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ASSOCIATION OF CONSULTING
STRUCTURAL ENGINEERS NSW

CERTIFICATES, PEER REVIEW AND BUILDING CERTIFIER EXPECTATIONS 2019

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- 1. Certificates**
 - 2. Peer review**
 - 3. Building Certifier Expectations**

Certificates

- Key Principals of a Design and Inspection Certificate
- Discussion on Sample Company Certificates
- Obligations for Certifying Engineer
- Building Certifier Expectations and role of PCA's

The Act

- Environmental Planning and Assessment Act 1979
- Part 4A Certificates (1) (a) Compliance certificate

Part 4A certificates

- (1) The following certificates (known collectively as **Part 4A certificates**) may be issued for the purposes of this Part:
- (a) a **compliance certificate**, being a certificate to the effect that:
- (i) specified building work or subdivision work has been completed as specified in the certificate and complies with specified plans and specifications, or
 - (ii) a condition with respect to specified building work or subdivision work (being a condition attached to a development consent or complying development certificate) has been duly complied with, or
 - (iii) a specified building or proposed building has a specified classification identified in accordance with the *Building Code of Australia*, or
 - (iv) any specified aspect of development complies with the requirements of any other provisions prescribed by the regulations, or
 - (v) any specified aspect of development (including design of development) complies with standards or requirements specified in the certificate with respect to the development,

BCA

Professional engineer means a person who is—

- (a) if legislation is applicable — a registered *professional engineer* in the relevant discipline who has appropriate experience and competence in the relevant field; or
- (b) if legislation is not applicable—
 - (i) a Corporate Member of the Institution of Engineers, Australia; or
 - (ii) eligible to become a Corporate Member of the Institution of Engineers, Australia, and has appropriate experience and competence in the relevant field.

- (iii) A certificate from a *professional engineer* or other appropriately qualified person which—
 - (A) certifies that a material, design, or form of construction complies with the requirements of the BCA; and
 - (B) sets out the basis on which it is given and the extent to which relevant specifications, rules, codes of practice or other publications have been relied upon.

Sample Certificates:

- TTW
- Northrop
- Enstruct
- Mott Mac
- RBG
- Arcadis
- SDA
- Aecom
- Acor
- WGE
- New Zealand (IPENZ)

Key Principals of an Inspection Certificate

- Period of Inspections during Construction
- Certifier Qualifications
- Conformance with the structural drawings
- Lists certified drawings
- Lists D&C Elements
- Reliance on D&C Elements
- Specific Exclusions
- BCA and Australian standards referenced
- (Fire)

Key Principals of an Inspection Certificate

Period Inspections during Construction Sample Wording Comparison:

- *“Verify compliance with design 'intent' indicated on the structural drawings”*
- *“At the time of the inspection the works inspected were considered to be in accordance with the structural drawings”*
- *“At the time of our inspections, as represented by our site reports, the work inspected conformed with the intent of the design conveyed by the list of structural drawings attached.*
- *‘to the best of our knowledge and belief, confirmed that the as-inspected works will be in accordance with the intent of the structural engineering design”*
- *“At the time of the inspection, the work generally conformed, in our opinion with the structural drawings”*

Key Principals of an Inspection Certificate

Qualifications of the Certifier:

- *“xxx, being professional engineers”*
- *“appropriately qualified and competent in this area”*
- *“designed by a practicing structural engineer who exercised the degree of skill, care and diligence normally exercised by Consulting Engineers in similar circumstances”*
- *as the structural consultant*
- *by a practicing structural engineer*
- *“CPEng No or similar”*

Key Principals of an Inspection Certificate

Listing D&C Elements:

- *Yes or No?*

Specific Exclusions?

- *Yes or No?*

Reference to conformance with the BCA and Standards

- *Yes or No?*

Separate Design and Inspection Certificates?

- *Yes or No?*

Key Principals of an Inspection Certificate

What about New Zealand?

- *Separate “Producer Statements” : PS1, PS2, PS3, PS4*
- *Standard Format written by IPENZ – some councils have their own format also.*



Key Principals of an Inspection Certificate

What about New Zealand?

- *PS1 – Consultant Design Certificate.*
 - *Lists off recommended level of Construction monitoring CM1 – CM5*
 - *Lists CPEng Number*
 - *Lists Professional Body memberships.*
- *PS2 – Design Review*
 - *Independent review of the design to confirm compliance with standards*
- *PS3 – Construction*
 - *Certificate from the Contractor to confirm that all works completed in accordance with the design.*
- *PS4 – Construction Review*
 - *Confirmation of Construction monitoring provided CM1-CM5*
 - *Refers to contractor submissions*
 - *Provides certification “on reasonable grounds”*

Certificates

CONSTRUCTION MONITORING SERVICE		
LEVEL	REVIEW	COMMENT
CM1	Monitor the outputs from another party's quality assurance programme against the requirements of the plans and specifications. Visit the works at a frequency agreed with the client to review important materials of construction critical work procedures and/or completed plant or components. Be available to advise the constructor on the technical interpretation of the plans and specifications	This level is only a secondary service. It may be appropriate where: - For the design consultant when another party is engaged to provide a higher level of construction monitoring or review during the period of construction or - When the project works are the subject of a performance based specification and performance testing is undertaken and monitored by others.
CM2	Review, preferable at the earliest opportunity, a sample of <u>each</u> important work procedure, material of construction and component for compliance with the requirements of the plans and specifications and review a representative sample of <u>each</u> important completed work prior to enclosure or completion is appropriate. Be available to provide the constructor with technical interpretation of the plans and specification.	This level of service is appropriate for smaller projects of a routine nature being undertaken by an experienced and competent constructor and where a higher than normal risk of non-compliance is acceptable. It provides for the review of a representative sample of work procedures and materials of construction. The assurance of compliance of the finished work is dependent upon the constructor completing the work to at least the same standard as the representative sample reviewed.
CM3	Review, to an extent agreed with the client, <u>random samples</u> of important work procedures, for compliance with the requirements of the plans and specifications and review <u>important</u> completed work prior to enclosure or on completion as appropriate. Be available to provide the constructor with technical interpretation of the plans and specifications.	This level of service is appropriate for medium sized projects of a routine nature being undertaken by an experienced constructor when a normal risk of non-compliance is acceptable.
CM4	Review, at a frequency agreed with the client, <u>regular samples</u> of work procedures, materials of construction and components for compliance with the requirements of the plans and specifications and review the <u>majority</u> of completed work prior to the enclosure or on completion as appropriate.	This level of services is appropriate for projects where a lower than normal risk of non-compliance is required.
CM5	Maintain personnel on site to <u>constantly</u> review work	This level of service is appropriate for - Major projects - Projects where

Key Principals of an Inspection Certificate

Building Certifier Expectations

- *Confirm Expectations on Consultants/Contractors before Construction begins*
- *Standardised system or Protocols*
- *Do PCA's expect Principal Consultants to refer to D&C elements?*
- *What are PCA's expectations on Contractors to self-Inspect and Certify their works?*
- *Do PCA's require Engineers to be Chartered*
- *What references to Standards are expected?*

Peer Reviews

- ACSE Practice Note PN 24 (Dec 2017)
- When is a Peer review appropriate
- When should a Peer review be carried out?
- Principals of Integrity
- Scope for Peer Review
- Responsibilities
- Standard Formats to Peer reviews

ACSE Practice Note PN 24



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Introduction

This Practice Note sets out a recommended methodology to assist structural engineers reviewing another's work. Peer reviewing is a well-accepted part of scientific and academic worlds, and peer review for engineers should be regarded as a positive process and encouraged in the profession. A peer review improves the quality and safety of designs, reduces risk and furthers career development of younger engineers.

The ACSE is not attempting to set out all the various degrees and types of review that may be undertaken but set out guiding principles from which any professional review may be carried out. It is assumed that design engineers will have an in-house review process for use in appropriate projects and a formal QA program. This document refers to review by an external, independent engineer and recognises that there must be a close relationship between the Review Engineer and the Design Engineer to ensure that all objectives and assumptions are included in the review.

This document also aims to ease any fears of a Peer review being carried out on one's work, and allow all engineers to embrace and support (and even initiate) a review of their designs.

This document is not intended to include a Review of Designs following completion of design and issue of construction documents.

Definitions

Client	The person or body who has requested and commissioned the review.
Design Engineer	The party whose work is being reviewed.
Review Engineer	The reviewing party.
Institution	The Institution of Engineers Australia or "Engineers Australia"
Schedule of Issues	A tabular form of issues raised allowing both engineers to formally and openly communicate
Peer Review	An evaluation of professional work by others working in the same field

When is a Peer Review Appropriate?

Peer review is appropriate when:

- the design is unusual and/or falls outside any Codes of Practice
- when the project or subject matter is high risk (including when the structure is large or important for public safety or in case of financial or economic risk or costs estimates are being made)
- there is a degree of uncertainty in some aspect of the design (it may be the first time that the Design Engineer has undertaken this type of work)
- there is a use of new or exotic materials
- for compliance with a design / project brief e.g D&C contract

This practice note is not intended to relate to:

Dispute Resolution, Expert Witness or Cost Reviews, and while the principles of this Practice Note may be relevant for reviews in these instances, it may not be possible as a Peer Reviewer to always meet the expectations of this Practice Note.

When Should a Peer Review be carried out?

To facilitate improvements in the structural design, a peer review should be conducted as early as possible, preferably at completion of 40% of structural design documentation and certainly no later than 90% completion of the design documentation.

Disclaimer:

The ACSE is an association formed to provide a forum for the exchange of information between its members and others. Since the information contained herein is intended for general guidance only, and in no way replaces the services of professional consulting engineers on particular projects, no legal liability for negligence or otherwise can be accepted by the Association for the information contained in this Practice Note.

ACSE Recommendations

- Standardised Certificates. (Design, Review, Contractor, Inspection)
- CPEng Qualification requirement (NER)
- Agreed level of Construction monitoring at Consultant Engagement
- Contractor Producer statements / Certificates
- Standardised (Peer) Review System



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