THIS REPORT IS PROVIDED FOR VIEWING & INFORMATION PURPOSES ONLY AND SHALL NOT BE RELIED ON FOR ANY PURPOSE

AN ALTERNATIVE VIEW OF THE ACCREDITED [PRIVATE] CERTIFIER PROCESS

[A Business Opportunity, or A Hangman's Noose]

Andrew Shirley B.E.(Hons), FIE Aust, CPEng, M.CIRCEA. R.P.E.Q.

Director, Shirley Consulting Engineers Pty Ltd

ADDRESS TO ENGINEERS AUSTRALIA SEMINAR

PROFESSIONAL ENGINEERS and BUILDING CERTIFICATION

28 October 2008

SUMMARY

This paper discusses the role of engineering certificates in the context of the building approval processes in NSW, and the Building Professionals Board *[BPB]* Accreditation Scheme in NSW. The paper also canvasses the various types of certificate that an engineer can to issue to a Principal Certifying Authority *[PCA]*, including an Accredited Certifier's certificate, the commercial and professional ramifications of the private certification process, and flaws in the current private certification system. Also, included in the paper are two case studies which illustrate how the present flaws in the private certification system have led to disasters for the property owners adjoining a development site.

1. INTRODUCTION

In the building and construction industry, an important area for quality control of the development works are the various 'engineering certificates', because nearly all building & construction works rely heavily on the integrity of engineering certificates. Further, and because poorly prepared, inaccurate or faulty engineering certificates can lead to both failure of structures and disastrous economic consequences for all involved, including the engineer preparing the certificate, the various government authorities and Engineers Australia have sought to regulate the various certificates provided.

The latest in this series of regulations, is the Accredited Certifier accreditation scheme by the Building Professionals Board *[BPB]* of New South Wales. This accredited certifier scheme is also part of the overall development planning and approval process under the Environmental, Planning & Assessment Act in New South Wales.

However, as the scheme has many defects, and is in the author's view fundamentally flawed, very few engineers have become an Accredited Certifier, with the result that poor quality building and construction work still continues.

In addition, it would appear that many engineers do not appreciate the ramifications of the various certificates provided by themselves, nor the part that the certificates play in the approval and construction processes. As a result, a number of certificates have been issued by engineers which have led to a disaster for the development itself, as well as the property owners near a particular development.

This paper thus canvasses the issues associated with the development approval processes, the related professional and ethical responsibilities of an engineer, and the types of certificates that can be issued by an engineer. The paper also provides two case studies where a disaster flowed from defective engineering certificates and the current certification processes.

ELECTRONIC

THIS REPORT IS PROVIDED FOR VIEWING & INFORMATION PURPOSES ONLY AND SHALL NOT BE RELIED ON FOR ANY PURPOSE

2. DEVELOPMENT APPROVAL PROCESS

Whilst the majority of engineers would have an appreciation for the general development approval process, and the role of a Principal Certifying Authority *[PCA]*, some of the significant points relating to the approval process are described in the following sub-sections.

2.1 Development Approval

Development approval for a particular development is normally processed by the Local Council, acting as the 'Consent Authority' if the development is not 'exempt development'. If the development can be described as 'exempt development', then development consent can be provided by a private certifier in their capacity as a PCA. In this case the Council is simply the repository [or storage centre], for the documents associated with the development.

During the processing of a particular development application by a Council, it is usual for the Council to receive a number of reports and consider objections by various parties [including government departments]; the Council then comes to a conclusion as to the desirability, or otherwise of a particular development.

On completion of these deliberations, the Council then issues a development consent with a number of attached conditions. These conditions can be fairly short and simple, or very lengthy and extending to hundreds of conditions.

At the time of considering a development application, the Council does not normally require detailed engineering and other plans, as these are prepared at the later 'Construction Certificate' *[CC]* stage.

2.2 Construction Certificates

After development consent, and whilst many developers continue to use the Council as their PCA, a very common method is for the developer to engage a private PCA. In this arrangement, the person undertaking the development pays the PCA, and once a PCA is appointed to the project, the PCA can only be changed by agreement from the BPB. It is also common for a particular developer to use the same private PCA over and over again, thus providing an ongoing business relationship with the developer and the PCA.

Whilst many have argued that it is wrong for the person who undertakes the development to also pay the person that approves the details of the development and the construction itself, the system that applies New South Wales is that the developer pays the PCA.

It is also to be noted that the PCA is, in essence a collector of certificates, with the PCA's work involving:

a) Reviewing of the various conditions of development consent.

b) Ensuring that the various plans and certificates required by the development consent are provided.

c) Issuing the construction certificate *[CC],* if the PCA is satisfied that all the certificates and plans comply with the various conditions of the consent.

Later, the appointed PCA inspects the construction processes on a specified number of occasions; these are known as 'mandatory inspections'.

In the processing of a CC, the PCA can also vary the conditions of development consent, if the PCA considers that such variation is appropriate, and in compliance with the intent of the original development consent condition.

THIS REPORT IS PROVIDED FOR VIEWING & INFORMATION PURPOSES ONLY AND SHALL NOT BE RELIED ON FOR ANY PURPOSE

Whilst on the surface the process described above may be reasonable; commonly, the persons finalising plans and providing the relevant certificates do not have detailed knowledge of the reasons for many of the conditions of consent. These persons, who are often engineers, then provide certificates varying the original design on a false premise and limited understanding of all the issues involved.

One of the many reasons for this lack of knowledge, is that the actual team undertaking the development is different from the team that gained the development consent.

Note: It is common for a particular developer to secure development consent, and then sell the 'development approval' to a new developer who has its own team of engineers and architects.

The consequence of this lack of knowledge of the issues dealt with during the development consent process, is that a particular engineer, or other consultant may issue a certificate stating that the design can be varied in such & such way, when in fact that variation can cause harm to third parties [see Section 5]. Further, many engineers and consultants simply focus on the site issues, and do not consider the potential impact of the proposed design change on a third party.

In addition, as the usual reason for wanting to change a particular condition of consent, or engineering detail is economics, the PCA will normally agree with his client [i.e. the developer], because to disagree with him would almost certainly mean that the next project by the developer will not be given to the PCA.

In light of the above, it is important that an engineer be very careful about any certificate that is issued to change a condition of development consent, or vary in a substantial way the engineering details of the original development approval.

3. TYPES OF CERTIFICATES

When issuing an engineering certificate in relation to a development, either during the design and CC process, or at the completion of a particular element of work, it is important that an engineer provide a certificate within their own expertise and accordance with the Code of Ethics of Engineers Australia.

In this regard, the following is to be particularly noted from the Code of Ethics:

1. In the *PRINCIPLES* section, the Code of Ethics requires that engineers concern themselves with social justice, and an awareness of the consequences of their actions.

2. In relation to the *COMMUNITY*, engineers must act in the interest of the community and manner which does not jeopardise the public welfare health and safety. In addition engineers should avoid assignments taken on behalf of clients, or employers, that are likely to create a conflict of interest between the member, or their clients, or employers and the community.

In other words, an engineer is required by, or bound by, the Code of Ethics to consider **not only** his developer client when providing a certificate, but also the community, and that includes adjoining property owners.

In light of the foregoing, currently there are three types of certificate that an engineer can issue to a PCA, with any of these forms of certificate normally being accepted by a PCA.

The certificate types are set out in the table attached to this paper, which was originally developed by Allan Sangster, and can be summarised as:

a) A Part 4A Certificate under the EPA Act.

b) A Professional Standards Act [PSA] Certificate.

c) The traditional Engineering Certificate.

These are discussed in the following sub-sections:

3.1 Part 4A Certificate

A Part 4A certificate can only be issued by an Accredited Certifier *[AC],* and in many cases the AC is an engineer who has been accredited by the BPB.

The EPA act also states that a PCA can 'rely' on a certificate from an AC. Thus, the PCA apparently has no legal duty to check that a certificate provided by AC has been prepared by a competent person; this has serious implications for an AC [see sub-section 4.1] and is the most probable reason for the disaster in one of the case studies.

Note: The author is not a lawyer, and the above should not be considered a legal opinion.

3.2 PSA Certificate

A PSA certificate is a conventional engineering certificate issued by a qualified, senior engineer, who has been granted 'limitation of liability' under the relevant Professional Standards Acts throughout Australia.

From an engineer's point of view, this is the most desirable of all certificates, and is discussed in sub-section 4.2.

3.3 Traditional Certificate

A traditional engineering certificate is the one issued by most engineers today, and comprises a simple letter prepared in a format approved by the PCA. The certificate also usually states that a certain part of the structure has been constructed in accordance with the relevant standards and specifications.

This form of certificate has very serious implications for an engineer, and as such is discussed in sub-section 4.3.

4. IMPLICATIONS OF VARIOUS CERTIFICATES

As any of the certificates provided by an engineer can provide the basis for a particular developer and / or builder to carry out certain works, or sell a property, all certificates have serious implications for the engineer if the certificates are in anyway defective, or faulty.

In addition, where an engineer issues a certificate [e.g. a certificate that permits a variation to a condition of development consent] that results in harm to an adjoining property owner, then that engineer can find themselves the target of litigation, and / or action by Engineers Australia for a breach of the Code of Ethics.

Thus, it is very important that the certifying engineer consider ways to reduce the risk of providing a faulty certificate, as well as providing appropriate commercial protection for their own personal assets, because litigation these days has the habit of embracing both the innocent and the guilty.

As such, the various advantages and disadvantages of the engineering certificates discussed in Section 3 are commented on the following sub-sections.

4.1 Accredited Certifier

As noted earlier, an Accredited Certifier is one whose qualifications have been accepted by the BPB, and this in reality means that some minor bureaucrat has filled out a checklist to qualify the person to undertake certain work. In addition:

THIS REPORT IS PROVIDED FOR VIEWING & INFORMATION PURPOSES ONLY AND SHALL NOT BE RELIED ON FOR ANY PURPOSE

ELECTRONIC

1. An AC is required to undertake training in the various legal requirements of the EPA act and to undertake continuing professional development in manner acceptable to the BPB.

2. An AC must be a private individual, cannot function in a corporate entity, and cannot certify a design prepared by a design colleague in the same consulting practice.

The act also specifically states that a PCA is entitled to rely on an AC; this in effect means that there is no legal obligation on a PCA to check the qualifications of an AC, or for the PCA to satisfy itself that the certificate is appropriate and properly prepared.

Whilst at first sight these requirements could be thought of as having minor ramifications on the average engineer, consideration of all the issues involved reveal the following:

a) As the accreditation is personal, the AC cannot trade, or issue a certificate in the name of a corporate entity; as such, the personal assets of the AC are exposed if the certificate issued is in any way defective.

   Note: PI insurance only covers the legal and claim settlement costs; it does not cover the individual engineer's costs of assisting the PI insurer. These costs can be considerable and amount to many tens of thousands of dollars.

b) The statutory reliance by a PCA on an AC's certificate means that there is no motivation for a PCA to make sure that the certificate is issued in a competent manner. Thus, if the PCA accepts a defective / incompetent certificate and subsequently damage occurs to a third party, the AC is left to fully bear the blame, with the PCA not being involved.

c) The BPB becomes the prime assessor of an engineer's qualifications, whereas most engineers would consider that this is the role and function of Engineers Australia.

d) The costs associated with becoming and maintaining AC accreditation are relatively high, and almost impossible to recover from the usual fees that can be charged.

e) The requirement for an AC to work as a private individual, means that the AC does not work as part of the engineering team, and is thus not subject to the day-to-day scrutiny of his engineering peers. Without such day-to-day scrutiny, an engineer can tend to have a false assessment of their own expertise.

So in summary, becoming an Accredited Certifier is NOT a 'business opportunity', but rather a Hangman's Noose, by which an engineer can be destroyed.

4.2 PSA Certifier

By contrast to the Accredited Certifier certificate, a PSA certifier is the usual well experienced engineer [working in a consulting practice, or other corporate entity], who undertakes mandatory training in risk management, and regularly subject to 'peer review' by fellow professionals.

An engineer issuing PSA certificates also has his, or her, qualifications and credentials reviewed by both Engineers Australia, and fellow senior engineers.

As such, a PSA certifier has none of the disadvantages that an AC has, and at the same time many advantages, including limited liability.

4.3 EA Certifier

The traditional Engineers Australia [EA] certifier, is the usual engineer working in a consulting practice or other corporate entity, who certifies that a particular piece of work has been carried out in accordance with the relevant standards and specifications.

THIS REPORT IS PROVIDED FOR VIEWING & INFORMATION PURPOSES ONLY AND SHALL NOT BE RELIED ON FOR ANY PURPOSE

THIS REPORT IS PROVIDED FOR VIEWING & INFORMATION PURPOSES ONLY AND SHALL NOT BE RELIED ON FOR ANY PURPOSE

The main difference between an EA certifier, and a PSA certifier is that the PSA certifier has a liability cap, in both money and time terms. However, an EA certifier is usually a much less experienced engineer, and therefore more vulnerable.

The principal adverse issue for an EA certifier is the lack of a limit on liability; thus, whilst many in their early years do not consider this a serious issue, as engineers become more senior and approach retirement age, the issue becomes large and can have enormous commercial ramifications [e.g. the PI premiums for run-off cover can be very costly when your income is minimal].

In the author's view, it is a complete conundrum as to why engineers today continue to issue certificates in this form and without any cap on their liability. It also seems that engineers should change their ways, and use the PSA process in the way that lawyers and accountants do, and to their own benefit.

5. CERTIFICATE PROBLEMS & ISSUES

As noted earlier, in many cases faulty or defective certificates have been issued in relation to building & construction works; in addition, there have been many instances where certificates have been issued to enable variations to conditions of development consent, which then cause problems for both for the builder / constructor of a particular development, as well as neighbouring property owners.

Further, as the PCA is in reality a 'certificate gatherer' during the construction processes, there is no commercial [or other] motivation for a PCA to become involved in the neighbourhood / adjoining owner problems when the ramifications of a faulty engineering certificate become apparent on site.

In addition, whilst neighbours naturally have the usual recourse to legal avenues of resolving these issues, it is seldom that the neighbours have the physical, emotional or financial resources to seek legal redress for the damage that they have suffered.

Thus, it can be seen that the consequences to the public at large from the current private certification process is one of an adverse impact, aided and abetted by faulty certificates issued by engineers.

6. CASE STUDIES

To illustrate the adverse impacts of the current private certification process, the following two case studies are provided to illustrate how adjoining property owners can suffer serious damage, virtually without any form of recompense, because of the behaviour of the PCA, the certifying engineers and the developer.

In both the case studies, the PCA:

1. Would not become involved in the dispute, even after immense local pressure was brought to bear on the Local Council and the PCA.

2. Approved a variation to a condition of development consent after being provided with a certificate from an engineering certifier / consultant.

In both cases, it was quite apparent that the consultant / certifier providing the certificate on which the PCA relied, was not fully informed as to the reasons for the various conditions of development consent. In addition, in one case the consultant certifying the change in a condition of development consent on an engineering matter, was not an engineer.

The case studies are located at:

THIS REPORT IS PROVIDED FOR VIEWING & INFORMATION PURPOSES ONLY AND SHALL NOT BE RELIED ON FOR ANY PURPOSE

- William Street, Double Bay;
- The Avenue, Collaroy;

and described in more detail in the following sub-sections.

6.1 William Street, Double Bay

The first case study concerns a property developer [owned by an international oil company], who undertook the construction of a basement in the deep, water charged sands in Double Bay. As part of the condition of development consent, a certain type of shoring [or excavation support] was specified, which was later altered at the construction certificate stage to a less effective form.

The consequences of the changes in the details of the shoring were:

a) Ground movement took place.

b) Extensive damage occurred to the two-storey unit building.

It then took much effort by the body corporate of the unit building to get any action from the developer to address / rectify the damage that the developer had caused. Some of the occupants of the unit building also had to move out whilst the underpinning and other repair works were carried out to the building.

The chairman of the body corporate also suffered immense personal stress, had a heart attack and pacemaker fitted, because in all the negotiations the developer threatened the body corporate with a claim for 'building delays', if the body corporate obtained a stop work order on the developer. In addition, the final days of one of the unit occupants who was dying of cancer, was made much more uncomfortable.

At the end of the day, the building was underpinned and repaired, but not without the body corporate having to pay out over $50,000 [professional and legal fees] and suffering considerably.

Damaged building as viewed from Construction site.

Construction site on common boundary with damaged building.

ELECTRONIC

THIS REPORT IS PROVIDED FOR VIEWING & INFORMATION PURPOSES ONLY AND SHALL NOT BE RELIED ON FOR ANY PURPOSE

Internal & external cracking in building

6.2 The Avenue, Collaroy

The second case study concerns the construction of a basement on a steeply sloping hillside in an identified landslip hazard area, where landsliding had previously taken place. In the development approval processes, the Council had taken great care to consider the need for effective support of the excavations and imposed stringent conditions, to avoid additional landsliding and damage to the adjoining properties.

However, during the CC stage, advice was sought from a geotechnical consultant [not an engineer] who advised that the requirement for the excavation support was excessive, and that a much lesser form of support could be utilised. This lower level of support was much cheaper and generally embraced the installation of support **after** excavation, rather than the installation of the contiguous piling support **prior to** excavation required by the conditions of development consent.

After acceptance of the certificate by the 'geo-consultant' by the PCA for the lesser form of excavation support, a serious landslide took place during the construction of a basement, with the landslide extending over approximately one half of the adjoining property and consequent serious damage to the property.

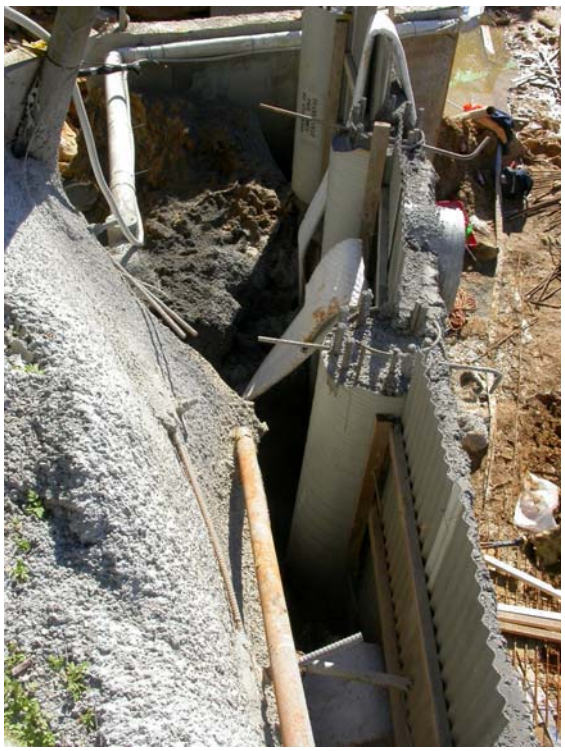
Later, and whilst the developer / builder offered to reinstate the backyard, the reinstatement was only offered after considerable pressure was brought to bear on the developer by engineers & legal team acting for the adjoining property owner.

Also, because of the emotional stress engendered by the landslide and associated structural damage to the house, the property owner also suffered a heart attack and then acquiesced, on health grounds, to virtually all of the developer's suggestions, despite his disagreement with many of the developer's proposals.

The subject property

The construction site below the damaged property

The construction site below the damaged property



lesser form of excavation support accepted by the PCA

THIS REPORT IS PROVIDED FOR VIEWING & INFORMATION PURPOSES ONLY AND SHALL NOT BE RELIED ON FOR ANY PURPOSE

ELECTRONIC

THIS REPORT IS PROVIDED FOR VIEWING & INFORMATION PURPOSES ONLY AND SHALL NOT BE RELIED ON FOR ANY PURPOSE

Resultant damage to the property included landslips and subsidence

CONCLUSION

In light of the foregoing, the following conclusions can be drawn from both the case studies, and the identified issues with the PCA and Accredited Certifier process.

C1. The current private certification process is not working effectively, and has the fundamental flaw of mixing the roles of regulator and developer.

C2. The method of payment of a private PCA should be in a manner that ensures the integrity of the regulatory process [e.g. an 'arms length' payment / contract].

C3. The lack of a requirement by a PCA to satisfy themselves as to the expertise of a certifier can have serious ramifications on both a developer and adjoining property owners; as such, it would seem that the statutory ability of a PCA to 'rely' on a certificate provided by an Accredited Certifier is not appropriate.

C4. As a private PCA is normally not fully informed as to all the reasoning behind the various conditions of development consent, a private PCA can make a serious error of judgement when releasing a construction certificate that relies, in part, on number of engineering certificates.

C5. The Local Council as the usual Consent Authority should be more extensively involved in the Construction Certificate process.

C6. Engineers should issue certificates under the relevant Professional Standards Acts, and not seek to become an Accredited Certifier in accordance with the BPB scheme.

C7. The Accredited Certifier system, as currently established by the BPB, has the fundamental flaw of requiring engineers to:

a) Work outside of a 'professional team',.

b) Place themselves in a position where they can be an innocent target of litigation.

C8. The Accredited Certifier process is should not be supported by engineers until the system is drastically reformed.

SHIRLEY CONSULTING ENGINEERS PTY LTD

THIS REPORT IS PROVIDED FOR VIEWING & INFORMATION PURPOSES ONLY AND SHALL NOT BE RELIED ON FOR ANY PURPOSE

TYPES OF ENGINEER CERTIFICATES [after Sangster 2008]

Legislation:	**Environmental Planning & Assessment Act NSW**	**Professional Standards Act NSW**	**Engineers Australia + NPER**
Engineer Certificate Type:	Part 4A Compliance certificate	Engineer compliance certificate	Traditional letter or Aust. Standard
PROFESSIONAL REQUIREMENTS			
Professional Qualifications	**Mandatory** as determined by BPB	**Mandatory :** NPER	**Mandatory** NPER or CPEng
Relevant experience	As determined by BPB	NPER - peer review & code of ethics	NPER - peer review & code of ethics.
CPD – Engineering / Technical	**Mandatory** – As required by the Building Professionals Board	**Mandatory** by Eng Aust.- 50 hrs / year.	**Mandatory** by Eng Aust.- 50 hrs / year
CPD - EPA Act & procedures	**Mandatory** - BPB course	**Mandatory** : self education & attendance at relevant courses.	Voluntary
Professional Indemnity Insurance (PI)	**Mandatory** >= $1 million	**Mandatory** > = $1 million	Voluntary
Conflict of interest	Cannot certify own designs	Voluntary by declaration	Often certifies own designs
Annual Risk Management training	Voluntary	**Mandatory** under PSC	Voluntary
Liability	100% to engineer for items certified	As determined by a Court	As determined by a Court
Liability Limit (excluding personal injury)	10 years after practical completion	**$1 million + 10 years** [grade dependant]	None
Subject to ICAC jurisdiction	Yes	Not Tested	No
Coverage	NSW	Australia	Most western countries