



Australian
Institute of
Architects

Response to the NSW Government Building Stronger Foundations Discussion Paper

Submission to Fair Trading NSW

BCR@finance.nsw.gov.au

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SUBMISSION BY

Australian Institute of Architects ABN 72 000 023 012

NSW Chapter

Tusculum

3 Manning Street

Potts Point NSW 2011

+61 2 9246 4055

nsw@architecture.com.au

Contact

PURPOSE

- This submission is made by the Australian Institute of Architects NSW Chapter (the Institute) to Fair trading NSW to provide comments on the Building Stronger Foundations Discussion Paper.
- At the time of this submission, the Chapter President of the Institute is Kathlyn Loseby.
- The State Manager is Kate Concannon.

INFORMATION

The Australian Institute of Architects (Institute) is the peak body for the architectural profession in Australia. It is an independent, national member organisation with around 11,000 members across Australia and overseas. More than 3,000 of these are based in NSW.

The Institute exists to advance the interests of members, their professional standards and contemporary practice, and expand and advocate the value of architects and architecture to the sustainable growth of our communities, economy and culture.

The Institute actively works to maintain and improve the quality of our built environment by promoting better, responsible and environmental design.

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EXECUTIVE SUMMARY

There are embedded recurring failures in building quality occurring across Australia. This is due to a range of issues, notably:

- (1) quality is not embedded into the value system of the design and construction process
- (2) the roles and accountabilities of those involved are not clearly defined and
- (3) there is a general lack of recognition of the value that good design, thorough documentation and construction oversight bring to the overall life cycle costs, maintenance and operations of buildings while meeting the functional needs and expectations of the end-users. Current building practice must change from time and cost being put above quality and safety so that people's safety and economic security are not put in jeopardy. The Australian Institute of Architects (the Institute) believes that community well-being must be paramount.

The Institute's Code of Conduct expects architects to '*improve standards of health and safety for the protection and welfare of all members of the community.*' This is an important distinction beyond the basics of safety, and it is not just for the client, the developer or the financial institution, but for *everyone*.

To ensure community protection, all building practitioners need to be brought under a regulatory regime. Only regulated practitioners should be accountable for complex matters such as:

- the design of multi-unit residential dwellings
- the design certification of any parts of the construction works
- the structural design of buildings, and
- the water-tightness of buildings

With regards to higher risk buildings such as multi-unit residential buildings, mixed used buildings and speculative commercial buildings, only fully qualified, experienced and regulated professionals should be responsible for the delivery of design services and project management for these types of buildings. Further, different classes of licence should be issued according to building class and size. Currently, anyone in Australia can procure and construct an apartment building. No evidence of any relevant education, expertise, capacity, or insurances held is required.

The current market sees developers and building contractors fragmenting the design, documentation and site observation stage services of the professional team (architects and engineers). Instead of maintaining a consistent consultant team, building contractors can shop around the market mid project to change the team and reduce fees. This process undermines a cohesive process and the potential to achieve quality outcomes.

Architects are not always engaged to prepare documents for all stages of the design and documentation process and this lack of continuity is, in the Institute's opinion, one of the key contributors to problematic building quality issues.

For large and complex projects, continuous oversight and quality assurance is required throughout the design and construction stages, to mitigate errors and manage risk. We suggest this could be achieved through the appointment of an independent site architect and clerk of works as has operated effectively in the past.

While there have been many contributing factors to the current crisis, a significant part of the problem has been the rise of a method of procuring building services called the design and construct, or D&C contract.

Whereas previously other building professionals, such as architects, would have maintained a direct relationship with the developer (client), today that is no longer the case under D&C contracts. The consequences are that it is more difficult to override, challenge or even effectively communicate concerns about decisions that can have an adverse impact on quality.

Without quality controls in the building process, government and industry cannot restore public confidence in the building system when there are building failures.

The Institute offers the following recommendations to build stronger foundations and build confidence in the building and construction industry.

RECOMMENDATIONS

- a) Require people that undertake design work to state that their work (plans and documentation) complies with the BCA or identify if there are any exclusions.
- b) Require building contractors to declare that the building is built in accordance with the plans and documentation and to declare that the construction work complies with the BCA.
- c) Require a higher level of documentation than is presently provided before building work commences.
- d) Introduce a registration scheme for people offering design services based on their level of education, skills and competencies.
- e) Register or licence all practitioners who are accountable for aspects of the building quality, including tradespeople.
- f) Register professional engineers in a range of specialisations, such as mechanical, structural, fire safety, etc. and introduce a registration system for the building designer occupational category.
- g) License or register project managers and require them to hold specific qualifications or competencies, hold professional indemnity (PI) insurance and complete units of continuing professional development (CPD) every year. They must also be accountable and be able to be deregistered through a thorough complaints and disciplinary system.
- h) Require practitioners to have a minimum qualifications or competency assessment, mandatory CPD, a fit and proper person test, mandatory PI insurance and ongoing accountability for practitioner's roles in decision-making, in registration systems.
- i) Only use the term building designer to apply to the separate occupational category.
- j) Appoint a Building Commissioner to act as the consolidated regulator for building in NSW, with a broad suite of powers to monitor buildings and building work so that they can take strong compliance and enforcement action.
- k) Introduce a holistic, independent inspection and certification regime. This should provide independent oversight of construction techniques and oversight of adherence to codes, standards and council approvals. This can be delivered by an on-site independent inspection regime that includes a clerk of works and an on-site architect.
- l) Direct stronger regulation to higher risk areas such as complex midrise or multi storey buildings, where a graduated regulatory system is required. What is sufficient for class 1 and 10 buildings is not sufficient for class 2 to 9 buildings.
- m) Review the appropriateness of the model of development that allows developers to use special purpose vehicles (single purpose companies).
- n) Bring developers into the regulatory regime, with a statutory duty of compliance.
- o) Require any variation to be certified holistically, and retrospectively for the entire development, not solely for that variation in isolation.
- p) Require documentation that is handed over to owners at the completion of a project to include all significant variations and accurately reflect the as-built building by requiring "as-builts" to be produced progressively throughout the construction process.

- q) Introduce a statutory requirement that residential apartment buildings be built in accordance with detailed documentation.
- r) Require a thorough level of documentation at the Complying Development Certificate (CDC)/Construction Certificate (CC) stage.
- s) Increase qualitative control over design and construct (D&C) innovative approaches to building that typically preference reductions in time and cost (eg value engineering and substitution).
- t) Ensure adequate time is given to design compliance review.
- u) Clearly define the basic roles and accountabilities of all building practitioners, especially the role of the consultants.
- v) Implement a management system for outsourced design detailing to overseas operations to ensure compliance with the BCA.
- w) Make the author of variations driven by value engineering both identifiable and accountable for their decision.
- x) Define the role, accountability and liability of project managers.
- y) Strengthen the competency of building contractors and require building contractors of all buildings to be licensed.
- z) Ensure greater harmonisation in compliance and enforcement systems with other jurisdictions.

1. INTRODUCTION

The Australian Institute of Architects (the Institute) welcomes the opportunity to make a submission to the *Building Stronger Foundations* (June 2019) discussion paper and appreciate the government's willingness to work with industry and the community.

The Institute is the peak body for the architectural profession in Australia, representing around 11,000 members, with around 3200 members residing in NSW. The Institute works to improve our built environment by promoting quality, responsible, sustainable design. Architecture influences all aspects of the built environment and brings together the arts, environmental awareness, sciences and technology. By combining creative design with technical knowledge, architects create the physical environment in which people live, which in turn, influences quality of life. Through its members, the Institute plays a major role in shaping Australia's future.

As a distinct profession, architects can and do offer services that directly impact on public health and safety issues and quality issues affecting buildings. The Institute's Code of Conduct expects architects to 'improve standards of health and safety for the protection and welfare of all members of the community.' This is an important distinction, beyond the basics of safety, and it is not just to serve interests of the client, the developer or the financial institution, but everyone.

2. BUILDING STRONGER FOUNDATIONS RESPONSE

The discussion paper sets out 4 propositions in response to the recommendations made by the Shergold Weir Report, *Building Confidence*. While an important step, these propositions need to go further to achieve improved quality outcomes for end users and the broader community. Section 3 provides a list of issues that also need to be addressed to ensure public confidence in the building industry in NSW is restored. There are also some aspects of the proposals in the discussion paper that are considered problematic. The 4 propositions that are addressed below are:

1. Require categories of building practitioners who are defined as 'building designers' to formally declare that plans, specifications and performance solutions they provide are compliant with the Building Code of Australia (BCA), and that building contractors declare that buildings are built according to the declared plans;
2. Introduce a new registration scheme for building designers;
3. Ensure an industry-wide duty of care is owed to subsequent homeowners; and
4. Appoint a Building Commissioner to act as the consolidated regulator for building in NSW.

A summary of the Institute's responses is provided in tabular form against each question in *Appendix 1*.

Require categories of building practitioners who are defined as 'building designers' to formally declare that plans, specifications and performance solutions they provide are compliant with the Building Code of Australia (BCA), and that building contractors declare that buildings are built according to the declared plans

The Institute agrees with the proposition that people undertaking design work need to be registered and need to be able to state that their work (plans and documentation) complies with the BCA. They must also be able to identify which aspects are not included in the statement and identify issues for which they are not responsible. Example of appropriate statements are detailed in *Appendix 2*.

The proposal that the building contractor must also declare that the building is built in accordance with the plans and documentation is supported. It is also important that the building contractor is required to declare that the construction work complies with the BCA, as there will be matters that are not covered by the plans and specifications.

There is a gap between when the architect states that drawings and plans comply with the BCA and when the building contractor declares that the building is built in accordance with the plans, that needs to be managed. There are many building practitioners besides architects and builders, who design, install, construct and manage aspects of the construction process that have not been considered. The Institute supports the concept of re-introducing an on-site independent inspection regime to address this. We have detailed our proposal in the body of our submission in section 5.

The Institute believes that a higher level of documentation is required, than is current industry practice, before building work commences. This issue and variations to plans is discussed in the body of the submission in section 4.

It is assumed that the reference to 'statutorily declared' in the discussion paper does NOT mean that the formal declaration be in the form of a "statutory declaration" made under the *Oaths Act*, as this would impose the need to have the document that the person "*swears, affirms or declares to be true, in the presence of an authorised witness*". Rather, it is expected that this takes the form of a signed design statement.

Introduce a new registration scheme for building designers

The concept of a registration scheme for people offering design services is supported. However, the term building designer is a misleading one and appears to be applied to architects, engineers and draughters. The term building designer is used by industry to describe a particular type of practitioner. Industry and the community would not describe architects and engineers as building designers. Using the term to cover all practitioners who undertake design work will create confusion. Building designers are a separate occupation, with very different qualifications and skills to architects and engineers.

Architects are required to be registered in each state and territory. This is one of the only nationally consistent registration schemes with compulsory continuing professional development (CPD) either implemented or being implemented in every jurisdiction in line with the Shergold Weir report recommendations.

The Institute believes there is merit in setting up a system that registers professional engineers in a range of specialisations, such as mechanical, structural, fire safety, etc. and in introducing a registration system for building designers based on their education, skills and competencies. The Institute is of the view that all practitioners who influence the outcomes of building quality need to be registered or licenced, including tradespeople.

The list of these practitioners is set out in Appendix 4 and the certificates and statements that are required is set out in *Appendix 2*

Ensure an industry-wide duty of care is owed to subsequent homeowners

The Institute supports the industry-wide duty of care to subsequent homeowners in principle but is unable to offer detailed comment at this time. Further advice will be submitted in a supplementary submission.

Appoint a Building Commissioner to act as the consolidated regulator for building in NSW.

The Institute supports recommendation 6 of the Shergold Weir report that each jurisdiction give regulators a broad suite of powers to monitor buildings and building work so that, as necessary, they can take strong compliance and enforcement action; and that each jurisdiction makes public its audit strategy for regulatory oversight of the construction of commercial buildings, with annual reporting on audit findings and outcomes.

The Institute endorses the concept of a building commissioner who is supported by an advisory board consisting of industry representatives. The building commissioner must be suitably resourced. The proposal does not contain sufficient detail on the role of the building commissioner. We would expect that at a minimum, the building commissioner would be tasked with the following:

- Residential building investigations
- Building plan regulation and audit
- Residential building dispute resolution
- Plumbing regulation
- Electrical and gas safety regulation
- Strata building bond schemes
- Building product safety
- Building and construction security of payments scheme
- Engagement and strategic collaboration with local government
- Engagement of principal certifying authorities (to maintain independence away from the building contractor)

3. OTHER ISSUES THAT MUST BE ADDRESSED

There are issues that are wider than the propositions put forward in the discussion paper, and the Institute is strongly of the view that these need to be addressed in addition to the proposals outlined above. As recognised in the Shergold Weir report, many of the problems within the industry have occurred as a result of changes to industry practice.

The contractual arrangements for multi-storey residential projects are now commonly delivered under a design and construct method (D&C). D&C is a procurement form designed to shift risk and cut costs /improve profits and is often at odds with quality, particularly when the ultimate owners (in multi-residential) are not involved in the process. Under this method, there is no independent oversight of construction techniques and limited oversight of adherence to codes, standards and council approvals. D&C methods often result in consultants such as architects and engineers becoming sub-consultants to building contractors and being kept at a distance during the construction phase.

Issues to be addressed include the following:

- Most of the issues around defects are in the speculative multi-residential apartment sector. Where buildings are built by long term owners, these issues rarely arise. Any regulation needs to be directed at the higher risk areas, and a graduated regulatory system is required. What is sufficient for class 1 and 10 buildings is not sufficient for complex midrise or multi storey buildings.
- A model of development that allows developers and special purpose vehicles (single purpose companies) to have no ongoing duty of care to subsequent owners has contributed to the current situation. Developers must be brought into the regulatory regime, with a statutory duty of compliance. There must be some accountability by developers to future owners.
- As noted in the Shergold Weir report, regulatory controls over staged building approvals are often very limited. While they are intended to allow for ongoing approvals as the design is developed and before work commences, this often results in a significant difference between the as-designed building documentation and the as-built building. Documentation handed over at the completion of a project must include all significant variations and accurately reflect the as-built building.
- There is no statutory requirement that residential apartment buildings be built in accordance with detailed documentation.
- There can be an absence of sufficient documentation to cover safety and compliance risks. The quality and level of documentation needs to be further developed than is current practice at the Complying Development Certificate (CDC)/Construction Certificate (CC) stage and increased controls are needed over D&C approaches to building (eg value engineering and substitution).
- In D&C, the original designers are novated from the client to the contractor. At this point, the architect's ability to influence and maintain quality is reduced. Further, a common practice is for the building contractor to truncate the role by employing cheaper practitioners for later design stages. Where consultants are replaced during the process, there is a lack of continuity, loss of project knowledge and heightened potential for mistakes across many stages of the project.
- Architects are rarely required to undertake contract administration as they were under traditional lump sum contracts. This means they only provide partial services and do not have oversight of the whole project. With only partial oversight, the risk of errors being missed, increases.

- Consultants may be engaged for partial services yet are expected to take on risk and responsibility for design compliance when they have not had a full opportunity to review. Pressure is then applied, as certification may hold up various stages of the project. Adequate time needs to be given for design compliance review.
- When novated to the building contractor, architects may be nominated as the lead consultant under a consultancy agreement. There may also be a clause stating that the architect must follow the instructions of the building contractor. Building contractors manage design under the D&C method and can and do make design decisions and changes regardless of the consultant's expert advice. The conflict inherent in this situation must be resolved. While the scope of work for consultants will vary from project to project, there must be a definition of the basic roles and responsibilities of the consultants involved.
- Outsourcing design detailing (generally to overseas operations) results in a lack of control over the delivery team's experience and qualifications. If overseas drafters, building designers or architects are used, it will be necessary for an Australian registered person to state that the plans and documentation complies with the BCA.
- Value engineering and product substitution can be sensible and facilitate innovation but can also be driven by time and cost reductions. Variations driven by value engineering and substitution made during design and construction need to be visible and those making decisions need to be identifiable and be held accountable.
- Project managers typically take on the role of the independent assessor and advisor to the client during construction. Given the level of influence over the project quality, project managers should be licensed. To be licensed or registered, they should be required to hold specific qualifications or competencies, hold professional indemnity (PI) insurance and be required to complete units of continuing professional development (CPD) every year. At present, many project managers are not appropriately trained, and are driven by time and cost minimisation, which often negatively affects the quality and safety outcomes.
- Currently, many practitioners in the building process do not need to be registered or licenced. This means no minimum qualifications or competency assessment, no mandatory CPD, no fit and proper person test, no mandatory PI insurance and ongoing responsibility for their role in decision-making.
- There is no holistic, independent inspection and certification regime. Those people inspecting and reporting need to be adequately trained and qualified and need to be independent. One solution could be an independent site architect who employs a clerk of works. This is discussed in detail in the body of the submission in section 5.
- Self-certification by sub-contractors and installers is problematic as it can result in products and services being delivered that are different to the original design documentation and may significantly impact other aspects of the building. An independent inspection regime would alleviate these problems.
- There is a need to strengthen the competency of building contractors and require building contractors of all buildings to be licensed.
- Greater harmonisation in compliance and enforcement systems is needed across jurisdictions.

4. DOCUMENTATION

Sections 4A and 4B address issues raised in the discussion paper at Questions 1 – 9 regarding the required level and quality of documentation. Section 4C addresses issues raised in the discussion paper (Questions 10 – 12) with regard to explaining through documentation how any performance solutions used in the design and construction of the building comply with the BCA

4A. Level and quality of documentation

Issues arise with building contractors building with inadequate documentation (eg using design documentation rather than construction documentation to build from). There may be insufficient documentation to cover safety and compliance risks as the scope and quality of documentation is limited.

There can be a significant difference between the as-designed documentation and the as-built building, which creates enormous issues for the building owners with regard to maintenance and repair.

Design and documentation requirements to deliver a successful project on site are vastly different from project to project, building contractor to building contractor and client to client.

In the building process, architects are commissioned by owners to provide a service either as:

- full service – design, documentation, site advice and contract administration, or
- partial service – design and documentation to development approval only, or design and documentation to building approval stage.

An example of full service would be a traditional design-build process where a building owner (client) hires an architect to design a building and provide a complete set of approved design and construction documents (drawings and specifications); a general contractor is selected; the architect's set of stamped, completed and approved plans are handed to the contractor and these form part of the contract that binds the contractor to build the building exactly as shown in the drawings, approved plans and specifications.

Partial service can mean that the architect is only involved in the initial design and provides minimal documentation. Levels of detail differ between stages in the project and it is becoming common practice for developers to employ architects to prepare the initial documentation to development approval stage, and then hand on the task of more detailed documentation and product and material specification to other practitioners, such as building designers, who do not hold the same level of skills as that of an architect, and are not regulated in any way with regard to education, experience, ongoing education, PI or compliance with a codes of ethics.

There is also a commonly held misconception that drawings for development approval (DA), CDC or CC are sufficiently detailed to inform construction. The level of documentation for a DA, CDC or CC is somewhat lower than what an architect would expect a project to need for construction. DA, CDC, or CC documents are not generally sufficiently detailed to resolve the complex junctions and interactions, which are the most common causes of building defects in complex buildings.

The level of detail needed to construct for a single house (BCA Class 1) may be possible from a CC, but in complex buildings such as BCA class 2-9 this is not generally the case.

Architects routinely separate the documentation tasks: *DA, CDC or CC documentation* and *construction documentation*. The majority of details are prepared in the latter phase. Wall junctions, fire- rating details, waterproofing details, box-gutters, balcony details, thresholds, flashings, etc. form part of this work.

Construction detailing is perhaps one of the most crucial skills used in construction documentation. This is because the nature and quality of architectural detailing contributes to how the building is built, what it will look like, what it will cost, how long it may take to build and contribute ultimately to the quality of the building. For these reasons, practitioners involved in the documentation process must have a thorough understanding of the methods and techniques used in building construction. This includes knowing how various materials are connected or attached and how they interact when brought together. An understanding of how air, water, and other elements interact with buildings is also crucial to quality construction documentation.

Unless qualified design professionals, such as architects, are engaged for this phase of work (especially on multi-unit residential buildings) this construction information is missing from the process. Without construction detail documentation, including specifications, the quality of the building and the use of properly specified products and materials will depend on the building contractor, project manager and site trades.

The level of DA, CDC or CC documentation does not impact building quality, whereas construction documentation does. To improve outcomes, there needs to be a focus on construction documentation, which is currently not regulated.

Appendix 3 contains a list of required plans and documentation that would require a statement or certificate of compliance.

4B. Variations to documentation

Changes to plans and documentation need to be certified wherever the changes materially affect the requirements in the *Environmental Planning and Assessment Regulations*, and as we propose in the plans and documentation listed in Appendix 3.

Additionally, any variation must be certified holistically, and retrospectively for the entire development, not solely for that variation alone. This is because there can be ramifications unknown if variations are considered in isolation.

Changes are currently submitted as a section 4.55 (modifications of consent) under the *Environmental Planning and Assessment Act*. This process should remain.

Under a D&C contract, limited documentation is prepared at the time building work commences, with documentation produced and developed throughout the project. Often the design will contain assumptions or will be qualified. Later, when products are specified, the original designer may not be consulted to consider their effect.

The Shergold Weir report recommended that each jurisdiction provides for a building compliance process that incorporates clear obligations for the ongoing approval of amended documentation by the appointed building surveyor throughout a project.

While supporting this recommendation, we would argue that the original designer, if not continuing as part of the project, be consulted and their advice recorded. This will more clearly delineate who is the decision-maker.

The only obstacles that would prevent a person from submitting a declaration for variations would be time pressure. It should be noted that the prediction of all consequences of changes to plans is difficult if the time is not allowed – or consequences are not agreed or actioned as part of the variation.

Where a variation is identified, the contract needs to allow the designer sufficient resources to properly investigate the impact of the variation. Presently, ‘time bar’ restraints in D&C contracts are written to keep the contract moving, save additional money and reduce delivery time. However, this can be at odds with a proper due diligence and quality outcomes.

All plans and documents relevant to the ongoing functioning of the building should be held by the proposed building commissioner in a central repository, including variations to plans and documents and most particularly, performance solution documentation.

There should be a digitally based information system for all buildings that keeps information on building plans, approvals and certifications. It should be accessible to the building owner, fire authorities and the building regulator. The information should include information on the building plans, approvals, critical building systems and elements, including fire protection systems and all post occupancy work undertaken.

4C. Documentation of performance solutions

The following addresses issues raised in the discussion paper at Questions 10 - 12 with regard to explaining through documentation how any performance solutions used in the design and construction of the building comply with the BCA.

The following are some circumstances in which difficulties arise in documenting performance solutions and their compliance with the BCA:

- Facades - some testing standards are available but mostly, it comes down to expert opinion and that expert opinion comes from architects and façade engineers. There is no deemed to satisfy provision in the BCA for facades.
- Situations where expert opinion is not accepted by the NSW Fire Brigade.
- Using innovative technologies - eg green roofs are technically non-compliant, a roof should be non-combustible, and a green roof is not. However, the regulations are not able to cope with this.
- Expert opinion needs to be based on levels of evidence, but there is no guidance on what evidence is acceptable. For example, tests from overseas will be accepted by some certifiers and not others.
- Some certifiers will accept *Codemark* certificates and some will not.
- Compliance with the BCA rests on its interpretation. In many situations the interpretation is left to the individual certifier, which can vary substantially. The BCA needs to be re-written in plain English so that it can be clearly interpreted.

Other methods of documenting performance solutions and their compliance that can be considered are modelling (either computer modelling or practical) or overseas testing and practical usage. At present the market decides, and if one does not agree, another is tried. While it allows for innovation, it also indicates there is not a clear framework to evaluate options.

5. INDEPENDENT INSPECTION REGIME

The following addresses issues raised in the discussion paper at Questions 13 - 16 regarding declaring that buildings are constructed according to building plans.

The discussion paper proposes a declaration at the design and documentation stage that the design complies with the Building Code of Australia (BCA) and a declaration by the building contractor at the end that construction is in accordance with the plans. This leaves a gap between the two that needs to be addressed to ensure a safe and quality built outcome.

Present design and construct methods have lost this independence and quality check. Building certifiers do not undertake this function in terms of quality, but rather inspect certain stages of the construction and collate certificates of compliance from subcontractors to form a final sign off that the building is fit to occupy.

Prior to the rise of design and construct (D&C), the architect was responsible as the 'agent of the client' and the 'independent assessor of the contract' to confirm quality, and when large or complex projects were involved this would also involve the engagement of a clerk of works.

The Institute recommends the consideration of a reinstatement of the role of an independent clerk of works in the construction process for large and complex projects.

5A. Clerk of Works

The clerk of works is a full-time inspector of the works on behalf of the owner but exercises no executive authority and is usually under a site architect's direction. Under current D&C contracts, there is no independent site architect or clerk of works, as the architect's contract with the developer is novated to the building contractor. The inspection role is either managed by a project manager or the building contractor monitors construction progress and quality. Quality can very easily be undermined if the building contractor seeks inappropriate cost cutting.

The role of the client's site inspector (Clerk of Works) has disappeared in Australia since the 1980s, even though it remains a key project role in most other countries including the UK, USA, Hong Kong, Ireland, Spain and in developing countries such as Kenya.

The principal duties of the clerk of works are inspection of the works and the provision of written reports to the site architect. Other duties may include:

- checking the quality of materials delivered to the site for inclusion in the works and their conformity with the contract documents
- recording the on-site issue of drawings and other documents
- arranging materials tests and recording the results
- keeping records of meetings
- recording weather conditions
- recording the daily workforce
- checking claims for payment
- making recommendations to the architect

If a similar role to the clerk of works is reintroduced into the system, it is imperative that the role be independent of the building contractor. This would mean that the position could not be paid by the building contractor.

The cost of this would reduce the margin of error during construction and importantly the risk of costs of rectification, remediation, maintenance, and costs associated with evacuating apartment owners and tenants.

The Clerk of Works role is a longstanding one for centuries and it has been reported that in the last three years in the UK the number of clerks of works has doubled. In terms of costs, the British adjudicator and barrister Tony Bingham once declared that: “*The cost of a clerk of works per annum is cheaper than a day in court*”.¹

To address the issues of inaccurate as-built drawings and manuals/ warranties, the clerk of works should report to the site architect and inform that role for appropriate issuing of these items.

5B. Site Architect

The role of the site architect provides a holistic overview of the project and provides a quality check on the project. The site architect must be independently engaged (this could be through the Building Commissioner, or the Client) and paid separately from the contractor. The site architect is responsible for the following:

- Clerk of Works, on site full time (mandatory to maintain quality).
- Supply of ‘as-builts/record drawings’ progressively throughout the project construction (this is the only way that all changes and ‘actual’ construction can be accurately documented in the ‘as-builts/record drawings’ so the strata owners have a reliable document. It can only be reliable if regular on-site visits are made, with detailed discussions with the Clerk of Works).
- Checking all the manuals, warranties etc are correct, again in consultation with the Clerk of Works.
- Co-ordinating the consultant/engineer/original designers with the Clerk of Works to confirm what is built matches what is designed and documented.
- Post occupancy evaluation, nominated to occur at 6 months and 12 months after ‘occupation’ is triggered. This will not only feed into the Defects Liability Report (which should be mandatory on these projects) aligned to the final payment and final certificate, but also provide valuable information on appropriate materials, finishes and other items. This is crucial to maintain an independent assessment and true rectifications.

¹ <https://aca.org.au/article/bring-back-the-clerk-of-works>

6. REGULATION OF BUILDING PRACTITIONERS

The following addresses issues raised in the discussion paper at Questions 17 - 25 regarding registration of building designers.

6A. Registration of Architects

An architect who is a member of the Institute is professionally qualified, legally registered to practice by State Registration Boards and bound by a code of ethics established by the Institute and the Registration Board. This code requires they perform all duties with professional integrity.

Architects are registered professionals trained in the art and science of building design. They develop the concepts for structures and turn those concepts into images and plans. Architects create the overall aesthetic and look of buildings and other structures, but the design of a building resolves far more than its appearance. The architect ensures the design is functional, safe, and economical to suit the needs of the end users. The documentation also specifies the building materials and products.

The architect provides various designs and prepares drawings and a report, presenting ideas to the client based on their needs. Computer-aided design (CAD) and Building Information Modelling (BIM) technology has replaced traditional paper and pencil as the most common method for creating design and construction drawings. After discussing and agreeing on the initial proposal, architects develop final construction plans that show the building's appearance and details for its construction.

Traditionally, the role of an architect does not end in the design stage. During construction, there can be continual revision of plans on the basis of client needs, budget and other constraints not envisaged during design stage. As construction proceeds, the architect will visit building sites to make sure that contractors follow the design, adhere to the schedule, use the specified materials, and meet work quality standards. Under novated contracts, this last function may be undertaken by a different architect or be given to another building practitioner to undertake.

In novated contracts the architect is usually asked to state that the work is in accordance with the documents and the BCA. If the architect has only had an observation role it is impossible to state that what is built complies.

The Architects Accreditation Council of Australia's 2015 International Benchmarking Study found that Australia has broadly comparable architect registration standards to other leading economies. However, Australia is in a minority among comparable countries in not having any general legal reservation of architectural design function or licensing of non-architect designers which may seem at odds with the intent to protect consumers.

Many countries licence classes of "building author" aside from architects. Engineers are licensed in most OECD countries and licensing of other occupations is also common. For example, in the Netherlands, the Architects Register also controls the use of the titles of urban designer, landscape architect and interior architect. Similarly, in Italy, the Provincial Rolls cover architecture, landscape architecture, urban planning and conservation. South Africa licences three classes of architectural technologist and draftsman. The Board of Architects Malaysia also licenses drafters and interior designers. In Spain, there is a licence class called Aparejador, which is like an assistant architect and building work supervisor. While in Japan, only 1st class Kenchikushi are able to design complex buildings.

It should be noted that most countries regulate architectural design function by building class through planning law (i.e. the right to sign off plans for development approval) rather than directly through Architects Acts or similar legislation.

The *National Standard of Competency for Architects* describes what is reasonably expected of a person who can demonstrate the standard of skill, care and diligence widely accepted in Australia as a competent professional Architectural practitioner.

It sets out functions important to the practice of architecture, rather than simply measuring knowledge in isolation from skills, or time spent in formal education. The Standard is not a form of assessment in itself but a framework to be used by those authorised to assess the professional standards of Architects. Having one Standard that underpins accreditation of architecture education and assessment programs provides a clear roadmap for the development of competency (through education, practice and examination on the path to registration as an architect).

The Standard is used in the processes that lead to the registration of Architects including the – Architecture Program Accreditation Procedure in Australia and New Zealand Architecture, Overseas Qualifications Assessment, National Program of Recognition, the Architectural Practice Examination and Experienced Practitioner Assessment, and Continuing Professional Development in those jurisdictions where it is compulsory.

6B. Registration/Licensing of other building practitioners

Better regulation is needed regarding multi-unit residential buildings, mixed use buildings and speculative commercial buildings. The Institute believes that only fully qualified and experienced professionals should be responsible for delivery of design services and project management for these types of buildings. Different classes of licence could be issued according to building class and size.

These classifications must be partnered with training requirements and supervised experience to be eligible to obtain a licence for more complicated building types and size. There is a need to upskill the whole industry.

Mandated standards for education or experience for building designers, drafters, project managers and the like are needed.

Licensing or registration of other design professionals to have an appropriate level of knowledge and experience related to the scale of projects being delivered is fundamental to ensure a level playing field and a balanced, fair and equitable regulatory system.

The Institute believes that regulation of building professionals, whether designers, draftspersons, certifiers, or project managers is essential to provide the community protection. Regulation is particularly important for project managers as they play a major role in the process.

Regulation would provide that these professionals are educated to accredited standards, hold professional indemnity insurance, abide by a code of conduct, and undertake continuing professional development, thereby increasing quality outcomes and better mechanisms for consumer protection.

The *Building Professionals Act* defines ‘accredited certifiers’ or ‘building professionals’ under *Division 1 Clause 4 Accreditation Scheme*. This does not define the ‘skill base, title, or qualifications that are required of each category.

Building contractors and the sub-contractors to building contractors should be qualified, and higher skilled tradespeople should be licensed.

The specific occupations that should be in the registration scheme for the design of complex class 3-9 buildings have been identified as follows:

- Project Manager
- Architect
- Planner
- Quantity Surveyor
- Structural Engineer
- Civil Engineer
- Mechanical Engineer
- Electrical Engineer
- Geo-tech Engineer
- Hydraulic Engineer
- Fire Services Engineer (Wet/hydraulic and dry/electrical)
- Fire Engineer (Fire safety: modelling/evacuation of fire solutions, and performance of all materials in the modelling)
- Acoustic Consultant
- Facade Engineer
- Vertical Transport Engineer
- Traffic Engineer
- Environmentally Sustainable Design / Sustainable Consultant / Engineer
- BCA Consultant
- Disability Discrimination Act Consultant
- Access Consultant
- Landscape Architect

For Residential (BCA Class 1, 10), all of the above plus:

- Building Designer
- Draftsperson
- Residential Project Manager

There is a difference between building designers and architects. Architects education requirements are generally 5 years of study and a Masters degree, followed by qualification experience requirements (a minimum of two years) and further assessment against specific competencies through an examination process. Building designers are generally educated through accredited TAFE building courses and/or other construction-based pathways of 2-3 years duration; the skills gained in these courses are heavily focused on smaller size building, and standard construction techniques.

Typically, building designers find career paths in the largest part of the construction industry, supporting the construction of individual houses and townhouse style medium density developments. Increasingly, however, some developers are approaching building designers to undertake the design and /or documentation of larger multi-unit residential developments.

While this split of service delivery is set by the market, there is no level of consumer protection applied to the services provided by those building professionals who are engaged for projects that may be outside their level of expertise. There are also no ethical/behavioural rules, via a code of conduct or similar long held measure, which apply to building and design professionals other than architects.

6C. Licensing regime

In terms of existing registration/licensing regimes being appropriate to be accepted as registration for building contractors and building designers, we believe that the current registration regime for Architects is robust. The *Architect's Act 2003* and the *Architects Regulation 2017* originated in 1921 with the first Architects Act and in the main, aligns with Architects Acts in other jurisdictions.

A similar system needs to be introduced for building designers, project managers, professional engineers and other building professionals based on assessing qualifications and experience against competency standards. Differing competencies should be tied to different types of work.

At present, the Architects Act protects the title architect, but does not reserve certain work for architects. To truly protect the consumer, certain work should be reserved to architects, engineers and building designers according to their competencies.

An Act for professional engineers, building designers and other building professionals could be modelled on the Architects Act, and could require:

- Eligibility criteria based on assessment of accredited education and experience (mapped against competencies)
- Practical experience required before registration (nominally 2 years)
- Registration interview process
- Registration process (documents and listing on register)
- Code of professional conduct
- Offences
- Publicly available register
- Annual CPD
- PI insurance
- Annual renewal of registration
- Disciplinary process

7. INSURANCE

While not specifically addressed in the discussion paper, the key to building regulation reform is the availability and cost of insurance, which is problematic for many practitioners. Insurance is key to the robustness of the industry, not litigation. This will better protect consumers.

A requirement for registration should include a requirement for full PI insurance. Given the current insurance market, this may not be achievable. Architects are required to have PI insurance in most jurisdictions, but there is no requirement to hold insurance without exclusions.

In June 2019, the Queensland government released a report on the availability of insurance for certifiers, engineers and architects. It recognised that many insurers are leaving the PI insurance market.

Most insurers in the Australian market appear to have added some sort of exclusion for 'non-compliant cladding' to architects' professional indemnity insurance policies, especially for architects who do any amount of work on multi-residential projects. Some exclusions are much broader than others and leave the architect with much greater exposure to uninsured claims.

Insurance premiums across the board on all products appear to be increasing given the general state of the insurance market and the 'cladding issues.' The increases vary dependent upon the profile and activities undertaken by the architect and the underwriting criteria of the insurer.

Building certifiers are having great difficulty in gaining affordable insurance, and it is impossible for them to get a policy without a cladding exclusion.

The NSW proposal to have architects, engineers and building designers declare compliance with the BCA will spread the strict liability that exists for building certifiers, as opposed to the common law liability of negligence. We would strongly urge that governments take care with any requirements for registration that impose strict liability on individuals as opposed to companies in the process, particularly to enable access to insurance products. This should also extend to building certifiers.

In order to meaningfully implement the recommendations of the Lambert and Shergold Weir reports regarding extending the regulated accountability framework for construction professionals, consideration needs to be given to the following:

- Home Owners Warranty Insurance to be increased to cover apartments over 3 storeys, funded by building levies
- PI insurance to be supported by an insurance framework that can be relied on in perpetuity
- PI insurance to have access to run-off cover (to allow retirement or business to cease)
- Major Projects Insurance required by the Building contractor
- Decennial liability insurance for the contractor or principal to take out, valid 10 years after completion of the project
- Proportionate Liability must remain. Opting out must be illegal

APPENDIX 1 –SUMMARY RESPONSE TO DISCUSSION PAPER QUESTIONS

Question No.	Summary response	Refer Report
1-9	<p>The Environmental Planning and Assessment (EPA) Regulation 2000, Schedule 1 defines what should be included for:</p> <ul style="list-style-type: none"> a) Part 1 Development Application (DA), b) Part 2 a Complying Development Certificate (CDC) c) Part 3 Construction Certificates (CC) <p>Clause 50 of the EPA regulation provides further detailed requirements including Residential Apartment Development, BASIX, Wilderness Act, and SEPP.</p> <p>However, for the drawings to be accurately assessed to the BCA all performance solutions need to be shown on the drawings, this will include:</p> <p>Architectural</p> <ul style="list-style-type: none"> - Floor plans - Elevations - Sections - RCP showing light, mech, fire sprinklers meet BCA - Fire compartmentation plans/Fire - Door schedules - Fire rated construction/ compartmentation plans - Window and Room Schedules - Specifications - Wet Area details - Stair and ramp details - Balustrade details - External wall details - Roof details - Expansion and Construction joint details - Membrane junctions - Parapet details - Interstitial condensation management details <p>Structural plans</p> <ul style="list-style-type: none"> - TBD <p>Mechanical plans</p> <ul style="list-style-type: none"> - TBD <p>Fire Services</p> <ul style="list-style-type: none"> - Hydrant - Hose reel - Sprinklers - Detection zones - Smoke control zones - Passive/penetrations <p>Hydraulics</p> <ul style="list-style-type: none"> - Drainage - Water supply - Sewer - Fire seals/penetration 	4A

	<p>All variations wherever the changes materially affect the requirements as listed above are to be certified holistically, and retrospectively for the entire development, not solely for that variation alone. This is because there can be unknown ramifications if considered in isolation.</p>	4B
10 - 12	<p>The ABCB guidance note doesn't address the complex issues, it purely sets out the process</p> <p>Q10: circumstances where it is difficult to document performance solutions:</p> <ul style="list-style-type: none"> • Facades. Some testing standards are available, but effectively it comes down to 'expert opinion' and that 'expert opinion' comes from 'architects' and 'façade engineers' There is no Deemed to Satisfy for facades. It is hard to document. • Situations where expert opinion is not accepted by the NSW Fire Brigade. • When using innovative technologies (eg green roofs are technically non-compliant, a roof should be non-combustible and a green roof is not. However, the regulations are not able to cope with this). • Expert opinion needs to be based on levels of evidence, but what evidence is acceptable? For example, Tests from overseas will be accepted by some certifiers and not others. • Some certifiers will accept Codemark certificates and some won't. • The crux of the issue about the BCA is the interpretation. In many situations the interpretation is left to the individual certifier and this can vary substantially. The BCA needs to be re-written in plain English so that it can be clearly interpreted. If certifiers, who are trained in the interpretation of the BCA cannot agree, what hope does anyone else have? <p>What impact will the Building Commissioner have if they are not able to decipher these difficulties?</p> <p>This is where the problem really is, BCA interpretation! A Building Commissioner will not solve this problem.</p>	4C
	<p>Q11: Is a performance solution report valuable? Yes</p> <p>Q12: Other methods for documenting performance solutions:</p> <ul style="list-style-type: none"> • Modelling (either computer modelling or practical) • Overseas testing and practical usage (again, as per item 10, different certifiers will accept this and others will not). Who is right, who is wrong? • At present the market decides, and if one does not agree, another is tried. Is this correct? On one hand it allows for innovation, on another it indicates there is not a clear and level playing field in which to judge. 	
13 - 16	<p>The Institute recommends:</p> <ul style="list-style-type: none"> - An independently engaged and paid Site Architect (note this is different to the novated design architect, however it could be resourced from the same office to be efficient with knowledge and CAD/ BIM share) <p>This role is holistic to the quality of the project and will identify the risk management processes, it must be independently engaged (this could be through the Building Commissioner, or the Client) and paid separately from the contractor.</p>	5A

	<p>The Site architect is responsible for the:</p> <ul style="list-style-type: none"> - Clerk of works (full-time on site) - Supply of 'as-builts/record drawings' throughout the construction process - Checking all manuals, warranties are correct - Co-ordinating the original design consultants/ engineers to confirm what is built matches the documentation - Post Occupancy Evaluation 	
17 - 25	<p>Only fully qualified and experienced professionals should be responsible for delivery of design services and project management for these types of buildings. Different classes of licence could be issued according to building class and size.</p>	6A 6B 6C
	<p>An Act for professional engineers, building designers and other building professionals could be modelled on the Architects Act, and could require:</p> <ul style="list-style-type: none"> • Eligibility criteria based on assessment of accredited education and experience (mapped against competencies) • Practical experience required before registration (nominally 2 years) • Registration interview process • Registration process (documents and listing on register) • Code of professional conduct • Offences • Publicly available register • Annual CPD • PI insurance • Annual renewal of registration • Disciplinary process 	
	<p>The Building Professionals Act is the existing Act that defines 'accredited certifiers' or 'building professionals' under Division 1 Clause 4 Accreditation Scheme. This does not define the 'skill base, title, qualifications necessary as described above. Builders and the sub-contractors to builders should be qualified, and higher skilled tradespeople should be licensed.</p>	

	<p>The specific occupations or specific activities that should be in scope for the registration scheme for complex class 3-9 buildings have been identified as follows:</p> <ul style="list-style-type: none"> • Project Manager • Architect • Planner • Quantity Surveyor • Structural Engineer • Civil Engineer • Mechanical Engineer • Electrical Engineer • Geo-tech Engineer • Hydraulic Engineer • Fire Services Engineer (Wet/hydraulic and dry/electrical) • Fire Engineer (Fire safety: modelling/evacuation of fire solutions, and performance of all materials in the modelling) • Acoustic Consultant • Facade Engineer • Vertical Transport Engineer • Traffic Engineer • ESD / Sustainable Consultant / Engineer • BCA Consultant • DDA Consultant • Access Consultant • Landscape Architect 	
	<p>For Residential (BCA Class 1, 10)</p> <ul style="list-style-type: none"> • All above plus: • Building Designer • Draftsperson • Residential Project Manager 	
26 - 30	Duty of Care	

APPENDIX 2 – STATEMENT/CERTIFICATE EXAMPLES

Example 1

Date

Client Name
Contact Name
Address 1
Address 2
Address 3
Address 4

ARCHITECTURAL CERTIFICATION OF BUILDING WORKS

Dear Mr. / Ms. Contact Name,

We certify that the architectural design for the above project element as described in the contract documents complies with the requirements of the Building Code of Australia.

This advice shall not be considered as relieving any other party of their responsibilities, liabilities or contractual obligations.

Yours Sincerely,

Example 2

Certificate of #XXXXXX Stage Completion

Project #Insert project name/address#

Principal # Full name of Principal # (ACN # Principal's ACN #)
of #address of Principal #

Delete Contractor Box and info below if not novated to the contractor

Contractor # Full name of Contractor # (ACN # Contractor's ACN (if applicable) #)
of #address of Contractor#

Construction Contract Design and construct contract for the Project entered between the Principal and the Contractor on #Insert date#

Consultant #Full name of Consultant # (ACN # Consultant's ACN #)
of #address of Consultant #

Consultancy Agreement Consultancy Agreement for the Project entered between the Principal and the Consultant on #Insert date# **Delete if not novated to the Contractor** “and novated to the Contractor on #Insert date#”

Consultant's Services #Insert details#

Date of Certificate #Insert date#

To the Principal:

In my professional opinion, the Documentation prepared by the Consultant for the Services have as far as practicable been checked, co-ordinated with all other disciplines and approved for accuracy and comply with the relevant Legislative Requirements and are suitable, appropriate and otherwise fit for the express purpose set out in this Agreement.

Defects and/non-conformances (if relevant) listed below:

Signed for and on behalf of the Consultant:

APPENDIX 3 - DOCUMENTS THAT REQUIRE STATEMENTS/DECLARATIONS

- The *Environmental Planning and Assessment (EPA) Regulations 2000*, Schedule 1 defines what documents what should be included for:
 - a) Part 1 Development Application (DA),
 - b) Part 2 a Complying Development Certificate (CDC)
 - c) Part 3 Construction Certificates (CC)
- Clause 50 of the EPA regulation provides further detailed requirements including Residential Apartment Development, BASIX, Wilderness Act, and SEPP.
- Plans can be certified at the CC/CDC stages and at the DA stage.

If drawings are to be compliant to the BCA at CDC/CC, a performance statement does not meet this test. We recommend in addition to the EPA Regulation requirement documents (as listed above) submitted at CDC/CC for BCA compliance must include:

- Architectural
 - Floor plans
 - Elevations
 - Sections
 - Reflected ceiling plans showing light, mech, fire sprinklers meet BCA requirements
 - Fire compartmentation plans/Fire
 - Door schedules
 - Fire rated construction/ compartmentation plans
 - Window and Room Schedules
 - Specifications
 - Wet Area details
 - Stair and ramp details
 - Balustrade details
 - External wall details
 - Roof details
 - Expansion and Construction joint details
 - Membrane junctions
 - Parapet details
 - Interstitial condensation management details

- Structural plans

TBD

- Mechanical plans

TBD

- Fire Services
 - Hydrant
 - Hose reel
 - Sprinklers
 - Detection zones
 - Smoke control zones
 - Passive/penetrations

- Hydraulics
 - Drainage
 - Water supply
 - Sewer
 - Fire seals/penetration

APPENDIX 4 – THE LIST OF PRACTITIONERS WHO SHOULD BE REGISTERED OR LICENSED

The Building Professionals Act is the existing Act that defines ‘accredited certifiers’ or ‘building professionals’ under Division 1 Clause 4 Accreditation Scheme. This does not define the ‘skill base, title, qualifications necessary as described above.

Builders and the sub-contractors to builders should be qualified, and higher skilled tradespeople should be licensed.

The specific occupations or specific activities that should be in scope for the registration scheme for complex class 3–9 buildings have been identified as follows:

- Project Manager
- Architect
- Planner
- Quantity Surveyor
- Structural Engineer
- Civil Engineer
- Mechanical Engineer
- Electrical Engineer
- Geo-tech Engineer
- Hydraulic Engineer
- Fire Services Engineer (Wet/hydraulic and dry/electrical)
- Fire Engineer (Fire safety: modelling/evacuation of fire solutions, and performance of all materials in the modelling)
- Acoustic Consultant
- Facade Engineer
- Vertical Transport Engineer
- Traffic Engineer
- ESD / Sustainable Consultant / Engineer
- BCA Consultant
- DDA Consultant
- Access Consultant
- Landscape Architect

For Residential (BCA Class 1, 10)

- All above plus:
- Building Designer
- Draftsperson
- Residential Project Manager