

08 February 2019

Ministry of Business, Innovation and Employment  
Building System Performance  
PO Box 1473,  
Wellington 6140

Attention: Dave Robson, Manager Building Performance and Engineering

Re: **Building Code Technical Risk Advisory Group (BCTRAG)**  
**Description of Risk Identified by NZGS to New Zealand's Standards**

Dear Dave,

This letter describes a recent experience which I believe highlights a significant issue and risk to the currency and robustness of New Zealand's building standards.

As you are aware, the New Zealand Geotechnical Society Inc (NZGS) National Management Committee (MC) believes that New Zealand should be a full participant in the AS4678 Review Project which has recently commenced and is being managed by Standards Australia. This Australian standard is titled "Earth Retaining Structures".

The AS4678 Review Project presents an excellent opportunity for the New Zealand construction industry to improve current practice for the design and construction of retaining structures. Currently there is no equivalent New Zealand Standard which addresses all of the issues and scope which is expected to be covered by the revised version of AS4678. As a result of this, several different approaches are known to be used for the design of retaining structures within the wider New Zealand industry. Participation in the AS4678 Review Project would enable New Zealand to develop a joint Australia and New Zealand Standard, and, address a current gap in the New Zealand Standards suite in an efficient and cost-effective manner. Such participation would also foster a consistent and robust design approach for retaining structures across New Zealand (and Australia).

During 2017 and 2018 the NZGS MC discussed the AS4578 review project, and the opportunities and benefits that New Zealand participation would afford to the New Zealand construction industry, with Standards New Zealand (SNZ). Unfortunately, on 07 November 2018, NZGS received the following communication from SNZ:

*"A commissioner to fund the administrative feeds for New Zealand's participation in the project was not identified. Please be advised New Zealand has opted out of the project and it will continue as an Australian (AS) publication."*

With respect to funding for the development of new and upkeep of existing New Zealand standards, NZGS received the following advice from SNZ on 09 July 2018:

*“With regards to Standards New Zealand as a potential funder for the fees for this project, Standards New Zealand does not receive direct government funding and as such operates on a cost recovery basis. As a result Standards New Zealand needs to recover any project fees for New Zealand’s participation in an Australian-secretariat joint standard from a third party, either a regulator and/or industry which uses the joint standard, and/or through other means such as the sales price of the resulting standard if this is feasible.”*

The NZGS MC believes that the above decision regarding New Zealand participation in the AS4678 review project represents a significant lost opportunity. The above experience also suggests that the current funding mechanism for maintaining New Zealand’s standards is flawed as it does not support and enable appropriate levels of maintenance to be undertaken in a timely manner.

The availability of robust, current and New Zealand relevant building codes and standards, weather developed standalone for New Zealand only or jointly with Australia, is a critical issue for our construction industry. Such documents are required to ensure an appropriate level of public safety is consistently achieved across New Zealand and to ensure suitable levels of resilience are maintained in our built environment. To achieve and uphold these objectives it is also important that our standards are a reflection of current best practice.

My general assessment indicates that a review and update of many of New Zealand’s construction codes and standards is overdue. This assessment is supported by the 2016 MBIE Building Performance Standards consultation process which identified a review priority list of 95 construction standards.

The NZGS MC considers it is essential that a sustainable, appropriately resourced and well managed process, program and funding mechanism is in place for the maintenance, review and upkeep of New Zealand’s building codes and standards. It is also of critical importance that robust mechanisms for ensuring the future participation of appropriate *independent* experts is established to develop and maintain these documents in a timely manner. My recent experiences and observations with respect to the AS4678 Review Project opportunity indicates that, at present, this critical activity is not being completed in an efficient and timely manner.

The NZGS MC is aware that other engineering-focussed not-for-profit organisations such as Engineering New Zealand (ENZ), the Heavy Engineering Research Association (HERA) and the Structural Engineering Society New Zealand Inc (SESOC) have previously expressed concerns to MBIE regarding the upkeep of New Zealand’s construction codes and standards. Such concerns were summarised in a written communication from Engineering New Zealand (ENZ) dated July 2018 that was titled *“Funding Model Review of Joint AS/NZS Standards - Response from Engineering New Zealand, SESOC, NZGS, and TDS”*. For ease of reference a copy of such written communication is attached to this letter (Attachment 1).

A Collaborating Technical Society  
of Engineering New Zealand

When asked to propose where funding to support upkeep and maintenance of New Zealand's building codes and standards should come from, SESOC, HERA and NZGS have all previously stated they believe the Building Levy and/or the Building Research Levy is the most appropriate mechanism. Further, the NZGS MC understands that an appropriate level of surplus funds is currently available via the Building Levy to enable a robust building code and standards review program to be established immediately.

The NZGS MC wish to reiterate that they fully support the proposal to fund the maintenance and upkeep of New Zealand's building codes and standards via the Building Levy fund. The primary reason for this support is such "reliable" funding mechanism would enable many benefits including:

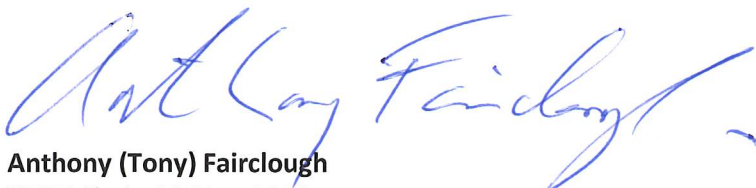
- 1) The overall standards review program could be managed appropriately and efficiently.
- 2) Proper programming would enable New Zealand's standards to incorporate new learnings and technology in a timelier manner.
- 3) Improved frequency of managed review will help to ensure New Zealand's standards remain current, and, allow any advantages afforded by new innovations and learnings to be made sooner. Conversely, outdated approaches or methodologies would be phased out from New Zealand practice in a more timely manner, and,
- 4) Independence from potential undesirable commercial influence could be better managed.

We also note that MBIE previously identified the Building Levy and/or the Building Research Levy as a potential funding source during their 2016 Building Performance Standards consultation process. The NZGS MC understands that this work was completed as part of the development and finalisation of a review priority list of 95 construction standards.

In summary, my recent experience and observations indicate funding issues and a lack of robust program management are the single biggest risks to the future relevance and robustness of New Zealand's building codes and standards. As such I respectfully request that MBIE assess and address these issues as a matter of urgency.

Please do not hesitate to contact me if you have any questions regarding this letter.

Yours Sincerely



**Anthony (Tony) Fairclough**  
NZGS Chair, 2017 to 2019  
Chartered Professional Engineer

**Attachment 1: Communication from ENZ to MBIE dated July 2018:**

*“Funding Model Review of Joint AS/NZS Standards - Response from Engineering  
New Zealand, SESOC, NZGS, and TDS”.*

## Tony Fairclough

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**From:** Laura Stockton <laura.stockton@engineeringnz.org>  
**Sent:** Wednesday, 18 July 2018 9:45 a.m.  
**To:** Victoria.Hodgson2@mbie.govt.nz; Jim.robinson@mbie.govt.nz  
**Cc:** Tania Williams; Paul Campbell; Jason Ingham; Tony Fairclough; John Scott; David Carradine  
**Subject:** Joint Standards Funding review- response from Engineering New Zealand and engineering technical societies  
**Attachments:** Joint Standards response 2018 Final.docx; BSP Standards Programme\_consultation\_2016.pdf  
**Importance:** High

Hello Victoria and Jim,

Attached are Engineering New Zealand's and our Technical Societies' views on Joint Standards and the future funding of Joint Standards for your consideration when briefing the minister. Standards – both Joint with Australia and National - are critical to the public safety of New Zealanders and to the resilience of the built environment of New Zealand. We need to see a sustainable funding model for Joint Standards and robust mechanisms for ensuring the future participation of the right people to develop and maintain these Standards.

Please do not hesitate to discuss any of our points directly with us – we are available and fully committed to being part of further discussion with yourselves and other stakeholders on this or related matters

With kind regards,

Laura

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# **FUNDING MODEL REVIEW OF JOINT AS/NZS STANDARDS REPOSENSE FROM ENGINEERING NEW ZEALAND, SESOC, NZGS, AND TDS JULY 2018**

## **INTRODUCTION**

This note forms a response to MBIE's Trade and Regulatory Co-operation team's request for input from interested parties as part of the 2018 review of the funding model for Joint AS/NZS Standards.

Engineering New Zealand has consulted with three of its larger technical groups to provide this response. The Structural Engineers' Society (SESOC), the Timber Design Society (TDS) and New Zealand Geotechnical Society (NZGS) are long-standing contributors to Joint AS/NZS Standards and their members are the primary sources of applied technical expertise on structural, geotechnical and timber design engineering matters.

Engineering New Zealand, SESOC, NZGS and the TDS wish to jointly respond on the following topics

- The value of Standards used by engineers carrying out engineering activities
- Summary of previous funding reviews
- The value of Joint Australian/New Zealand Standards when compared to alternatives
- The future of Joint Standards for safety critical work
- The engineering community's ability to fund allocated project management costs for Joint Standards and recommendations
- The funding of expenses for participants on Joint Standards' committees

We don't believe that the current system is sustainable. We would be pleased to work with yourselves, Standards NZ, BSP and other stakeholders to look at ways to make Standards development sustainable, attractive to the right participants and industry and to develop mechanisms for ensuring knowledge transfer and succession planning. We want to see a funding model that provides outcomes that are in the best interests of New Zealand in respect to public safety and built environment resilience.

## THE VALUE OF STANDARDS

Standards can be broadly categorized into those that enhance trade and those that promote resilience from natural hazards<sup>1</sup>, public safety and well-being. The beneficiaries of Standards that promote public safety and greater resilience are all New Zealanders. The cost of updating resilience and safety-related standards will be small compared to the impact of natural hazards on unsafe and low resilience structures. We are concerned that the loss of Joint Standards could jeopardise public safety and built environment resilience.

Standards that are part of the framework of the building regulatory system positively contribute to buildings and the health, physical independence and well-being of people who use them. These Standards promote public safety and well-being. Engineers play a key role in making sure that buildings are designed, maintained and assessed within the building regulatory system.

Recent consultations (2015 and 2016/17) by MBIE to identify and then prioritise Standards cited in the Building Code galvanized interested parties to think carefully about Standards. With funding limited for Standards development interested parties had to decide which Standards should be categorised as priority Standards to secure funding. Engineering New Zealand and many associated engineering technical groups participated in these consultations.

The discussion and recommendations in this note are drawn primarily from the work carried out as part of previous reviews on the building regulatory framework. However, the points we make here are equally relevant for Standards that promote public safety as part of other regulations or used as part of industry good practice in the absence of regulation.

## PREVIOUS STANDARDS FUNDING REVIEWS

### **2015 MBIE Building System Performance (BSP) review of all currently cited Standards in the Building Code**

MBIE's 2015 review developed a priority list and consulted with BRANZ, Engineering New Zealand, NZIA, Cement and Concrete Association (CCANZ), HERA, Standards NZ, Building officials (BOINZ), Building industry Federation, Construction industry Council (CIC), Registered Master Builders Federation, and the Wood Processors and Manufacturers Association of New Zealand (WPMA).

A point system based on Standards meeting a range of criteria was developed to prioritise Standards.

### **2016/17 Review of long-term funding for Standards and Standards Programme by MBIE BSP (see attachment)**

Following on from the first review this second review aimed to refine the previous priority list of Standards as there were insufficient funds available to Standards NZ to develop or maintain all Standards relevant to or directly cited in the Building Code.

The consultation covered

- Which Standards are covered by the priority list for funding investment

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<sup>1</sup> The approximate annual economic cost from natural hazard impacts to NZ is about \$6Billion. The Crown bears most of this cost. The social cost is believed to be about twice the economic cost.

- The sequence of the Standards Programme
- Opportunities for co-funding

By investing in priority standards BSP's objectives (at the time) were to

- Lead the development and maintenance of the most important Standards that underpin the NZ Building Code
- Clearly signal Standards development intentions to the building sector to accommodate innovation in new and updated Standards

BSP said that they engage Standards New Zealand to project manage joint Standards and facilitate BSPs contribution to Australian and European Standards reviews.

BSP identified 47 NZ Standards considered appropriate to allocate Building Levy funding towards ongoing development. The funding would cover Standards NZ involvement only, not participants. BSP also identified a further 29 joint AS/NZ Standards, 10 Australian Standards, and 2 European Standards in need of revision.

We believe these 29 Joint Standards remain a priority and their revision (and necessary research) should be funded by government.

Since the MBIE 2017 re-organisation, Building System Performance hasn't re-affirmed the objectives nor informed the engineering profession, professional bodies and technical societies what their position is on the priority standards identified in this review.

## **JOINT STANDARDS – ORIGINS AND WHY THEY ARE IMPORTANT**

Standards New Zealand promote joint Australian and New Zealand Standards. They say that 'Developing and adopting these joint Standards has provided the technical foundation for a shared system promoting safety, interoperability, sustainability and trade, since 1992. Joint Australian/New Zealand Standards are also widely adopted by all the independent nations within the southern Pacific region.

In 2016, Standards Australia and Standards New Zealand recommitted to their partnership following changes to Standards New Zealand's institutional arrangements, and that the partnership would continue wherever possible to promote the harmonisation of standards across the Tasman for the mutual benefit of both economies. However, following the changes to Standards New Zealand in 2016 Standards Australia introduced hefty participation fees to be paid by Standards New Zealand for participating in any joint standard. The fees being charged by Standards Australia range from AU\$2,000 for simple projects to AU\$ 33,000 for large, complex projects.

So, despite the recommitment, participation fees have created a new and significant barrier to the continued participation of New Zealand in Joint Standards development.

Engineering New Zealand and its associated technical groups have been long-standing contributors to the development of Australian/New Zealand Joint Standards. Maintaining New Zealand representation on priority Joint Standards ensures single, appropriate and up to date design practices, made easy to comply with through consistent style, language and definitions.



For engineers working in construction the priority for Standards maintenance (and development) has been those standards being cited in the New Zealand Building Code to make sure of the appropriate safety, resilience and durability performance of New Zealand's built infrastructure.

## THE FUTURE OF JOINT STANDARDS FOR SAFETY CRITICAL WORK

Where it is agreed that a standard should exist and be maintained the question now is whether this legacy of Joint Australia/New Zealand Standards is still useful, relevant, affordable and preferable over alternatives in those cases.

If Joint Standards are not to be funded and a Standard is needed viable alternatives and robust mechanisms to assess alternatives need to be established.

### Alternatives to Joint Standards

#### *National Standards*

If New Zealand is not represented on a key Joint Standard the Standard will be de-Jointed and become an Australian Standard. There is currently no guarantee that an equivalent New Zealand National Standard would or could be developed to replace the Joint Standard. Citations in New Zealand may be limited to the last version of the Joint Standard.

Developing National Standards in a country with a small population, such as New Zealand, can be problematic. Whilst the experts with the knowledge and skills to develop and maintain standards may be available it isn't clear whether this small, and in some areas dwindling, pool of experts are always willing and available to participate. The engineering profession is looking to MBIE to make sure that suitable funding and planning mechanisms are in place to deliver future critical national Standards.

#### *Other International Standards*

Standards New Zealand and Standards Australia have both signalled their preference to adopt International Standards over the development of Joint or National Standards if appropriate. So, what are viable options for New Zealand?

International Standards include European Standards (Eurocode), British Standards, International Standards (ISO) or American Standards. It is important that each alternative is assessed on its merits. The experience of engineering technical groups is that in many instances international codes tend not to be appropriate for the following reasons

- Technically International Standards can lag behind many of standards being developed in New Zealand. National and Joint AS/NZ Standards benefit from cutting edge research relevant to the New Zealand environment – there may be no mechanism for reflecting necessary research into the international standards
- National or regional Standards tend to reflect the building and construction types common to their jurisdiction – foreign Standards can provide little support in certain parts of the NZ built environment context
- Development times can be long as committees are required to satisfy the needs of large numbers of participant countries/states
- Thorough checking is required by experts to assess whether an International Standard is suitable for New Zealand, and if not, what modifications may be needed

- Significant costly modifications may be required – even regions within participant countries modify versions of the base standard to suit their particular environments.
- Not all international Standards for structures follow the Load and Resistance Factor Design (LRFD) philosophy of NZ and AS/NZ Standards. This means significant investment in changing nomenclature/terminology
- International Standards not produced using the metric system of measurement, such as American Standards, are in conflict with the New Zealand metric system.
- Some International Standards organisations do not allow cherry picking of particular Standards or parts of larger standards, but say that a whole series of standards or the entire standard must be adopted.

## RECOMMENDATIONS

The engineering community recommends funding is made available to Standards New Zealand from government funds

- for New Zealand participation in those standards identified as priority standards in the 2017 BSP consultation document.
- for emerging Joint Standards
  - that are to be newly developed
  - national standards where benefit can be seen from becoming a Joint Standard
- previously de-Jointed Standards to be re-Jointed, if de-Jointed due to lack of funding.

It is accepted that beyond the priority list of 29 Joint Standards identified in the 2016/17 MBIE review, other Joint Standards are maintained and developed/renewed based on the individual merits of each Standard, whether those benefits come from improved trade and commerce or whether the standard is essential to code conformance and hence the safety of New Zealanders and the resilience of the built infrastructure.

We recommend

- open and transparent processes,
- robust stakeholder identification,
- generous advanced notice of Standards reviews/assessments as well as
- reasonable consultation periods.

Whilst some industry organisations have access to industry levies, funding for Building Code Standards not related to those industries have no industry-based funding sources. Engineering New Zealand itself is a not-for-profit membership organization and has no means to fund the development of critical Standards. This also is true for SESOC, NZGS, TDS and many other of the technical groups providing input into Standards development

## EXPENSES FUNDING FOR COMMITTEE REPRESENTATIVES

Engineering New Zealand and its associated technical groups representing structural engineers, geotechnical engineers and engineers designing primarily with timber all agree that this current review should extend its terms of reference to include discussions on funding of expenses incurred by volunteer representatives on Joint AS/NZS Standards committees.

A Joint Standards' committee participant should be nominated by a technical group based on their expertise. The nomination should always be based on having the right person involved. However, billable hours lost and expenses incurred travelling to Australia for several days often rules out those engineers not having the resources that the larger engineering firms have. Even the larger firms are now questioning whether they can afford to lose billable hours to Standards participation. And for most participants Standards' committee work involves many hundreds of hours work, mostly carried out at evening and weekends.

There is a great reliance on a small number of expert participants, especially where the same expertise is needed on more than one Standard.

Engineering New Zealand questions if it is beneficial to the safety and resilience of New Zealand if the required expert does not participate in Joint Standards development because their firm cannot afford their absence or expenses.

We consider the current volunteer approach with no paid expenses discourages many worthy and expert engineers, as well as the next generation of engineers, from wanting or being able to participate in Standards' development.

We recommend that this review considers funding some or all expenses incurred for participants to encourage larger numbers of new participants. We also recommend that options for recognising the value of our volunteer participants are considered.

Laura Stockton

**Engineering Practice Manager, Engineering New Zealand**

Tony Fairclough

**President, New Zealand Geotechnical Society**

David Carradine

**President, Timber Design Society**

Paul Campbell

**Past President, Structural Engineering Society**