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AUSTRALIA

Inquiry into non-conforming building products

Engineers Australia submission to the Senate Standing Committee on Economics

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Introduction

The Grenfell fire demonstrates that cost should not be the overriding consideration when procuring and constructing a building. Short cuts should not be taken because, too often, short term cost saving lead to longer term on-going costs as well as potential loss of life.

To ensure that our buildings are meeting standards, Australia needs to ensure that our buildings are inspected in a way that ensures they are compliant to our codes, that when buildings are not built to code that they are brought up to the level required of the code and that no person should occupy an apartment or a house that has not been cleared for occupancy.

Under current regimes in Australia, multi storey apartment buildings are being constructed that are not meeting the standards that the Australian public expects. On the whole, people who purchase an apartment expect that—for the many hundreds of thousands of dollars they have invested—the quality of their apartment is fault free. Unfortunately, the system is not meeting those expectations.

In a system that puts cost ahead of professionalism we have created an industry where margins are thin and corners are cut. Professionals are left out of the process and decisions are being made by those who do not have the experience or knowledge to make them. This in turn leads to unacceptable and unnecessary risks being taken in the construction of people's homes.

About Engineers Australia

The Institution of Engineers Australia (Engineers Australia) is the not-for-profit professional association for engineers. Established in 1919, Engineers Australia is constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community.

Engineers Australia is the trusted voice of the profession. We are the global home for engineering professionals renowned as leaders in shaping a sustainable world.

Scope

The Terms of Reference of the Senate Inquiry into non-conforming building products was broadly to examine the supply chain of products into Australia that do not meet Australian standards, and the issues of those products not just in the construction sector but across the economy.

The scope of this submission is related to issues coming to the fore after the Grenfell Tower fire in London in June 2017, and issues around fire safety engineering in the Australian construction sector. This submission will not examine products in isolation, rather it will examine gaps in the system that can allow non-compliant products to enter the construction of multi storey buildings in Australia.

Construction phase inspections and self-certification

While there is one Building Code in Australia there are eight separate Building Acts, each of which makes a determination on how many mandatory construction phase inspections are to be undertaken for each class of building. This leads to inconsistency across the country.

In some states there are mandatory requirements for building surveyors to inspect on site, while other jurisdictions leave the decisions to the building surveyor under a risk based analysis.

In each case, however, the final inspection by a fire engineer is not included in the matrix of inspections. Fire engineers, who undertake the design of fire safety measure after the architect's designs, are not necessarily included in the final stage inspection prior to the closing up of key structural and service components in the construction phase.

It is at the inspection stages that defects such as non-compliant features are meant to be exposed. However, in many instances issues such as external cladding and internal fire safety measures cannot be seen in the current inspection schedule and therefore cannot be assessed as non-compliant.

In Victoria for example, the Relevant Building Surveyor (RBS) is required to carry out mandatory inspections as written by the surveyor in the Building Permit. These are meant to be at "critical stages" of the construction process. There are only four mandatory inspections in Victoria, but this means most elements of construction may not be inspected (for example penetration seals or installation of combustible cladding).

In addition, as the building surveyor is often acting as a member of the building team, they cannot be truly independent of the team. For example, the RBS in Victoria is required to be appointed by the owner, but if the owner is a developer that RBS is often chosen based on cost and the ability to get the project completed as quickly as possible, and often based on past experience.

Moreover, there are numerous examples of builders self-certifying and follow-up inspections continue to find significant deficiencies. The scale of this problem is unknown because a systematic evaluation of buildings has not yet been undertaken.

It is recommended that inspectors are not involved with the project. For complex buildings this may require the expertise of an engineer; this would be the case for a complex structural design or a complex fire safety Performance Solution. In the case of the fire safety Performance Solution, this inspector could also have the role of a peer reviewer.

Building commissioning

Building commissioning ensures that the whole of the building functions correctly, including construction, plumbing, air conditioning, electrical and, importantly, fire safety.

Unfortunately, the current regulatory system around inspections of buildings make verifying for commissioning difficult. This is because mandatory inspections do not include the inspection of safety measures before final close up of a building. Additionally, changes made to the original design during construction and before the close up phase do not necessarily require the input of the fire safety engineer, nor does the fire safety engineer have access to certify the safety measures as designed.

This can lead to situations where fire safety measures may have been installed that are not compliant with the code and which cannot be seen by the building surveyor or fire engineer. This therefore means that they cannot be seen as a building defect until a full audit is undertaken or a failure of the system occurs.

Ensuring that fire safety measures are inspected by a properly trained, experienced and registered fire safety engineer before the final close up of walls and ceilings would reduce the chances of this occurring and therefore reduce the level of fire safety risks to the public.

Essential Safety Measures

There is a lack of Essential Safety Measures (ESM) maintenance being performed at an adequate level. Deficiencies are often noted year after year with no mechanism to force rectification.

While some states require an annual essential safety measure report, this is not a blanket requirement in all jurisdictions.

In many states essential safety measures maintenance companies are not audited and in some like Victoria are not licensed or regulated. There is a voluntary accreditation scheme through the Fire Protection Association Australia but it is still new and, at the present time, not recognised by state or federal legislation.

In some states, like Victoria, essential safety measure maintenance providers have no obligation to report deficiencies to local councils. As a result, deficiencies often go unresolved.

ESM functionality starts with commissioning. If a system is not properly commissioned, then a defect is unlikely to be recognised as a defect in subsequent inspections. That is, if a system appears not to work or be deficient, the ESM provider may assume the building was designed, commissioned and approved that way and therefore not recognise that there is a building defect.

The ideal solution would be for an independent qualified fire safety engineer or other specially qualified independent person to conduct an ESM audit on a periodic basis, such as every five years. The timing would depend on the complexity of the system and any special requirements in the Occupancy Permit.

The role of engineers

Under the performance based Building Code of Australia (BCA), building surveyors require engineering advice that many are unable to afford. As a result, engineering decisions are often made by people without the technical training, skills or knowledge to make them.

It is acknowledged that, under the current regimes and practices, building surveyors are under pressure from those who commission their work to keep costs down and meet tight deadlines.

This highlights, however, that costs can override the process of engaging technically experienced professionals in the system.

For new builds it is important from a fire safety perspective that appropriately qualified engineers are brought in to assess and certify work.

There is also a need for an independent and appropriately qualified fire engineer to be involved in determining if, after a major event such as the Lacrosse building fire in Melbourne, a building which doesn't meet the performance requirements of the Building Code of Australia should remain occupied.

Training

There is lack of specific training for fire safety engineers in Australia that would have international recognition. That is, we do not have an undergraduate engineering programme in fire safety engineering, and we do not have a post-graduate engineering program in fire safety engineering that would be accepted world-wide.

In Australia, education in fire safety engineering is not provided through an undergraduate program. Instead, an engineer first qualifies in another discipline which may or may not be in engineering, and then conducts further specialist studies. There are three universities that provide graduate level programs in fire safety engineering (Victoria University, Western Sydney University and The University of Queensland).

Engineers Australia accredits entry-to-practice engineering programs, which means that those fire safety engineering courses provided at the graduate level are not at present accredited. The result is that Australian qualifications in fire safety engineering are less well recognised internationally.

The overall effect of this situation is that career paths for fire safety engineers is not as well defined as in other nations, and Australia will continue to be quite reliant on skilled migration to meet workforce needs.

The issue of accreditation of training programs can be resolved, and Engineers Australia is capable of developing a suitable accreditation scheme if there is demand from providers.

Professional registration

Fire safety engineering is not subject to a nationally consistent licensing and registration regime.

For many years, Engineers Australia has been highlighting the need for engineering services, such as fire safety engineering, to be properly regulated to ensure they are being undertaken by qualified and competent persons. While Queensland has a long-established registration regime for engineers it remains, at present, the only jurisdiction to have done so. Victoria and the ACT are in discussions with Engineers Australia to establish registration, but progress is slow.

The greatest risk to consumers in the current registration environment comes from building practitioners attempting to undertake engineering work without adequate skills or competencies. Currently, the designation of engineer is not protected, meaning that the term “engineer” can be used by any person, even if they cannot demonstrate competency in the field of engineering.

Inconsistencies in the understanding of policy makers of the work of fire engineers is demonstrated in state and territory regulations prescribing minimum standards. In the absence of state and territory governments upgrading their entry requirements, Engineers Australia has established the National Engineering Register (NER) which provides minimum entry levels matched to Engineers Australia’s standards, mandates for levels of Continued Professional Development (CPD) and transparency for consumers and users of engineering services across the country. The NER however voluntary and it is recommended that state governments make use of it as part of new co-regulatory scheme.

Conclusion

Engineers Australia would like to thank the Senate Committee for the invitation to participate in this review.

Should the Committee have any questions in relation to this submission please contact Mr Jonathan Russell, National Manager Public Affairs at jrussell@engineersaustralia.org.au or by phone on (02) 6270 6565.


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