

CPD Webinar series

A CLOSE LOOK AT
PERFORMANCE SOLUTIONS AND
THE ARCHITECT'S ROLE

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Architects
Registration Board
of Victoria





Acknowledgment of Country

We respectfully acknowledge the Traditional Owners of the lands wherever attendees are situated, in particular the Wurundjeri People of the Kulin Nation, and pay our respects to their Elders past and present.



CPD Questionnaire

- Attending this webinar live and submitting this form will qualify you for 1 hour formal CPD. Certificates will be sent to the email address used to complete this form, please ensure your name and contact details are correct. This form will close 24 hours after the webinar has commenced.
- Certificates will be issued within 1 week of the closure of the quiz.

<https://forms.office.com/r/fQYHY6PAaa>

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Outline of topics to be covered:

1. What is required under the Building Act and the National Construction Code for a performance solution to be lawful and valid?
2. Who is involved in the preparation of a performance solution and who assesses it?
3. When, during the design and construction of a building, can a performance solution be prepared?
4. What is an architect's role in the performance solution process?
5. What steps should an architect follow to comply with their obligations:
 - under the Architects Act?
 - under the terms of their client architect agreement?
 - under their common law duty of care?

What is a performance solution?

- Building work must comply with the National Construction Code per the Building Regulations 2018
- The National Construction Code imposes performance requirements for different aspects of a building e.g. structure, fire resistance, energy efficiency
- There are two ways to meet the performance requirements:
 1. Follow the Deemed to Satisfy (DTS) provisions
 2. Provide a performance solution which has been formally assessed as meeting the performance requirement



Process to develop a performance solution

Clause A2G2(4) of the NCC Volumes 1 and 2 sets out the steps as follows:

- (a) Prepare a performance based design brief
- (b) Carry out analysis as proposed by the PBDB
- (c) Evaluate the results against the acceptance criteria in the PBDB
- (d) Prepare a final report



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QUESTION 1

What is a performance solution?

- a) documents or data that shows compliance with the NCC
- b) a report that assesses a design to verify compliance with performance requirements of the NCC
- c) a report that exempts part of the design from compliance with the NCC
- d) Information provided by the manufacturer

Who prepares the performance based design brief?

A PBDB is a document developed in collaboration with key stakeholders. This might be:

- the owner
- the builder or project manager
- the architect or building designer
- Engineer
- Relevant trade practitioner
- building surveyor (relevant building surveyor can have only limited involvement see section 79 Building Act)

What must be included in a performance based design brief?

Summary of the building work being carried out

Description and explanation of the proposed solution

The applicable performance requirements

The assessment process to be used

The acceptance criteria

What supporting evidence is required

Format and content of the final report

Stakeholder signoff

How should the solution be assessed?

Clause A2G2(2) of the NCC sets out 4 assessment methods. They can be used in combination if needed:

- (a) Evidence of suitability of the materials or products;
- (b) Verification method from the NCC or accepted by the appropriate authority that shows compliance;
- (c) Expert judgement
- (d) Comparison with DTS provisions

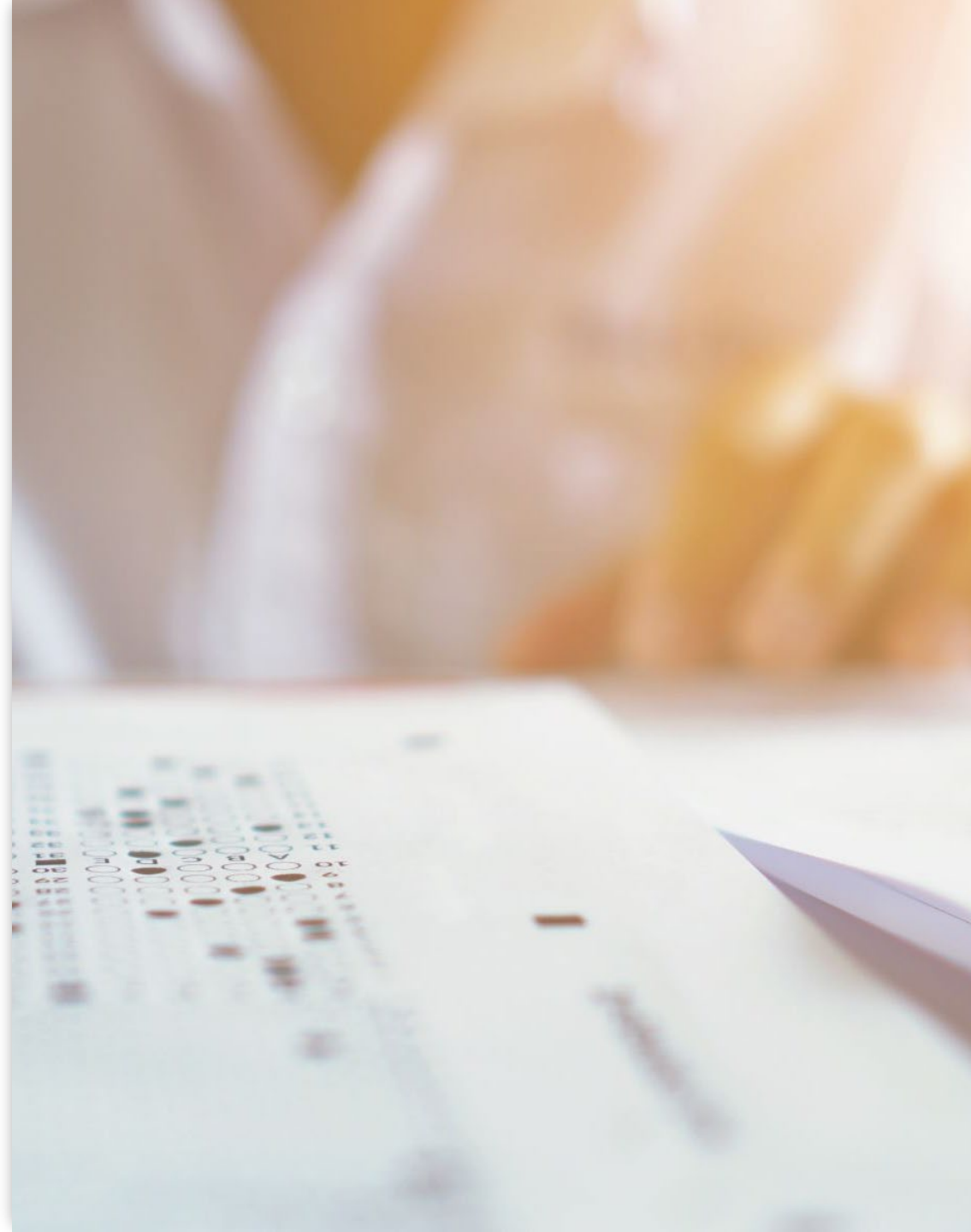


Evidence of suitability

Documentary evidence showing that a material, product, form of construction or design meets the relevant performance standard.

6 pathways to proving suitability:

1. Certificate of Conformity e.g. CodeMark certificate
2. Certificate of Accreditation e.g. BRAC accreditation
3. Certificate from a Conformity Assessment Body
4. Certificate from a professional engineer or appropriately qualified person
5. Test Report from an accredited testing laboratory
6. Other documentary evidence e.g. product technical statement



Verification Method

Verification methods are tests or calculations that are specified in the NCC as being ways to verify compliance with particular clauses.

e.g. the Access provisions in the NCC include verification method D1V2 which provide a way of modelling whether the performance requirement is met, based on the occupant profile and characteristics of the building.

Verification methods other than those specified in the NCC may also be acceptable where compliance is demonstrated.

Expert Judgement

This method might be used where modelling or testing can't be used.

An 'expert' is someone with the qualifications, skills and experience to form a judgement about whether the performance solution would meet the performance requirements.

The expert would need to clearly document their assessment process including the matters taken into account in forming their conclusion.

Comparison with DTS provisions

Provide analysis using an accepted methodology, applying the methodology to both DTS and to the performance solution and comparing the outcome, applying a defined benchmark.

The type of analysis may vary depending on the performance requirement being assessed e.g. may be computer modelling

What is included in the final report?

Clause A2G2(4) provides that the final report should include:

- (i) the performance requirements that need to be met
- (ii) The assessment methods used
- (iii) The process followed
- (iv) Confirmation as to whether the performance requirements are met
- (v) Any conditions or limitations



Who assesses the performance solution final report?

The relevant building surveyor for the building work must assess the report or evidence provided to support the compliance of the performance solution.

RBS can rely on section 238 certificate certifying compliance issued by an endorsed engineer (have immunity from liability when relying on a s238 certificate)

Can also rely on a certificate from other qualified people. This could include an architect where they have suitable qualifications and experience.

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QUESTION 2

What must be included in a performance solution report?

- a) Evidence of suitability of products
- b) Expert analysis
- c) Comparison between performance under DTS provisions and performance under the design in question
- d) Any of the above, depending on the context

Who can prepare a performance solution?

NCC doesn't prescribe who may carry out the work. This will depend on:

- the type of work to which the performance solution relates
- the type of assessment method being used e.g. expert judgement requires appropriate qualifications and experience to be an 'expert'
- The level of complexity involved in the solution

Where a certificate is being relied on, an RBS may require it to be from an engineer or a registered building practitioner so the section 238 immunity applies

Timing and the 'retrospectivity' problem

Performance solutions should be prepared at design stage, prior to the issue of the building permit and prior to the building work being carried out.

Builders, architects or other consultants may try to 'fix' non-compliant building work by having a performance solution prepared for it. This is not permissible under the Building Act if the building work has already occurred.

A performance solution has to be assessed by the RBS and form part of the building permit. Can't amend a building permit after the building work has been carried out.

What effect does a 'retrospective' performance solution have?

Where the building work has already been carried out a performance solution can't be approved by the relevant building surveyor

Does not 'cure' any non-compliance in the building work

Can do no more than provide evidence to support corrective building work not being needed or prosecution/enforcement action being taken.

Examples of 'last minute' alternative solutions

Building drawings that don't include guttering details – plumber on site identifies that DTS can't be used and a performance solution has to be prepared

Drawings or specification nominates a particular product but no performance solutions is prepared until it is due to be installed and the installer identifies the need for a performance solution

A specified product is substituted by the builder and it is later identified that a performance solution would be needed for the alternative product




Standardised performance solutions

Example 1: standardised PS in designs for volume builders – there are standard building designs for customers to choose from. They may incorporate a standardised type of PS.

Example 2: product manufacturer or installer offers a standard performance solution for the use of their product.

Be wary of standardised performance solutions. A performance solution must account for the specific site characteristics. There must be a thorough report prepared using an assessment method that accounts for the site characteristics.

An aerial photograph of a construction site. A yellow excavator is positioned on a dark, uneven ground surface. To the left, there are several blue corrugated metal structures, possibly temporary site offices or storage units. The site appears to be in the early stages of development, with various materials and equipment scattered around.

Impact of staged permits or D&C procurement

- Common practice in larger developments for RBS to issue staged building permits
- Where this occurs, a performance solution can be issued at any stage, so long as the work has not yet been carried out
- Risk with staged building permits is lack of clear picture as to end result as design is not locked in. RBS must be satisfied that the work will be compliant
- Need to check in with other consultants, to ensure the performance solution does not affect anything else. For example, if a PS is prepared for external wall materials at stage 3, may need to get revised fire engineering report.

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QUESTION 3

When can a performance solution be prepared?

- a) anytime during the project
- b) only before the first stage building permit is issued
- c) prior to the relevant building permit being issued
- d) When an NCC non-compliance in the building work needs to be resolved

Obligations of the relevant building surveyor

It is the relevant building surveyor (RBS) job to assess the building design and determine whether it complies with the NCC.

The RBS should identify when a design does not comply with the NCC and where a performance solution is required.

State Building Surveyor pushing for building surveyors to refuse to issue permits where building drawings are incomplete

What is an architect's role in the performance solution process?

Architects may be involved in a range of ways:

- Identifying the need for a performance solution
- Liaising with the RBS/Owner/Builder regarding its preparation
- As a stakeholder in the development of the PBDB
- Actually preparing/certifying the performance solution



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QUESTION 4

Can an architect prepare a performance solution?

- a) No. Architects don't have the required expertise.
- b) Yes. The architect can decide whether they are prepared to issue a performance solution.
- c) No. Building surveyors won't accept a performance solution prepared by an architect.
- d) Yes, if the architect has the requisite expertise and follows the process in the NCC

Architects' obligations relating to performance solutions

All work carried out by architects attracts obligations, including:

1. Statutory obligations under the Architects Act
2. Contractual obligations under the client architect agreement.
3. Common law duty of care.



A close-up photograph of architectural blueprints. A rolled-up blueprint is in the foreground, partially unrolled, showing detailed technical drawings with lines, dimensions, and text. The background shows more blueprints spread out, with various annotations and measurements visible.

Obligations under the Architects Act

- Architects Act and Code of Conduct in Architects Regulations impose requirements of professional and competent conduct
- Need to ensure that building drawings at building permit stage are complete so that any need for a performance solution is identified
- Have enough knowledge to identify potential need for performance solutions at preliminary design stage and for town planning drawings

Contractual obligations

What does the client architect agreement require? Consider whether the agreement:

- Specifies that the architect must produce a design that complies with all legislative requirements
- Makes the architect the lead consultant who is responsible for coordinating the work of the other consultants and ensuring compliance
- Imposes specific obligations in relation to dealings with the relevant building surveyor

In any of those scenarios, a failure to ensure performance solutions are prepared may be a breach of contract

Common law obligations

Common law duty of care to client to prevent loss and damage – architects must conduct themselves with the standard of competence expected of a reasonable, skilled architect.

Potential common law duty of care to subsequent purchasers of the building.

How to discharge those obligations

1

Pay careful attention to the products and methods specified in drawings or in the specification. Consider whether they are likely to meet DTS or may need a performance solution

2

Get advice from the RBS or a consultant building surveyor

3

Keep the RBS abreast of any design changes or proposed product substitutions or approvals

4

Get confirmation from the RBS as to whether any performance solutions will be required. Get RBS to do a regulatory review at an early stage

5

Ensure that performance solutions are thorough, clearly documented and prepared by someone who has the qualifications and expertise

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QUESTION 5

What steps should architects take to comply with their obligations in relation to performance solutions?

- a) Get the RBS to deal with them
- b) Tell the builder to resolve it with the RBS
- c) Prepare the performance solution themselves
- d) Check the design against the NCC, raise it with the RBS and make sure product substitution approvals include consideration of NCC compliance

Obligations under a design and construct contract

Design and construct procurement does not change the obligations for a compliant design

Where RBS has signed off on the design, the builder cannot just substitute materials where that might have an impact on compliance

Architects asked to approve substitutions should take care to check compliance

Refer to RBS to ensure they have identified whether a substituted material, product or system will require a performance solution

Ensure that any performance solution is properly prepared and assessed

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QUESTION 6

Will a performance solution be required where there is a proposed product substitution by a builder under a design and construct contract?

Useful links

VBA practice note (currently under review):

https://www.vba.vic.gov.au/building/building-resource-hub/practice-notes/practice-note-sp-1#building_performance

ABCB:

<https://ncc.abcb.gov.au/sites/default/files/resources/2022/Handbook-Access-verification-methods.pdf>

<https://www.abcb.gov.au/sites/default/files/resources/2022/UTNCC-Using-assessment-methods.pdf>

Any questions?



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