

Royal Commission of Inquiry into Building Failure Caused by the Canterbury Earthquakes

Standards Council – Submission 2

2 March 2012

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1. Executive summary

This is the second submission by the Standards Council (Council) to the Canterbury Earthquakes Royal Commission (Royal Commission). Its main purpose is to describe the underlying concepts of standardisation, with particular reference to the interaction between research and standardisation. The objective is to demonstrate how a well-resourced New Zealand Standards process, based on international best practice, can deliver new standardisation tools in the most timely and efficient manner and ensure their accessibility to users.

The submission is in three parts.

1.1 The Standards Council's response to the Royal Commission's Interim Report

The Royal Commission released an Interim Report to Government on 11 October 2011. This report provided initial recommendations to the Government for action and included several recommendations that referred to urgent changes to New Zealand Standards.

The Council advises that we have since undertaken the following activities.

1. Stakeholders from various sectors were brought together in November 2011 to share learnings from the recent earthquake series, as had been done in September 2010 following the first Canterbury earthquake.
2. A workshop of experts involved with the use and development of NZS 3101:2006 *Concrete structures Standard* was held in November 2011 to clarify aspects of the Standard to be reviewed and the priority of these aspects.
3. A programme of work to revise NZS 3404.1 and 2:1997 *Steel structures Standard* has been underway, with Part 1 published in 2009. A proposal has been submitted to the Department of Building and Housing (DBH) for the P3404 committee to meet and review the scope and priorities within this programme of work.
4. Discussions have been underway with the sector to revise NZS 3603:1993 *Timber structures Standard* for several years. The necessary approvals have been sought to access and use the intellectual property from AS 1720.1:2010 *Timber structures* as the preliminary draft document, and a project proposal has been submitted to the DBH to revise and replace this New Zealand Standard.
5. Discussions with Standards Australia, the process owner for the AS/NZS 1170 series, have commenced to ensure any adjustment to these joint New Zealand Standards can begin rapidly.

1.2 Comment on the Structural Engineering Society New Zealand (SESOC) practice note (as requested by the Royal Commission on 21 December 2011)

In December 2011 the Structural Engineering Society New Zealand (SESOC) submitted a practice note to the Royal Commission entitled 'Design of Conventional Structural Systems following the Canterbury Earthquakes'.

The SESOC practice note has implications for the Council. The Council is involved in the timing and appropriate mechanism for transferring and diffusing knowledge and research into the building and construction sector, through New Zealand Standards in the national Standards catalogue.

Consideration of the SESOC practice note through the Royal Commission of Inquiry would be useful. The Council would welcome any recommendations for how and when the contents of the practice note should be considered as part of the review of the relevant material structural design Standards.

1.3 Submissions in relation to the hearing on new building technologies

The Council's supporting role in researching, transferring, and diffusing of knowledge through New Zealand Standards means we have information to contribute to the Royal Commission hearing about *new building technologies*.

New Zealand Standards and other forms of standardisation (for example, industry developed guidelines) are an effective way of disseminating research and new innovations to the sector. However, as this submission describes, the effectiveness of this channel is dependent on sector coordination and adequate resourcing.

New Zealand Standards are an efficient and effective mechanism to transfer knowledge and enable new building technology to be diffused into the market safely and confidently.

The challenge often encountered by the Council is the appropriate timing to standardise new technology and research, and bring this knowledge into the national Standards catalogue.

As the Council stated in its first submission, there are currently three challenges in fully achieving an effective and coordinated standardisation system.

These challenges are:

1. insufficient sector coordination and leadership
2. a lack of clarity on the intended function which the standardisation tool is to serve
3. the Government's policy settings which define the Council's operating model, which do not enable:
 - a public-good prioritised work programme
 - complete certainty and commitment to a longer-term standardisation programme and its coordination with research and implementation.

The Standards Act 1988 requires that the Council approves New Zealand Standards that have been developed robustly, fairly, and transparently. The current contract-based model ensures rapid and efficient development, drawing on a cost-effective model of volunteer contributions from the most affected stakeholder groups.

However, this model does not:

- effectively link the Standards development process to the research community
- enable certainty on its means of Standards deployment once developed
- provide alignment of conformity assessment processes within New Zealand
- enable mechanisms for risk assessment or preliminary impact assessment which may guide the most appropriate standardisation solution.

The Council considers the effectiveness of New Zealand Standards within the building regulatory system can be improved.

The timing of standardising new innovations and technology, such as that given in the SESOC practice note, and disseminating this knowledge and research through standardisation can be challenging.

When the development of Standards is coordinated with the wider sector programmes, and is well integrated and deployed, standardisation will contribute significantly to an economy.

Improving the coordination of work programmes for research, standardisation, deployment, education, and support can bring significant efficiencies and clarity to the sector and those involved in the preparation of documents for the regulatory system.

2. Background

Submission from the Standards Council

The Council expressed an interest in contributing information to the Royal Commission and provided its first submission on 14 October 2011 describing its roles and functions.

This is the Council's second submission to the Royal Commission. It is in three parts:

- the Council's response to the Royal Commission's Interim Report
- comment on the Structural Engineering Society New Zealand (SESOC) practice note (as requested by the Royal Commission on 21 December 2011)
- submissions in relation to the hearing on new building technologies.

3. Introductory comment

The Council has noted a number of recent submissions by industry participants, and comments made during the Royal Commission's hearings, about the need for New Zealand Standards for building to be updated using the national standard setting process.

Several submitters and witnesses have also noted that the process in New Zealand has been under-resourced for many years, which has resulted in an over-dependence on voluntary input by experts and has also reduced the accessibility of promulgated New Zealand Standards due to the necessity of a fully user-funded approach.

As is clear from the Council's first submission, we share the concerns about the under-resourcing of the New Zealand Standard-setting process and are of the view that a different approach to the funding of the Council's work is needed in order to optimise the benefits to be gained in the building sector from the internationally recognised standardisation model used by the Council.

This second submission describes the underlying concepts of standardisation, with particular reference to the interaction between research and standardisation. The objective is to demonstrate how a well-resourced New Zealand Standards process, based on international best practice, can deliver new standardisation tools in the most timely and efficient manner and ensure their accessibility to users.

The Council is aware that the Royal Commission also intends to hold a hearing on the regulatory framework. While the scope of that hearing has yet to be announced, the Council anticipates making further submissions in relation to that hearing, and wishes to reserve its position in relation to the content covered in those hearings.

4. Update on the Council's developments post Royal Commission's Interim Report (11 October 2011)

The Royal Commission released an Interim Report to the Government on 11 October 2011. This report provided initial recommendations to the Government for action and included several recommendations that referred to urgent changes to New Zealand Standards.

The Council's first submission was prepared in advance of the Interim Report.

The content of this second submission continues to reflect our views, and provides an update on activity in response to these recommendations.

The Interim Report's recommendations as they related to the Council (and Standards New Zealand) were:

- '11. *that Standards New Zealand be required to initiate the process of amending current building standards in light of the findings from the Canterbury earthquakes referred to above;*'
- '15. *urgent work should be carried out to enable appropriate provisions to be incorporated in the relevant structural design actions standards (AS/NZS 1170 and NZS 1170.5) together with the material design standards (NZS 3101 Concrete Structures, NZS 3404 Steel Structures and NZS 3603 Timber Structures) so as to facilitate the use of these technologies.'*

The Council advises that we have since undertaken the following activities.

1. Stakeholders from various sectors were brought together in November 2011 to share learnings from the earthquake series, as had been done in September 2010 following the first Canterbury earthquake.
2. A workshop of experts involved with the use and development of NZS 3101:2006 *Concrete structures Standard* was held in November 2011 to clarify aspects of the Standard to be reviewed, and the priority of these aspects. As a result:
 - a number of clauses have been signalled for review as part of a proposed Amendment 3 to the Standard; a proposal has been prepared and submitted to the DBH to commence this project immediately; the chair of the NZS 3101 workshop has also formally requested that the DBH initiate a review of the primary loadings Standard, AS/NZS 1170 *Structural design actions*
 - other aspects of NZS 3101 have been considered in conjunction with the setting of research programmes, and changes are expected to be incorporated into this Standard by way of a future amendment or revision once research has sufficiently advanced
 - finally, some aspects have been described by the sector stakeholders as requiring more consideration before research can be defined and decisions made.
3. A programme of work to revise NZS 3404.1 and 2:1997 Steel structures Standard has been underway, with Part 1 published in 2009. A proposal has been submitted to the DBH for the P3404 committee to meet and review the scope and priorities within this programme of work.
4. Discussions have been underway with the sector to revise NZS 3603:1993 Timber structures Standard for several years. The necessary approvals have been sought to access and use the intellectual property from the Australian Standard, AS 1720.1:2010 Timber structures, as the preliminary draft document, and a project proposal has been submitted to the DBH to revise and replace the New Zealand Standard.
5. Discussions with Standards Australia, the process owner for the AS/NZS 1170 series, have commenced to ensure any adjustment to these joint New Zealand Standards can begin rapidly.

The Council considers it has taken matters as far as it practicably can at this stage. Once the outcome of the project proposals is clear, and funding decisions have been taken by the regulator, further work can then be undertaken by the Council to carry out the necessary urgent amendments and prioritisation of the work programme.

5. Structural Engineering Society New Zealand (SESOC) practice note

In December 2011 the Structural Engineering Society New Zealand (SESOC) submitted a practice note to the Royal Commission entitled 'Design of Conventional Structural Systems following the Canterbury Earthquakes'.

SESOC describes this document as 'an attempt to provide interim design advice for designers in advance of potential code changes, in order to 'future-proof' new building designs, to the extent practical.' The Council supports recommendations that encourage standardisation, as are contained in the practice note, and thus the greater objectives of New Zealand and industry.

Consistent with its role as the facilitator of New Zealand Standards, the Council does not have any comment on the technical guidance or content offered in the SESOC practice note. However, while the Council supports initiatives to provide interim advice of this nature, it does have comment in respect of the manner in which the recommendations of a practice note such as this should be used by the industry, given the regulatory framework and the existing set of relevant New Zealand Standards.

Our comments relate to the issues described in the Council's first submission about the building regulatory system design.

The SESOC practice note has implications for the Council. The Council is involved in the timing and appropriate mechanism for transferring and diffusing knowledge and research into the building and construction sector, through New Zealand Standards in the national Standards catalogue.

Consideration of the SESOC practice note through the Royal Commission of Inquiry would be useful. The Council would welcome any recommendations for how and when the contents of the practice note should be considered as part of the review of the relevant material structural design Standards.

The Council is also aware that a recent workgroup of technical experts from the sector has met to discuss NZS 3101 *Concrete structures Standard*, and the Council expects they will provide some comment on the technical aspects.

This practice note appears to set provisions intended to be used in a mandatory context to ensure the New Zealand Building Code requirements are met. As described in the latter part of this submission, the Council looks forward to working with the SESOC experts should the content of this practice note be considered for incorporation into the relevant New Zealand Standards.

The Council considers the research, knowledge and expertise from those within SESOC membership is valuable in ensuring New Zealand continues to advance its requirements and guidance for structural design.

6. New building technologies

The Council's supporting role in researching, transferring, and diffusing knowledge through New Zealand Standards means we have information to contribute to the Royal Commission hearing about *new building technologies*.

New Zealand Standards and other forms of standardisation can be effective at disseminating research and new innovations to the sector. However, as this submission describes, the effectiveness of this function is dependent on sector coordination and adequate resourcing.

6.1 Standardisation and timing for technology transfer

Standardisation can drive innovation at a company, sector, and economy-wide level. Stringent New Zealand Standards and other forms of standardisation for products and performance of processes can encourage companies to innovate to achieve and exceed these Standards. If these Standards anticipate Standards in overseas markets, they can provide domestic companies with a competitive advantage internationally.

Codifying information into Standards also facilitates technology transfer which can be a basis for further innovative activity. Involvement in standardisation can create competitive advantage, particularly if companies secure influence over international Standards. Effective integration of standardisation into countries' research and development frameworks (the national innovative 'ecosystem') could deliver significant benefits for researchers, as well as end-users, through increased ease of uptake and the development of a well-considered knowledge and evidence base.

Internationally, regionally, and domestically, Standards and other forms of standardisation are an effective channel to disseminate innovative technologies to markets. Examples include solar energy, nuclear energy, hydrogen technologies, and solid and liquid bio-fuels. Other examples include technologies, metrics, and good practice impacting on energy efficiency and energy management systems, intelligent transport systems, the thermal performance of buildings, and the comparison of energy systems and energy-ware balances.

The process of standardisation is not just about creating norms for given technologies in given markets but helping to establish credibility, focus, and critical mass in markets for new technologies.

New Zealand Standards are an efficient and effective mechanism to transfer knowledge and enable new building technology to be diffused into the market safely and confidently.

The challenge often encountered by the Council is the appropriate timing to standardise new technology and research, and bring this knowledge into the National Standards catalogue.

The main tension that exists (as illustrated in Figure 1) is to avoid initiating standardisation too early or too late. That is, if requests for standardisation are made before the research can be considered mature enough, and a particular product or technical standard is imposed too early in the process of developing a new product, then the effect on innovation may be negative.

On the other hand, standardisation that comes along too late may result in unnecessary costs due to duplication or 'locking in' technologies that were not the most efficient, and therefore, potentially have a detrimental effect on innovation.

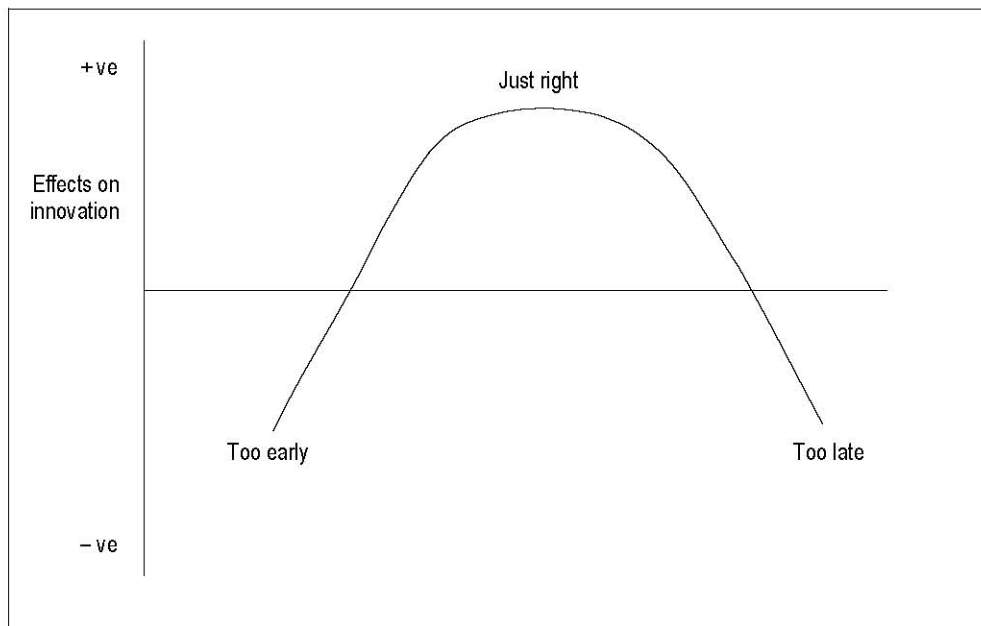


Figure 1 *Innovation curve*

Adapted from Everett M, Rogers, *Diffusion of innovations*, 3rd ed. (New York: Free Press, 1963), p.247

This is not a new challenge confronting the Council. As the following case study shows, when a step change occurs in new technology or innovation, research is often required to ensure a solid evidence base exists upon which adjustments to provisions are considered and set.

This case study shows the transfer of new technology and innovation by four world leading structural engineers, and the use of New Zealand Standards to thoroughly consider the supporting research and for this knowledge to be effectively disseminated to users. At the time, the Government's policy settings for the Council were different, and the Ministry of Works laboratories were still in effect to conduct the necessary research.

Case Study NZS 3101 *Concrete Structures Standard*

NZS 3101: *Concrete Structures*

NZS 3101 is the Standard for concrete design, first published in 1982.

Its use resulted in safer concrete structures and improved efficiency of design for structures using concrete.

It is used primarily by structural engineers and territorial authorities to verify the design of concrete structures.

The Council took a leadership role in maintaining a strategic overview of the review project and providing policy guidance from relevant industry sectors.

The challenge facing the NZS 3101:1982 development committee: when to standardise

During the mid 1970s a New Zealand National Society of Earthquake Engineers (NZNSEE) study group was set up to produce recommendations for the design and detailing of ductile structures.

The study group produced a series of papers and recommendations which were published in 1977 and 1980. These covered much of the research completed in New Zealand and overseas over the previous

decade, especially research carried out at the University of Canterbury, University of Auckland, and at the Ministry of Works central laboratory, by a large number of post-graduate students and staff under the supervision of Professors Park and Pauley and Drs Nigel Priestley and Richard Fenwick.

NZS 3101 was published in 1982.

By then, it was considered a state-of-the-art code of practice, informed by the research and innovation completed throughout the 1970s.

If NZS 3101 had been standardised several years earlier it would have been less informed and rigorous, resulting in more than a decade of research not being able to be considered when setting provisions and requirements. Step changes in innovations, such as constructing with ductility, might not have had sufficient evidence to justify its incorporation.

If NZS 3101 had been standardised several years later the previous requirements set out in the ACI 318:1971 and Ministry of Works Code of Practice 1968 might have remained in effect for longer, resulting in much lower awareness of this new innovation and research such as constructing with ductility.

Reviewing NZS 3101

For a Standard to remain current and fit for purpose, it needs to be regularly reviewed and updated. Frequent review of the New Zealand Standard would lessen the impact of standardising too early or too late as new research and innovations get continually reviewed for their level of maturity.

NZS 3101:1982 was fully reviewed in 1995 and 2006, with amendments made in between. The most recent was NZS 3101:2006 Amendment 2, which was published in 2008. Reviews are now dependent on funding sponsorship.

The industry has also signalled a need for a standing committee to be in effect to monitor the research programmes, and assist in determining the appropriate timing for considering new innovations and technology into NZS 3101. While the Council has held ad hoc workshops, such as the NZS 3101 workshop held in November 2011, a lack of funding has prevented this from being a regular and established function.

SNZ 3101:2006 – overdue for further review

Council-facilitated working group that has been currently determining the future work programme and timetable for the review of NZS 3101:2006 faces the same challenges. Updates can now be made, as a result of new research (these can also be made by way of amendment).

Drivers for a new review include:

- the introduction of new technologies and innovation since the last review
- a growing list of queries from users of the Standard
- feedback from the industry
- the Royal Commission's Interim Report (11 October 2011), which proposed to the Government that SNZ 3101:2006 be reviewed to include information on the magnitudes of elongation.

The issues facing a review of SNZ 3101:2006

The challenges facing the NZNSEE study group in the 1970s – when to reference the standard – remain today.

A recent NZS 3101 workshop identified potential updates that can be grouped into three categories.

1. **Updates that can be carried out now.**
A proposal for funding a project has been prepared to develop Amendment 3.
2. **Aspects that require further research.**
Sector stakeholders have been discussing these and considering how they might be incorporated into various research programmes.
3. **Aspects where problems are still being defined.**
New research work is yet to be defined or funded.

New Zealand Standards and other forms of standardisation support innovation by providing an essential platform on which new technologies and processes can build. Research on innovation and economic growth by the economist William Baumol (2002) concludes that the significant rate of innovation in modern economies emerges from the ability of companies to 'routinise' innovation.

Rather than making random one-off innovations, modern economies are able to produce continual and routine innovations in doing things better and more efficiently. These economies can facilitate the diffusion and effective transfer of technology. The technological knowledge which some Standards contain is generally available to all.

Empirical work has attempted to assess the extent to which Standards benefit the economy. One team of researchers estimated that a reliable standardisation system had contributed 0.9% towards the 3.3% annual GDP growth in the West German economy between 1960 and 1990 – second only to investment in importance.

Research conducted in the UK suggests that as much as 13% of labour productivity growth from 1948 to 2002 was due to the portfolio of Standards tools maintained by the national standards body. Over one-quarter of the UK's annual technological growth can be attributed to these national standards. This growth is due to the role of Standards and other forms of standardisation in disseminating management practices, technology, and other knowledge. It is therefore no surprise that the High Tech Strategy for Germany, published by the Federal Ministry of Education and Research in 2006, singles out the importance of a vigorous standardisation strategy, citing early standardisation as a key element in securing the rapid translation of research into commercial products and services.

In New Zealand, research by Business and Economic Research Limited (BERL) in 2011 shows that a more coordinated approach to Standards development could contribute to an increase in New Zealand's gross domestic product by up to 1% or \$2.4billion over a ten year period.

New Zealand Standards are published and reflect provisions or information, drawing on the best information available at that time. To maintain their currency they should be frequently reviewed and, if necessary, periodically amended or revised.

6.2 Challenges

There is significant opportunity for better integration of standardisation into New Zealand's research and development lifecycle.

Specifically, the Council, as the national standards body, is well placed to provide value adding services including stakeholder consultation and Standards development, publication, and dissemination.

The Council can directly support the 'research and new technology' environment through the provision of New Zealand Standards and other forms of standardisation that incorporate the:

- establishment of common vocabularies, enabling innovators working in different locations to communicate with confidence about common subject-matter, without wasting time and effort
- acceptance of new technologies by the marketplace, through the assurance of New Zealand Standards and related products
- consideration of health, safety or other aspects, as technology moves away from areas covered by existing arrangements
- setting of a target for technologies to aim for, in terms of a performance specification.

As shown in Figure 2, standardisation can be used to support a building system in a range of areas.

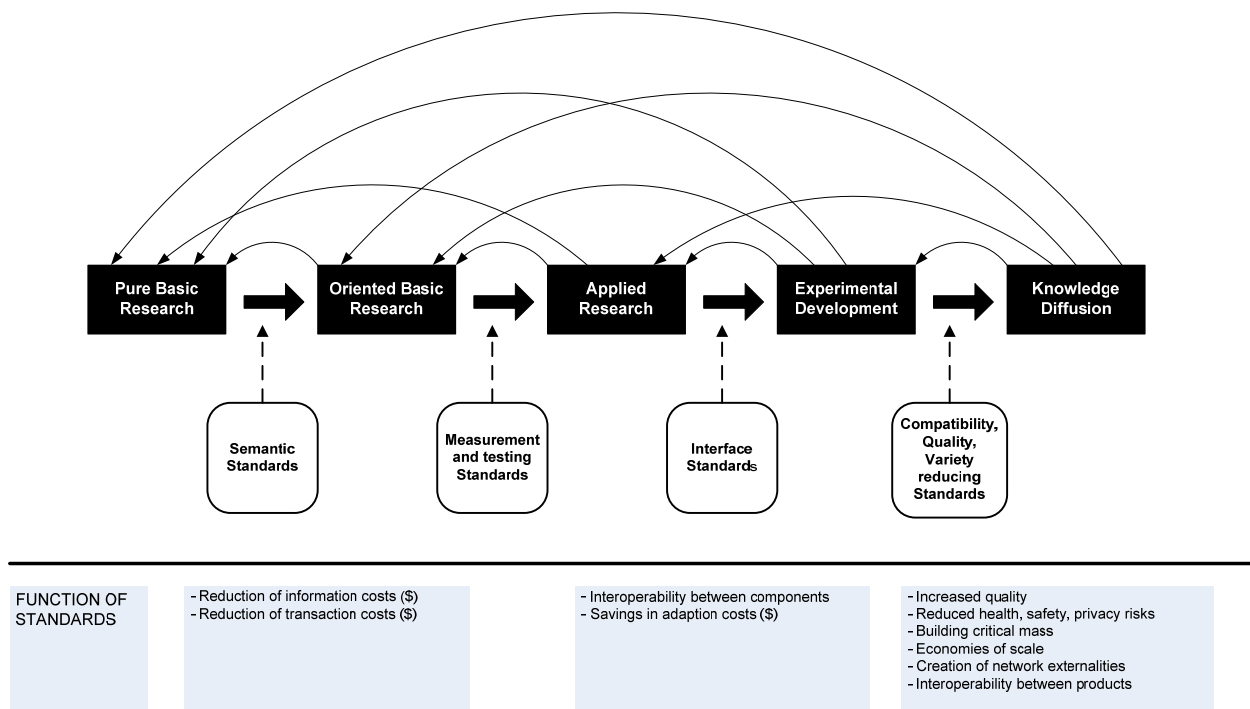


Figure 2 Points of standardisation

As the Council stated in its first submission, three aspects in particular create challenges to fully achieving an effective and coordinated standardisation system.

These challenges are:

1. insufficient sector coordination and leadership
2. a lack of clarity on the intended function which the standardisation tool is to serve
3. the Government's policy settings which define the Council's operating model.

6.3 Coordination and leadership

To maximise the benefits of research and standardisation, the full system – from research through to education and support – needs to be effectively coordinated.

New Zealand Standards and other forms of standardisation can be used to support the building and construction sector, from solutions deployed in a cited mechanism through to voluntary guidance, New Zealand Standards, and other forms of standardisation documents. However, it is important to have

clarity on the expected role, regulatory status, and function of each document to ensure its content is fit for the intended purpose.

As shown in Figure 3, with effective sector leadership and coordination, efficiency gains can be achieved. This model shows an example where research may be transferred to a New Zealand Standard in two phases as the knowledge matures. The amendments to the Standard are intended to then be cited, and after that industry guidance and seminars are expected to be provided to ensure the knowledge is effectively disseminated.

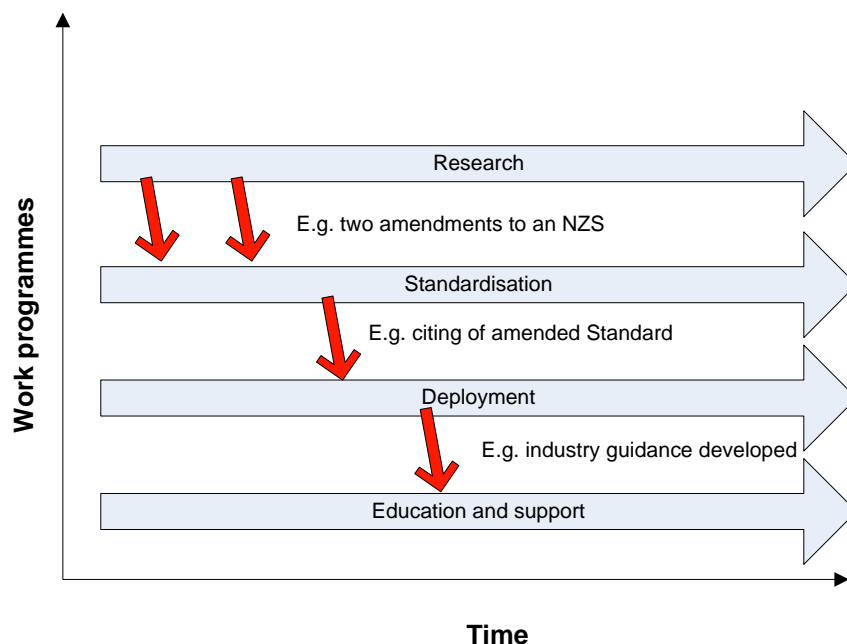


Figure 3 Coordination of the building and construction programmes

The effective coordination of the programmes of work would provide benefit and certainty to all of the organisations and stakeholders involved, for example:

- research organisations will have clarity on what research is needed, how their research will be used, and the expected timing for this
- standardisation developers, including the Council, will have clarity on the intended use of the standardisation solution; there will be sufficient and relevant research available to standardise, and sufficient time to ensure a preliminary impact assessment can be carried out
- those deploying standardisation solutions, including the regulator, will have an early opportunity to guide standardisation and confidence that the standardisation tool is fit for purpose
- those involved in education and supporting the sector can prepare appropriate mechanisms to support the promulgation of the changes to the wider building and construction sector.

An example of how this is not working, is NZS 3603:1993 *Timber structures Standard*.

Case Study NZS 3603:1993 *Timber structures Standard*

Background

A revision of NZS 3603:1993 – an important New Zealand Standard for the design of timber structures – has been called for by the industry for the past seven years.

NZS 3603: 1993 *Timber structures*

NZS 3603 is the Standard for the design of timber structures. It is used for the design of large timber structures, as well as being the basis for residential timber-framed buildings (NZS3604). It contains design stresses and methods for specific design.

NZS 3603 was last fully revised in 1993. Since then it has been amended three times, the last time (Amendment 4) in 2005. Building methods and processes have changed significantly over this period.

The 2005 amendment incorporates changes to timber grades and their respective design stresses. It reflects changes to the timber resource in New Zealand, as well as the methods used to grade that timber.

The issues

- NZS 3603 is considered long out-of-date by the industry for design methods and aspects such as connections.
- NZS 3603 is currently inconsistent with the recently changed loading Standards in the AS/NZS 1170 series.
- The New Zealand timber sector wants NZS 3603 to be aligned to Australian Standards – Australia being a key market for New Zealand timber.

AS 1720.1-2010 *Timber Structures Part 1: Design Methods*

Australian Standard AS 1720.1-2010 *Timber Structures Part 1: Design Methods* sets out limit state design methods for the structural use of timber.

This Australian Standard is similar to NZS 3603, but much more up-to-date.

Potential jointing of NZ 3603 and AS 1720 has been considered.

2005

Seven years ago a technical feasibility study was conducted by a Standards New Zealand Technical Working Group (P3603/WG1) to investigate jointing these two Standards.

The finding was that jointing these Standards is technically feasible, as the underlying structure, drivers, and philosophies underpinning these documents were similar.

November 2010

The timber sector stakeholders indicated that AS 1720, with suitable amendments, would provide a base document that is more relevant for updating the Standard.

December 2010

A sector discussion meeting held at the University of Auckland decided that the next version of NZS3603 would be based on the revised Australian design standard AS 1720.1-2010.

The meeting identified:

- the sections of AS1720.1-2010 that needed further work
- a preliminary budget that would be passed on to government agencies and timber industry organisations to obtain the necessary funding to carry on these revisions.

The sector recognises that NZS 3603 contains components of both public good and private interest. Industry has indicated that some funding contribution from it is reasonable. However, a clear apportionment of public versus private interest is not easily defined, and the process to initiate a revision project continues to be protracted.

October 2011

The Royal Commission specifically mentions the need to update NZS 3603 in its Interim Report.

The DBH's position

'...the Department agrees that there is a need to technically update NZS 3603 to reflect new construction methods and timber properties, and to align it with the loading Standard AS/NZS 1170...'

The sector has acknowledged that the DBH has been faced with a significant increase in urgent work since the Canterbury earthquakes and, as a result, 'resources for Standards revision have been under constraint.'

Current status

- There is agreement by all interested parties (industry, the Council, academics, government agencies and the Government) that NZS 3603 is out-of-date and should be updated or jointed with AS 1720:2010.
- An imperative for this revision is that NZS 3603 is no longer consistent with the loading standards in the AS/NZS 1170 series.
- The DBH has stated it will be looking to non-government funders to join it in funding any future Standards revision which the industry accepts.
- It is still not clear where the public good versus private interest funding balance should be. Clarity on this apportionment is preventing any progress in updating NZS 3603 or furthering the jointing of NZS 3603 and AS 1720.

6.4 Policy settings

In addition to an improved coordination approach to the building and construction programmes system, the Government's policy settings for the Council, as described in our first submission, have not assisted in the setting of longer term programmes or frequent maintenance of the New Zealand Standards catalogue.

The Council is currently required to be fully self-funded through the sale of Standards and by negotiating agreements for service with funders to develop and maintain New Zealand Standards. This creates a significant tension between prioritising those projects in a work programme that third parties are willing to fund, versus those New Zealand Standards that fulfil critical public good but do not have sponsors to fund their development or maintenance.

In addition, to recover costs, the Council operates a webshop to sell New Zealand Standards. The need for stakeholders to pay for New Zealand Standards (so that the Council can recover its operating costs) has been seen as a barrier to the uptake and use of Standards. The Council continues to support and investigate alternative mechanisms for cost recovery to improve access to these documents and to meet its broad functions under the Standards Act 1988.

The Standards Act sets out the process requirements that must be met before the Council can approve a New Zealand Standard, and then add it to the national Standards catalogue. The process requires that each Standard is developed robustly, fairly, and transparently. When funding can be secured, the Council ensures timely and efficient Standard development is achieved by drawing on a cost-effective model of volunteer contributions from the most affected stakeholder groups.

However, this model does not:

- effectively link the Standards development process to the research community
- enable certainty on the means of deployment once a Standard has been developed
- provide alignment of conformity assessment processes within New Zealand
- enable mechanisms for risk assessment or preliminary impact assessment which may guide the most appropriate standardisation solution.

The Council considers that changes to its policy settings and funding model are required to improve the effectiveness of New Zealand Standards within the building regulatory system.

7. Conclusions

The Council thanks the Royal Commission for the opportunity to provide comments on the SESOC practice note.

While the Council does not offer opinions on the technical aspects of the SESOC practice note, it considers that the practice note status within the regulatory system should be clarified.

The timing of standardising new innovations and technology and disseminating this knowledge and research through standardisation, such as that given in the SESOC practice note can be challenging.

When the development of Standards is coordinated with the wider sector programmes and well integrated and deployed, standardisation can contribute significantly to an economy.

Improving the coordination of work programmes for research, standardisation, deployment, and education and support can bring significant efficiencies and clarity to the sector and those involved in the preparation of documents for the regulatory system.

The Government's policy settings for the Council do not enable:

- a public-good prioritised work programme
- complete certainty and commitment to a longer-term standardisation programme and its coordination with research and implementation.

References

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