



NASH News October 2010

Special edition

NATIONAL IMPROVEMENT WORKSHOP

Held Dubbo NSW on 5 and 6 September 2010

This event proved to be an exceptionally valuable and exciting couple of days.

We discussed software, risk management, plant layout and benchmarking. 68 people attended from across Australia and New Zealand representing a diverse and interesting cross section of the Australasian steel framing industry.

We got off to a relaxed start on Saturday night with the pre-conference Workshop dinner. This was a great ice breaker and opportunity to network before we commenced the formal program on Sunday.

In this introduction to the Workshop we will briefly summarise the program and in the following pages of this Special Edition of NASH we will expand on each topic in depth.



Dubbo workshop attendees

DAY 1

Software Systems, Risk Management and Insurance

The focus was on integration or interoperability of different software systems.

Software Systems

Software Systems was introduced with an overview of Building Information Modelling (BIM). A concept well developed in commercial and industrial construction but little used in residential. BIM relies on consistent data standards and tight control, but residential construction is currently too fragmented.

NASH members use a huge range of software in their businesses, most of which does not communicate well inside or outside the business. While software is essential, poor interfaces create errors and inefficiencies that are sometimes concealed. A clear need emerged for common platforms that facilitate data exchange without limiting functionality or scalability.

Risk Management

Risk Management, from both a safety and insurance perspective, rounded out Day One. Risk is all about probability. Risks that could lead to injuries or business losses can be eliminated, isolated or managed, or operators/visitors protected with Personal Protective Equipment (PPE). Generally elimination is the cheapest and PPE the most expensive option overall. Sharing responsibility for risk management tends to secure better outcomes.

Insurance

When business risks can't be eliminated or safeguarded, insurance can be the answer. Steel framing businesses are involved in the construction chain, traditionally a complex insurance minefield where exclusions, contractor cover and contract indemnities must be carefully checked. It's essential, for efficient and gap-free cover, that business insurers know every aspect of the business insured.

DAY 2

Opened with a presentation and tour of Custom Steel Frames' operation, one of the largest in Australia.

Custom Steel Frames demonstrated the principles and practice of efficient manufacturing layout. Progressive changes and improvements in production operations were explained, along with reasons for change and rejected options. Participants had the opportunity to interact with production staff and to consider the implications for their businesses of pursuing specific techniques.

Returning to the workshop venue, we split into breakout groups and examined particular likes and dislikes regarding layout options. We explored how different techniques could be applied in individual businesses.

To wrap up the day we presented the NASH Online Business Assessment Tool (OBAT). Participants worked through the OBAT questionnaire, clarifying and discussing specific questions.



Arthur Hosking and a tour group



First group ready for Custom Steel Tour

NASH

National Association of Steel-Framed Housing
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WORKSHOP PROGRAM

We've included the program in our NASH Special Edition to help you navigate your way through the detailed discussion that covers the next few pages.

Day 1 - Sunday

- Workshop welcome and introduction
- Current and future trends in CAD for Engineers and Designers
- Software systems presentations by:
 - Homefab Truss and Frame
 - Quik Series
 - BlueScope Lysaght
- Auditing of software for regulatory approval
- Software systems presentations by:
 - Custom Steel Frames
 - Vertex CAD/PDM Systems
 - Framacad Solutions
- Managing risk in your business
 - Risk management
 - Business insurance
- The future needs and requirements of software - Breakout groups

Day 2 - Monday

- Plant tour - Custom Steel Frames
- Principles of plant layout
- Plant layout - Breakout groups
- Online business assessment tool (OBAT)
- Conclusion and future directions of the steel framing industry

Will Osmo, President of NASH, formally opened the Workshop

SOFTWARE SYSTEMS

Ken Watson, Executive Director of NASH, presented an overview of the future trends for engineers, building designers and architects. A key trend he identified is the slow movement towards Building Information Models (BIM) from CAD systems. Generally this is being driven by contractors or owners on the larger or more complex projects.

Currently it takes too long to draft the individual components of the project to a BIM due to the inexperience of the drafts people and the time to set up components. Then there's the initial cost of software and hardware. Time and cost savings will result down the track however because all project members are working from the same database and not having to re-enter data. It's interesting that quite a few building designers are embracing BIM and that quite a few building product suppliers have provided details of their products to make it easier to use these programs.

Presentations were made by the following NASH Members:

- Homefab Truss and Frame (Barry Byrne)
- Quik Series (Linda McDonald)
- BlueScope Lysaght (Kavitha Mysore)
- Custom Steel Frames (Colin Shanks)
- Vertex CAD/PDM Systems (Juho Soumalainen)
- Framacad Solutions (Peter Blythe)

The software packages chosen represented a broad range used in the steel framing industry in Australia. Homefab and Custom Steel discussed their systems that were developed for their own use. Homefab had approached it from a database point of view whereas Custom Steel had adopted the use of macros to drive a CAD package. Quik Series, BlueScope Lysaght, Vertex and Framacad Solutions all represented commercial software.

Following the introduction in South Australia of regulations for the use of software for the design of trusses without an engineer, the Australian Building Codes Board (ABCB) is planning to introduce a protocol for software. (See NASH News July 2010 for more information on the SA requirements.) Dr Lam Pham from the ABCB explained key points about the building regulations and the implications on the introduction of a protocol for software. Dr Pham sought the industry's input and feedback on the draft protocol.



Ken Watson, Executive Director of NASH

WHAT DOES THE INDUSTRY WANT FROM ITS SOFTWARE?

The workshop broke up into four break-out groups for discussion. Groups reviewed the software they currently use within their own businesses to manage the activities of:

- Design
- Detailing
- Manufacturing process
- Quoting
- Transport
- Financial
- OH&S
- Customer relations
- Ordering
- Inventory
- Purchasing
- Payroll
- Tacit knowledge
- Costing



Breakout discussions

Software problems and solutions identified by the groups

There was very little integration between the various business activities unless the software covered multiple business functions. There was very little integration between the different software packages. Typically most fabricators would have a:

- design package covering detailing and manufacturing,
- accounting package covering financial, ordering, purchasing, inventory and payroll, and
- a variety of stand alone systems based on Word, Excel or Access.

Some businesses have attempted to use the architectural CAD drawings as the basis of their drawings but they have problems:

- The lines on the drawings do not have any attributes attached and hence must be interpreted by the detailer.
- The drawings are often not to scale as system dimensions may have been manually overridden by the designer.

The slow movement to BIM has the potential to overcome these issues. However the issue of responsibility for the information in the BIM needs to be resolved otherwise there will be little progress towards BIM for residential and low-rise construction.

There does not appear to be much integration into suppliers' systems from the fabricators' systems. Overall there are too many systems and hence the systems are not developed to their full potential. This problem is further compounded by the need to keep the systems compliant with the latest laws, codes, standards, regulations and practices. Also of concern is the time required for operators to become proficient in the use of the software.

A way forward could be for the industry to adopt best-of-kind packages that could be plugged into a standardised backbone such as BIM. This would minimise duplication/re-entry of data, save time and minimise errors.

Another deficiency in the steel framing industry is the lack of good estimating and quoting tools to enable a quick-to-use and accurate estimate. Having to fully design the steel frame to be able to estimate the project was considered too costly and time consuming.

The problem of the small drafting business with one or two operators was highlighted. The commercial packages available are too expensive for these businesses that only do drafting. Small businesses need a cost effective program that only covers the drafting aspects and can interface with manufacturing systems. This would allow more detailers to enter the industry and help overcome the shortage of trained detailers.



Breakout group led by Mike Kelly (NASH)

MANAGING RISK IN YOUR BUSINESS

Two speakers discussed two different aspects of managing risk in a manufacturing business – safety and insurance.

Safety

Dr Amir Morris, a Safety and Risk Consultant, spoke about how safety can lead to more productive workplaces.

The first task in managing risk is to identify and evaluate the actual hazard not a symptom of the hazard. It is also imperative that the 'solution' does not create new and bigger problems.

The next step is to control the risk. This involves considering the following three factors:

- Probability of encounter with the hazard
- Probability of extent of damage to victim
- Number of victims

This is usually attacked using the following hierarchy of controls:

1. Eliminate
2. Engineer
3. Modify
4. Isolate
5. Training and Administrative controls
6. Personal Protective Equipment (PPE)

The list is in order of preference and also of cost. Initially it might appear that PPE is a cheap solution for a number of hazards, the cost of this rapidly builds up as PPE (usually disposable) must be issued to all employees and visitors on an ongoing basis.

Once the solution is implemented, its effectiveness must be evaluated and either the solution improved or a new solution developed.

Best practice in risk management requires:

- Spreading involvement and ownership
- Local systems
- Taking action
- Evaluation and benchmarking

Insurance

Jardine Lloyd Thompson (JLT) is one of the world's largest insurance brokers. Craig Anderson presented on some of the traps in insurance that can cause companies not to be covered and emphasised that organisations need to work closely with their insurance brokers/companies.

Public and Products Liability

- Efficacy Exclusion – a typical clause in an insurance contract "the failure of any Product to correctly fulfil its intended uses or function and/or meet the level of performance, quality fitness or durability warranted or represented by the insured", excludes any claims involving the failure of the product to perform its intended function.
- Industry Restriction Exclusion – Many policies exclude or limit cover for products used in certain industries such as mining, railways, marine, aviation, aerospace, and motor industries. Cover can be provided where the insurer is made aware of the industries where products are supplied.
- Work Away Exclusion – Policies often exclude manual on site work, particularly welding and working at heights.

Contractors and Subcontractors

Engaging contractors has impacts on liability arrangements as it's not standard to cover contractors under your policy. Whilst you may have evidence that the contractor has insurance, the level, extent of cover, exclusions and currency are not clear. This can result in you being held responsible for the contractor's damages.

To minimise your exposure where the cover is not included in your policy:

- Check for evidence of cover (a certificate of currency) before engaging.
- Check evidence of cover for business activity they're undertaking on your behalf.
- Check liability of the cover is sufficient.
- Keep a copy of the certificate on file – essential in the event of a loss.

Policies are available that include coverage for contractor and subcontractors, which allows you to dictate the level of coverage, ensure adequate limits and reduces the need to check for evidence of insurance. In the event of a loss, it means that only one insurance company is liable for loss and therefore eliminates any conflict that could occur if the contractors were to arrange separate cover through their own insurers.

Contractual Liabilities

Contracts often have a 'hold harmless' clause similar to: "You shall, without limitation, indemnify the principal for any loss, damage, expense, claim or liability suffered or incurred by the principal, caused directly or indirectly by

you pursuant to this agreement." By accepting this, you agree to indemnify the principal for all claims that arise from the execution of the service under the contract, regardless of negligence on the part of the contractor.

Most public liability policies contain the following exclusion: "We will not cover any liability or obligation assumed by you under any contract, agreement or warranty which would not have otherwise arisen or been implied in law unless you have told us about them and we have noted them on the schedule." If you have a similar clause in your policy, you must notify your insurance broker or provider to ensure your coverage under the policy. Otherwise you are not covered.

Insurance Summary

The essential steps to ensuring adequate cover:

- Know your policy
- Be sure your insurance provider knows all areas of your business operation
- Review insurance clauses in contract
- Check for evidence of cover for contractors and subcontractors
- Be sure to notify any changes of your area or operation to your insurance provider

While these steps are essential, they may not be sufficient. NASH is investigating the possibility of facilitating group cover for businesses in the steel framing industry. This would provide NASH members the economies of scale and achieve benefits in relation to premium, coverage and administration.



Left to right: Workshop dinner, Workshop attendees, Silvano Schippa, Susu Nousala and Barry Byrne (Homefab), Craig Anderson, Paul Skinner (Centrix WA), Arthur Hosking (Custom Steel) and Darryl Althorpe (Centrix), Sally Robertson (Newcastle Steel Frames & Trusses), Amir Morris.

PLANT LAYOUT

On Monday morning we descended on Custom Steel for a tour of their production facilities. The size of the facilities and their capability is amazing. Custom Steel welds their wall frames and trusses and uses Henrob self piercing rivets for floor systems. Henrob demonstrated their E frame machine.

The plant uses a large number of low cost roll formers located close to assembly points to minimise product inventory and double handling of steel. It's heated in winter and cooled in summer for the comfort of employees resulting in consistently good productivity throughout the year.

The plant's been customised to produce framing to a price and with enough capacity to supply framing reliably into small and large projects at an agreed delivery speed.

Arthur Hosking of Custom Steel gave an overview of the principles and operating philosophy that led to the current plant layout and operating regime. The output of the plant is limited by detailing speed but runs comfortably with 3 out of 4 jigs (frames or trusses) in production and the fourth being set up for the next job.



Demonstrating Henrob E Frame.

To ensure the plant is reliable and can run without constraints, Custom Steel has:

- Purpose built the sheds with correct width for cross flow manufacturing
- Installed a backup generator to eliminate stopping for power outages
- Installed lighting for day/night operation including the yard
- Installed air conditioning and insulation to maintain constant output in all weather
- Enlarged the storage area in order to keep manufacturing going when deliveries are stalled due to wet weather, contractor delays, etc
- Installed on-site coil storage of up to 600 tonnes
- Implemented a forward coil ordering system with two suppliers
- Increased storage and stocks of regularly used products
- Roll forming of ancillary products previously purchased
- Installed turret punch and sheet metal folders for the manufacture of brackets
- Automatic welding masks for all production welding staff
- Installed high precision quick set up jigs
- Elevated equipment off the floor space, eg welding machines including wire attached to overhead frames
- Installed 2 ball pack welders per jig on overhead Bomac bearing type trolleys
- Two sets of finished product trolleys to allow continuous flow
- Manufactured uniformly operated roll formers with one standard operation procedure (SOP)
- Manufactured/provided enough roll formers to make each jig independent
- Increased forklift numbers to prevent delays while waiting for coil loading and trolley unloading
- Installed reclaimers/recycle bins at production areas to prevent unused material build up
- Developed and installed a bulk cutting facility for structural steel sections to eliminate bottle necks
- Increased number of trucks and trailers to ease yard congestion and for reliable delivery
- Introduced a priority ordering system for off site processed items to reduce delays to allow job to be dispatched on time

Measures to control manufacturing times, delays and cost of production at Custom Steel:

- Set production areas up with optimum amount of capacity and space
- Set jigs and roll formers for one way flow
- Positioned roller doors for the jig layout
- Raw material storage area adjacent to roll formers, cartridges, bins etc
- Output/finished job area large enough and always accessible by forklifts to empty trolleys
- Set up preventative maintenance and spare parts inventory program on all key equipment
- Job analysis to formulate accurate pricing across the product range
- Installed SAP financial, job tracking and database software
- Implemented staff training courses for detailers

We then returned to the main workshop venue and into break out groups to discuss the Custom Steel plant and how individual businesses could improve their layout and efficiency of production.

BENCHMARKING

On-line Business Assessment Tool

Over an 18 month period, NASH carried out a benchmarking study of the steel framing industry with the support of the industry and an AusIndustry grant under the Industry Cooperative Innovation Program (ICIP).

In May 2008 the study culminated with a workshop in Melbourne that strongly supported the transfer of the benchmarking tool to an on-line system so that members could benchmark their businesses on an ongoing basis. Susu Nousala from RMIT University, who was also the consultant for the benchmarking project, gave the background to the new online tool and also discussed its future directions.

The on-line tool has now been completed and is named the On-line Business Assessment Tool (OBAT). It can be found on the 'members only' section of the NASH website www.nash.asn.au

OBAT feedback

Paul Skinner from Centrix WA completed OBAT when his plane was delayed from Perth. He found it to be very useful planning tool, giving him a different outlook on his business and highlighting key areas that could be improved. He completed it with his colleague, Darryl Althorpe, providing them with a good basis for their planning discussions.

Gavin Kirk-Lauriston from Steel Framing Australia had a similar experience and again commented that OBAT was a very useful tool in analysing his business and planning its future direction.

The workshop participants all undertook to complete OBAT by the end of September. All NASH members are encouraged to complete the tool by the end of October, which will allow NASH to update key benchmarks for the industry.

All data entered is confidential and will not be disclosed to any third party. The summary of the results will be presented in such a way that no individual business can be identified.

CONCLUSIONS

NASH President Will Osmo concluded the workshop with a summation of the key outcomes:

- Software systems need to be integrated within a business and be able to transfer data to and from customers and suppliers
- Systems need to be robust and meet the needs of the industry.
- Custom Steel plant was a well laid out facility that sparked a lot of interest and should lead to improvements of other business facilities with the lessons learned.
- The OBAT provides the industry with a tool to measure its progress, both individually and collectively.

Participant feedback was that the Workshop was both useful and enjoyable. The formal sessions, along with the opportunity to discuss their issues with people from all over Australia and New Zealand, were invaluable. The feedback was unanimous in wanting another workshop within the next two years.



Will Osmo on left (NASH President)

THANKS FOR MAKING THIS FANTASTIC WORKSHOP POSSIBLE

Thanks to Buildex, BlueScope Steel, Framacad Solutions, Henrob and LiteSteel Technologies for their sponsorship of the workshop.

A special thanks to Custom Steel Frames for their assistance with the local arrangements and for opening up their plant for the industry to inspect and learn.

The speakers set a high standard with their presentations and for the discussions that followed and we thank:

Barry Byrne (Homefab Truss and Frame)

Linda McDonald (Quik Series)

Kavitha Mysore (BlueScope Lysaght)

Colin Shanks and Arthur Hosking (Custom Steel Frames)

Juho Soumalainen (Vertex CAD/PDM Systems)

Peter Blythe (Framacad Solutions)

Lam Pham (Australian Building Codes Board)

Craig Anderson (JLT)

Amir Morris (Safety and Risk Consultant)

Susu Nousala (RMIT University)

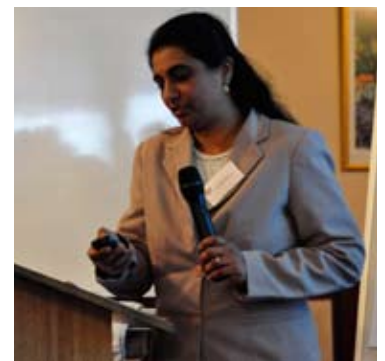
Thanks also to Susu Nousala, Michael Kelly, Amir Morris and Lam Pham for facilitating the break out groups and to Louise George for workshop preparation and coordination.

Ken Watson
Executive Director



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Left to right: Juho Soumalainen (Vertex), Peter Blythe (Framecad Solutions), Colin Shanks (Custom Steel Frames), Barry Byrne (Homefab), Lam Pham (ABCB), Linda McDonald (Quik Series), Kavitha Mysore (BlueScope Lysaght)