GUIDE TO THE AUSTRALIAN STEEL FRAMING INDUSTRY FOR NEW FABRICATORS

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INTRODUCTION

Steel house frames were first used in Australia in about 1950 and the first steel framer commenced in Wollongong in 1968. There are now an estimated 60 steel framing businesses in Australia. Despite the length of time that the steel framing industry has been operating and the large number of participants, the industry still displays many characteristics of a developing rather than a mature industry. Three characteristics indicating a developing industry are:

- A significant number of new operations commencing business
- A significant number of operations ceasing business
- The principals of some new operations having little industry experience

Most steel framers compete for jealously guarded business, in price competitive markets, with little or no support from others. Despite good intentions, a great deal of effort, personal sacrifice and, sometimes, quite considerable investment, some steel framing businesses still fail.

Every failure of a steel framing operation impacts on other local businesses and the industry as a whole. This is a major concern to the members of the National Association of Steel-Framed Housing (NASH) whose shared objective is to develop the industry. In order to make a positive contribution to this situation, the NASH membership has decided to help new steel framers by providing useful information gained from industry experience.

The role NASH hopes to play is not that of a policeman but educator, not a teacher but an information provider. We trust this publication will assist new entrants to the industry.

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INDUSTRY OUTLOOK

The members of NASH believe that the outlook for steel framing in Australia has never been better. Prospective new entrants are attracted to the industry because it has such exciting prospects for further growth and development.

The underlying reasons for this optimism are:

- widespread awareness of steel framing
- growing awareness of termite issues
- improved steel framing products
- declining quality of timber framing components
- trends in architecture that suit steel products
- proven performance of steel framing

INDUSTRY PITFALLS

While there are a number of very successful steel framers, and the outlook has never been brighter, steel framing is not an easy industry in which to flourish - as has been proved by numerous failures. Steel framing looks easy, but it is a major mistake to underestimate the difficulties inherent in the industry.

The major pitfalls to starting and operating a new steel framing business have changed little. These are:

- limited working capital
- limited design skill
- slow adoption and/or development of design software
- site rectification
- builder reluctance
- powerful support for the status quo

Working Capital

NASH is not in a position to advise new members how much working capital is required. However, NASH can point out that many steel framing businesses have failed in their infancy due to a lack of working capital. NASH strongly recommends that industry entrants consider the following major factors:

<u>Date of commencement of trading</u>

Often overheads of factory rent and staff commence long before the company is ready to go to the market. This is particularly the case where new systems are developed. It is often the intention that "some" income-generating work will be carried out in the development stage but in reality this rarely happens.

Sales revenue

Most members of NASH report that their predictions during the planning phase of overheads and cost of manufacture were fairly accurate. Where the budget was severely tested (read wrong) was in the area of predicting sales revenue, especially in the first few years. Most members of NASH found that is was much harder to generate sales than they anticipated. Accordingly, those who have survived and continue in business today have generally used cash reserves that were well in excess of those initially budgeted.

Limited Design Skill

It is often considered that the product itself is the most important part of the steel framer's operation. While most successful steel framers agree that the product is a commodity that needs to be manufactured and assembled correctly and efficiently they stress that the really important part of a successful operation is good design.

In most NASH members' experience they were not able to start their operations with easy "butter box" style homes which would have allowed them to work up to the more complex ones in time. They found that the early adopters of steel frames were owner builders and builders with designs for which timber frames were less competitive. These customers were building more complex structures requiring frame designs outside the anticipated frame envelope. These designs called for ingenuity by the frame designers and input by engineers, sometimes even at the quote stage.

To meet the challenges posed by complex designs experienced, innovative and accurate detailers are required. These are a rare commodity. The timber framing industry cannot be relied upon for a supply of experienced detailers as the timber framing software is generally so advanced that the majority of structures are designed by the software itself. This has led to a general de-skilling of timber frame detailers over the last 10 years or so.

Slow Adoption/Development of Design Software

NASH recommends that good design software be considered as a fundamental component of any steel framing operation.

In the minds of new steel framers the product often takes precedence over the design methods. Regularly, the thought process is that software will be purchased or developed as and when required. This thinking, however, does not provide for the significant time taken to develop software or to modify and debug new software.

When considering design software it is worth remembering that errors occur in timber design software, despite the continual development of the software over many years at the cost of millions of dollars. The software is also tested by literally hundreds of users each day and continually improved.

Site Rectification

Even with good detailers and good design software errors will occur, particularly in the first year or so of a framing operation. It is the NASH members' experience that builders and owners builders are reluctant to carry out on-site rectification of steel frames even if, in the normal course, they would have rectified an error in a timber frame. The only solution that has worked for NASH framers is to be on-site promptly to rectify errors when they occur. In the early trading period of most successful steel framers, a far higher amount of on-site rectification was carried out than was ever envisaged. The on-site problems can become a major distraction to management both due to the loss of good staff to carry out rectification and the necessity to repair damaged credibility with the customer.

Powerful Support for the Status Quo

As a product with moderate market share but such obvious potential steel framing is seen as something that could upset a long-established status quo. There is a very large accumulated investment in the timber industry and hence there are parties who need to protect their investment in that industry. Those who have much to lose by any trend towards steel include forest owners (including governments), saw millers, manufacturers of value added timber products and timber merchants. These parties invest massively in supporting their own industry bodies and in marketing to the building industry. The building industry is traditionally reluctant to change and the timber interests foster this in relation to maintaining market share. They defend their market share with considerable vigour and expertise.

Builder Reluctance

The experience of NASH members is that most builders are reluctant to use steel frames, even if their clients request them. Some builders even try to talk the owner out of it.

Many of the reasons for this have some justification. The most common reasons are

- fear of the unknown
- a previous bad experience
- fear of loss of certainty of profit
- concerns about on-site rectification
- time lost during the learning curve period
- increased cost of other trades
- costs of gearing up

<u>Fear of the unknown</u>

People commonly fear the unknown and are reluctant to change unless given a sufficiently attractive incentive. Change can be difficult and challenging. Most people have experienced difficulties when trying something new. The existing “comfort zone” is easy and attractive. New skills and techniques can take time to master and time for most builders is one of their most valuable commodities. They may also be concerned about such things as acquiring new tools or needing different sub-contractors or inspection and certification differences. The following paragraphs discuss some of the factors underlying builders’ fear of the unknown.

<u>Previous bad experience</u>

Considering the number of years that steel framing has been around it is not surprising that a very large number of builders have had at least one first hand experience of steel frames. Many of those that have not had first hand experience know others that have. It is unfortunate that many, many builders have had, in their limited exposure to steel frames, a bad experience. This harks back to one of the reasons for publishing this booklet in the first place - to help prepare new steel framers so that they do not give another batch of first time users a bad experience.

Loss of certainty of profit

Most builders who make a living from timber construction are naturally reluctant to try new products if there is no guarantee of improved profit. The common reasons forcing them to stray from the comfort zone are problems with timber, promise of lower cost, consumer demand and lack of work. Personal innovation will drive only a small percentage to change.

A change based on the promise of lower costs will only be permanent if lower costs are realised on the total project.

Concern about on-site rectification

As explained above, builders regularly have problems with timber frames. They can easily rectify these problems themselves and back charge if they deem necessary. So it is natural they will expect some problems with steel frames. However, the builder often fears that he will not be able to fix a problem with a steel frame himself, which may leave him reliant on the steel framer and exposed to the additional cost of delays.

Learning Curve

Those builders that are familiar with steel frames will argue that they can be erected more quickly than timber frames due to their higher precision and light weight. However, it is likely that these builders would have a system of construction worked out to suit steel frame erection just as they would have had a system worked out to erect timber frames previously. Additionally, fixings and details at various points would all be known to the builder and his trades without reference to a manual. While there is often a strong argument that there are time savings in erection, there is no doubt that there is a learning curve and this may more than take up the potential time savings on the first project.

Increased costs of other trades

A builder's decision to change to steel is hampered by other trades equally as reluctant to change as the builder himself might have been initially. Often, the sub trades work on slim margins and use changes to routine as an opportunity to charge the builder more - with or without justification. This situation especially applies to project builders who often have little relationship with their tradesman.

Costs to set up

Contractors have (for them) a substantial investment in tools to work with timber and are reluctant to buy new equipment to support occasional steel frame construction. This regularly means that trials of steel frames are made with inappropriate equipment. For example heavy-duty drills are often used to fix frames together with the risk of stripping of screws and complaints about how slow and cumbersome the erection was. A light tek gun with adjustable clutch would have made a big difference to the contractors experience.

Types of customers

When setting up a steel framing operation it is important to have a clear understanding of the market. The market is made up of several customer types. Below is a brief summary of the customer types and the experience to be expected with each.

Project builders

- have the largest share of the framing market
- are extremely focused on cost
- usually resist change unless it gives competitive edge in profits
- already receive very favorable pricing form the timber industry
- offer limited training to their contractors but will cost in any "extra" costs incurred due to inexperience
- often have limited site supervision
- unless carefully documented will not accept any variations due to problems caused by their other trades (ie brickwork not correct or squeaking floors due to poor installation)
- demand quick service
- can be poor payers, particularly if there are problems - regardless of who caused them

Builders

- are more interested in quality
- have to be very price conscious to survive
- often have smaller contracting teams that can be convinced to try new products
- can be innovative and are accountable for their own decisions
- are aware that new products take more of their (the principals) time to try out

Owner builders

- usually have time to shop around a lot
- often commence their investigations months or even years before a project actually commences
- often have poor drawings which change regularly
- require more detailed drawings and/or more site assistance
- are attracted by steel because it is perceived to require less tradesmanship and can be built slowly without being affected by weathering
- can be informed or uninformed - informed owner building is usually a successful method of building a home
- uninformed generally take up a lot of time understanding the system and asking questions