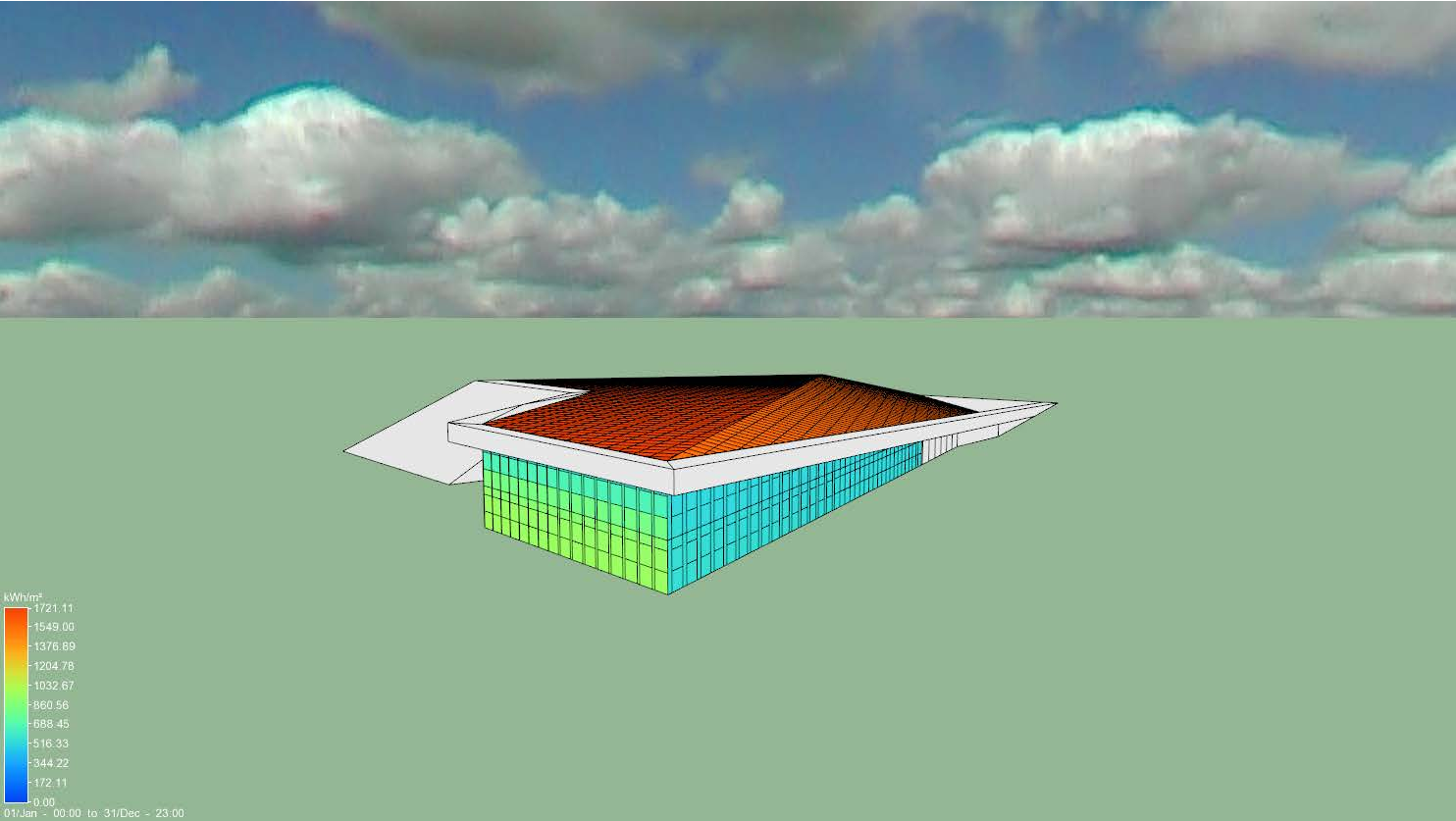


BCA 2014 Section J Amendments



March 2014

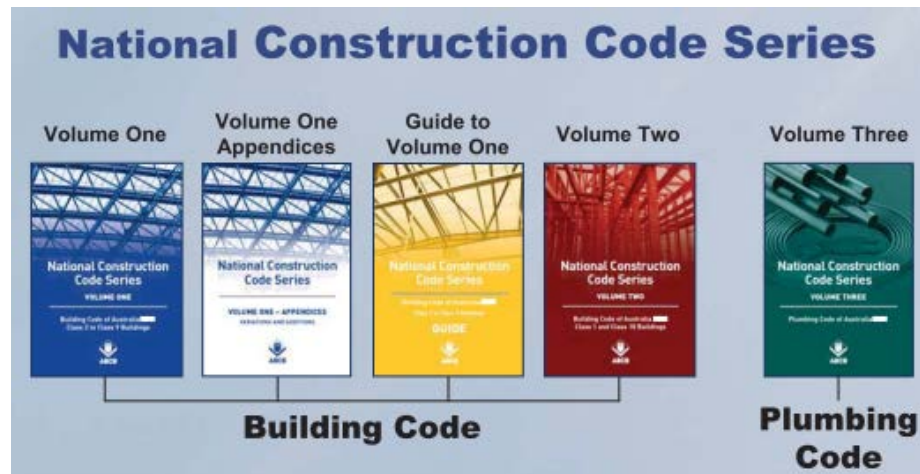
Introduction

- BCA 2013 Amendments - Recap
- BCA 2014 Amendments
- Section J – DTS(prescriptive) vs JV3(performance)
- Cost implications of DTS
- Building Envelope and Glazing
- J5 – Mechanical – AS/NZS impacts
- BCA 2015 Proposed Amendments

BCA 2014 Section J Amendments

NCC – National Construction Code 2014

1. **Building Code of Australia Volume One – Class 2 to Class 9 Buildings**
2. Volume One Appendices: Variations and Additions
3. Guide to Volume One
4. Building Code of Australia Volume Two – Class 1 to 10 Buildings
5. Volume Three – Plumbing Code of Australia



BCA 2013 Amendments – Re-cap

BCA Clause	Amendment
Part B – Structure	<ul style="list-style-type: none">• New Flood provisions• New Wind Standard• Garage Doors Standard
Part C – Fire Resistance	<ul style="list-style-type: none">• Smoke separation is required between a ward area and a treatment area.• Changes to Type A fire ratings FRL's
Part D – Access & Egress	<ul style="list-style-type: none">• DDA - Evacuation via a step ramp or threshold• DDA - Need an accessible handrail to fire stairs and ramps• DDA - “D” handles to required exit doors• Child locks to windows- bedrooms & early childcare centres• DDA signs to exit doors• New AS1657-2013

BCA 2013 Amendments – Re-cap

BCA Clause	Amendment
Part E – Fire Fighting Equipment	<ul style="list-style-type: none">• New Residential Sprinkler Standard• New Combined Sprinkler & Hydrant Standard• New Mechanical Standards• Use of lifts for egress• Lift Standards Omitted
Part F – Health & Amenity	<ul style="list-style-type: none">• New External Waterproofing Standards• New Residential Slabs & Footings Code
Part J – Energy Efficiency	<ul style="list-style-type: none">• Various definition changes• Internal glazing• Exemption for small heaters• Deemed to comply materials added to stated “R” values• Chose to apply AS/NZS 1668 2012 or old AS1668 1991

BCA 2014 Amendments

BCA Clause	Amendment
Part C – Fire Resistance	<ul style="list-style-type: none"> Combustible concessions for Class 3 timber framed construction
Part D – Access & Egress	<ul style="list-style-type: none"> Slip Resistance Quantified – AS 4586-2013 Child locks to windows- bedrooms & early childcare centres

Table D2.14 SLIP-RESISTANCE CLASSIFICATION

Application	Surface conditions	
	Dry	Wet
Ramp steeper than 1:14	P4 or R11	P5 or R12
Ramp not steeper than 1:14	P3 or R10	P4 or R11
Tread or landing surface	P3 or R10	P4 or R11
Nosing or landing edge strip	P3	P4

BCA Clause	Amendment
Part J – Energy Efficiency	<ul style="list-style-type: none"> Glazing - Stand alone provisions for internal fabric glazing Glazing - Increased energy index values for 9c aged care Lighting – Clarification around lamp and illumination density power application Hot Water Supply provisions moved to PCA, NCC Volume 3 AS/NZS 1668 2012 only – transition period ends

BCA 2014 Amendments (continued)

BCA Clause	Amendment
Part E – Fire Fighting Equipment	<ul style="list-style-type: none">• Fire Hose Reels no longer required to Class 2, 3 & 4 Bldgs.• Additional requirement for Fire Extinguishers in Class 2, 3 & 4 Bldgs.• Zone smoke control requirements to Class 5, 6, 7b or 9b parts of a residential building are no longer applicable• Smoke alarms within apartment's to be interconnected• Exit signs can be photo luminescent. New Standard ASTM E2073-10
Part F – Health & Amenity	<ul style="list-style-type: none">• Floor waste requirements enhanced Class 2, 3 & 4 Bldgs.• Carpark Ventilation – References back to the Standard
Part I – Maintenance	<ul style="list-style-type: none">• DELETED

Section J – DTS(prescriptive) vs JV3(performance)

Deemed-to-Satisfy

OBJECTIVE

To reduce Green House Gas Emissions

TARGET PROJECTS

Simple constructions with simple architecture

Alternative Method JV3

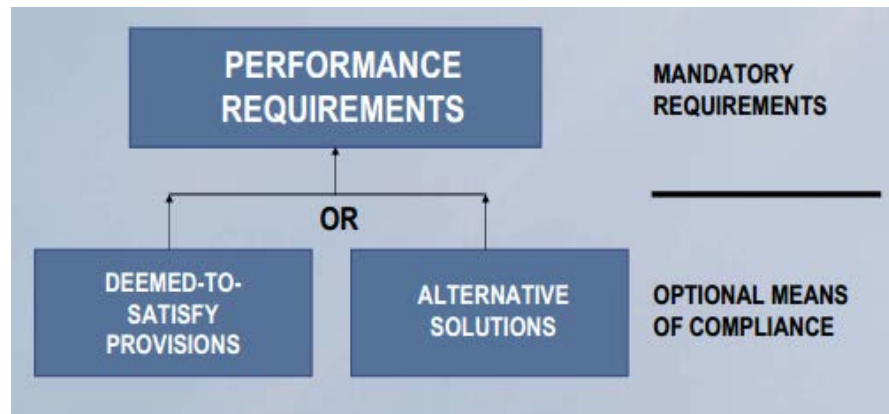
OBJECTIVE

To reduce Green House Gas Emissions

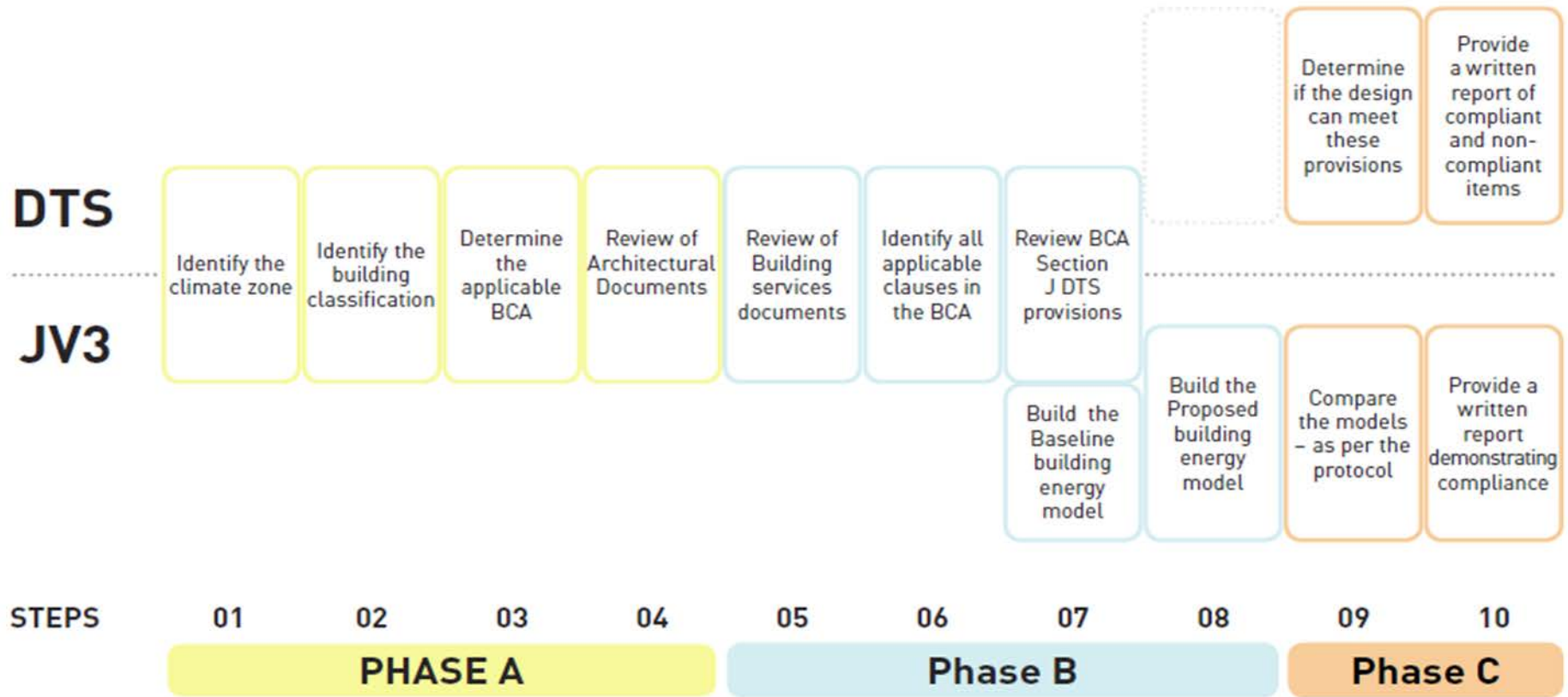
TARGET PROJECTS

Everything else

Any project aiming for predictive energy use



Section J – DTS(prescriptive) vs JV3(performance)



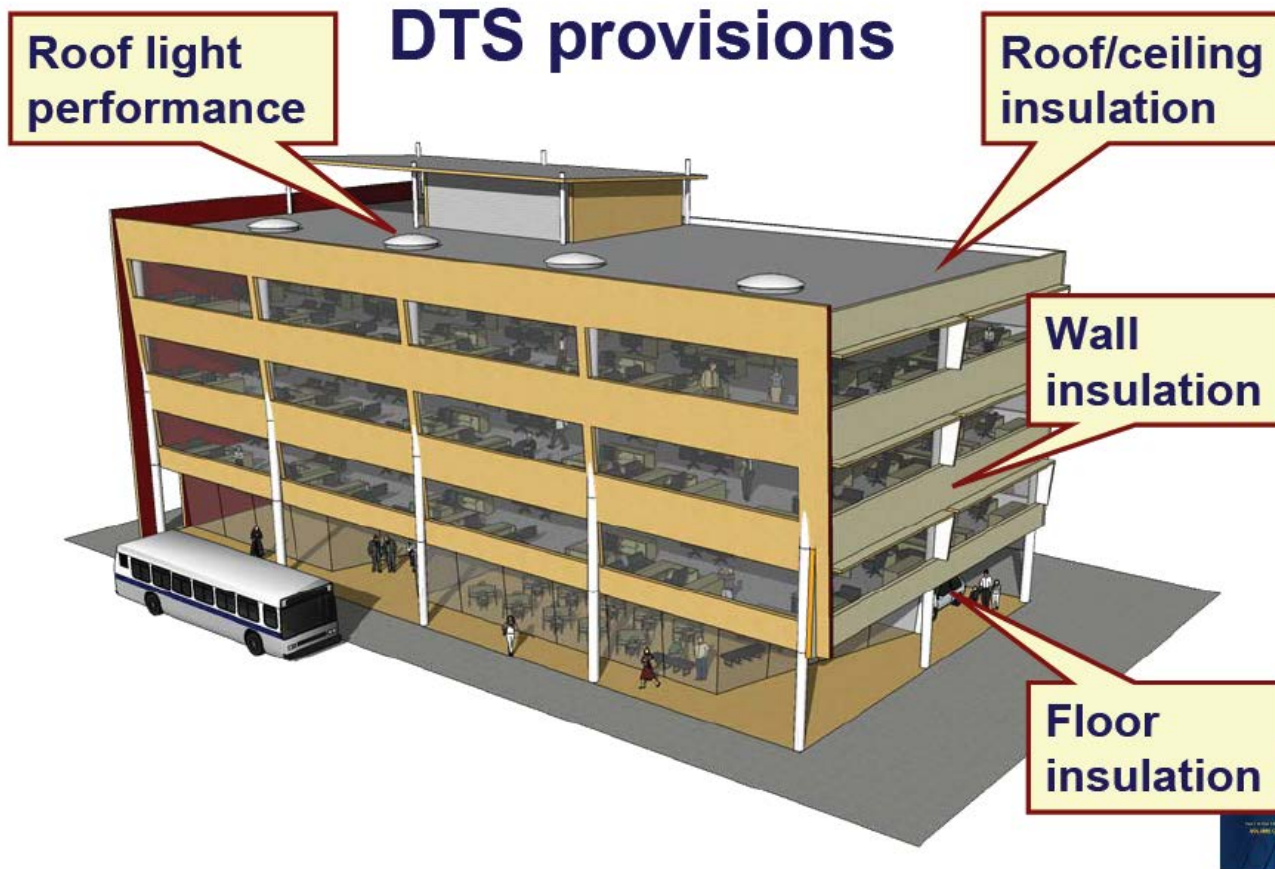
Cost implications of DTS

- Why would DTS cost more?
- Insulation and glazing performance requirements above what is really required
- Why?
- The DTS is a very coarse tool
- Orientation is split into 45° increments
- Insulation requirements are to cover worst case
- Design Better Buildings
- JV3 allows for a better design approach based on analysis



Building Envelope and Glazing

PART J1 – BUILDING FABRIC

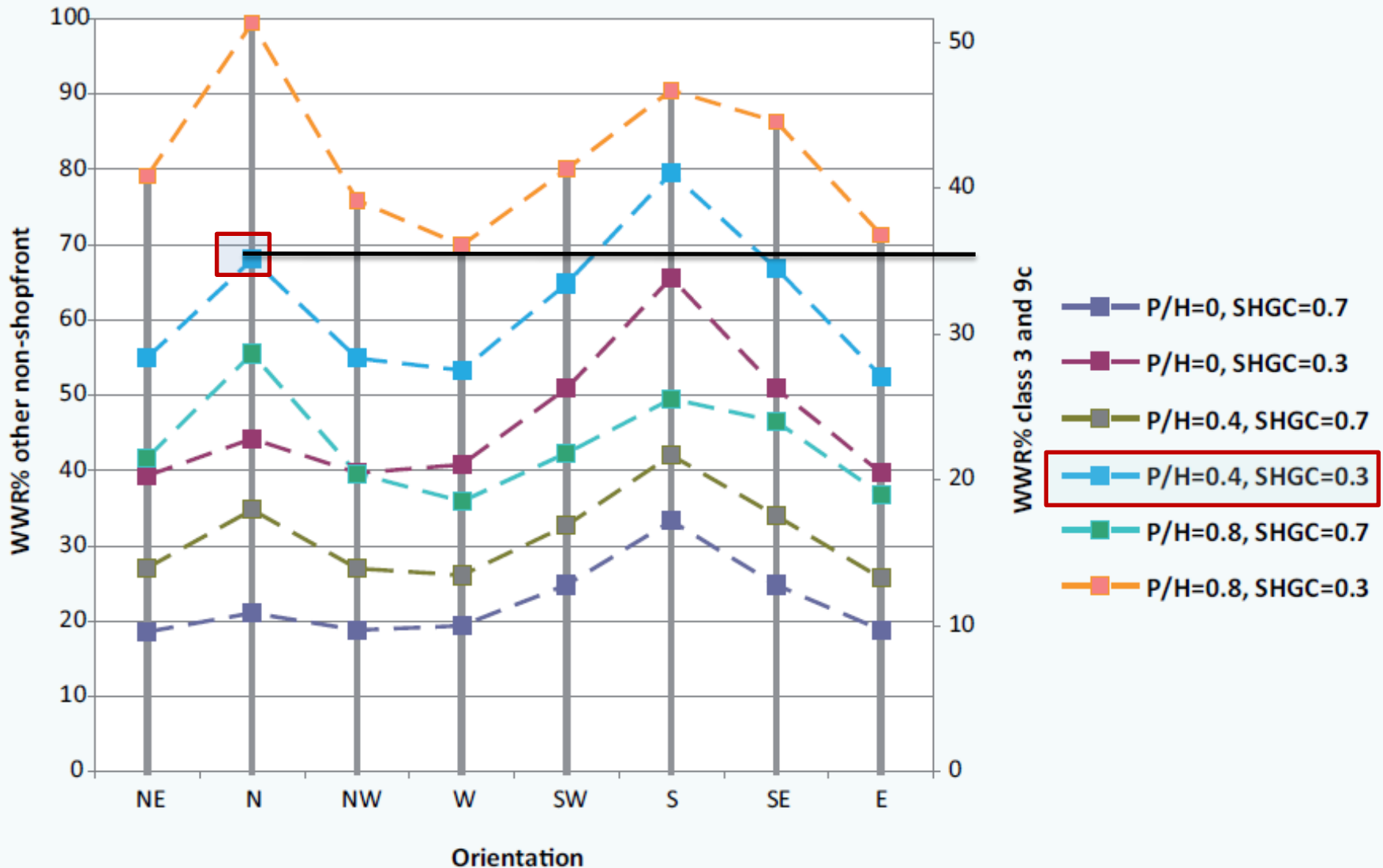


Building Envelope and Glazing

Glazing design for climate zone 1

Double glazing low-E

Zone 1 U=2.7



J5 - Mechanical

- Impacts of the new AS/NZS1668 2012
- Which is now fully applicable in 2013 – transition period is over.
- **Regulatory authorities**
- Confusion over using 1991 or 2002 Standard removed, now 2012 Standard
- 2012 Standard should eliminate the (almost) universal ***application of Alternative Solutions to ventilation rates in ordinary car parks***
- Specific guidance is given on:
 - Kitchen Exhaust Hoods, Car Park ventilation and Mechanical or Natural ventilation in general.
- In the case of Health Care buildings, specific ventilation rates and room pressurization requirements are now provided in this BCA referenced Standard.

J5 - Mechanical

- Impacts of the new AS/NZS1668 2012
 - **Mechanical services designers**
 - Car park ventilation rates in the 2012 Standard range from 20% to 30% less
 - Health Care buildings, specific ventilation rates and room pressurization requirements are now provided
 - Simplified calculations provided for assessing minimum outdoor air rates in small systems.
 - Using the new calculation procedures to optimise the Effective Outdoor Air in complex systems, designers can now offer more **energy efficient solutions** for their clients, by using credits from recycled air, transferred air and air passed through cleaning devices.
 - New Standard's calculation methods are even simpler than those in the 1991 Standard.
 - Appendices indicate parameters that should be included in Alternative Solution proposals for: Car Parks as well as Kitchen Exhausts with proprietary hoods or ventilated ceilings.

J5 - Mechanical

- Impacts of the new AS/NZS1668 2012
 - Mechanical services designers (cont)
 - Guidance given in appendices on general mechanical or natural ventilation, with specific advice on methods of performance assessment that should be used for **development of Alternative Solutions**.
 - Extensive advice is provided in Commentary throughout the Standards to raise designers' awareness of factors such as special usage or **building construction that might impact on ventilation system performance**.
 - Specific commentary is included to guide industrial ventilation system designers who must now take note of this commentary when using this Standard to comply with building regulations.
 - Ventilation calculations and hood design parameters for additional, commonly used kitchen exhaust hood types are now included. e.g: Eyebrow hoods and proprietary hoods.
 - Calculation methods for additional cooking processes now included. e.g: Woks and Combi-ovens including bread ovens.
 - Reduced exhaust airflow rates included for dishwashers and non-grease-producing ovens will give designers another **option for saving energy**.

J5 - Mechanical

- Impacts of the new AS/NZS1668 2012
 - **Equipment manufacturers and suppliers**
 - Use of “Jet Fans” or similar devices to distort ventilation airflow within car parks is likely to become more common, now that this application is included in the prescriptive clauses. ***Possible Alternative solution assessment required, CFD analysis.***
 - The use of high performance filters to permit reduced outdoor airflow rates carries with it an obligation on suppliers to replace them with filters of the same performance.
 - Large car parks require use of CO monitoring systems to control ventilation rates. Testing and commissioning by qualified technicians on completion is required by the Standard. ***Will need to match energy modelling requirements.***
 - A responsible building owner’s duty of care would include ongoing routine calibration and maintenance of these systems. Manufacturers and suppliers may provide these services.

J5 - Mechanical

- Impacts of the new AS/NZS1668 2012
 - **Maintenance contractors**
 - The use of high performance filters to permit reduced outdoor airflow rates carries with it an obligation on maintenance contractors to replace them with filters of the same performance. ***Affects static pressures and fan energy.***
 - Large car parks require use of CO monitoring systems to control ventilation rates. Routine calibration and maintenance of these systems is the building owner's duty of care. Maintenance contractors may need to engage specialists.
 - ***Demand control ventilation (DCV)*** is now included in the Standard to reduce outdoor airflow and by doing so, reduce energy costs. Population indicators are permitted for DCV operation. Maintenance of these devices is a building owner's responsibility, which will probably be delegated to the maintenance contractor. ***Affects energy modelling.***
 - Installation of partitions during tenancy fitouts can adversely impact on ventilation within a space. Specifically, the use of Transfer Air from adjacent areas within an enclosure to enhance the Effective Outdoor Air may be dependent on partition layouts within the space. Maintenance contractors carrying out simple tenancy fitouts will need to review ventilation system documents before commencing work. ***Affects energy modelling.***

J5 - Mechanical

- Impacts of the new AS/NZS1668 2012
 - **Filter manufacturers and suppliers**
 - The use of high performance filters to permit reduced outdoor airflow rates carries with it an obligation on suppliers to replace them with filters of the same performance.
 - By offering higher performance filters, manufacturers and suppliers may be in a position to assist both designers and building owners reduce a building's outdoor air energy costs.

BCA 2015 Potential Amendments

BCA Clause	Amendment
Part E – Fire Fighting Equipment	<ul style="list-style-type: none"> • Sprinkler valve room locations, to be direct from FIS, not greater than 10 m from road if no FIS • Sprinklers – Residential Aged Care Facilities
Part F – Health & Amenity	<ul style="list-style-type: none"> • Includes provisions to deal with external road and rail noise for Class 2 buildings • Natural Ventilation – Calculations must not consider certain windows and doors applicable to external noise provisions • New deemed to comply designs added for sound insulation construction
Part J	<ul style="list-style-type: none"> • A working group with the aim of "simplifying the provisions and improving compliance without changing stringency". • Out for public comment June 2014 with the aim of inclusion in NCC/BCA 2015. <ul style="list-style-type: none"> • rewrite and simplification of J5 • expanded guide • reworking of some pipe and duct insulation tasks • rework of car park ventilation tables

Summary

- BCA 2013 Amendments – note AS 1668 1991 was still applicable
- BCA 2014 Amendments – AS/NZS 1668 2012 only applies – resulting in a significant amount of change and greater flexibility
- Look at using JV3 as a tool for optimising the building design – must be done early in the design phase of works
- DTS can be more expensive even when including the cost of modelling
- Look out for the Section J draft for public comment out in June 2014 – <http://www.abcb.gov.au/en/about-the-australian-building-codes-board/abcb-media-room>