Canterbury Earthquakes Royal Commission
Te Komihana Rūwhenua o Waitaha

Discussion Paper:

Roles and Responsibilities

July 2012

1. Introduction

This paper presents key issues that are faced by central and local government, the building and construction industry and other elements of the private sector when developing and enforcing legal and best practice requirements for buildings in earthquake events.

The Royal Commission, through its Terms of Reference, is required to make recommendations on:

> the adequacy of legal and best-practice requirements for building design, construction, and maintenance insofar as those requirements apply to managing risks of building failure caused by earthquakes.

Respondents are asked to contribute views, evidence and well supported analysis on any or all of the topics documented in this paper in this context. The paper is set out as follows:

1. Introduction
2. Current regulatory framework
3. Issues with the current regulatory framework
4. Roles and responsibilities
5. Information about building performance

Submitters who are familiar with the current regulatory framework may wish to skip Section 2.

1.1 Purpose

The purpose of this paper is to:

- review the current regulatory framework, including legislation, regulations and compliance methods;
- review the current roles and responsibilities across the sector that underpin the building and construction industry; and
- identify issues for which further comment and analysis is sought from interested parties, in relation to the earthquake performance of buildings.

Matters discussed in this paper are issues identified as a result of the Canterbury earthquakes, that may signify wider systemic issues with aspects of the current regulatory system.

Please consider whether there are fundamental problems with the current regulatory framework and whether there is clear communication of its components, goals and objectives across all groups of stakeholders.

Key matters for consideration are any:

- gaps, omissions, weaknesses within the current building regulatory framework in relation to the performance of buildings in an earthquake, for example how standards are developed and how they are given legal effect;
- gaps in capability and ways of bridging these gaps, including the possibility of restructuring the Building Consent Authorities to ensure there is the capability in issuing consents for multi-storey buildings; and
- areas where information or communication is lacking across the sector, who would benefit from these gaps being filled, and who should undertake and/or fund this work.

This paper includes some tentative views of the Royal Commission, based on reports, submissions and hearings held to date. These are not final and will be subject to the consideration of submissions to be received and hearings to be held.

The training of engineers and post-earthquake assessment process will not be discussed in this paper. These topics are the subject of separate discussion papers that can be found on the Royal Commission website at http://canterbury.royalcommission.govt.nz/.

Issues relating to earthquake-prone buildings are not discussed in this paper as submissions and a hearing on this matter are now completed.

The Royal Commission is seeking submissions on the issues set out in this discussion paper, and plans to hold a public hearing commencing on 3 September 2012 covering the matters discussed.

Submissions can be sent by email or post as follows, and are required to be received by the Royal Commission by 12pm on 13 August 2012.

Email: Canterbury@royalcommission.govt.nz
Post: Canterbury Earthquakes Royal Commission
PO Box 14053
Christchurch Mail Centre 8544
New Zealand

1.2 Framework for defining problems and analysing possible solutions

In providing comment on the issues discussed in this paper, it is important to, where possible:

- identify problems, omissions or risks that arose in the Canterbury earthquakes or could arise in a future event and for which proposed solutions or changes may result in a materially improved outcome in the future;
- provide evidence and/or analysis behind the problems and proposed solutions;
- consider the advantages and disadvantages of a adopting a proposed solution, including the risks, barriers to implementation and likely costs;
- provide evidence of what has worked well elsewhere and identify any key differences or similarities between the New Zealand and other jurisdiction(s) that could affect how the proposed solution might work here; and
- note any third parties that have been consulted on or have contributed to your submission.

2. Introduction to the Building Regulatory Framework

The regulation of the design, construction and maintenance of buildings in New Zealand is carried out under a three-part framework.

- The **Building Act** (the Act) contains the provisions for regulating building work.
- The **Building Regulations** contain prescribed forms, list specified systems, define “change of use” and “moderate earthquake” and set out the rates of levy and fees for determinations.
- The **Building Code,** contained in Schedule 1 of the Building Regulations 1992, sets objectives, functional requirements and performance standards that all new buildings must meet and covers aspects such as stability, fire safety, safety of users, services and energy efficiency.

The Ministry of Business, Innovation and Employment (MBIE) is the government department responsible for administration of the Act and associated regulatory system. (This includes the functions of the former Department of Building and Housing.) Local government (territorial authorities) plays a key role in regulating building activity under the Act by processing consent applications and checking, and enforcing compliance.

2.1 The Building Act 2004

The Building Act 2004 sets out the current law on buildings and building work in New Zealand and provides the framework for building controls with the following objectives:

- People can use buildings safely and without endangering their health.
- Buildings have attributes that contribute appropriately to the health, physical independence and wellbeing of the people who use them.
- People who use a building can escape from the building if it is on fire.
- Buildings are designed, constructed and able to be used in ways that promote sustainable development[1].

The Act aims to improve the control of, and encourage better building practices in, building design and construction, to provide greater assurance to consumers. It applies

[1] Section 3 Building Act 2004

to building construction, alteration, demolition or removal, and maintenance of a building's specified systems, such as lifts and fire protections installations. It does not cover planning and resource management and occupational health and safety.

2.2 Building Regulations

There are currently 18 building regulations made under the Building Act 2004. In relation to the performance of buildings in an earthquake, the Building (Specified Systems, Change of Use, and Earthquake-prone Buildings) Regulations 2005 determine when a change in a building's use will require upgrading to meet the requirements of the Building Act 2004. These regulations also define a moderate earthquake.

2.3 The New Zealand Building Code

Schedule 1 of the Building Regulations 1992 contains the Building Code, which sets out the minimum standards for all new building work. It does not prescribe how work should be done, but states how completed building work and its parts must perform. This is currently focussed on life safety. The advantage of this approach is flexibility. It contains no prescriptive requirements stipulating that certain products or designs must be used. This flexibility allows developments and innovation in building design, technology and systems. It is commonly known as a "performance-based approach" (as opposed to being prescriptive). As experienced with the "leaky building" problems without having an adequate infrastructure and training to underpin it, it can be problematic.

Figure 1 below illustrates the hierarchy of New Zealand building controls, including the various compliance paths.

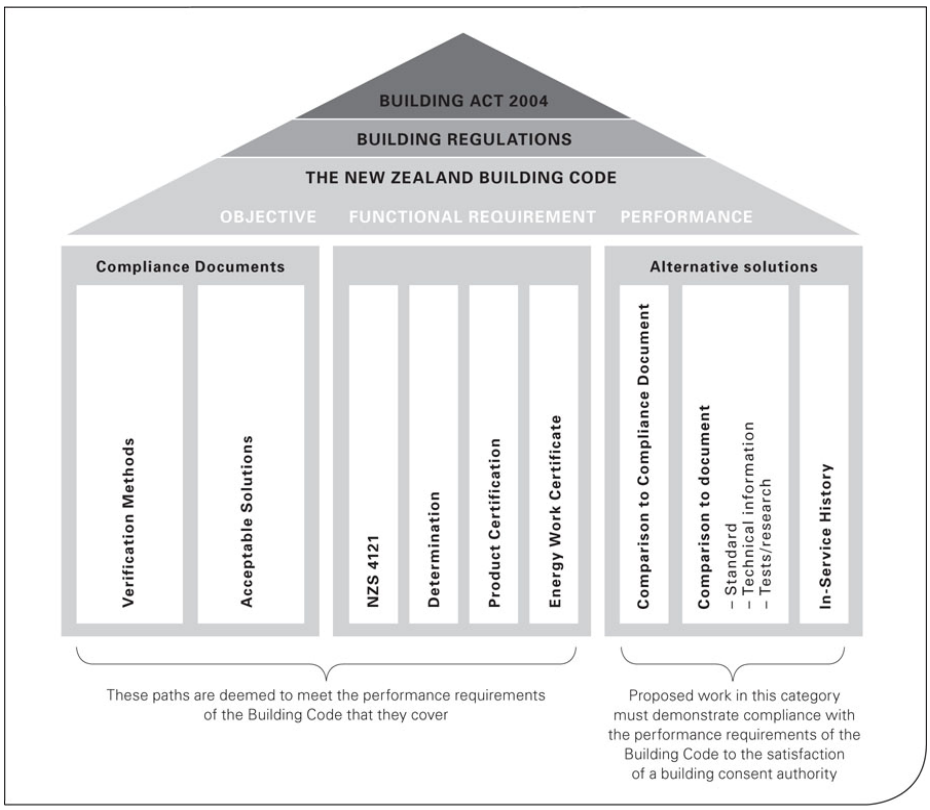


Figure 1- Hierarchy of New Zealand Building Controls[2]

2.4 Compliance with the Building Code

The top three tiers of Figure 1 are statutory controls that must be followed. The rest of the diagram shows the various paths that may be used to demonstrate compliance with the Building Code. Compliance can be achieved using one or more paths. An applicant can choose which path or paths to follow. With the exception of “alternative solutions”, the pathways shown above must be accepted by the building consent authority as meeting the performance requirements of the Building Code.

2.4.1 Compliance Documents

The compliance documents provide details for construction that if followed result in compliance with the Building Code. They are published by MBIE. The two kinds of compliance documents are Verification Methods and Acceptable Solutions. Standards developed by Standards New Zealand that are cited, in their entirety or in part in a compliance document, become part of the Building Code.

[2] Department of Building and Housing, (2011), The New Zealand Building Code Handbook, Third Edition, Wellington: New Zealand

2.4.2 Verification Methods

Verification methods are tests that prescribe one way to demonstrate compliance with the Building Code. They can include calculation methods, laboratory tests and tests in situ which may involve examination of plans and verification by test, where compliance with specified numbers, dimensions or locations is required.

2.4.3 Acceptable Solutions

Acceptable Solutions are simple step-by-step instructions that show one way to comply with the Building Code.

2.4.4 Determinations

A determination is a binding decision made by MBIE. It is used as a way of solving disputes or answering questions relating to the Building Code and territorial authority, Building Consent Authority, or regional authority[3] decisions under the Building Act 2004. It is generally specific to a project, however determinations will often provide a guide to interpretation of the Building Code or Act.

2.4.5 Alternative Solutions

An alternative solution is a building solution that differs, in part or wholly, from the solutions offered by the Compliance Documents, but demonstrates compliance with the performance requirements of the Building Code to the satisfaction of the building consent authority. The main reasons for the use of an alternative solution are that there may not be a Compliance Document for the proposed construction or the building work may incorporate unusual design features that fall outside the scope of a Compliance Document. Alternative Solutions allow for innovation and applicants have the freedom to propose an innovative solution.

[3] A regional authority means a regional council or a unitary council (Regional Council has the meaning given to it by section 5(1) of the Local Government Act 2002, and means a Regional Council named in Part 1 of schedule 2 of the Act).

3. Issues with the current regulatory framework

3.1 Efficacy of Building Regulatory Framework

There may be a lack of understanding as to how the Building Act 2004, Building Code, New Zealand Standards and guidance documents relate to one another and which documents regulate minimum standards and which are simply guidance. This results in potential inconsistency and a lack of innovation due to practitioners either following different documents, or overly following some documents due to a misconception that they are a regulated requirement. Overall, there seems to be confusion about the building regulatory framework and how it is to be followed in practise. This appears to be a communication issue rather than a systemic issue with the framework. Submissions received by the Royal Commission suggest that if improved and/or greater guidance were issued by MBIE, then the building regulatory framework would be more user-friendly.

3.1.1 Development of a National Policy Statement

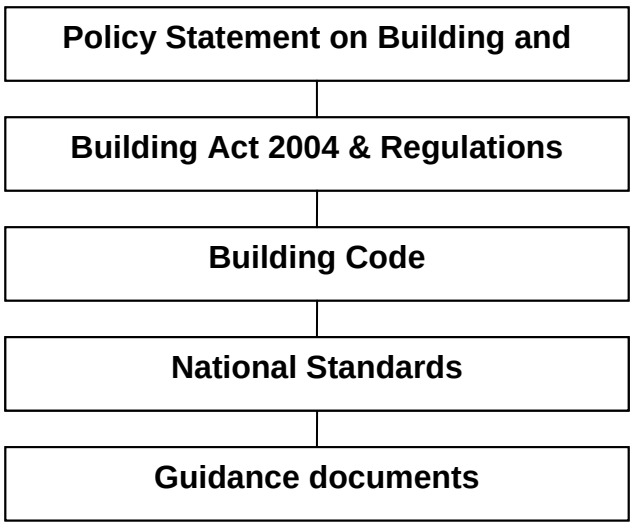
Submissions received have also suggested that the building and construction industry would benefit from a national policy statement, the suggestion is that this would provide a clear direction from government on the aims/objectives of the building and construction sector across New Zealand.

Section 3 of the Building Act 2004 sets out the purpose of the Act, guiding the objectives of the building industry. There is no provision or requirement in the Act for a national policy statement.

By contrast, section 45 of the Resource Management Act 1991 provides for national policy statements for resource management. This and subsequent sections set out the aims and criteria for such statements, and the process for their development (which includes a statutory public consultation process)[4].

The New Zealand Construction and Industry Council (NZCIC) recommends the regulatory hierarchy below, which includes what is effectively a national policy statement:

[4] See the Ministry for Primary Industries, National Coastal Policy Statement for an example of a policy statement under the Resource Management Act 1991.



The Institution of Professional Engineers New Zealand (IPENZ) also believes there is merit in having a national policy statement and, in addition to this, that there should be clear ownership and development of protocols. IPENZ propose the following:

- Policy documents being developed and owned by MBIE.
- Documents that give effect to mandated policy, being New Zealand Standards, funded through the Building Levy.
- Guidance documents being developed in expert professional communities to an agreed protocol to ensure they can be co-owned and co-branded as "endorsed" advisory documents by MBIE, professional bodies[5] and relevant learned societies[6].

It is not clear from submissions received and information available what purpose a national policy statement would serve in relation to the Building Act 2004 as the Act itself sets a clear purpose for the building and construction activity.

[5] A professional body is usually a non-profit organization seeking to further a particular profession, the interests of individuals engaged in that profession, and the public interest. for example, IPENZ.
[6] We use the term Learned Society to refer to an organisation that exists to promote an academic discipline or profession, or a group of related disciplines or professions. for example Structural Engineering Society New Zealand (Inc.) and New Zealand Society for Earthquake Engineering (Inc.)

3.1.2 Identified issues with the Building Act 2004

The Building Act 2004, (including the Building Code) was reviewed in 2009. According to the Cabinet Minute (CAB Min (10) 27/10 refers),the review aimed to:

- Clarify and simplify building regulatory requirements and require a more targeted, risk-based approach to their administration by building consent authorities; and
- Clarify the responsibilities of building producers to residential consumers, and better equip residential consumers to transact with confidence for building work.

The review found that the building regulatory system is not broken, but that it is costly and inefficient. The review did note that changes made by the Building Act 2004 had contributed much-needed improvements to the quality of building work. However, several areas for further improvement were identified, including:

- problems ensuring responsibility sits in the right place;
- weaknesses in consumer protection; and
- undue reliance on building consent authorities.

In August 2010, and in response to the review findings, the Government agreed to several changes to reform the building and construction sector in order to make it easier, more efficient, and more cost effective, for New Zealanders to build good quality homes and buildings.

At the core of the Government's decisions were:

- clearer accountabilities for owners, designers, builders and building consent authorities;
- consumer protection and remedial changes, including new general remedies;
- risk-based consenting to ensure the amount of checking and inspection required is aligned to the complexity of the work, and to the skills and the capabilities of the people doing the work; and
- a nationally consistent and efficient building regulatory system.

This is a significant work programme for MBIE and there are two pieces of legislation through which the core regulatory changes identified in the Building Act review are intended to be made. These are the Building Amendment Act 2012, which came into force in March 2012, and the Building Amendment Bill (No 4).

The Building Amendment Act 2012 introduced changes to the Building Act 2004 to make accountabilities clearer and to provide for a risk-based building consent system.

The Building Amendment Bill (No 4) would, if enacted, introduce:

- new consumer protection measures to help New Zealanders who are building or renovating their home to hold those responsible for their building work to account;
- mandatory written contracts for all residential building work over a prescribed value;
- new information disclosure requirements for building contractors about their skills, qualifications, licensing status and track record; and
- changes requiring building contractors to fix any defects in their work that are reported within 12 months of completion.

It completed its first reading on 1 May 2012 and has been referred to the Local Government and Environment Select Committee.

3.1.3 Conflicts between the Resource Management Act 1991 and the Building Act 2004

Submitters to, and research[7] considered before the Royal Commission have commented that the combined requirements and processes of the Building Act 2004 and the Resource Management Act 1991 (RMA) have produced inefficiencies in the building consent process administered by territorial authorities. Some consider that this imposes costs and delay that impede building activity across the country.

The RMA is intended to enable the sustainable management of natural and physical resources, and has a local focus in how it is applied. In contrast, the Building Act 1991 was intended to introduce a set of national controls relating to building work and the use of buildings. These controls addressed whether buildings were safe and sanitary, provided a means of escape from fire, and took into account natural hazards such as earthquakes, floors or land instability. The Building Act 2004 widened that scope to ensure that buildings contribute to the health, physical independence and well-being of their occupants, and that they are constructed in ways that promote sustainable development.

[7] M.W.H., (2004), 'Conflict Between The Resource Management Act 1991 and the Building Act 2004 - An Issues Paper'. BRANZ

A review of the Resource Management Act 1991 is currently underway by the Ministry for the Environment. One of the aims of this reform is to have a more efficient planning system.

Questions – efficacy of building regulatory framework

1. Are there problems with the existing building regulatory framework, identified through the experience of the Canterbury earthquakes? If so, what is the effect of these problems and are they sufficiently significant to require regulatory action?
2. What potential solutions might address the issues (e.g. a 'national policy statement') and how might these work in practice? What would the benefits be? What might the disadvantages be?
3. What are your views on the model proposed by IPENZ?
4. Has the Building Amendment Act 2012 gone far enough? If not, what changes are still needed and why?
5. What problems are there, if any, with the level of understanding of the building regulatory framework held by participants in the building sector?
6. What would help improve understanding of the building regulatory framework (if needed), and how should this be done? How would any costs be funded?
7. Do the Building Act and the Resource Management Act work effectively together to ensure an efficient consenting process, while balancing any appropriate competing objectives? If not, how can this be improved?

3.1.4 National Standards development

When a Standard relevant to building work is created by Standards New Zealand, or is published or revised, MBIE reviews it to determine whether it is suitable to be used in a Compliance Document[8]. Depending on the outcome of the review, MBIE may cite the entire standard or part of it in a Compliance Document. This then becomes part of the Building Code. If it is not cited then it is not part of the Building Code and therefore not formally part of the building regulatory system.

It has been suggested that the process for developing standards and giving them regulatory standing is unsatisfactory because there is a lack of understanding across the sector of this process and because it relies heavily on volunteer effort. There is also a range of other "non-official" documents being relied upon by the sector that have no

[8] Many Compliance Documents (e.g. Acceptable Solutions or Verification Methods) refer to Standards as a means of compliance.

official standing or may not be communicated effectively or used consistently, for example practice notes issues by certain groups. Resourcing Standards development and issues with the current funding model are discussed in section 4.4 of this paper.

The New Zealand Construction Industry Council (NZCIC) consider that Standards should provide a means of compliance through a mix of acceptable solutions and verification methods for all clauses of the Building Code. In addition to this, they recommend that there should be clear performance objectives against which alternative solutions can be reviewed against. The NZCIC also considers that a process is needed for prioritising which Standards are developed, reviewed and amended, and that government (MBIE) should lead this process, in consultation with an industry advisory panel consisting of key industry practitioners.

Although the recommendations by NZCIC are not earthquake specific, it considers that there are systemic issues with the building regulatory framework that have implications for the design and performance of buildings for or in earthquakes.

Questions – Standards development

1. What, if any, are the weaknesses, (e.g. omissions, failures, impediments) in the current building regulatory framework in relation to the process for developing requirements for design and performance of buildings for or in earthquakes?
2. What is the best way to provide compliance guidance (for example, should New Zealand Standards be the main or only method of compliance)? Why?
3. What guidance could or should be given on the compliance methods so that these methods are efficiently and effectively incorporated into the Building Code? Who would or should undertake this work?

4. Roles and responsibilities

4.1 Roles

Key players involved in the building controls system, in relation to earthquakes, comprise several organisations as discussed below. This section examines their current roles and responsibilities and identifies issues on which the Royal Commission seeks comment.

4.1.1 Ministry of Business Innovation and Employment

The Ministry of Business, Innovation and Employment is the government agency responsible for building and housing, and administers New Zealand's building legislation and regulations. Within the Ministry, the Building and Housing Group's functions include:

- advising the Minister for Building and Construction on matters relating to building control;
- administering and reviewing the building code;
- producing and maintaining compliance documents that specify prescriptive methods as a means of complying with the building code;
- providing information, guidance and advice on building controls to all sectors of the building industry and consumers;
- implementing, administering and monitoring a system of regulatory controls across the sector with skilled building professionals; and
- making determinations, or technical rulings, on matters of interpretation, doubt or dispute.

4.1.2 Building Advisory Panel

A Building Advisory Panel was established under section 172 of the Building Act 2004. The Panel's function is to provide independent, specialist advice to the responsible government agency on trends in building design, quality and performance, building technology, sustainability, urban planning and consumer issues. It is unclear to the Royal Commission how much guidance from this panel has been used or sought by the former Department of Building and Housing.

4.1.3 Territorial Authorities

Territorial Authorities (TAs) are responsible for enforcing the Building Act, Regulations and the Building Code in their areas, and for maintaining records

4.1.3.1 Building Consent Authorities

Building Consent Authorities (BCAs) are required to be accredited in order to be able to undertake the relevant statutory functions, and are audited on a regular basis to retain this accreditation. They are responsible for:

- issuing building consents;
- inspecting building work for which they granted a building consent;
- issuing notices to fix;
- issuing Code Compliance Certificates, under the Building Act 2004
- issuing compliance schedules and amending them where the specified systems are affected by building work; and
- carrying out other functions and duties specified in the Building Act 2004.

Territorial authorities are required to administer this function for their district or city, which may be carried out in-house or outsourced.

4.1.5 Licensed Building Practitioners

The Building Act 2004 set up a licensed building practitioner (LBP) scheme to promote, recognise and support professional skills and behaviour in the building industry. Licensed building practitioners must show they meet the standards for the licensed class appropriate for them. Once licensed, LBPs are responsible for notifying TAs of breaches of building consents. Since March 2012, restricted building work on houses and small-medium sized apartments buildings is only able to be carried out or supervised by LBPs

4.1.6 Standards New Zealand

Standards New Zealand is New Zealand's developer of Standards and Standards based solutions[9]. Standards New Zealand is the operating arm of the Standards Council, an autonomous Crown Entity operating under the Standards Act 1988. The

[9] For further information on Standards development see section 3.3.1

Standards Council, an appointed body with representatives from a wide range of community sectors, is the governing body for Standards New Zealand. The autonomous way it operates and its self-funded status is intended to help it maintain an independent stance and facilitate a cross-section of industry and consumer confidence in standards development.

The majority of Standards are developed in partnership with Standards Australia. As New Zealand's representative for the International Organisation for Standardisation (ISO) and the International Electrotechnical Commission (IEC), Standards New Zealand provides New Zealand's input into the international Standards community.

Standards New Zealand's role is to manage the Standards development process (described in Figure 2 below) using internationally recognised best practices. The process used complies with the directives from the ISO and the IEC, as well as the Standards Act 1988. There are approximately 650 building and construction related New Zealand Standards. Following review by MBIE to determine whether it is suitable to be cited in the Compliance Documents, a Standard will become part of the Building Code and will have regulatory standing.

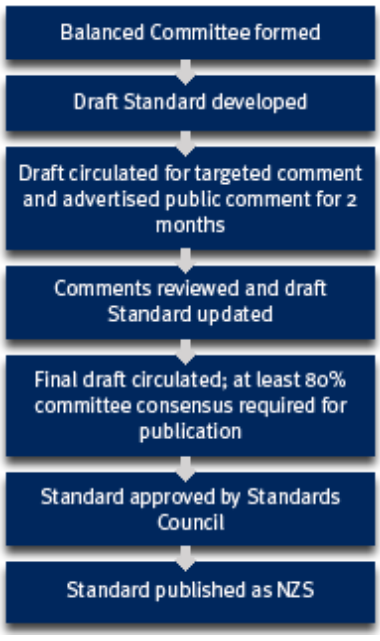


Figure 2- Standards Development Process

4.1.7 Building and Research Association of New Zealand (BRANZ)

BRANZ is an independent research, testing, consulting and information company providing services and resources for the building industry. Their main areas of activity are to:

- research and investigate the construction and design of buildings that impact the built environment in New Zealand; and
- enable the transfer of knowledge from the research community into the commercial building and construction industry.

Funding for BRANZ comes from three main sources:

- industry funding via the Building Research Levy (collected from building consent fees.);
- the Ministry of Science and Innovation (e.g. research grants); and
- revenues generated through commercially contracted research projects for private, government and international clients.

4.1.8 The New Zealand Construction Industry Council (NZCIC)

The New Zealand Construction Industry Council (NZCIC) is the overall representative body for 30 industry bodies in the building and construction sector. Given its membership base, the NZCIC is able to take a sectoral approach to matters and operates on a consensus basis.

The NZCIC states that its aims include promoting the interests of the broader construction industry to central Government, and creating conditions in which the sector can prosper. It does this by providing a forum for discussion. This enables member organisations to exchange views and identify issues of common concern within the sector. The NZCIC also represents industry interests, communicates industry views and distributes information.

4.1.9 Engineers

4.1.9.1 Institution of Professional Engineers New Zealand (IPENZ)

As well as being the registration body for New Zealand's engineers, IPENZ is also the professional body for engineers of all disciplines with membership including engineering

students, practising engineers and senior members in positions of responsibility in business. Members are classified into various membership classes according to their levels of education and extent of experience in engineering practice. Membership of IPENZ is voluntary but all professional members must be registered as Chartered Professional Engineers[10].

IPENZ undertakes a number of activities towards achieving formal recognition for the professional standing of engineers including:

- setting internationally benchmarked qualifying standards for degree qualifications and assessing foreign qualifications;
- representing engineers' interests with government;
- providing contact with other professionals through branches and technical groups;
- maintaining a publication and conference programme;
- developing good practice guidance and design guidelines for the industry; and
- undertaking practice reviews from time to time.

4.1.9.2 Learned Societies

'Learned societies' are voluntary organisations formed to promote a particular academic or professional discipline. They often play important roles for their particular industry by facilitating communication of new research by publishing journals, sponsoring academic works and holding regular conferences. Examples of these societies include:

- New Zealand Society of Earthquake Engineering Inc (NZSEE);
- Structural Engineering Society New Zealand Inc (SESOC); and
- New Zealand Concrete Society.

These societies play a key role in developing and guiding practice documents. However, there can be confusion about the standing these documents have in the overall regulatory framework.

4.1.10 GNS

Geological and Nuclear Sciences (GNS) Ltd is a crown owned research institute that operates as a limited liability company under the governance of a Board of Directors. Its

[10] 'Chartered Professional Engineer' (CPEng) is New Zealand's only statutory-backed mark of quality indicating an engineer has proven his or her current competence to practise as a professional engineer within New Zealand.

governing legislation is the Crown Entities Act 1992, the Companies Act 1993 and the Crown Entities Act 2004. GNS is New Zealand's leading research organisation in the field of seismic hazards. It provides earth, geoscience and isotope research and consultancy services. According to its Statement of Corporate Intent for 2011-2014, its purpose is to:

> Undertake research that drives innovation and economic growth in New Zealand's geologically-based energy and minerals industries, that develops industrial and environmental applications of nuclear science, that increases New Zealand's resilience to natural hazards, and that enhances understanding of geological and earth-system processes.

4.2 Responsibilities

Submissions received by the Royal Commission show that there is confusion about what role parties have in the building regulatory system, and what their organisation is responsible for. Because of the confusion, it is argued that the system has become inefficient. Some examples of the confusion relate to the legal standing of guidance material, who develops guidance documents, obligations to comply with these documents, and the process for gaining building consent based on alternative solutions.

Questions - responsibilities

1. In the context of building performance in an earthquake, who should the key players in the development of the building regulatory framework be and why, and what should their roles and responsibilities be? What impediments currently exist to achieving this?
2. If a work programme is needed for the development of building related Standards to ensure performance in an earthquake, (as discussed above in section 3), who should lead this, what are the priority areas, and how should this be funded?

4.3 Capability

The training and education of engineers is discussed in ***Discussion Paper – Training and Education of Engineers and Organisation of the Engineering Profession (June 2012)***[11]***.***

A BCA[12] carrying out building consent, inspection and approval work must be accredited by a building consent accreditation body (International Accreditation New Zealand [IANZ][13]). To obtain and keep accreditation, BCA must be audited, every two years, against the standards and criteria in the Building (Accreditation of Building Consent Authorities) Regulations 2006. The outcome of the audit (to gain or retain accreditation) from IANZ is forwarded to the audited BCA. This information is not publically available unless it is subject to a request to IANZ under the Official Information Act 1982. Once accredited, a BCA must then be registered by MBIE against the standards and criteria in the Building (Registration of Building Consent Authorities) Regulations 2007.

As part of a BCA's accreditation, it must demonstrate they have adequate expertise to carry out their functions as a BCA. In order to achieve this it must employ or contract in people with relevant skills. Christchurch City Council in their role as a BCA has engineers from various disciplines on their staff, and arrangements wilth private engineering companies for overflow work and specialist skills outside their experience.

MBIE in its role as regulator has a Chief Engineer on its staff. The main purpose of this role is to provide advice to the Building and Housing Group. A question has been raised with the Commission whether there should also be a Chief Architect role.

NZCIC and IPENZ submit that regulators must have sufficiently skilled personnel. They encourage local and central government to ensure regulators in the building and construction sector have the people and systems necessary to operate an efficient and effective regulatory regime.

[11] http://canterbury.royalcommission.govt.nz/documents-by-key/20120621.4590
[12] BCAs can either be a territorial authority, regional authority (council) or private companies
[13] The International Accreditation New Zealand (IANZ) has been appointed by the Chief Executive of MBIE as the building consent accreditation body under section 248 of the Building Act 2004.

Questions - capability

1. What examples or evidence are there of issues of competency within BCAs? What options are there to address these competency issues, if there are any? Give consideration to the different size and scope of territorial authorities across the country, and different mechanisms for acquiring expertise.
2. What skills are needed in the private building sector to ensure seismically resistant buildings?
3. MBIE has a Chief Engineer on its staff. What is or should be the purpose of this position? Should MBIE also have a Chief Architect and/or Chief Designer? Why or why not?

4.4 Standards development

Government funding for the Standards Council was phased out over the 1990's and was replaced with a requirement for the Council to operate on a commercial (self-funded) basis. It receives no direct funding from central government to maintain its operations or develop New Zealand Standards, although it is legislated to conduct this role. It is funded through agreements for service with stakeholders contracting for the development, amendment or revision of standards and through the sale of standards.

The Standards Council assert that successive Governments have not articulated a clear commitment to them as a prime source of Standards development expertise and capability in New Zealand and they are therefore working without a clear mandate.

The current model for Standards development appears to be based on the assumption that Standards serve commercial interests, not a regulatory or public good outcome.

In 2005 the Ministry for Economic Development commenced a review[14] into New Zealand's standards and conformance infrastructure. This review:

- compared New Zealand's Standards and conformance infrastructure with international practice;
- evaluated its effectiveness in contributing to improved competitiveness of New Zealand enterprises; and
- identified issues that need to be addressed to enhance that effectiveness.

[14] Ministry of Economic Development, (2007), *Report on the Outcomes of the Standards and Conformance Infrastructure review,* Wellington: New Zealand.

The review recommended that further work needed to be conducted to identify options to ensure adequate funding is available for standards development to support regulation.

> A third approach is to consider the provision of limited public funding to tackle market failure in the provision of standards. The review has concluded that such funding is warranted and that such an allocation, if properly administered, has the potential to provide significant benefits. If this is to be the case, processes would need to be put in place to ensure that genuine market failures are being addressed, that this does not replicate resources that are available within existing departmental baselines to deal with these and that any such public funding is consistent with principles of cost recovery and does not undermine activities that are cost recovered.

It is not clear whether any funding changes occurred as a result of this review.

IPENZ, the Standards Council and the NZCIC believe that the current suite of compliance documents are not being sufficiently kept up to date because of the way the Standards Council (which is the governing body of Standards New Zealand) is funded and because of the reliance on volunteers to develop Standards. This is having an impact on providing up-to-date Standards that can be used in the design and construction of seismically-resistant buildings. These policy issues are wider than building performance in earthquakes but are of sufficient importance to building performance to be further investigated.

Questions – resourcing Standards development

1. What should the role of Standards New Zealand be and how should it be funded?
2. What are the advantages, disadvantages and risks of relying on Standards for the majority of building and construction methodologies?
3. Should primary reliance continue to be made on volunteers?
4. In the event that Standards New Zealand is unable to source volunteers, what other means of funding might be available?
5. Should there be more use or less use of mechanisms other than Standards to develop and provide methodologies for compliance; why or why not? Who would or should do this work and how should it be funded?

4.5 Obtaining regulatory approval for building work

4.5.1 Building Consents

A building consent is the formal approval, under section 49 of the Building Act 2004, permitting an applicant to undertake building work in accordance with the plans and specifications approved by the BCA. “Building work” is defined as the construction, alteration, demolition or removal of a building and includes site work. A person cannot carry out building work unless it is in accordance with a building consent.

An applicant is required by the Building Act 2004 to submit plans to a BCA that demonstrate compliance with the Building Code. The BCA then reviews the submitted plans and technical literature, and will issue a building consent when it is satisfied, on reasonable grounds, that the proposed building work will meet the requirements of the Building Code.

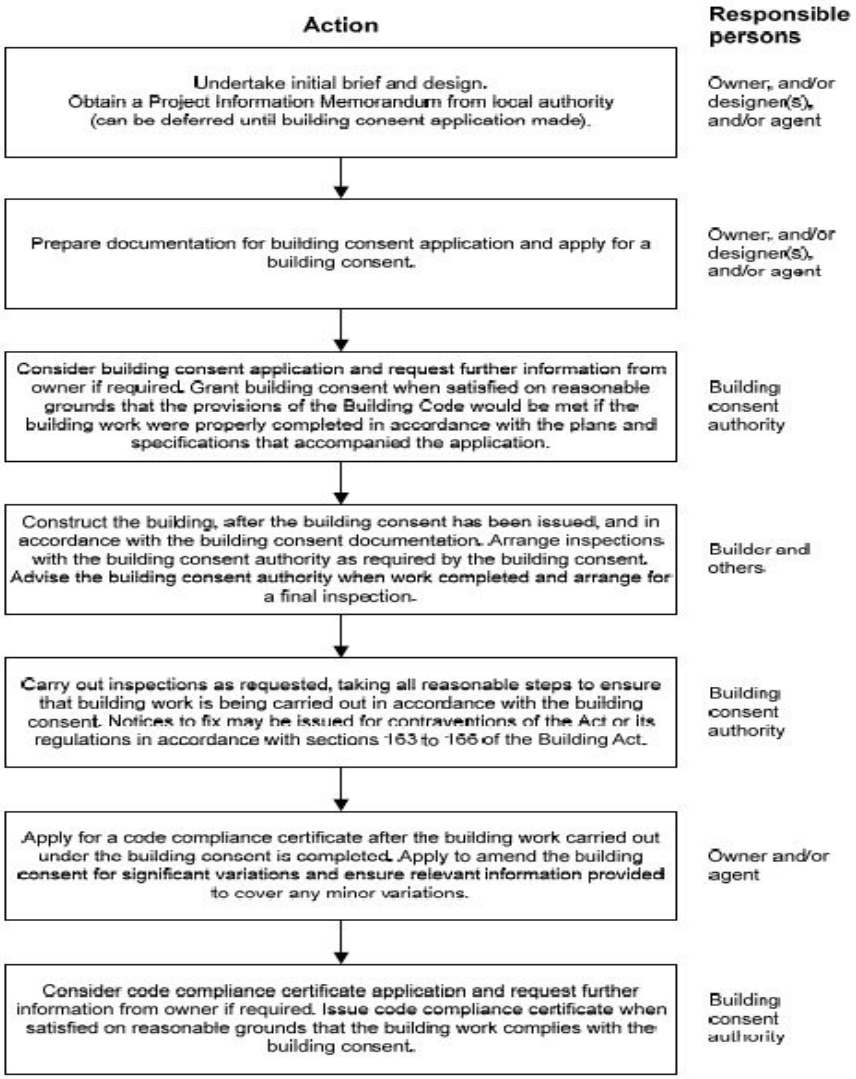


Figure 3- An overview of the building consent process

In addition to a building consent, an owner may need resource consent if this is required by a District or Regional Plan.

IPENZ and NZCIC consider that New Zealand needs a single national regulatory body to process building consents, with the body having regional representation. They believe that this model would ensure a smooth interface with the Resource Management Act 1991 consenting process, and allow for improved national consistency. NZCIC's view is that this model also needs the following:

- Risk-based consenting applied to work involving alternative solutions, with clear policies that define the requirements for evidence at different levels of risk.
- Clear and unambiguous information to allow applications involving only acceptable solutions and applications involving multi-use consents to proceed rapidly.
- The regulatory body delivering services locally as well as centrally, applying modern technology to its processes to ensure high quality service is received.
- Consistent national education and training of building officials.
- The national regulatory body taking responsibility for rapidly identifying emerging issues and ensuring these are addressed.

4.5.1.1 Centres of Expertise

MBIE provided evidence at the Royal Commission's hearing on new technologies [15] that it is considering how to enable easier use of emerging technologies. This includes considering the concept of 'centres of expertise', whereby more complex or innovative structures could be assessed without requiring that specialist capability in every BCA.

MBIE is also reviewing the accreditation methods of building consent officers to ensure they are more proficient in understanding emerging technologies, and how they may comply with the Building Code.

[15] This hearing took place in March 2012.

Questions – obtaining regulatory approval for building work

1. How well do you think the current consenting system works and why?
2. Are there any issues with the intersection of roles between territorial authorities and building consent authorities; why or why not?
3. Do you consider the status quo (local control by BCAs), a national model as described above, or an alternative option, would provide the most effective and efficient consenting process for complex building work?
4. Where do you think the focus should be within the consenting system in terms of risk? Are there any changes needed, taking into account those already introduced in the Building Amendment Act 2012? Why or why not?

4.6 Peer review, quality assurance, and the use of producer statements

A producer statement is a statement supplied by or on behalf of the applicant for a building consent, or by or on behalf of a person who has been granted a building consent. It shows that certain work will be or has been, carried out in accordance with the technical specification.

Producer statements are not expressly referred to in the Building Act 2004, (as they were in the 1991 Act). A producer statement can assist the building consent authority in deciding whether it is satisfied on reasonable grounds the provisions of the Building Code will or have been met.

Peer review of design can be undertaken by engineers at various stages in the process to verify that the design complies with the Building Code. Due to peer reviews and producer statements not currently being a requirement of the Building Act 2004, there is confusion over their standing and resulting ad hoc and inconsistent use. Evidence received by the Royal Commission shows that BCAs have faced liability issues arising from reliance on these documents.

The Building Amendment Act 2012 has now amended section 7 of the Building Act 2004[16] to recognise peer review, and supporting quality assurance systems, as a means of providing assurance of Building Code compliance for commercial buildings.

[16] Section 7 of the BA 2004 has been amended to allow for "independently qualified persons"
a) who is accepted by a territorial authority as being qualified to-
   i. carry out or supervise all or some of the inspections, maintenance, and reporting procedures required for a specified system stated ina compliance schedule; and
   ii. certify that those procedures have been fully complied with; and
b) whose acceptance under paragraph (a) has not been withdrawn by the territorial authority.

The Royal Commission has received suggestions that a matrix should be produced showing when a peer review should be conducted. This would be based on several variables, including the type of building and its complexity level. Submissions received to date suggest that there also may be a question over the objectivity of the peer review where the peer reviewer is selected and engaged by the original designer or the owner.

NZCIC's view is that there needs to be a clear means of obtaining regulatory approval for building work, without duplication of steps or stages. NZCIC proposes a process, key elements of which, for the purposes of this discussion paper, include:[17]

- Designers would provide sufficient documentation of designs to owners so those owners can submit those documents in the knowledge they are likely to demonstrate there are reasonable grounds for the relevant regulator to decide designs comply with the Building Code.
- Builders would decide how to construct the designed building, manage the construction process, and at its conclusion, provide sufficient evidence so the owners can submit that evidence in the knowledge it is likely (taken in conjunction with evidence collected directly by the regulator) to demonstrate there are grounds for the regulator to issue a code compliance/consent checking certificate.
- Where appropriate (for example, where alternative designs that might be considered difficult to construct) the role of designers observing construction to confirm correct implementation by the builder is recognised and specifically included in the regulatory approval process.
- Producer statements and memoranda for restricted building work are consolidated into two nationally-consistent documentation systems, one based on proof of workmanship, the other on providing a standardised means for providing evidence towards alternative solution acceptance.
- Information from the consenting process on the quality of work submitted by individuals is consistently provided to occupational registration authorities to assist those authorities to run educational and complaints processes to support consistent competence standards.
- Clear disclosures of limitations are required of parties involved in the design or construction process, and the building owner is adequately informed on the ongoing maintenance that might reasonably be required.
- Clear information for building owners is provided from a single central source.

[17] New Zealand Construction Industry Council (NZCIC), Briefing to the Minister of Building and Construction and the Department of Building and Housing, March 2012, page 7

Questions – quality assurance

1. Comment on the proposed model for regulatory approval by NZCIC – what aspects of this model should or should not be adopted and why?
2. When might producer statements be used and why; what benefits do they provide? What, if any, standard should such statements be required to meet?
3. What standing, if any, should producer statements have?
4. When should a mandatory peer review take place (ie. type of building, complexity level)? Who should the costs of a peer review fall upon?
5. What guidance (and level of guidance) should there be on the use of peer review (for example, a matrix guiding peer review requirements) and who would or should be responsible for developing and providing and enforcing (if reviews are mandatory) this?
6. Who should conduct peer reviews? Should there be any specific requirements (for example, independence) and why or why not?
7. Do peer reviews need to be audited and if so by whom?

5. Information about building performance

Following the Canterbury earthquakes, it became clear that building performance expectations differed between the public and engineers. Engineers considered that the majority of buildings performed well, whereas many building users and members of the public considered the buildings to have performed to a lower standard than they expected.

IPENZ and NZCIC both consider that MBIE should supply more guidance to the sector on how buildings are expected to perform.

Current regular checks on buildings (that do not come to a territorial authority's attention for other reasons) are generally related to the Building Warrant of Fitness system. This examines specific systems like fire prevention, management of lifts etc.

IPENZ recommends that analysis be conducted to establish whether there would be a public benefit in having a building warrant of fitness that is wider in coverage than the current warrant (e.g. examines building deterioration). They suggest experts, who can check for deterioration changes every 10 years, should be responsible for providing the warrant check.

Questions – information about building performance

1. Comment on whether there are any gaps, weaknesses or omissions in the information available on the performance of buildings in an earthquake such that affected parties can make informed decisions. How might these be addressed?
2. What benefits might the implementation of a building warrant of fitness, to check for building deterioration, provide? What costs or disadvantages might this lead to?