This mandate fails to recognise market segmentation of industry professionals, whom are largely organized into two distinct assessor groups as follows:

- Accredited Energy Raters; and

- Section J Compliance Assessors

Whilst GIW provides both of the above service offerings and facilitate the Certification of architectural drawings to suitably reflect the NatHERS and DTS provisions; it is our submission that by and large there is a total disregard by the industry of Part J0.2 items (b) - (f).

This claim is based upon our observation of fee requests Class 2 Building Permits, where in the majority of instances scope has been limited to NatHERS Reporting. It is therefore our summation that Registered Building Surveyors are not specifically requesting, nor is the application of Part J0.2 (b) - (f) being appropriately verified.

THE OBJECTIVE

We seek to solve the problem of non-compliant design documentation under Part J02. In doing so our aim is to instil greater national consistency.

THE IMPACTS

Further education for Accredited Energy Raters, BCA Section J Compliance Assessors, design professionals and RBS is required in order to identify that the following reporting obligations are mandatory:

1. Energy Rating Report in accordance with NatHERS; and
2. DTS Provisions under Part J.02 (b) - (f); and
3. Certified Architectural Drawings to suitably validate the application of item 1 and 2 above.

This Proposal for Change seeks to provide clarification of the intent and application of the current DTS provisions. We would anticipate that there may be an increase in consulting services fees given that both NatHERS and DTS assessments are provided. This increased cost should have been suitably accounted for in the BCA 2010 RIS.

CONSULTATION

We believe that the mandate and subsequent implementation of BCA 2010 – Section J: Part J0.2 has been ad hoc at best principally because the Provisions do not suitably address current market segmentation. Having attended a number of industry seminars, our impressions were that the vast majority of industry professionals do not have a thorough comprehension of Part J.02 (b) - (f), nor were they poised to suitably implement the specific DTS Provisions.

BCA PART J - ENERGY EFFICIENCY – PART J1 BUILDING FABRIC:

Item No. 2. A.	**Part J1.2: "Thermal Construction – General". Clarification of the term "Supporting Members" to suitably address concrete columns forming an integral part of the external building envelope.**

THE PROPOSAL

- Part J1.5 - Walls (a). Modify clause to read as follows:

  (a) Each part of an external wall that is part of the envelope, <u>including columns forming part of the envelope</u>, other than of…."

THE CURRENT PROBLEM

The term "Supporting Member" as captured under Part J1.2 - "Thermal construction – general – (a)(i)" is given by example as "studs, noggins, joists, furring channels and the like". These examples are by reference typical to lightweight timber or metal framed wall; or heavyweight masonry or concrete wall with furring channel to the internal face.

The current provisions do not adequately address the treatment of concrete column. On the proviso that concrete columns are captured under the definition of "Supporting Member", then concrete column should also be addressed by a specific sub-clause mandating that the concrete column be insulated in accordance with Part J1.5(a) when forming part of the thermal building envelope.

It is crucial that all external envelope columns within conditioned spaces be insulated on the internal sides and rear facing surface. To exclude insulation in this configuration would be to create a thermal bridge, and significantly impact the effectiveness of the building thermal envelope, and thus undermine Section J –Objective J01: "To reduce greenhouse gas emissions".

THE OBJECTIVE

Provide clarity to the current DTS Provisions and as a result deliver greater national consistency.

THE IMPACTS

A significant improvement in the effectiveness of the thermal envelope may be achieved by eliminating thermal bridging at concrete columns. Given that external envelope walls are already covered under Part J1.5 we do not believe there should be any further cost implications. Although this should already be the norm, not all architects and designers recognise the obligation to insulate heavyweight external concrete columns. Architects and designers will therefore need to review generic wall details to allow for this scenario.

The following figure is provided to illustrate our recommendation. The surfaces in "orange" identify where insulation is to be placed around the concrete column. (Note: This drawing is not to scale, nor does it accurately represent any specific insulation type).

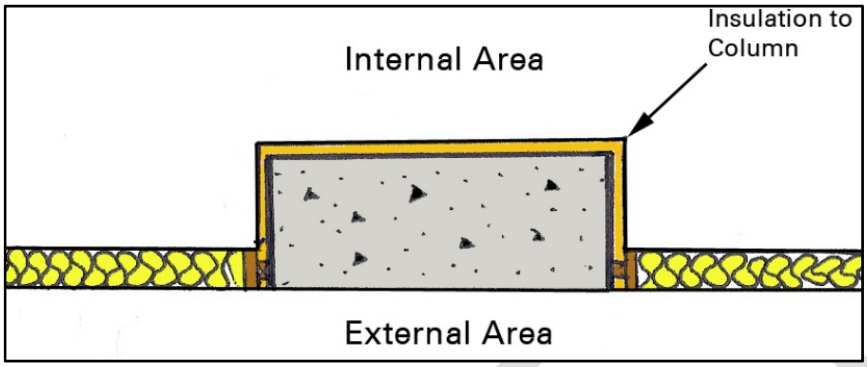


Figure 1 – Proposed Column Insulation

CONSULTATION

This issue has been raised on a number of projects to date. There appears to be no market consensus at present. This Proposal for Change is therefore presented to strengthen our position that concrete columns forming part of the thermal building envelope need to be insulated in accordance with NCC Part J1.2 DTS Provisions.

Item No. 2. B.	**Rationalise Table J1.3a: "Roofs and Ceilings – Minimum total R-value for each climate zone" increasing by an average figure derived from Table J1.3b: "Adjustment of minimum R-Value for loss of ceiling insulation". Subsequently delete Table J1.3b.**

THE PROPOSAL

- Seek to revert to a simplified but more workable assessment under Part J1.3a.

- We propose that Part J1.3 be rationalised by increasing Table J1.3a – "Roofs and Ceilings – Minimum Total R-Value for each climate zone by an average figure derived from Table J1.3b – "Adjustment of minimum R-Value for loss of ceiling insulation".

- Table J1.3b would be deleted and the BCA Section J Handbook updated accordingly.

- We recommend that an average percentage of ceiling area uninsulated of "2.0% - 2.5%" be applied under Part J1.3 as the revised base thermal Insulation R-Value requirement. For example, in climate zone 6, the minimum R-Value of ceiling insulation required to satisfy J1.3a is typically R3.0. This base minimum R-Value for ceiling insulation is then adjusted up to R4.2 to suitably allow for uninsulated ceiling area.
  This modification will instil clarity, national consistency and greater stringency of thermal performance requirements within the NCC 2014. This Proposal for Change also provides the ABCB an opportunity to increase the stringency under Table J1.3a in accordance with any such relevant COAG directive.

- The preferred locations of insulation at roof and or ceiling level shall remain at the discretion of the design team with one exception addressed by sub clause as follows:

  "Where a plenum air return is proposed then he total roof and ceiling insulation must be at roof level". (Refer: Item No. 2. C)

THE CURRENT PROBLEM

Section J - Part J1.3 – Table J1.3b requires a determination of the type of light fittings and specific uninsulated area requirement around each fitting. This task typically requires a number of hours to enable an accurate calculation.

The NCC-BCA 2010 Volume One Information handbook – Chapter 6 (Part J1 – Building Fabric) currently references the AS/NZS3000:2007. Figure 4.7 Default Minimum Clearances for Recessed Luminaires at present only identifies specific clearances for "Incandescent lamps" and "halogen lamps". Presently it is impractical to accurately determine the necessary clearance from other types of light fittings.

GIW deduce that the BCA2010 – Part J1.3 - Table J1.3b – "Adjustment of minimum R-Value for loss of ceiling insulation" has failed to deliver on its intended objectives. Moreover, at the time of writing, inadequate information was available under Australian Standard AS/NZS3000 to identify suitable clearances to thermal insulation from downlights and fans. A review of AS/NZS 3000:2007 / Amendment A (NZS only) - depicts an updated Figure 4.7 (Page 188). This amendment has retained the luminaire types: "Incandescent lamp" and "Halogen lamp" only. This does not suitably address the clearance requirements for other common luminaire types such as fluorescent lamps, compact fluorescent lamps, and light emitting diodes (LED's). Subsequently the adjustment calculations may be inaccurate due to a lack of clearance calculation parameters at the time of assessment. One might contend that a large percentage of Section J Assessments in which other luminaire other than those contained in AS/NZS 3000:2007 have been specified, an erroneous default minimum clearance figure may have been applied. This would skew or invalidate the percentage of ceiling area uninsulated under Table J1.3b.

The assessment under Table J1.3b adds additional complexity and time to undertake a Section J assessment.
We believe that a logical amalgamation of Table J1.3a and Table J1.3b would provide an improved outcome.

THE OBJECTIVE

Rationalise an unnecessarily complicated Part of the DTS provisions.

THE IMPACTS

We believe that by simplifying Part J1.3, a cost saving can be passed on to clients and an environmental benefit can be attained by negating the risk of an incorrect adjustment factor being attained from Table J1.3b.

CONSULTATION

Discussions with Energy Safe Victoria have identified that there is a draft 2012 amendment to AS/NZS3000 which will update the Figure 4.7.

It is our assertion that the ABCB and Standards Australia need to work unilaterally to ensure the proposed AS/NZS3000 - 2012 amendments under Figure 4.7 – "default minimum clearances from recessed luminaires" be revised to take consideration of a wider range of luminaire types than are currently considered.

Item No. 2. C.	Part J1.3: "Roof and ceiling construction". Guidance required for suitable configuration of roof/ceiling insulation when a plenum air return is implemented.

THE PROPOSAL

- Specification J1.3. - Figure 2 - Notes. Add Note No.5 as follows:

> *"Where a ceiling space is used for air conditioning plenum return, insulation is to be applied at roof level only".*

THE CURRENT PROBLEM

When a ceiling space is used as an air-conditioning return air plenum, the ceiling space effectively forms part of the conditioned volume. Designers may choose to configure roof/ceiling insulation by locating the majority of bulk insulation at ceiling level, in which case high levels of heat transfer will occur into the plenum space.

Consequently, there will be an increased load on the building air-conditioning system because the air in this location is too readily affected by external envelope thermal transfers. Bulk insulation located at roof level reduces the rate of heat transfer into the plenum and thereby reduces the load on the air-conditioning system.

THE OBJECTIVE

To mitigate the risk of designers allocating roof / ceiling insulation primarily at ceiling level when a plenum air return configuration has been adopted by the services engineer.

THE IMPACTS

Reduce the energy consumption and stress on associated HVAC systems by suitably locating insulation at roof level when adopting a plenum return air configuration.

CONSULTATION

GIW provide a third party verification service in assessing design and contract documentation. We have seen instances where such errors have initially gone unnoticed between the project Architect and the Services Engineer. This has reinforced our resolve that Section J Compliance Reporting should be undertaken by suitably experienced and qualified third party professionals.

Item No. 2. D.	Part J1.5: "Walls". Address consistency issues between the heat flow directions as provided in the BCA and those provided by the ICANZ Insulation Handbook.

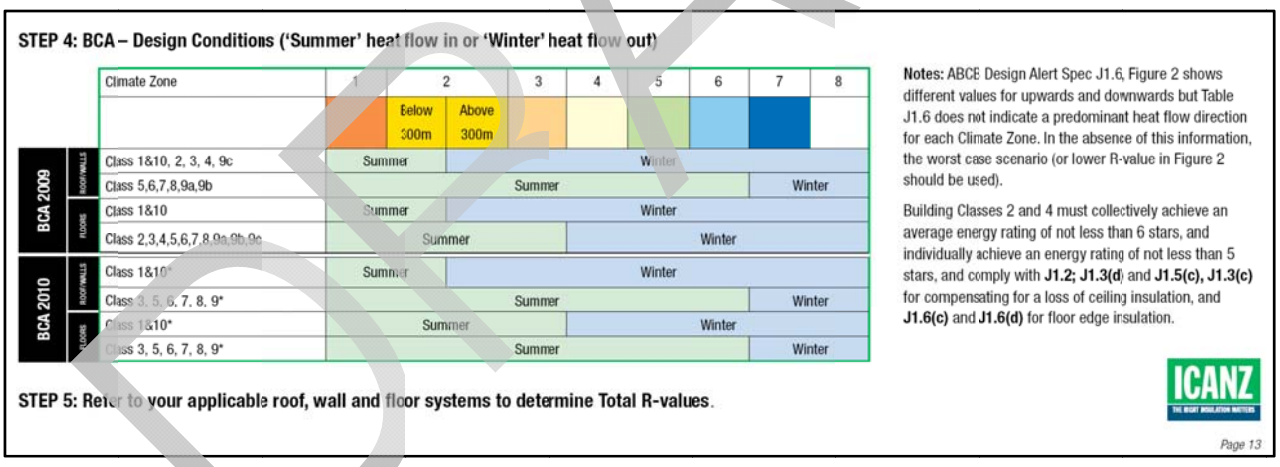
THE PROPOSAL

- Modify Table J1.5a and Table J1.5b to include heat flow directions consistent with those determined within the ICANZ Handbook, or as determined independently by the ABCB.

THE CURRENT PROBLEM

Heat flow directions are not stipulated under Part J1.5 – Walls. Insulation manufacturers typically publish heat flow directional values for their products under summer (inwards) and winter (outwards) design conditions. As there is no prescribed direction by the Regulations, the application of heat flow direction is discretionary, or as is generally the case, reliant upon the guidance provided in the ICANZ manual. This raises a concern that designers or builders may apply the higher product R-Value based by heat flow direction to attain the required total system R-Value. As the directional R-Values vary, this may result in a different product thickness or more drastically an entirely different system nomination.

The ICANZ Handbook provides BCA 2009 and BCA 2010 directional heat flow design conditions which can be used as a guide only. This information should be suitably adopted within the NCC for consistency, as is the case under Part J1.3 Roof and Ceiling Construction and Part J1.6 Floors.



STEP 4: BCA – Design Conditions ('Summer' heat flow in or 'Winter' heat flow out)

		Climate Zone	1	2 Below 300m	2 Above 300m	3	4	5	6	7	8
BCA 2009	ROOF/WALLS	Class 1&10, 2, 3, 4, 9c	Summer		Winter						
		Class 5,6,7,8,9a,9b	Summer							Winter	
	FLOORS	Class 1&10	Summer		Winter						
		Class 2,3,4,5,6,7,8,9a,9b,9c	Summer				Winter				
BCA 2010	ROOF/WALLS	Class 1&10*	Summer		Winter						
		Class 3, 5, 6, 7, 8, 9*	Summer							Winter	
	FLOORS	Class 1&10*	Summer				Winter				
		Class 3, 5, 6, 7, 8, 9*	Summer							Winter	

Notes: ABCE Design Alert Spec J1.6, Figure 2 shows different values for upwards and downwards but Table J1.6 does not indicate a predominant heat flow direction for each Climate Zone. In the absence of this information, the worst case scenario (or lower R-value in Figure 2 should be used).

Building Classes 2 and 4 must collectively achieve an average energy rating of not less than 6 stars, and individually achieve an energy rating of not less than 5 stars, and comply with **J1.2; J1.3(d)** and **J1.5(c), J1.3(c)** for compensating for a loss of ceiling insulation, and **J1.6(c)** and **J1.6(d)** for floor edge insulation.

STEP 5: Refer to your applicable roof, wall and floor systems to determine Total R-values.

ICANZ

Page 13

Figure 2: Extract from ICANZ Insulation Handbook Part 1: Thermal Performance 2010 – Page 13

THE OBJECTIVE

This Proposal for Change seeks to deliver greater national consistency in determining total system R-values under Part J1.5.

THE IMPACTS

By stipulating heat flow directions we envisage that this measure will deliver marginally higher insulation R-values under Part J1.5.

CONSULTATION

We surmise that designers may be adopting inappropriate heat flow directions for the project specific Climate Zone and Building Classification.

Item No. 2. E.	Part J1.5: "Walls". Suitable design detail for spandrel glazing sections to take consideration of the thermal bridging effect.

THE PROPOSAL

Amend Part J1.2 (a) (i) and add an additional clause under J1.5 Walls to represent the suitably compliant application of spandrel glazing insulation.

Provide a detail contained within an updated NCC Section J Handbook depicting the application of spandrel glazing insulation with window frame sections to amply address the thermal bridging effect.

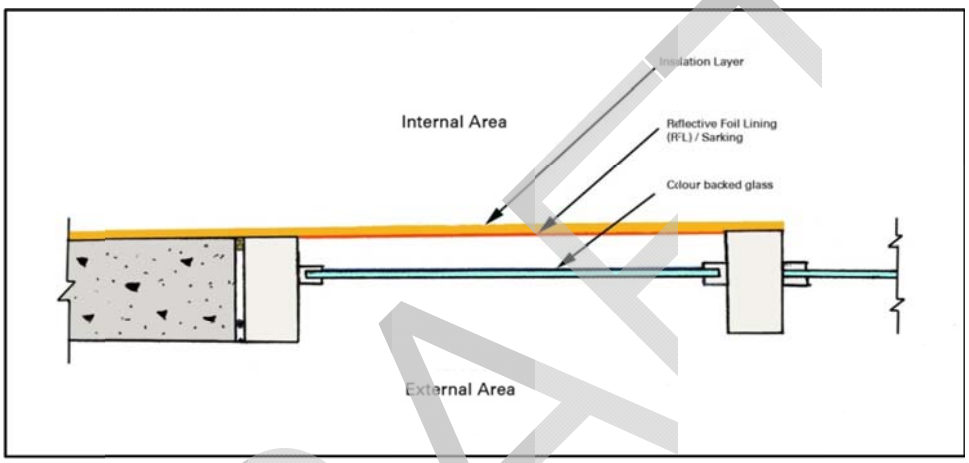


Figure No. 3 – Detail: Insulation Backed Spandrel Glazing.

THE CURRENT PROBLEM

NCC Part J2 – Glazing disregards opaque (non-transparent or non-translucent elements and its supporting frame located in the envelope) from its calculation parameters. The application of insulation to spandrel glazing sections is therefore called up under Part J1.2 (a) (i) and Part J1.5 Walls. This would allow for a variety of insulation detailing including installation directly to the rear (internal) face of the glass, and leaving the window framing exposed. This represents a serious design flaw with respect to thermal bridging and overall building thermal envelope design.

We advocate that the suitable application of spandrel glazing insulation be rigorously considered and addressed to achieve greater mitigation of thermal bridging from window frames. Notwithstanding the thermal bridging effect, there are also significant issues such as glass fracturing and fatigue failure associated with inappropriate or contiguous insulation backings of spandrel glass.

THE OBJECTIVE

To provide amendments to the NCC provisions which will amply address the thermal bridging effect of spandrel glazed window sections. Furthermore, provide guidance to the industry on the appropriate allocation of insulation to spandrel glazing by way of design detail. Provide clarification and expanded upon the application of Part J1.5 Walls (c) for lightweight metal framed external walls used as spandrel glazing sections.

THE IMPACTS

Deliver a more effective thermal building envelope by suitably addressing the thermal bridging effect associated with spandrel glazing window sections.

CONSULTATION

Informal discussions with two major insulation manufacturers have supported this standpoint.
We seek a formalisation of these discussions.

BCA PART J - ENERGY EFFICIENCY – PART J2 GLAZING:

Item No. 3. A.	**Part J2.1: "Application of Part". Clarify the application for NCC Part J2 Glazing for Class 2 Building unconditioned "Common Area".**

THE PROPOSAL

- Add the following clause to Part J2.1 as follows:

  "(d) a Class 2 – Entry Foyer/Lobby that does not have a conditioned space."

- Reinstate Glazing Calculator – Method 1 from BCA 2009 with updated energy index values to suit. Apply this assessment method for Class 2 Entry Foyers/Lobbies in a conditioned space, and Class 2 Common Areas adjacent to a conditioned space (e.g. Common area corridors adjacent to sole-occupancy units).

THE CURRENT PROBLEM

As mentioned in Item 3. A the BCA 2010 Glazing Calculator - Method 2 currently assesses the ratio of glazing to wall area on a prescribed orientation. Part J2 Glazing - Part J2.4 requires the assessment of Class 2 unconditioned building glazed areas. This includes entry lobby glazing at ground floor and non-conditioned corridor and stairwell glazing. These areas of glazing are to be assessed in isolation from the sole-occupancy units glazing.

In the case of entry lobby glazing the resultant is a ratio of glass to wall area of circa 100%. Under Method 2 this results in a non-compliant status. BCA 2009 Glazing Calculator Method 1 provides a far more suitable assessment method by calculating common area glazing over the net floor area served.

THE OBJECTIVE

To provide modified DTS provisions which amply address Class 2 (Common Area) glazing for unconditioned spaces.
This should apply to all non-conditioned entry foyer areas and self-contained corridors and stairwells.

THE IMPACTS

We seek greater national consistency with respect to the treatment of Class 2 (Common Areas) in multi residential and mixed use developments.

CONSULTATION

There is no clear consensus within the industry about the correct assessment of glazing in Class 2 (Common Areas). Our summation is that Part J2 Glazing is at present largely excluded from Section J assessments within the industry.

Item No. 3. B.	Part J2.4: "Glazing". Update ABCB Glazing Calculator Method No. 2 for additional functionality and consideration of design elements.

THE PROPOSAL

- We propose a comprehensive review of BCA 2010 – Part J2 Glazing - Glazing Calculator - Method 2 to include the following items:
  A. Appropriateness of the current Glazing Calculator energy index values;
  B. Interrelation between glazing performance as a function of glass areas to wall area by orientation;
  C. Introduction of more comprehensive Glazing Calculator assessment inputs including:
     - Shading device function for vertical fins;
     - Window opening types category (column) with associated Total System U-Value and SHGC for each specific product;
     - Electronic links to WERS product codes and system performance characteristics;
     - Shading Factors – i.e. Adjoining or neighbouring structures.

THE CURRENT PROBLEM

The BCA 2010 Glazing Calculator - Method 2 currently assesses the ratio of glazing area to wall area by prescribed orientation. The notion that glazing thermal performance can be assessed independently on each façade is far too simplistic. This one dimensional methodology is a major shortcoming of Part J2.4 and the current ABCB Glazing Calculator. Glazing performance must be assessed and aggregated as a function of each wall orientation.

THE OBJECTIVE

It is unreasonable that building glazing solutions be assessed by individual façade without due consideration of glazing on all other facades. Buildings are not one dimensional and Part J2.4 should suitably reflect this notion. The following example is provided to reflect this shortcoming: A building may have extensive glazed on one façade and only minimal glazing on other facades. In this scenario, an initially result may be non-compliant under the DTS provisions. This may prompt an inappropriate architectural response; or an assessment under the Alternative Solution methodologies.

THE IMPACTS

We anticipate that by providing a major overhaul to the Glazing Calculator would deliver a more desirable and rigorous DTS assessment method. This would be well received by assessors and architects alike. It would also significantly reduce the likeliness of having to revert to the Alternative Solution methodologies which, given the complexity of JV3, add significant costs to a project with minimal perceived benefit.

CONSULTATION

GIW take this opportunity to offer our services in the formulation and delivery of a suitably updated Glazing Calculator tool.

Item No. 3. C.	Part J2.4: "Glazing". Update ABCB Glazing Calculator Method 2 to provide suitable cross referencing between the Glazing Calculator and the Windows Energy Rating Scheme (WERS).

THE PROPOSAL

- Part J2.4 Glazing to include a new provision as follows:

"(c) Glazing to be selected in accordance with the Windows Energy Rating Scheme".

THE CURRENT PROBLEM

Industry professionals (including designers, builders and glazing contractors) can sometime mistakenly rely on the "glass only" thermal performance ratings rather than the correct nomination of total system (glass and frame) thermal performance values. As identified in Item No. 3. A. above, the glazing calculators should comprise not only the glass and frame type but also window opening type and associated total system U-Value and SHGC.

THE OBJECTIVE

This Proposal for Change seeks to deliver greater national consistency and adherence to accurate system thermal performance requirements at the design documentation and construction stages.

THE IMPACTS

Part J2.4 - Glazing – ABCB Glazing Calculator may be improved and streamlined by linking the tool to WERS.
Window opening directional details will significantly improve the accuracy of system thermal performance inputs. The outcome is an enhanced and more accurate Part J2 calculation. This Proposal for Change will provide clarity on glazing specifications. Intern glazing contractors may be less inclined supplement the nominated glazing system with alternative (and sometimes inferior thermal) glazing systems.

CONSULTATION

This Proposal for Change is expected to result in more comprehensive specifications and window schedules at the design development phase. This directly responds to the Victorian Auditor-General's Report, "Compliance with Building Permits" December 2011, Section 3.3 – Audit results; Subsection 3.3.1 - Quality of documentation lodged at councils: "Inadequate documentation concerning glazing elements" which states:

"There was a lack of documentation concerning window schedules and associated glazing elements in 77 of 116 domestic permits and 52 of the 98 commercial permits examined. This information is needed to enable the RBS to assess compliance with requisite safety and energy efficiency standards".

Item No. 3. D.	Part J2.4: "Glazing". Clarification for "Façade area" with respect to the calculation of area extents.

THE PROPOSAL

- Update the BCA 2010 Volume One Information Handbook – Chapter Seven - Part J2 – Glazing to provide a clear definition and accurate determination of "Wall Area".

THE CURRENT PROBLEM

Misappropriation of ceiling / roof void area; sub-floor void areas; and adjacent non-conditioned building zones as part of the "Wall Area".

THE OBJECTIVE

Define the extents by which a wall area is calculated. Wall area extent can vary depending on the type of roof / ceiling configuration and the allocation of insulation.

GIW hold the view that the vertical extent of the wall should typically intercept the location of the corresponding ceiling level. This is considered appropriate given that Part J1.3 - "Roof and ceiling construction" is used to address the area above the ceiling.

An exemption should be provided for the scenario where a plenum return ceiling space is applied and all insulation is located at roof level. In such instances the wall height should include the ceiling space up to the underside of the corresponding roof insulation.

THE IMPACTS

The incorrect allocation under "Wall Area" can invalidate Part J2 .4 Glazing. We seek to have instilled greater national consistency.

CONSULTATION

We have held discussions with the ABCB Technical Support staff in relation to this issue. Both GIW and the ABCB technical representative were verbally in agreement on this position. We propose that this verbally agreed position be formalised to ensure greater nationwide consistency.

Item No. 3. E.	Part J2.4: "Glazing". Building Classification 9C –"Aged care building" to have an increased energy index figure.

THE PROPOSAL

- We propose that under Part J2.4 - Table J2.4a Energy index; there be a distinction between glazing in a Class 3 building and glazing in a Class 9c aged care building classifications. This Proposal for Change seeks to provide Class 9c buildings with an increase in Energy Index Option "A" of circa 20% within all Climate Zones.

- Link Part J2 - Table J2.4a Energy index to Part J5 – Air-conditioning and ventilation systems. Provide a suitable allowance for the application of an increase in Energy Index Option "A" linked to the nomination of a specific type of air conditioning (and its associated energy use); i.e. evaporative cooling or refrigerative air conditioning.

THE CURRENT PROBLEM

A large number of Preliminary NCC 2011 Part J2 – Glazing assessments for Class 9c buildings have resulted in a non-compliant status. In order to achieve a complaint status, glazing area reductions may deliver an architectural solution inconsistent with the building type and its usage patterns. The effect is a loss of amenity with respect to views and connection to the natural environment, which we insist is of vital importance to the wellbeing of residents.

The DTS provisions must be re-evaluated and corrected accordingly to suit these factors. Furthermore, it is unreasonable for the majority of Class 9c building assessments to result in a need for assessment under the Alternative Solutions. The DTS provisions should be amply attainable.

THE OBJECTIVE

We seek to evoke a balance between Part J2 Glazing and occupant amenity. Consultation with aged care facility operators has confirmed that many aged care residents spend a large proportion of any given day in their sole-occupancy unit. For this reason it is important that views out and a general sense of connectedness to the surrounding natural environment be a fundamental design criteria. Determination of an appropriate energy indexes under Table J2.4a. Section J DTS Provisions cannot be established in isolation and under simple terms energy demand.

THE IMPACTS

We believe that the introduction of this Proposal for Change will have a positive net result on resident's wellbeing. The increased glazing area and associated thermal heat transfer can (if suitably incorporated into the NCC) be counterbalanced with increased natural ventilation flows and air changed rates. This can be further improved upon with a reprioritization of evaporative cooling over refrigerative cooling for sole occupancy areas within Class 9c buildings.

CONSULTATION

This Proposal for Change to the NCC is based upon extensive consultation with aged care facility operators and architectural design teams. We have concluded that the current energy index is too restrictive and needs to be reviewed (or reworked) into more conducive DTS provisions. It is unreasonable that the aged care industry be directed to the Alternative Solution pathways at such a high frequency.