

# NASH NEWS

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



# HIA EXPO IN BRISBANE

This year the Housing Industry Association (HIA) has moved from holding an annual expo in a capital city to coincide with their annual convention, to holding a state based conference and state expo.

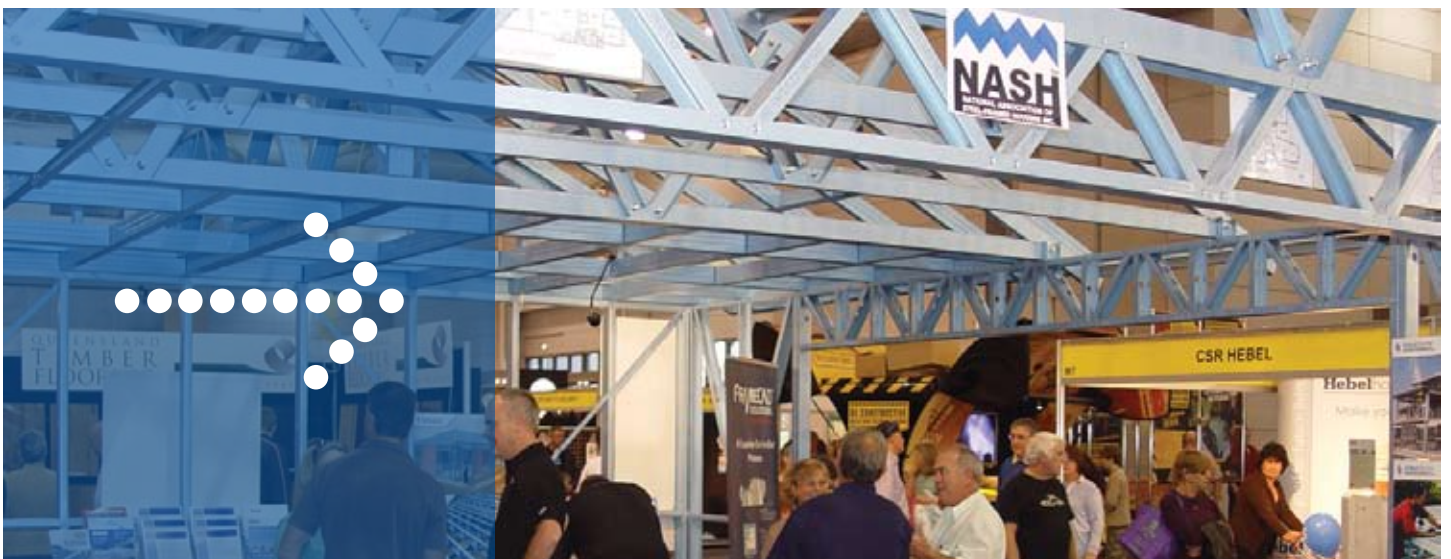
At the Queensland state expo in Brisbane, Rigid Steel, Besteel and South East Steel Framing joined ITW Buildex and NASH in promoting steel framing. Each of the three frame manufacturers provided components for a display that cohesively demonstrated the different systems.

The steel framing display generated considerable interest. The public appeared to be familiar and informed about steel framing and were interested in more detailed information.

A large number of requests for quotes were taken and anticipation is high that this will lead to future orders.

The display itself is now going to be used for a pilot course on steel framing (see Queensland pilot course).

Congratulations and special thanks to the members involved in this highly successful display. It has raised the profile of steel framing with both builders and home owners.





# NASH SA CHAIRMAN

## GARY SCOTT

Gary describes himself as a struggling migrant, unable to sever himself from his English heritage, still supporting the English Cricket team through thick and thin – and there's been plenty of thin!

Passionate about sport he sometimes finds himself distracted by work. Unable to pay mortgages and bills he turned to steel framing in the hope that it would stop the progression of grey hair. Although disappointed on this front, he became one of the many to be involved in steel framing that is finding its potential unlimited and its attraction compelling

Gary entered the industry ten years ago with Charlie Siciliano at Quickframe Steel Frames, at the very beginning of the Quickframe story. After five years with Quickframe he joined Joe Ballester and the team at Steel Frame Solutions, again as a start up business.

He sees the steel framing potential in SA as unlimited and is looking forward to the next five years and the huge challenges that the mining boom will present in SA.

He is encouraged by the massive potential for steel frames and recognises the complications presented by the lack of high

quality training. He decided to nominate for the Chair position on the resignation of Howard Montgomery, to help take the industry forward to the next level. The NASH Council is already seeing the effort that he is pouring into NASH and we welcome



## NASH PAST PRESIDENT LES MCGRATH

Les has had a long and distinguished history serving the steel framing industry. He was elected Chairman of the Victorian Chapter of NASH in 2000 and National President the following year. He served in this position until November 2006 and is currently serving on the Council of NASH as Past President. He is also Chairman of the NASH ICIP Consortium on benchmarking. During his term as National President, the market share of steel framing grew from 5% to 13%.

Les is Managing Director of the TGM Group, a consulting engineering and surveying practice that has grown to be one of the major consulting firms in Victoria. It is in the top six land development practices and the leader in the dairy and security industries.

With a team of more than 100 professional and technical staff, TGM has the resources to manage small and large scale projects in structural, civil, and hydraulic engineering, surveying, planning, project supervision and administration.

Les has been active in the design of steel framing for over 20 years and has over 40 years of experience in all levels of civil engineering.

Les holds a Masters Degree in Structural Engineering specialising in prestressed concrete and bridge structures. He lectured for 11 years at Ballarat University in structural design, construction and administration. His particular expertise is in solving difficult structural engineering problems and he takes pride in being able to offer value-added solutions.



He has been active on the NASH Standards Committee and has presented on the new Standard at seminars around Australia, as well as presenting papers in New Zealand and Hawaii.

In his spare time Les competes in triathlons and has qualified for the World Masters Competition to be held in Florida in November.

# BRICK TIES CLOSE TO THE COAST

## THEY MATTER!

Behind every masonry wall in a steel or timber-framed building lie some very important components – the brick veneer wall ties or simply “brick ties” that stabilise the brick wall by connecting it to the structural frame. Most Australian homes, and many other low-rise residential and commercial buildings, are built this way. How long these buildings will last depends, like a chain, on the weakest structural component in the system. Brick ties are part of that structural chain, but can be neither inspected nor replaced once the building is completed. Their selection and installation are vital to sustaining the 50 year minimum life expectancy of Australian brick veneer buildings.

### Regulatory Provisions

Masonry construction in accordance with AS 3700, calling up AS/NZS 2699.1 for brick ties, satisfies BCA performance requirements. Clause 3.3.3.2 of Volume 2 of the BCA contains simplified requirements for ties used in brick veneer construction in Class 1 buildings up to N3 wind classification.

AS/NZS 2699.1 contains a three-parameter classification system for wall ties based on earthquake resistance, static load resistance and durability. The standard defines three levels of mechanical performance for both non-earthquake (Type A) and earthquake (Type B) ties.

Type A has Light, Medium and Heavy Duty classifications, each with a minimum characteristic strength requirement in both tension and compression, and an overall limit of 1.5 mm deformation.

Type B has Earthquake Light, Earthquake Medium and Earthquake Heavy Duty classifications, each with a minimum characteristic stiffness, strength and residual strength requirement.

All types of tie, including their fastener(s), are required to have a minimum 50 year service life, regardless of the service environment, when subjected to temperature extremes, alkalinity, moisture, UV radiation (during construction) and salt attack.

This may be achieved for steel ties by:

- manufacturing the tie from specified steel sheet or wire, or
- conducting accelerated corrosion tests on coated steel ties as described in the Standard.

For ties not made from steel, the manufacturer must demonstrate compliance with the durability requirements. For Class 1 buildings up to N3 wind classification, engineered polymer ties may be used without durability verification.

AS/NZS 2699.1 contains an important provision that ties and fasteners must be supplied together as a system. This makes it less likely that inferior fasteners will be substituted for recommended fasteners.

### Severe Marine (R4) Ties

Severe Marine environments are those within 1 kilometre of breaking surf or 100 metres of salt water. AS/NZS 2699.1 defines six levels of performance against salt attack, although in practice only levels R2 (Moderate), R3 (Marine) and R4 (Severe Marine) are commonly applied.

There are currently two alternatives for construction in Severe Marine locations - stainless steel or engineered polymer. AS/NZS 2699.1 requires that the tie and fastener system be “galvanically and chemically compatible” and have a corrosion resistance at least that of the tie alone. For stainless steel ties, this requires isolation of the tie from both the steel frame and the fastener. Where the tie is face-fixed through an insulation or bracing panel, no further frame isolation should be required. Where there is no separating panel, isolation can be achieved with a non-metallic dampcourse material. It is advisable to use a Class 4 screw with neoprene washer or similar to isolate the screw from the tie.

### Engineered Polymer Ties

West Australian specialist plastics manufacturer, Novaplas, manufactures the only engineered polymer tie available in Australia. The Ni-Ties™ brick tie is manufactured from acetyl resin to a patented design for both face-fix and side-fix styles. The face fixed ties

are currently available in Light Duty rating, with a medium duty tie under development. The side-fixed ties are rated as Medium Duty. The horizontal shaft of the Ni-Ties™ tie has a circular cross-section with a concentric central disc to ensure a drip point. The masonry end of the tie is also roughly triangular with a raised rim to aid mortar keying action. Ni-Ties™ brick ties should be fixed to the frame with Class 4 screws.

## Comparative Product Costs

There is a fairly wide range of prices evident for conventional sheet steel face-fix veneer ties. Light Duty ties range from around 7 to 10 cents with Medium Duty ties up to around 15 cents. Stainless steel ties (R4) range from about 20 to 25 cents.

The Ni-Ties™ polymer tie is claimed by the manufacturer to be around one-third of the price of a stainless steel tie. For more information on Novaplas and Ni-Ties™ see [www.infolink.com.au/dir/Novaplas](http://www.infolink.com.au/dir/Novaplas)



### Tie Durability Classification System – AS/NZS 2699.1

Zone – common name	Severe Marine	Marine	Moderate	Comments
Distance to Breaking Surf	0–1000 m	1–10 km	>10 km	
Distance to calm saltwater	0–100 m	100–1000 m	>1000 m	
Tie durability classification	R4	R3	R2	Ties may be stamped OR colour-coded
Tie colour code	Blue or White	Red	Yellow	Stainless steel ties may be uncoloured
Deemed-to-comply materials	Stainless steel (316) or Engineered polymer	Sheet steel + 470 gsm zinc each side or galvanized wire 470 gsm	Galvanized steel Z600 or sheet steel + 300 gsm zinc each side	

# NASH HANDBOOK

Over 430 copies of the draft NASH Handbook sent out for comment in September were downloaded from the NASH website during the four week comment period.

The Handbook provides guidance on all design related issues for low-rise steel framing and includes discussion on design models, connections, testing procedures, durability fabrication and construction practices as well as issues such as fire rating and acoustics. The Handbook has collated design information from disparate sources ie. Standards,

manufacturers' manuals, CSIRO and manufacturer test data and design tables, to assist in the efficient and reliable design of high quality steel framing.

The committee would like to thank all those who submitted comments. Your comments will improve the relevance of the Handbook and its benefit to the steel framing industry. The committee is now reviewing all the comments and commencing the final edit of the Handbook for planned publication in the first quarter of 2008.



# STANDARDS SEMINARS

NASH in conjunction with the Australian Steel Institute (ASI) and Engineers Australia has held seminars in Melbourne, Brisbane, Sydney, Perth, Adelaide, Gippsland, Canberra and Newcastle. The seminars follow the referencing of the NASH Standard for Residential and Low-rise Steel Framing, Part 1 Design Criteria in the Building Code of Australia (BCA).

Typical attendances have reached 70 – 80 in the capital cities and 40 in the regional centres, demonstrating a strong interest in steel framing. The show bags

of member information were snapped up. A special thank you to my fellow presenters – Les McGrath, Kavitha Mysore and Lam Pham.

The final seminars in the series were recently held in Cairns and Townsville – both venues were very well attended. Thank you to Homefab Frames and Trusses for their support of these final seminars.



Typical attendances have reached **70-80** in the capital cities.

## CONDENSATION

When moist air comes into contact with cold surfaces such as windows and walls, condensation can form. This can lead to problems of mould growth and, in extreme cases, affect durability. As sealing and energy efficiency of modern buildings improves, there is less ability to vent moisture through cracks or gaps in the building structure. Consideration of moisture in buildings is now becoming more important.

In areas of high moisture generation such as kitchens, bathrooms and laundries, exhaust fans should be provided to externally vent the moisture when the room is in use. It is recommended that the lining, eg. plasterboard, in all areas be

sealed and painted with two coats of washable paint. This improves the vapour resistance of the internal lining. In tropical areas the outdoor air is more humid and therefore paint that is vapour permeable is recommended.

A building wrap is commonly placed around the exterior of the wall studs. The building wrap functions as an air and water barrier. Some wraps also assist in providing the insulation to the building. It is highly desirable that the building wrap be vapour permeable so that any vapour in the cavity can escape. If not there is risk that the vapour could condense on the wrap and become trapped causing potential durability issues to the building.

With light-weight low heat resistant claddings, eg. weatherboards, cement or metal sheeting or similar, in cool weather the area of the lining adjacent to the stud is cooler than the surrounding area and vapour can condense here leading to staining, known as ghosting. In addition to the measures outlined above ie. exhaust fans and painting, the BCA requires that a thermal break with an R-value of at least 0.2 be placed on the external face of the stud. This could be a 12 mm expanded polystyrene strip (EPS) or a proprietary product. It ensures that the frame is kept warm and hence minimises the condensation effect. The thermal break is not required with brick veneer and other similar forms of construction.





# REVIEW OF APPRENTICESHIP TRAINING COURSES

The General Construction Package (BCG03) sets the national qualifications and their training requirements for apprentices and tradespeople. The package is currently under periodical review that occurs every 3 to 5 years.

Covered in the package are the qualifications and their training requirements for several trades including bricklaying; carpentry; roof tiling, wall and ceiling lining; etc.

To obtain a qualification, eg. carpenter, all the compulsory core competency units must be completed together with a specified number of elective competency units. These elective units can in theory be chosen by the student and / or employee, but in practice are chosen by the teaching institute. A competency unit can be a core unit in one qualification and an elective in another qualification. In carpentry the student must complete 19 core competency units and 11 elective units.

For more details see the National Training Information Service web site [www.ntis.gov.au](http://www.ntis.gov.au)

NASH has made a number of submissions on the course structure and the content of the individual competency units. In the carpentry qualification, roof trusses and floor systems are now core competency units. NASH has argued that steel and timber should be included in all relevant units, eg. walls, trusses, floors and fitting out. At this point in time, steel has been covered in the wall and truss units.

NASH has sought clarification that all relevant units in the wall and ceiling lining qualification should cover both timber and steel wall substrates.

It is anticipated that the review will be completed this calendar year and be introduced in 2008, with the first students commencing the new training package in 2009.

Training of carpentry and other lecturers in steel framing and supply of relevant training materials will be a significant challenge for NASH.

## **Queensland pilot course**

A pilot course, Queensland Lightweight Steel Framing (39221QLD) was run in September. The course was developed by an industry based committee for carpenters who wanted to gain an understanding of steel framing. It is anticipated that the course would typically be run over two days and cover floors, walls, roofs and fit-out.

The participants included experienced and inexperienced frame erectors and TAFE teachers. Feedback was positive and comments will enable the completion of the course notes.

The HIA Expo display frame proved an invaluable training aid.

## **CHAPTER NEWS**

Chapter meetings have recently been held in NSW, QLD, VIC and WA.

The VIC chapter meeting was held at the Bendigo Institute of TAFE and the NSW chapter meeting was held at Custom Steel, Dubbo. Arthur Hosking showed members around his new extended fabrication facilities. The WA Chapter meeting covered energy rating of houses.

Chapter meetings are an excellent opportunity for members to network, share common problems and to keep abreast of the latest developments in NASH and the steel framing industry.

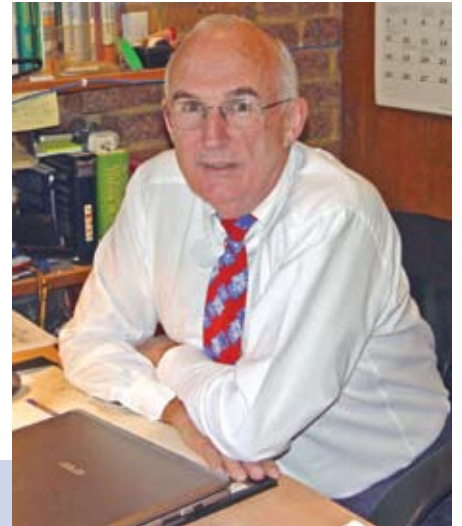
# WALLING AND CEILING INDUSTRY ASSOCIATION

The Association of Wall and Ceiling Industries of Australia and New Zealand (AWCIANZ) represents the interests of Australian and New Zealand lining manufacturers and plasterers.

It has recently changed from a federation of state organisations to a national organisation and has appointed Allen Morley, Executive Director of the new organisation. Allen's previous roles include Executive Director of the Steel Institute of Australia (now incorporated in the Australian Steel Institute).

NASH enjoys a long and mutually beneficial relationship with AWCI ensuring that steel framing and plasterboard work well together. Graeme Stark represents NASH on the Standards Australia Plasterboard Standard Committee, the body responsible for AS/NZS 2899. The latest update to this Standard has had a long germination period, but should be released in the new year.

AWCI is developing a Group Training Scheme for apprentices within their industry and we are working with them to ensure that steel framing is covered.



## BLUESCOPE STEEL LAUNCHES TV ADS FOR TRUECORE®

TrueCore® Steel commercials are being aired in regional VIC, northern and western NSW, south east QLD, Adelaide and WA. The ads feature the building of new long lasting, termite resistant clubrooms for a bikie group, The Termites.



## ANNUAL GENERAL MEETING

The NASH AGM will be held at BlueScope Steel in Port Kembla on Thursday 15 November 2007. Members are invited to join the Council over a light lunch at midday and then attend the meeting.



# MEMBERS

NASH welcomes the following new members:

Company	Chapter	Activity	Contact	Location
Superior Steel Systems	QLD	Frame supplier	Alan Floreancig	Atherton QLD
50 Plus Constructions	QLD	Builder and project manager of retirement villages	Shaun McBain Peter Tuttle	Loganholme QLD

Thank you to Bremick Fasteners who have upgraded their membership coverage from the WA Chapter to National membership.

Ken Watson  
Executive Director



ICIP Consortium members held a meeting in October at Homefab Steel Truss and Frame, Mareeba QLD, to review the Bench Marking Study progress

L to R Arthur Hosking (Custom Steel), Susu Nousala (ECON-KM), Tony Mason (BlueScope Steel), Ken Watson (NASH), Barry Byrne (Homefab Steel Truss and Frame), Les McGrath (TGM Group)

## AUSTRALIAN STEEL FRAME FOR JORDAN



JV Global is supplying and partly building a steel-framed house in Jordan, to showcase the potential of light-weight steel frames. The display home is being used to gain the necessary buildings approvals and to gauge market acceptance.

The Managing Director of JV Global, Terry Opie, says that steel framing is much cheaper than traditional building materials making the home up to 40% cheaper to build. JV Global, through its strategic alliances, plans to introduce steel-framed houses into Islamic countries.

Component Homes, a subsidiary of JV Global, designed, detailed and manufactured the house at its facilities in Perth and then shipped the frames to Amman in Jordan. A team from Component Homes is preparing to travel to Jordan in November to erect the steel frame house. The design

of the house was designed to suit local conditions and expectations. It consists of three levels with a large balcony at the second level and has a floor area of 258 square metres.