

CROSS-AUS LTD

Confidential Reporting on Structural Safety

A.C.N. 627 969 484
PO Box 1367, Kenmore Hills, Queensland 4069, Australia

www.cross-aus.org.au

Date: 23 July 2019

By email to BCR@finance.nsw.gov.au

Building Stronger Foundations - Discussion Paper, June 2019

Submission from CROSS-AUS Ltd (Confidential Reporting on Structural Safety – Australasia)

We are pleased to make this submission in response to the NSW Government discussion paper – Building Stronger Foundations.

A. General Issues

Before responding to the specifics of the discussion paper we wish to address the following fundamental issues:

A.1 Scope:

Although much of the focus has been on multi-storey residential construction, it is our recommendation that the building reforms and legislation should apply to all Class 2 to Class 9 buildings.

A.2 Harmonisation:

The issues raised in this discussion paper are not confined to NSW but apply equally well to all states and territories, and we would strongly encourage that there should be harmonisation of the relevant legislation across all jurisdictions. Accordingly we are pleased to note that at the Building Ministers' Forum meeting in Sydney on 18 July it was agreed that: ***All jurisdictions support a national framework to address the issues identified in the Shergold Weir Building Confidence Report.***

This national approach needs to address the fundamentals of what is wrong with the current system (as identified in Shergold Weir) and in particular ensure all building works (design and construction) are carried out by competent persons working within a nationally-agreed risk management framework of Building Control. This framework should be based on the principle that the relevant "dutyholder" (see below) that creates a building safety risk should be responsible for managing that risk and providing the relevant reassurance to the appropriate body.

A.3 Building Control:

Within each jurisdiction there needs to be one regulatory authority responsible for Building Control. This could be the proposed Building Commissioner, who is in effect the Principal Certifying Authority, and who would be responsible for overseeing design, construction and management of buildings, with the powers to investigate and take disciplinary action against building practitioners that engage in improper conduct. Again the form of Building Control should be consistent across all states and territories.

A.4 Dutyholders:

For simplicity we have used the term "dutyholder" to identify the key responsible parties who are involved in the delivery of a building project and who have different roles and responsibilities. If we

are to ensure that the appropriate standard of design and construction is being delivered, the issue of competence and working within one's area of competence must be addressed.

We propose that the key roles be identified as follows:

a. **Client (Building Proponent)** - Any person (or entity) for whom a construction project is carried out as part of their business. The client's responsibilities get little mention in this discussion, yet under all WHS legislation they have a critical role. Thus the legislation should make clear that the Client/Building Proponent has responsibilities that, as a minimum, would include making suitable arrangements for managing the building work so as to deliver compliance with building regulations and other building safety requirements including the allocation of sufficient time, resources and prioritisation. This would cover the selection and appointment of Building Designers and Builders with the necessary skills, knowledge, behaviours and expertise to discharge their functions relating to building safety effectively.

b. **Principal Building Designer** – The building designer appointed by the Client to control plan, manage, coordinate and monitor the pre-construction phase, and to ensure that the project complies with the building regulations. Traditionally this has been the Architect, although it could be whoever is appointed to lead and coordinate the design team. It should not be a Project Manager unless they are taking responsibility for the design. The Principal Building Designer would be responsible for providing overall certification of the building design by ensuring that each discipline takes responsibility for and certifies its own area of the design.

c. **Principal Contractor** – The building contractor appointed by the Client to plan, manage, coordinate and monitor the construction phase. The Principal Contractor carries full responsibility for the overall construction of the project, including the work of all other building contractors and sub-contractors involved in the project, and would be responsible for certifying that the completed building complies with the building regulations.

d. **Building Designer** - Any person (or entity) who carries on a trade, business or other undertaking in connection with which they prepare or modify a design for the project. This would include all the building disciplines required for the project such as Architects, Engineers (Structural, Civil, Mechanical, Electrical, Fire, Acoustic, etc.). For each design discipline, e.g. Structural Engineer, there would be one lead designer (the "Engineer of Record") who would take overall responsibility for that discipline and provide certification that the design complies with the building regulations.

e. **Building Contractor** - Any person (or entity) who carries out, manages or controls construction work (e.g. building, altering, maintaining or demolishing a building or structure). Anyone who manages this work or directly employs or engages construction workers is a contractor.

f. **Building Occupation** – This is another neglected area, and consideration should be given to ensuring that there is an "accountable body" responsible for the occupation phase of the building. The accountable body would be legally responsible for ensuring that building safety risks to occupants are reduced so far as is reasonably practicable. They may appoint professionals, such as a building safety manager, to support them in fulfilling this responsibility but may not, in doing so, delegate accountability to another party.

A.5 Project Delivery:

We recognise that there are several methods of project delivery with Design & Construct being the preferred method for many projects. The above principles of responsible "dutyholders" would still apply with the Principal Contractor now engaging the Building Designers and taking overall responsibility for the design as well as construction.

A.6 Registration and Licensing:

All Building Designers who provide design services should be required to be registered.

For the Engineering disciplines, registration should be required for the provision of all Professional Engineering services similar to the Queensland Professional Engineers Act. This would be a co-regulatory scheme with the relevant Engineering Institutions, such as Engineers Australia and the Institution of Structural Engineers, who become approved “Assessment Entities”.

We recognise that each jurisdiction will have its own regulatory body (e.g. Board of Professional Engineers of Queensland); however there must be national consistency and mutual recognition of registration between states and territories. We do not want the situation where an Engineer has to be registered separately in each state and territory.

Registration by itself is a starting point and will not necessarily ensure that the required standards of design and construction are being met. Thus it is important to emphasise that as well as being registered, the Building Designer must operate within their area of expertise and that the regulatory body responsible for registration must have the powers to investigate and take disciplinary action against building practitioners that engage in improper conduct.

For Building Contractors, the existing licensing schemes are inadequate, and there should be a similar scheme of registration of all those who are responsible for delivering the final constructed project such as site managers, engineers, foremen, site supervisors and leading tradespeople.

A.7 Confidential Reporting:

We note that one of the recommendations from the [Senate Economics References Committee report into non-conforming building products](#) is that: *The committee recommends that the Australian Government develop a confidential reporting mechanism through which industry and other stakeholders can report non-conforming building products.*

We draw to your attention that there is already such a scheme for structural issues - [CROSS-AUS](#) (Confidential Reporting on Structural Safety – Australasia) that was established in Australia in 2018 by the Institution of Structural Engineers and is linked to parallel schemes in the UK (CROSS), USA (CROSS-US) and Southern Africa (CROSS-SA).

Each of these CROSS schemes collects voluntary reports on structural safety issues and freely shares the learning from these reports with industry on a no-blame basis. The aim is to help to prevent future failures and improve public safety.

In the UK, [CROSS \(Confidential Reporting on Structural Safety\)](#) has been operating successfully since 2005 and is sponsored jointly by the Institution of Structural Engineers, the Institution of Civil Engineers and the UK Government Health and Safety Executive.

We further note that the UK Government in its response to the [Building a Safer Future Report](#) by Dame Judith Hackitt states that: *the best systems of oversight and regulation ensure that the people operating within them learn from their mistakes, without fear of blame or retribution. Effective reporting systems will be crucial to trust in the new building safety regulatory system, to development of a safety-focused culture in the sector, to better understanding of safety risks and issues and, ultimately, to safer buildings.*

The UK Government proposals for safety reporting for all those who work on buildings are to:

- Expand and strengthen the existing CROSS scheme to collect more voluntary reports on structural safety and to have a scheme for collecting reports on fire safety issues.
- Implement a new mandatory occurrence reporting system to the building safety regulator for key duty holders to facilitate reporting of fire and structural safety issues.

The Directors of CROSS-AUS would be pleased to discuss the further development of CROSS-AUS.

B. Response to NSW Discussion Paper - Building Stronger Foundations:

We are pleased to make the following submission in response to the four specific key reform proposals outlined in the NSW Response, viz:

1. Requiring ‘building designers’, such as architects, engineers and other building practitioners who provide final designs and/or specifications of elements of buildings to **declare that the building plans specify a building which will comply with building regulations, including the BCA.**

These design practitioners would need to **demonstrate how performance solutions would satisfy the requirements of the BCA.**

Builders would also have to **declare that buildings are constructed in accordance with building plans.**

2. Introducing a new **registration scheme for currently unregistered designers and commercial builders** who intend to make declarations.

Only authorised practitioners would be entitled to declare plans, how any performance solutions comply with the BCA and that a final building complies with its plans.

3. Ensuring that **building practitioners owe a common law duty of care** to owners’ corporations and subsequent residential homeowners, as well as unsophisticated development clients.

4. **Appointing a Building Commissioner to act as the consolidated regulator** for the construction industry, with powers to investigate and take disciplinary action against building practitioners that engage in improper conduct.

The NSW Response reform proposals focus on high-rise residential construction; however it is our recommendation that they should apply to all Class 2 to Class 9 buildings, as noted in A.1 above.

Although CROSS-AUS Ltd is particularly concerned with Structural Safety and our response will focus on the role of the Structural Engineer, we will also include reference to the role of other practitioners and stakeholders where relevant.

B.1 Role and function of ‘building designer’.

We assume that the Structural Engineer would be included within the category of “Building Designer” together with all other disciplines.

1.1 Declaring that plans comply with the BCA and other relevant requirements: Agreed

For the Structure, this declaration should be made by the Registered Structural Engineer for the project and provided after the structural design has been completed.

Additionally, we strongly recommend that there should be a further declaration that the structural design has been checked by another Registered Structural Engineer who is independent of the structural design team for that project.

And for major or complex structures (e.g. more than a certain height or number of storeys; or of novel/unusual construction) this design check should be provided by a separate third party Registered Structural Engineer who is fully independent of the Structural Design Team.

If the declaration is made at the completion of design, then any variations during the design stage will have been incorporated automatically.

If it is a fast-track project to be constructed in stages, the certification could be provided in stages accordingly.

1.2 Explaining through documentation how any performance solutions used in the design and construction of the building comply with the BCA:

For all structures a Design Basis Report should be part of the certified design documentation. Most structural designs are a combination of performance and deemed-to-satisfy solutions and as such

there should be no need to separately justify a performance solution unless it is an unusual or novel form of construction. In the latter case the independent third party design check would apply as in 1.1 above.

1.3. Declaring that buildings are constructed according to building plans:

We agree that the Builder should be required to certify that the building has been constructed in accordance with the certified design documentation. This should be the responsibility of the Principal Contractor and be provided prior to handover of the completed building.

However we would strongly recommend that the 'Building Designers' should also have a role during construction to carry out inspections of all critical elements and submit regular reports (e.g. monthly) to the certifying authority that they have inspected the works and that they are satisfied the works are constructed generally in accordance with the design documentation. For the Structural Engineer this would include all critical elements of structure such as footings, columns, primary beams, transfer structures and the like.

Changes during construction frequently occur and if initiated by the Client/Owner via the Building Designer, then the design documentation should be revised and certified as in 1.1 above. However if initiated by the builder, it should be the responsibility of the Principal Contractor to first obtain approval from the Client/Owner and then to have the documentation revised and re-certified by the original Building Designer as in 1.1 above. Finally it remains the responsibility of the Principal Contractor to certify that the construction is in accordance with the revised design documentation as above.

It is critically important to have an accurate As-Built record of the completed building and if the above process is followed this should be the result. This As-Built record should be lodged with the regulatory authority (proposed Building Commissioner) prior to handover.

B.2 Registration of 'building designers'

The proposal is that 'building designers' would be registered for the specific functions of signing-off plans and declaring that plans are compliant with the BCA.

It is our recommendation that registration should be broader and apply to all services provided by Building Designers and there should be a nationally consistent scheme across all jurisdictions as described in section A.6 above.

B.3 Duty of care of building practitioners

With regard to Building Designers who belong to a Professional institution (e.g. Institution of Structural Engineers), this is largely covered by the relevant institution's code of conduct.

However this could be strengthened by the inclusion of a Code of Practice within the registration scheme proposed in A.6 above, e.g. the Board of Professional Engineers of Queensland Code of Practice states: *A registered professional engineer must bring to the engineering task knowledge, skill, judgment, and care that are of a standard which might reasonably be expected by the public or the registered professional engineer's professional peers.*

B.4 Appointing a Building Commissioner to act as the consolidated regulator.

The role of the Building Commissioner is unclear at this stage other than it will *have powers to investigate and take disciplinary action against building practitioners that engage in improper conduct.*

We assume therefore it will become the Principal Certifying Authority responsible for Building Control we refer to in A.3 above.

It is also unclear whether the Building Commissioner would be responsible for registration and licensing or whether this would be a separate body. For the Engineering disciplines it is our recommendation that there should be a separate body similar to that of the Board of Professional Engineers of Queensland.

We note that the NSW Response proposed that declared plans would need to be lodged with the Building Commissioner and that the Building Commissioner would have the power to audit the documentation to ensure compliance.

We agree that the certified/declared plans and documents should be lodged with the Building Commissioner. However if the Building Commissioner is going to conduct audits it will need to be fully resourced with experienced building designers of all disciplines who would be capable of carrying out a full design check.

Provided that the design certification includes independent checking as described in 1.1 above, then the designers' declaration should suffice.

It is also most important that the certified As-Built record of the completed building is lodged with and retained by the Building Commissioner to ensure it is accessible in the future.

Although we believe we have covered most of the issues raised, we provide below a brief response to the individual feedback questions in the discussion paper. Where no answer is provided, we consider that the particular question is not within our scope.

C. Feedback questions (from discussion paper):

1. What kinds of plans should be signed off and declared by a statutory declaration? *All Plans used at the start of construction, and the same plans at end of construction including any amendments (i.e. the As-Built Plans). This can be staged to suit construction.*
2. Could plans be statutorily declared at the CC/CDC stages? If not, why not? *Yes*
3. To what extent should changes to plans be submitted to the regulator? *All changes including new drawings, new details, changes in material.*
4. Should a statutory declaration accompany all variations to plans or only major variations? *All variations, else the question of what is major comes into play.*
5. Are there any obstacles that would prevent a person from submitting a statutory declaration for variations? If so, what are those obstacles? *The only obstacle would be commercial arrangements.*
6. What other options could be workable if there are variations to plans? *There could be different approaches for different disciplines, disciplines that affect safety may be strict (structure / fire), whilst others could be more flexible (insulation?)*
7. How could the modifications process be made simpler and more robust? *No response*
8. How should plans be provided to, or accessed by, the Building Commissioner? *A centralised / online portal in agreed formats, e.g. locked PDF.*
9. What types of documents should 'building designers' provide to the Building Commissioner? *All design documentation as issued for construction, e.g. for structures: design basis report, drawings, specifications.*
10. In what circumstances would it be difficult to document performance solutions and their compliance with the BCA? *For structures, none.*
11. Would a performance solution report be valuable as part of this process? If not, why not? *For structures, this should only be required for complex/novel designs and would be included in the design basis report.*

12. Are there any other methods of documenting performance solutions and their compliance that should be considered? *For structures: submission of design models could be an avenue. This would take a very mature and technically competent body to administer.*
13. What would the process for declaring that a building complies with its plans look like? *Primarily this is the responsibility of the Principal Contractor and for structures would include a design certificate referencing design basis reports / drawings / specs / statement of quality process & checks undertaken.*
14. What kind of role should builders play in declaring final building work? *Principal Contractor has prime responsibility – refer 1.3 under B.1 above*
15. Which builders involved in building work should be responsible for signing off on buildings? *Refer 1.3 in B.1 above – i.e. the trade contractors (as they do the work) – and at interfaces, all contractors at that interface; all to be coordinated by the Principal Contractor.*
16. Are there any circumstances which would make it difficult for builders to declare that buildings are constructed in accordance with their plans? If so, what are those circumstances? *No response.*
17. Are existing licensing regimes appropriate to be accepted as registration for some builders and building designers, such as architects, for the new scheme? *Refer A.6 above – all such schemes must be based on deep technical competence.*
18. What occupations or specific activities are involved in ‘building design’ and should be in scope for the registration scheme? *All those that could have a negative impact on the building, the occupants, the general public and the environment.*
19. What should be the minimum requirements for a registration scheme? *Refer A.6 above and any scheme must require deep technical competence, evidence of insurance and CPD; and must be consistent and recognised across all jurisdictions.*
20. What form of insurance should be mandatory for ‘building designers’? Why? *No response.*
21. What kinds of minimum requirements should be prescribed for the insurance policy (for example, value, length of cover, etc.)? *No response.*
22. What skills should be mandatory for ‘building designers’? *For Engineers, as required for chartered engineer (CPEng, CEng) and for all Building Designers skills should include construction knowledge (i.e. knowing how buildings are actually constructed).*
23. Should specific qualification(s) be required? *For Engineers same as #22 and should form part of registration.*
24. Should there be other pre-requisites for registration? *CPD that includes some form of regular exposure to construction activities.*
25. What powers should be provided to the regulator to support and enforce compliance by registered ‘building designers’? *Powers need to be significant to act as a deterrent to improper conduct.*
26. Which categories of building practitioners should owe a duty of care? *All the dutyholders identified in A.4 above.*
27. What should be the scope of the duty of care? Should it apply to all or certain types of work? If so, which work? *Refer B.3 above.*
28. How will the duty of care operate across the contract chain? *No response*
29. What types of consumers should be owed a duty of care? *No response*
30. On what basis should a particular consumer be afforded the protection? *No response.*

**Submitted by Michael Fordyce BSc MEng FISTructE FIEAust CPEng
Director CROSS-AUS Ltd**