

# QUALITY ISSUES IN THE BUILDING SYSTEM

## WEBINAR Q+AS

The following questions and answers have been developed from those submitted webinar participants on Thursday 19 October 2023. Questions were grouped into themes and synthesised as below.

### PEER REVIEW PROCESS AND INDEPENDENCE

#### 1. Can a peer reviewer maintain independence throughout the design process?

It is the peer reviewer's job to remain independent. Please see Engineering New Zealand's [Practice Note 2: Peer Review](#) for guidance.

#### 2. When should a peer review be required?

Your professional judgement is required to determine when a peer review is needed. Figure 3 in our paper [Quality issues in the building system: overcoming inadequate structural engineering design](#) provides a helpful flow chart with clearly identified review stages. In some cases, the Building Consent Authority might insist on a peer review and you should engage early with them to understand their expectations and requirements.

### QUALITY OF ENGINEERING DESIGN

#### 3. Has Engineering New Zealand conducted an investigation into the design quality for residential houses?

No, Engineering New Zealand has not investigated the design quality of residential houses.

#### 4. Does Engineering New Zealand acknowledge that the CPEng process may give a "quality mark" to potentially incompetent engineers?

The Registration Authority determines whether CPEng engineers are competent or not. The RA registers engineers using our competence assessment process. All CPEng engineers are assessed as competent through this process. This process is continuing to evolve. If you have any concerns on the competence of CPEng engineers, we encourage these to be raised with us by emailing [concerns@engineeringnz.org](mailto:concerns@engineeringnz.org).

## **5. Why hasn't Engineering New Zealand provided examples of building design failures from engineering firms of all sizes in this report?**

Cases selected for the report were selected to show a range of building sizes, as well highlight a range of errors in design and quality assurance processes. We did not select the case studies in the report on the size of the design firm.

## **REGULATION AND LEGISLATION**

### **6. Are there updates on occupational regulation legislation since the election?**

No, we do not have an update on occupational regulation legislation since the election. Officials are awaiting direction from new Ministers.

For further information on occupational regulation, please read [Engineering New Zealand's occupational regulation briefing to incoming Ministers](#).

### **7. Should ENZ advocate for minimum scale fees for various job types to ensure clients select based on documentation quality?**

No, it is not Engineering New Zealand's role to advocate for minimum fees. Firms need to set appropriate fees, with no firm agreeing to undertake a job that they are not appropriately qualified to undertake and resourced for a quality outcome, including the need for internal design review and quality assurance.

## **REVIEW PROCESSES AND COLLABORATION**

### **8. How can the PS2 review process be updated to make it more collaborative?**

We encourage all design engineers to involve PS2 reviewers early and often in the design process. This can be one initiative that can help make the process more collaborative. The intent of our paper and webinar was to help provide further information and insights into improving the quality of review processes and to help make them more collaborative.

### **9. Does the number of review stages depend on the complexity of the project and when is it recommended to engage an external peer reviewer, and for what size of a project?**

Maybe, but it's not just about the number of review stages, but more about the timing and quality of those reviews, to make them meaningful and collaborative, to help inform and improve the design. It is the professional role of the design engineer to determine when and how often to engage an external reviewer. Figure 3 of our paper [Quality issues in the building system: overcoming inadequate structural engineering design](#) provides guidance on review stages.

## **LIABILITY AND RISK**

### **10. What are the liability risks for peer reviewers?**

Yes, there are liability risks for peer reviewers. If a court upholds a claim against a design engineer, a peer review of the design may also be liable for damages. Reviewing engineers should be aware both of their ethical obligations and their contractual obligations, as well as their potential liability, when reviewing work.

### **11. Should the liability risk for peer reviewers be amended?**

Please see above (question #12) for information on liability risks.

## CLIENT EDUCATION AND ENGAGEMENT

### **12. Is it time for Engineering New Zealand to advocate for mandatory peer reviews for all projects?**

No, Engineering New Zealand will not be advocating for mandatory peer reviews for all projects. It is the professional role of the design engineer to engage peer reviewers, as and when required. Not all designs are likely to need peer review and our paper [Quality issues in the building system: overcoming inadequate structural engineering design](#) highlighted the need for appropriate design review and quality assurance as part of the designers responsibilities, regardless of the presence or need for external PS2 peer review.

### **13. Can a small document be prepared to educate clients on when peer reviews should be required?**

While Engineering New Zealand will continue to review opportunities to support the profession with regards to peer reviews (including a small document for clients), it is ultimately the design engineer's role to advise the client on the peer review requirements of the brief.

## BCA INVOLVEMENT

### **14. Where do BCAs fit into regulatory reviews, and what challenges exist in collaboration with them?**

Building Consent Authorities make decisions daily on whether building plans and building work comply with the Building Code. They also manage the regulatory enforcement of the building system. As such, BCAs carry a significant amount of liability for building consents issued. BCAs must ultimately be satisfied that engineering designs comply with the Building Code.

## CHALLENGES IN THE INDUSTRY

### **15. How has the presenter addressed the challenges of engineering fees being cut and the impact on quality firms?**

Firms need to set appropriate fees, with no firm agreeing to undertake a job that are not appropriately qualified to undertake and resourced for a quality outcome, including the need for internal design review and quality assurance.

### **16. How often do clients resist paying for a full peer review?**

As outlined in our paper [Quality issues in the building system: overcoming inadequate structural engineering design](#) the need for (and scope of) external peer review should be discussed and agreed with the client before signing a contract for services and starting the design. This should avoid any disagreement over peer review expectations.

## PROFESSIONAL DEVELOPMENT AND TRAINING

### **17. Is a higher degree of competence required for those undertaking complex work?**

As in all professions, there are varying levels of complexity that require different levels of competence. All engineers should know the bounds of their competency and practice within these. Please see page 21 of our paper [Quality issues in the building system: overcoming inadequate structural engineering design](#) for a discussion on competency.

**18. What should a peer reviewer do if they find the designer's work not up to New Zealand standards to the point of being ethically and morally wrong?**

If you are the peer reviewer of a designer's work that does not meet appropriate standards, do not sign off on the work. If you have significant concerns about the competence of a CPEng engineer or a member of Engineering New Zealand, please contact Engineering New Zealand by emailing [concerns@engineeringnz.org](mailto:concerns@engineeringnz.org).

## **CONSTRUCTION INDUSTRY CHALLENGES**

**19. How can the system be changed to ensure liability remains with developers for an incentive for good quality designs?**

The building system operates under a model of joint and several liability. This system is stewarded by the Ministry of Business, Innovation and Employment. Further information on MBIE's policy on risk, liability and insurance can be found on their [website](#). We encourage members to raise concerns with MBIE on matters of liability.