



Remedial Building Industry

DISCUSSION PAPER

The DBPA and Implications for Waterproofing of Class 2 Buildings

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1. Introduction

ACRA supports the DBPA and we are seeking to provide guidance to our members to ensure they can comply with the DBPA. The guidance particularly relates to waterproofing of predominantly aging buildings. Most remedial works have previously been considered as *exempt development*.

One of the challenges for the remedial building industry in meeting the DBPA requirements for waterproofing works on Class 2 buildings, is, that we are required to apply today's standards and requirements to old existing buildings (or poorly designed/constructed new buildings) that have inherent deficiencies.

Compliance with current codes has always been an aim for remedial practitioners. However, where an aging building is 'unable' to meet current codes, alternative "*Remedial Solutions*" are often developed to solve the issues, as best as practicable.

By way of example, two reasons that an aging building may not be able to meet current codes are:

- i. Dimensions or existing conditions that preclude the solution meeting the current codes; and/or
- ii. Owners unable/not willing to bear the cost of a fully compliant solution.

Previously, as *exempt* works, it was not necessarily always the intent or necessity of remedial waterproofing work to bring existing buildings into full compliance with current standards.

Whilst we understand this is the intent of the DBPA, it is also not always possible to do so. This may be due to physical or financial obstacles. In that case, the overriding intent of the remedial sector is to ensure water penetration issues are effectively addressed so that the leaks cease in a cost effective and practical manner.

Remedial waterproofing is sometimes undertaken solely to repair an isolated water penetration issue (not replace an entire waterproofing system that is otherwise performing satisfactorily, notwithstanding possible technical non-compliances with current standards).

Consideration is therefore needed in how we now approach our work, satisfy the legislative requirements whilst also **supporting property owners to find financially viable and practical solutions for their older Class 2 buildings requiring "*Remedial Solutions*."**

2. Performance Requirements

Under the DBPA, remedial practitioners need to comply with the BCA by either satisfying:

- i. the relevant “Deemed to Satisfy” provision; or
- ii. providing evidence that the design is a “Performance solution” with verification that the design or system complies with the relevant requirements of the NCC and 'sets out the basis on which it is given and the extent to which relevant standards, specifications, rules, codes of practice or other publications have been relied upon'.¹

If it is possible to achieve a Deemed to Satisfy solution, then this can be readily achieved, and a *Design Compliance Declaration* provided.

If we can only partially achieve a Deemed to Satisfy solution, and a Performance Solution is required to meet the Performance Requirements of the NCC then what pathway is appropriate and what supporting documentation do we need to base our declarations on?

CASE STUDY:

For a project with the balcony being re-waterproofed and tiled, where only a 50mm turn up can be provided at the door threshold without removing the doors, and the Deemed to Satisfy requirement is 70mm. The doors themselves do not leak. The Owners understand that unless the doors are removed, the system cannot be Declared as compliant and agree to carry the risk of leaks associated with the non-compliant termination height.

Question:

Can a *professional engineer* or an *appropriately qualified* person in this case verify by reference to any standards or specifications that this “Performance Solution” demonstrates that it fulfils 'specific requirements of the BCA'?

Answer:

The above solution cannot be verified to show that it is at least equivalent to the Deemed to Satisfy provision as there are no testing methods available for this solution.

Discussion point:

The NCC Evidence of Suitability Handbook (**Handbook**) provides a framework (Figure 2.1 page 4) which outlines a hierarchy of evidence, which may be used in proving compliance with the NCC.

It appears that the pathway for Design Practitioners undertaking Remedial Works would be to obtain a:

“Certificate or report from a professional engineer, recognised expert or other appropriately qualified person as appropriate”

¹ Handbook: Evidence of Suitability [published June 2021:Version 2.2 ABCB] (the **Handbook**)
https://www.abcb.gov.au/sites/default/files/resources/2021/HandbookEvidenceofSuitability_2021%20%282%29.pdf

However, we note that as stated (page 5) “*the suitability of the selected option/s will be subject to acceptance by the appropriate authority*” and that the evidence of suitability must demonstrate how the *Performance Solution* will meet the performance requirements of the BCA.

What is the *appropriately qualified person* to base their verification on if there is no tested solution, adopted methodology or documentary evidence available to support the *Remedial Solution*?

Note: Clause A4.2(5) of the BCA 2019 states in its explanatory information that ‘*A proponent undertaking a Performance Solution can use any element or edition of any document, if they help satisfy the Performance Requirements. They do not need to use the documents listed in Schedule 4.*’ [**emphasis added**]

Query is: what if there is no 'document' to 'help satisfy the Performance Requirements?

Discussion Point:

If the Performance Solution needs to ‘meet or exceed the Deemed to Satisfy provision’, but obviously does not, (based on the example above) despite the consultants being of the opinion the remedial solution may work in the circumstances and taking into account the ‘space’ they are trying to work with, consideration must be given as to liability exposure for that remedial practitioner.

Does it come down to Consultant being comfortable in basing their remedial solutions on untested solutions?

Risk outcomes - varying opinions and different design approaches of different experts leading to varying solutions and potential dispute.

3. Documentation

The level of documentation is also an issue. NSW Fair Trading’s Design Practitioners Handbook² outlines a range of drawing details required for waterproofing works. These are applicable to new buildings and it is only meant to be a ‘Guideline’. However, our members have interpreted this to mean that they are required to produce these drawings for their remedial projects.

For many remedial works projects this level of drawing and documentation would be considered as excessive. For Owners, they would also consider this level of documentation to be excessive.

The Remedial Industry will be accused of “trying to make the job bigger than it needs to be”. Potential cost increases for remedial projects to allow compliance with the DBPA will be experienced.

² Design Practitioners Handbook

https://www.fairtrading.nsw.gov.au/_data/assets/pdf_file/0006/990528/Design-Practitioners-Handbook-3.pdf

Discussion point:

Guidance for Remedial Works is required.

Is it simply enough to provide a written Scope and supporting specifications, with some diagrams of the work, or must a bundle of drawings and details be developed setting out the expected details?

Would the introduction of a “Remedial Solution” be feasible in supporting the industry to comply with the DBPA?

4. Conclusion

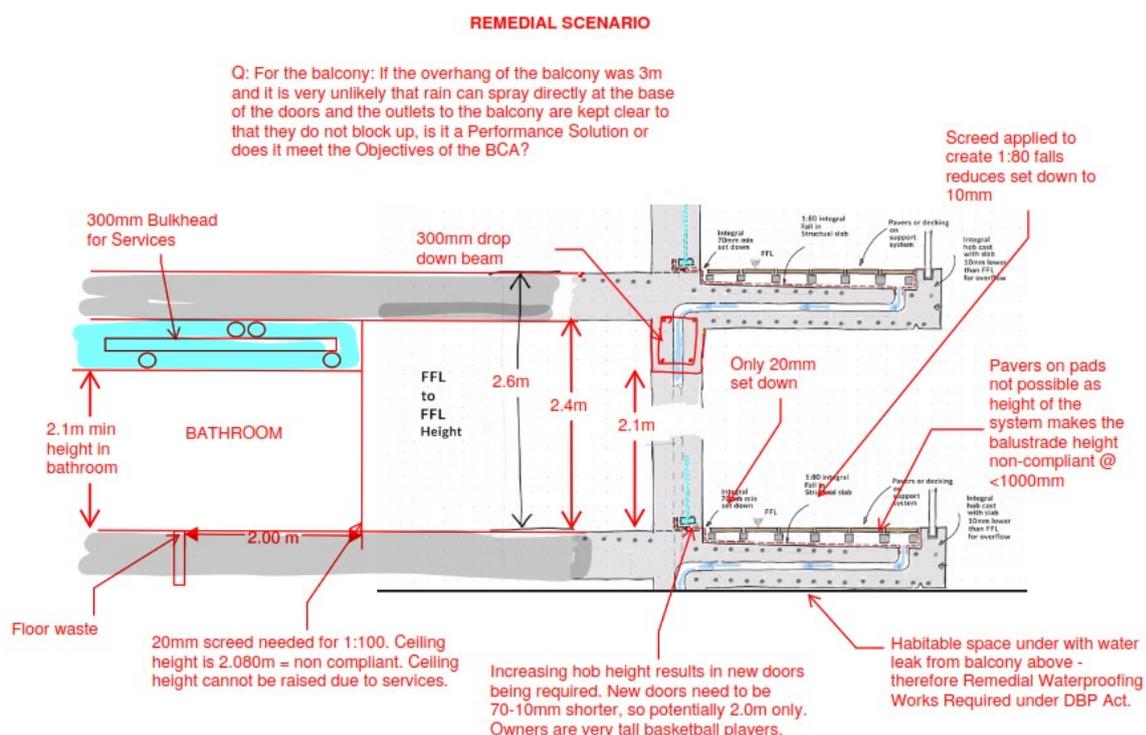
These are uncharted waters for the remedial industry, and not necessarily easy to adopt/apply the DBPA when we are most often working with old buildings which do not fully comply with current building standards.

The challenge is how can the remedial industry meet the DBPA and find a balance in solving the remedial issues, without having to address potentially numerous non-compliant building elements, non-related to water ingress.

In demonstrating the challenges and the potential oncosts to homeowners of Class 2 buildings, we provide three “idealised” remedial building examples in relation to:

- i. Bathroom waterproofing; and
- ii. Balcony waterproofing.

A few of the potential issues are outlined in the following sketch, incorporating the conflicting elements:



EXAMPLE – Balcony

Issue

An apartment block, converted from a hotel, has water penetration issues originating from the balconies. Historically, in addressing the failed waterproofing the replacement balcony waterproofing was applied as liquid membrane on top of the pre-existing tiles; there is no cavity flashing; and potentially the hob is not to BCA standard.



Remedial solution

The remedial solution is to demolish the tiles, re-screed and re-waterproof with new cavity flashings. The upturn of the waterproofing may not meet the 50mm above tile level requirement. The remedial solution addresses the water penetration issues and would cost approximately \$20,000 - \$30,000 per balcony [the cost varies according to balcony size].

BCA Compliance

If the Owner’s Corporation was required to meet the BCA requirements, potentially the remedial scope would require review and may need to include: removal of balcony doors; hob re-build; new door installation; membrane termination under the door; and internal repairs. In meeting BCA requirements, the remedial project costs have the potential to increase exponentially; at least double the project costs.

a. EXAMPLE - Balcony

Issue

Long term issue of water ingress via the slab into occupied apartments below. The Owners’ Corporation has limited funds and 18 small balconies to remediate. The balconies are tiled and have a single skin unreinforced masonry balustrade. The balustrade cannot be certified as structurally adequate to current AS1170.1 requirements (photo opposite).



At the door threshold, the step down is minimal. The door head is hard against the slab drop beam (photo below).

Remedial solution

In meeting the Owners’ Corporations funding limitations and risk prioritisation, the water ingress will be addressed first [with balustrade replacement and window replacement flagged for a future date when funds permit].

Detailing of the membrane upturn has been scoped to turn up the inside face of brickwork only.



Falls will be corrected, and new internal wastes provided to manage nuisance water at the perimeter, replacing original lateral outlets. While reinstating the existing sliding doors, an increased angle will be provided for membrane termination, but at a finished height below the required Termination Height for the locality.

The approximate cost of the remedial solution would be \$4,000 per balcony.

BCA compliance

It is not clear, in this situation, how the design declaration will meet BCA requirements without the balustrade and sliding door replacements occurring at the same time. Should this be required, the potential cost of each balcony could increase to \$9,500, which is at minimum a 130% increase to the project cost.

b. EXAMPLE - Bathroom

Issue

An Owners' Corporation has multiple bathrooms with leaking shower recesses, causing significant mould build up in impacted areas (photo opposite).

Floor ceiling heights throughout the apartments meet the BCA **minimum** requirements. There are no falls to the bathroom drainage outlets. To meet the required falls, screed is required. The application of the screed may result in the ceiling height being too low and not meeting BCA requirements.

Remedial solution

Create minor falls and re-waterproof the shower recess in mitigating the water penetration issues.

BCA compliance

In submitting a design declaration and in meeting BCA requirements, potentially the bathroom ceiling height may need to be increased. There are further issues here, which may be impacted by services located in the ceiling. There may be significant costs for the Owners' Corporation to absorb, in meeting the immediate water penetration issues.

