

# NASH NEWS

MARCH 2008



[WWW.NASH.ASN.AU](http://WWW.NASH.ASN.AU)

## IN THIS ISSUE:

AIR-CELL BREATHABLE INSULATION MEMBRANE  
NASH QLD CHAIRMAN - GREG ANDERSON  
NASH EXECUTIVE DIRECTOR - KEN WATSON  
BUSHFIRE EMERGENCY - WHO REMEMBERS EMBERS?  
NATIONAL OHS REVIEW ANNOUNCED  
NASH NATIONAL BENCHMARKING WORKSHOP  
REVISED DESIGN GUIDE FOR COLD-FORMED  
STEEL STRUCTURES  
PRODUCT NEWS  
NASH ENGINEERS ACTIVE IN ASEC CONFERENCE  
DID YOU KNOW?  
MEMBERS  
CHAPTER NEWS

**NASH**  
**25<sup>th</sup>**  
ANNIVERSARY



# AIR-CELL BREATHABLE INSULATION MEMBRANE

When you're building with clad walls you'll know that many cladding materials require installation with a breathable sarking product behind it so that vapours are allowed to permeate without damaging the cladding material or structure. In addition, you'll still need to install an insulation product.

AIR-CELL® Insulation has just made it easier with its new Permishield®, a revolutionary 3-in-1 breathable insulation, thermal break and vapour-permeable sarking. Designed specifically for wall applications, Permishield® is ideal for insulation behind lightweight cladding materials that usually require installation with a breathable membrane.

Permishield® is manufactured with a patented closed-cell, cross-linked foam structure sandwiched by highly reflective foil surfaces and pierced with tiny, evenly-spaced breather holes. It allows building professionals to do away with the traditional sarking-plus-batts combination in order to achieve thermal compliance as well as satisfy vapour permeability required by many lightweight wall cladding materials. It is available in two thicknesses 6.5mm (R1.8) and 8mm (R1.9).

AIR-CELL Technical Services Manager, Keith Anderson, explains "Conventional building methodology requires a perforated sarking product as well as bulk insulation to

be installed into the walls. And, if it's a steel-framed wall then a thermal break product is also required. Permishield® is a product that can achieve all this in one go - saving significant time in the construction process."

As with all AIR-CELL products, Permishield® is fast and easy to install. AIR-CELL Insulation advise that Permishield® has been stringently fire-tested and complies with BCA requirements.

[www.air-cell.com.au](http://www.air-cell.com.au)



# NASH QLD CHAIRMAN

## GREG ANDERSON

**Greg Anderson, NASH Qld Chapter Chairman and National Councillor, brings a wealth of steel industry related experience to his role as Director and Principal Engineer of Structerre Consulting Engineers (Qld).**

Structerre (Qld) is a Brisbane based multi-disciplinary practice of 33 staff that provides consulting services in geotechnical, structural, civil, hydraulic and forensic engineering. It is part of the Structerre Consulting Group, which has over 166 staff located in offices in WA and Qld. The WA offices are responsible for providing engineering services to clients who build in excess of 60% of the new homes constructed in WA each year.

Greg has 33 years experience in structural engineering and is a Fellow of the Institution of Engineers. He holds qualifications in Engineering and a MBusAdmin. Before Greg

joined Structerre he worked 11 years with BHP Steel and OneSteel Limited developing and applying steel-framed building solutions. This experience has been invaluable to Structerre who remain at the forefront of cold-formed steel design and product development.

Greg's particular interests are in the fire engineering design of steel structures and the design of innovative concrete masonry wall systems. Examples of these include:

- the fire engineering design of the steel sports stand structures at the Brisbane Cricket Ground
- engineering development and implementation of an innovative mortar-less concrete masonry wall system. Greg has published papers on these topics.

Greg recognises the efforts of NASH and its industry supporters as pivotal in the success of steel framing and

steel roof cladding in the residential building market. As a member of the NASH Technical Committee he is excited about the imminent release of the new NASH Handbook that will provide designers and the industry generally, with specific guidelines for the design of cold-formed steel structures. The Committee previously produced the standard for Residential and Low-rise Steel Framing Part 1: Design Criteria 2005, which is referenced in the BCA.



# NASH EXECUTIVE DIRECTOR

## KEN WATSON

**Ken brings a wealth of steel industry experience to NASH. Before joining NASH he managed the large engineering fabrication business of J Furphy & Sons, including fabricated galvanising kettles, stainless steel tanks and a wide range of general fabrication work.**

Before Ken joined J Furphy & Sons, he worked in a number of roles in BHP Steel's Structural Steel Development Group including Manager, Research and Development Manager and Market Development Engineer. The Group's focus was steel market development

activities in civil construction primarily in the multi-storey building market. Earlier in his career, he held structural engineering positions in BHP Engineering providing the experience for his later roles.

Ken holds a BE(Civil) from the University of Melbourne, a MEngSc from the University of Sydney and is a Fellow of the Institution of Engineers.

In 2002, he was jointly awarded the A Ramsay Moon Award by the Welding Technical Institute of Australia for the best industry research paper.



# BUSHFIRE EMERGENCY WHO REMEMBERS EMBERS?



On average over the long term, an Australian house is lost to a bushfire about every 4 days. The insurance cost of this loss averages about \$17 million annually for dwelling only, rising to \$33 million for dwelling and contents combined. If there are around 6 million detached dwellings in Australia, the loss from bushfires accounts for about \$5.50 per detached dwelling per annum, or about 1% of the average \$550 annual insurance premium for dwelling and contents.

Compared with these bushfire loss figures, the estimated value of building (non-contents) loss from all fires is \$540 million annually, about 30 times the dwelling loss from bushfires. So what's all the fuss about? Why do bushfires, and the measures and systems we put in place to manage them, attract so much attention? Much of this can be put down to 3 things:

1. Bushfires are emergency events where large numbers of buildings and community infrastructure – including fire fighting resources – are simultaneously threatened over a short period.
2. Bushfires are fought by some very skilful and courageous people, predominantly volunteers, who deserve and receive much public praise for their efforts.
3. The public view of bushfire attack and house loss is still dominated by the drama of flames and heat rather than embers and building envelope integrity.

Engineers Australia Society of Fire Safety recently conducted a seminar “Fire Safety Engineering – for

Building and Bushfires” in Sydney. CSIRO researchers explained that radiant heat and flame contact from forest fuel account for just 10% of house loss in bushfires. Around 90% of all house loss is due to ember attack, either on its own or assisted by adjoining secondary fires. In some recent major fires such as Canberra in 2003, 100% of losses were due to ember attack.

It's been said many times, houses are not destroyed by bushfires but by house fires started by bushfires. Most destroyed houses burn from the inside out. Prevent embers igniting the exterior or reaching the interior contents and you've an excellent chance of not losing the dwelling. Researchers note that in most fires, medium and heavy damage are rare; houses are either totally destroyed or barely touched. Human intervention soon after the fire front passes can increase the chance of survival by 3 to 6 times.

According to research findings presented at the seminar, whilst embers may attack buildings up to 700 metres from the fire front, radiation from any source has negligible effect beyond about 10

metres. Ember attack is present in bushfires of all magnitudes, and embers tend to attack the weakest link in the house's defence. Consequently, a dwelling with one vulnerability may succumb to even a relatively minor bushfire, with its risk of loss being lessened only by the fact that human intervention after the fire may be more likely for less severe bushfire events.

Despite the overwhelming evidence of ember attack as the dominant cause of building loss, and several decades of material and design solutions to address that challenge, much of the debate surrounding bushfire management still centres on how the possibility of radiant heat and flame contact can be reduced. Fuel reduction and property setbacks may be effective at reducing exposure of dwellings to peak radiation, but have little effect on the primary cause of loss – ember attack.

Protection against ember attack requires building rules that define the design and materials permitted, plus owner/community maintenance and preparedness. Protection against radiant heat and flame contact

requires planning rules and fuel reduction, activities that are planned and regulated by multiple agencies in most states.

There remains some debate amongst different stakeholders about the relative importance of embers versus radiant heat and flame contact, in causing house loss in bushfires. Some research is still ongoing, while other research is hampered by the scale of testing required to develop criteria and assess the bushfire performance of house-sized structures. Partly as a result of these factors, the revised standard for construction of buildings in bushfire-prone areas (AS 3959) has been delayed for several years while research, regulatory, materials and construction interests resolve issues of risk assessment and construction detail.

Homes in bushfire-prone areas that resist ignition, limit propagation, add no fuel and remain intact, represent better value for their owners and the community than those that don't. The practical measures to support bushfire-durable construction are described in AS 3959-1999 and expanded in its draft revision.

With maximum use of strong, durable, non-combustible steel materials on the building envelope, combined with better glazing, durable door and window screens and effective sub-floor ember screening, the probability of ignition, fire spread and house loss for properly-sited and well-prepared buildings is almost eliminated. Steel is an excellent choice when designing and building a bushfire resistant home due to its:

- excellent early fire hazard properties – you just can't ignite it
- non-combustibility – you can't burn it, so it doesn't add fuel to a fire
- strength and durability – its qualities are unaffected by time or maintenance.

Steel doesn't ignite and can't be made to burn under bushfire conditions, and while you are trying to burn it, doesn't give off heat or smoke. By the time a structural steel product has been affected by excessive heat, the building has most probably been lost.

**100%** of losses were due to ember attack.

## NATIONAL OHS REVIEW ANNOUNCED

The social and economic importance of harmonised Occupational Health and Safety (OHS) laws has been recognised by the Council of Australian Governments, the Productivity Commission and the States and Territories. The Minister for Employment and Workplace Relations, Julia Gillard, has just announced a national review into model Occupational Health and Safety (OHS) Laws.

The review will be conducted by an advisory panel to be chaired

by Robin Stewart-Crompton, an OHS lawyer and former CEO of the National OHS Commission. The other panel members are Barry Sherriff and Stephanie Mayman.

The panel has been asked to report to the Workplace Relations Minister's Council on the optimal structure and content of a model OHS Act that is capable of being adopted in all jurisdictions. The model legislation will consist of a model principal OHS Act, supported by model regulations and model codes of

practice that can be readily adopted in each jurisdiction.

Following information gathering and consultation with key stakeholders during April and May, an Issues Paper will be published along with an invitation for submissions. The panel is required to report on specific matters in 2 stages, at the end of October 2008 and January 2009.

Further information on the review may be found at [www.ascc.gov.au](http://www.ascc.gov.au)



# NASH NATIONAL BENCHMARKING WORKSHOP

## HOW MUCH DO YOU KNOW ABOUT YOUR BUSINESS AND YOUR INDUSTRY?

In September 2006, NASH won an Industry Cooperative Innovation Program grant from the Australian Government to undertake a Benchmarking study of business practices in the steel framing industry. The study was conducted with the direct involvement and financial contributions of NASH members, six of whom joined with NASH to pledge financial support and successfully apply for the AusIndustry grant.

The study got off to an excellent start with the Qualitative and Quantitative surveys receiving an outstanding response from members. Based on the information collected, an on-line Business Assessment Tool has been constructed for ongoing use by members in evaluating their business performance across a range of areas.

The 18 month long project will conclude with a National Workshop on Wednesday 14 May in Melbourne. The workshop's purpose is to:

- review and discuss some of the key findings of the study, and
- discuss the future direction and needs of the steel framing industry.

NASH has been fortunate to have the guidance and experience of study consultant Dr Susu Nousala throughout the project. Susu has conducted a number of similar studies in related industries. She will present the key findings of the study in an interactive context followed by breakout sessions on 3 focus topics selected from the study findings.

Each topic will be moderated by a member of the Study Consortium:

1. Operational efficiency – Arthur Hosking, Custom Steel Frames
2. Business management systems – Barry Byrne, Home fab Steel Truss & Frame
3. Winning new business – Joe Ballaster, Steel Frame Solutions.

NASH has also arranged for five short presentations on specific themes from leaders within the steel-framed housing industry. These presentations will provide personal, practical insights as a prelude to the breakout sessions:

1. Finding, training and retaining the right people to allow the industry to grow
2. A builder's thoughts on steel framing and its place in the future
3. The future of steel detailing software, systems and procedures
4. Marketing of steel framing – successes and failures
5. Do our business systems meet the needs of tomorrow?

The workshop is a great opportunity for members to learn more about themselves and the industry and to contribute to the future direction of projects flowing from the study.

NASH appreciates the support of the Victorian Department of Innovation, Industry and Regional Development in supplying the venue and catering. We're also delighted that the Victorian Minister of Industry and Trade has requested to speak at the workshop.

### Essential details:

**When: Wednesday 14 May 2008**

**Where: The Investment Centre**

**Level 46, 55 Collins St Melbourne**

**RSVP: Louise George or Ken Watson at NASH HQ by 30 April 2008**

As numbers are limited for the Workshop, it would be greatly appreciated if you could advise us ASAP if you are planning to attend this important event in shaping the future direction of your industry.

For full details of the workshop and latest news, visit the NASH website and follow the link in the right-hand panel [www.nash.asn.au](http://www.nash.asn.au)



# REVISED DESIGN GUIDE FOR OLD FORMED STEEL STRUCTURES

**Professor Greg Hancock from Sydney University has revised his Design of Cold-Formed Steel Structures to bring it into line with the latest revisions of the Cold-Formed Steel Structure Code AS/NZS 4600:2005. Greg is Chair of the Standards committee responsible for the Standard's development.**

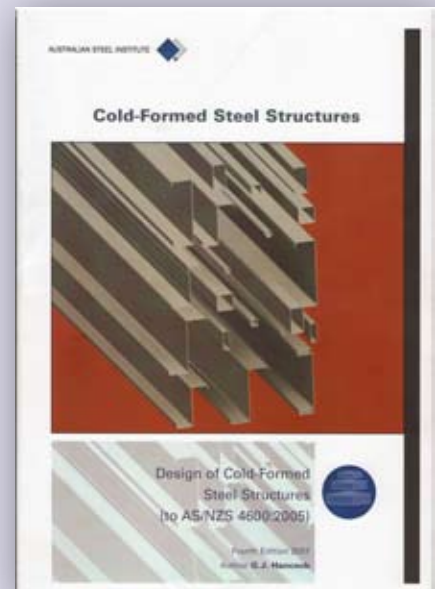
He is also a member of the American Iron and Steel Institute Specification Committee who are responsible for the development of the AISI Code on which the Australian Standard is based.

Greg's experience places him in a unique position to discuss and guide the design of cold-formed steel structures.

Some of the more significant changes to the Code that are covered in the new publication include:

- Welding of G450 steel
- Increase in design stress for G550 steel
- Rules for webs with holes, and for unstiffened elements under stress gradient
- Liberalisation of lateral buckling rules
- Modified bearing coefficients for bolted and screwed connections
- Addition of fatigue provisions and Direct Strength Method of design

The book is available for purchase from the Australian Steel Institute [www.steel.org.au](http://www.steel.org.au)



# PRODUCT NEWS

## NEW COATING FOR LSB

Lite Steel Beam Technologies have introduced a new protective coating for their products called AZ+. It is composed of a 55% Aluminium-Zinc Alloy protective coating that provides greater protection from atmospheric corrosion than a galvanised coating for the same coating mass. LSB AZ+ sections, 1.6 mm and 2.0 mm thick are manufactured from AZ150 coated steel coil and 2.5 mm and 3.0 mm thick are manufactured from AZ120 coated steel coil.

The coating in the external weld zone is restored to the same level of protection as the original coating by the application of aluminium and zinc hot metal spray. Unprotected surfaces that have been cut or drilled require re coating with a zinc rich paint to maintain protection.

[www.litesteelbeam.com.au](http://www.litesteelbeam.com.au)

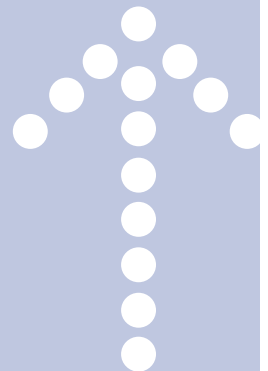


# DID YOU KNOW?

We reported in the last NASH News that NASH Council member Les McGrath would be competing in the triathlon event at the World Masters. He finished a creditable fifth in his age group over the half triathlon course (1.9km swim, 90km bike ride and 21.09km run).

Les also finished second in New Zealand in a full triathlon (3.8 km swim, 180 km bike ride and 42.2 km run) and has qualified for the world championships to be held in Hawaii in October this year.

CONGRATULATIONS **LES!**





# NASH ENGINEERS ACTIVE IN ASEC CONFERENCE

Apart from their work on the NASH Handbook and Standard Part 2, members of the NASH Technical Committee have been preparing papers for the Australasian

**Structural Engineering Conference** to be held in Melbourne in June. ASEC 2008 is a conference specifically organised for practicing structural engineers to meet, share ideas, learn about new technologies and broaden their technical skills.

For NASH, the conference provides an opportunity to acquaint the broader structural engineering community with light gauge steel design applications, helping to showcase the materials and expertise of the industry.

The papers accepted for the conference are:

- Design of trusses with light gauge cold-formed steel sections

**Authors:** Kavitha Mysore, Ken Watson, Emad Gad

- The development of generic span tables for cold-formed steel studs in residential and low-rise construction

**Authors:** Ken Watson, Mike Kelly, Lam Pham, Emad Gad

- Lateral bracing in steel-framed residential structures

**Authors:** Emad Gad, Ken Watson, Lam Pham, Les McGrath

ASEC 2008 will be held 26 and 27 June 2008. For further conference information or to register to attend visit [www.asec2008.com](http://www.asec2008.com)



## MEMBERS

NASH welcomes the following new members:

Company	Chapter	Activity	Contact
OneSteel Sheet & Coil	NSW	Steel manufacturer/distributor	Walter Suber
Ramset	VIC	National component	Harry Tsotra
Australian Tube Mills	QLD	Steel tube manufacturer	Ross Dempsey
Easy Frame	WA	Fabricator	Tim Crawford

## CHAPTER NEWS

State Chapter meetings have recently been held in both Victoria and Queensland.

Ken Watson  
NASH Executive Director