

SCNZ STEEL CONSTRUCTION
NEW ZEALAND

STEEL FUTURES

SCNZ MEMBERS EVENT - ROTORUA

An excellent member’s event was held in Rotorua on the 19th April. Around 23 SCNZ members attended. The event started in the afternoon with an amphibious vehicle tour of Rotorua lakeside and the Blue and Green lakes. This tour included an interesting and humorous explanation of the regions volcanic and Maori history while viewing the picturesque scenery.

This was followed by a members’ forum chaired by Chris Kay of New Zealand Steel. Mike Sullivan, D&H Steel Construction and Wolfgang Scholz, HERA, led a discussion on the industry’s response to the threat of imported fabricated steelwork. Mike recounted his observation of the Chinese steel fabrication industry from his recent visit to China. He also updated members on the status of a recently completed building project involving imported fabricated steel work that had experienced considerable delays and additional costs due to the poor quality of the fabricated components and the coating system. The feasibility of initiating dumping action against imported fabricated steelwork is being considered. Mike overviewed the process and the likely cost with such an action.

HERA have funded an AUT university student to research the economic impact of imported fabricated steelwork on the New Zealand economy. Wolfgang summarised some of the key points of the research. In particular he noted that the



The dusk view from the gondola going up Mt Ngongataha.

steel fabrication industry in New Zealand generates significant employment, provides significant tax revenue for the government and that the true cost of imported fabricated

steelwork, which is often of poor quality is not properly assessed at the tender stage of a project. The cost of repair and



The amphibious vehicle used for the Rotorua land and water tour.

repainting is often accounted as maintenance work, thereby under estimating the actual purchase cost. As a result a strong case will be made for government procurement policy to recognise this when assessing publically funded tenders.

Alistair Fussell, acting SCNZ manager, discussed what SCNZ is doing to promote the use of structural steel. This includes providing steel design support, developing a design support service brochure, visiting consultants, conducting engineering seminars, organising university student steel construction field trips and providing input into structural steel standard development work.

After the member’s forum, members enjoyed dinner at the Cableway Restaurant at the top of the gondola on Mount Ngongataha. John Freer, Onesteel gave a mid-dinner presentation of the steel market outlook. SCNZ would like to thank John and OneSteel for this informative presentation that was well received by the attendees.

One member who attended commented, “This is first time I have attended and I think these events are fantastic. These events provide an opportunity to meet others within the industry and talk about issues that are common to all. Definitely more members should attend”.

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UPCOMING EVENTS

2010

October 19-22 — The 9th Pacific Structural Steel Conference

STEEL CONSTRUCTION IN BUILDING TODAY MAGAZINE

SCNZ is running a steel construction feature with Building Today. In each feature we will be promoting excellence in steel construction. In particular we are looking for projects big or small in which a member company has shown excellence in some or all of the following:

1. Quality management in the workshop and on-site
2. Technical innovation
3. Project management
4. Health and safety practices



5. Environmental management in the workshop and on-site

SCNZ will write the article, you just need to tell us what you have been doing.

If you have a project you would like considered for an article please contact Rebecca at rebecca.symonds@scnz.org or phone 09 262 6682. Thank you.

Previous articles can be viewed in the Building Today magazines or on the SCNZ website.

ENGINEERING TECHNICAL SEMINAR UPSKILLS STEEL DESIGNERS

The latest SCNZ organised technical seminar series was well received by 130 engineers from around the country in March. These seminars are run twice a year at 6 locations around New Zealand. The latest seminar series was a joint effort between SCNZ and HERA. The seminar topics included braced frames in seismic applications, composite construction and coatings.

Alistair Fussell, SCNZ acting manager, presented a new innovative seismic resisting system called the buckling restrained braced frames. This system looks to provide some great benefits and will be included in the update to the earthquake part of the Steel Structures Standard NZS 3404.

Kevin Cowie, SCNZ engineer, provided some practical guidance for composite floor construction for both long span and slim floor construction. Some aspects of precast on steel beams were also covered. As part of the session on long span composite floor, John Frederickson, Fabsec Manager from D & H Steel Construction discussed their

welded beam manufacturing capability and provided a demonstration of software to design welded cellular beams. There are now a number of companies in New Zealand who are able to manufacture long span cellular and welded beams. Long span structural steel solutions have the great advantage of being able to create large unobstructed space in buildings.

Dr Stephen Hicks, HERA, discussed the design of composite concrete filled tube columns. His presentation also addressed new innovations in composite floor construction such as the use of steel and synthetic fibres in metal deck slab construction in lieu of traditional mesh reinforcing. Elimination of an onsite trade will result in faster construction which will have programming benefits for builders and the developers. This new innovation is currently undergoing further investigation for New Zealand application.

GOOD DOCUMENTATION SAVES TIME AND MONEY

An Australian study (Journal of Australian Institute of Steel Construction, Vol 34, No4, 2000) has shown that the quality of design and documentation has a major influence on the overall performance and efficiency of construction projects. Poor design and documentation quality is a major cause of construction process inefficiency, leading directly to delays, rework and variations and contributing to increase in project time and cost for both client and constructors alike. The study quantified the average time and cost allowance made by building contractors at the tender stage to account for the standard of design documentation (figure 1).

One of the conclusions of the study was that it is false economy to screw down consultant fees as the savings at this stage of the project are often outweighed by increased construction costs. The same argument could be made for the false economy of designers producing poor quality design documentation, even if they are being paid low fees. Often any time saved up front at the documentation stage is lost answering numerous requests for information long after the design team has moved onto another project.

To improve documentation levels for structural steelwork, SCNZ has developed a documentation code of practice which

is freely available for down load from the SCNZ website.

This Code of Practice for Structural Steelwork Documentation clearly identifies what contract documents, in particular the drawings, should contain to get good value out of steel construction in New Zealand. The Code of Practice for Structural Steelwork Documentation sets minimum performance criteria that are readily achievable and reflect common practice in the industry. The link to this is www.scnz.org/design-tools/documentation-checklist.

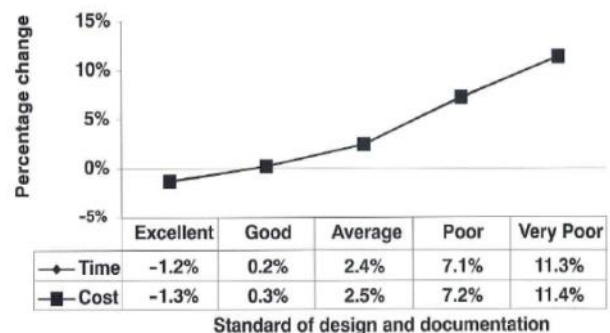


Figure 1: Average time and cost allowance included at tender stage (AISC Steel Construction Vol 34 No 4 Dec 2000)

ENGINEERING STUDENTS WELCOMED TO STEEL CONSTRUCTION

Final year Auckland University civil engineering students were welcomed to steel construction during a recent field trip organised annually by Steel Construction New Zealand. For this year's event the students were shown around the new D&H Steel Construction fabrication facility and then taken to visit a challenging steel construction project where a number of floors were being added to an existing concrete building.

The first stop for the 48 students was D&H Steel Construction's fabrication facility at Brick Street Rd, Henderson. On arrival, the students were welcomed by Alistair Fussell, SCNZ Acting Manager, and Graeme Stubbing of D&H Steel Construction. The students were then divided into three groups. Each group was taken around the brand new purpose built facility. The students were able to view up close the computer controlled fabrication equipment in action including the manufacture of custom welded beams. They were also introduced to detailing using 3-D modeling software.

The students and their lecturer were impressed with what they saw, the comment was made how few staff there were on the shop floor for the size of the operation. This is made



Students shown structural steel construction.

possible by the extensive use of computer controlled fabrication technology.

In the past 10 years D&H Steel Construction Ltd and a number of other local steel constructors have

invested heavily in smart technology which has transformed traditional manufacturing processes, greatly increasing precision and productivity.

Following refreshments, the students were briefed to the building site at 185 Hobson Street, where they were briefed by Stuart McClatchy, Project Manager and Tony Lyons, Site Manager both from Clearwater Construction. The students were again divided into three groups and escorted around the building.

185 Hobson Street is a complex building site. The existing building was an old BNZ bank. An additional 6 floors were added on top. The new structure had to be built within the confines of the existing building. This particular project demonstrated the considerable advantages of using structural steel for complex projects of this nature and how the weight of the additional structure could be kept to a minimum by the use of structural steel combined with a composite metal deck floor slab thereby minimising foundation strengthening requirements. The students' lecturer, Colin Nicholas, was very enthusiastic about this construction site as it provided him with many points to discuss with his students.

SCNZ would like to thank D&H Steel Construction Ltd and Clearwater Construction who gave so generously of their time to make this field-trip a really worthwhile exercise.



D&H Steel Fabsec Manager, John Frederickson, shows how welded beams are produced

KEEPING STEEL AT THE CUTTING EDGE— WORKSHOP IDENTIFIES RESEARCH PRIORITIES

The inaugural Steel Structures Research Workshop co-chaired by Greg McRae and Charles Clifton, was hosted at the Canterbury University College of Engineering in April this year.

The purpose of the workshop was to identify the current and future research needs for steel and composite structures. The event featured some outstanding international key note speakers including Professor Michel Bruneau (University of Buffalo, USA), Professor David Mukai (University of Wyoming, USA) and Professor Wada (Tokyo Institute of Technology, Japan). These international speakers were complemented by quality local presenters.

The topics covered included earthquake, fire, durability and composite steel construction.

New Zealand researchers and design practitioners have been at the forefront of developing low damage seismic resisting systems. Aurecon Wellington recently won a prestigious international award for a student accommodation project at Victoria University that featured

such technology.

This project featured in an SCNZ case study that can be viewed at www.scnz.org. Low damage technology was identified as an important area for future steel research.

Another important research topic that has the potential to improve the already impressive speed of construction credentials of steel, is the elimination of traditional reinforcing mesh and saddle bars from composite metal slabs by the addition of steel and synthetic fibre reinforcement. Early research findings have been very promising. Crack control and diaphragm action have been identified as important research topics for New Zealand application of fibre reinforcement.

Based on the input of workshop attendees, a list of research priorities were identified that will provide direction for the research community over the next few years. This was a very worthwhile, and hopefully, to be repeated event.

Want to know more? Please tell us what you would like to know about in the space provided below, fax this page back to us and we will be in contact with you.

Would you like to become a SCNZ member? For an annual subscription of only \$100 + GST you can enjoy the benefits of belonging to an association dedicated to the advancement of steel construction.

Please tick the box below and fax back to 09 263 5638.

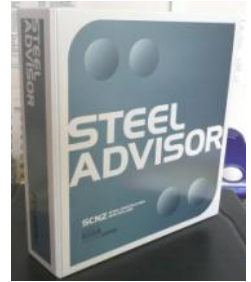
Yes, I would like to become a SCNZ member.

STEEL ADVISOR LATEST ISSUE

The latest Steel Advisor issue contains the **Portal Frame Design Tips Seminar Proceedings** presented by Dr Clark Hyland (Hyland Fatigue and Earthquake Engineering, previously of SCNZ) at the SCNZ spring 2009 technical seminar series. Structural design engineers will find in the

article a number of useful tips for their design of portal frames.

The Steel Advisors articles are available for subscribers at www.scnz.org/steel-advisor



LOCAL STEEL INDUSTRY BENEFITS FROM CER

A recent meeting of representatives of HERA (Dr Stephen Hicks and Dr Wolfgang Scholz), SCNZ (Acting Manager, Alistair Fussell) and the Australian Steel Institute (ASI) was held in Sydney last month to discuss ways of working more collaboratively on areas of common interest.

The original driver for the meeting was a decision by the ASI board late in 2009 to explore areas of greater cooperation between the Trans-Tasman organisations which have similar objectives, regulatory environments and challenges as a way of achieving greater outcomes for the respective industries while on a constrained budget.

The constructive meeting identified a number of areas where useful collaboration was possible. This included sharing technical articles related to steel design and construction which were applicable either side of the Tasman. SCNZ currently produce these as Steel Advisor articles while the ASI publish these as technical notes.

The ASI were keen to see if the model 10 storey building

report used by SCNZ for cost comparison purposes could be adapted for use in Australia as a means of establishing the cost competitiveness of steel solutions in multi-storey construction.

The threat of imported fabricated steelwork is a relatively new challenge facing the local steel construction sector. The Australian steel construction industry, which has experienced this problem for a much longer period of time and to a much greater extent, has allocated significant resources into developing a state and national strategy for addressing this issue. The NZ response to imported fabricated steelwork has already, and will in the future, benefit significantly from the work already undertaken by the ASI.

The intention is to continue regular contact between the Trans-Tasman organisations to facilitate ongoing collaboration.

THE 9TH PACIFIC STRUCTURAL STEEL CONFERENCE OCT 19-22, 2010 – BEIJING

The Pacific Structural Steel Conference (PSSC) is a major initiative bringing together expertise in structural steel research, education and construction from all around the Pacific Rim and beyond to promote cooperation among the structural steel associations and communication on developments in the field of steel structures in Pacific countries.

Without doubt the Chinese are the best hosts in the world and this conference will be spectacular, in not only technical content and cross-cultural interaction, but also in the best of Chinese hospitality.

For more details, please visit the PSSC conference website at www.pssc2010.com.

