Trends in prefabricated timber building

Phil Ladson & Spencer Calthorpe

Who is Multinail?
100% Australian family-owned business
Manufacturer of structural products

Manufacturer of machinery

Who is Multinail?
Developer of structural software

Innovative

Who is Multinail?
Who is Multinail?

Agile

Who is Multinail?

Dependable

Who is Multinail?
What is Multinail?
`Single Source’ systems supplier

Where is Multinail?
Worldwide
Where is Multinail?
Head Office, Stapylton, Queensland

Our Network
What can prefabrication do for you?

Where we have come from
Why we had to change
40 years on…
Technology in prefabrication has made steady progress

Where we are
Utilizing powerful software tools…the sky is the limit
Where is pre-fabrication going?

Roof panelisation
Where is pre-fabrication going?
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Where is pre-fabrication going?
Roof panelisation
We can handle most challenges
Where is pre-fabrication going?

Residential construction
House & Residential

Commercial construction
Office & Mezzanine

Industrial construction
Factory & Warehouse

Opportunities
Prefabrication facilitates

• Greener construction using more renewable resources by using more timber in more locations

• Cost effective building practices

• Economic construction

• Control over structural properties

• Ease of integration into existing building products
Drivers
Reactive Soils

Drivers
Flooding
Drivers
Excessive excavation

Drivers
Potential revenue

Intervention required
Spark needed

Residential prefabrication developments
FTMA/FWPA initiative

Prefabricated Lightweight Timber Ground Floor Systems R&D Project
Dr Alastair Woodard

Funded by Forest & Wood Products Australia
Residential prefabrication developments
FTMA/FWPA initiative
Market Implementation
Group Constituted

Issues and hurdles

“Builders have concerns with traditional systems… because of:
• Multiple trades and contracts
• Longer construction periods”

Dr. A. Woodard
Issues and hurdles

“For the volume builders “COST” is a major factor… not necessarily though for everyone”

Dr A. Woodard

Issues and hurdles

“Timber Industry has to match what the concrete sector offers… Supply & Install”

Dr A. Woodard
Too much waffle

“Currently some real issues for waffle pods… attitudes are changing”

Dr A. Woodard

Solutions

“One contract, to deliver a working platform, on a site on a specific date, for a specific cost”

Dr A. Woodard
Solutions

“…easy-to-install, cost effective, lightweight timber ground floor systems”
Dr A. Woodard

Solutions

“Offering a total system that includes the prefabricated timber floor, the supporting system...and a simple, effective quick installation process”
Dr A. Woodard
Some benefits of prefabricated systems

- Guaranteed quality …in a controlled factory environment,
- Flexibility in design and optimization of materials,
- Reduced material waste and zero on-site waste,
- Speed of on-site construction…no waiting for slab curing, typically 5-7 days,
- Simplified plumbing…now …a ‘parallel’ …rather than…a series’ process’;
- Extension of concept to indoor-outdoor living…
- Opportunities…value-add…
  - pre-ink-jetting wall frame positions,
  - pre-cutting holes for plumbers,
  - pre-installing plumbing pipes, fittings for shower bases’

Dr A. Woodard

Residential construction
Residential construction
Timber Ground floors

Solutions
Reactive soils and flooding
Solutions
Excessive Excavation

Multi-residential construction
2-3 storey
Multi-residential construction
2-3 storey

The sky is the limit
Misconceptions related to the capacity of timber structures
Commercial prefabrication developments

Opportunities

Building height reduction
Service accommodation
Modular manufacturing

Capabilities

Large load (7.5kPa)

Long Span (10.4m; 3.0 Pa)
Commercial prefabrication developments

Speed of construction

- Reduction of onsite labour
- Reduction of material waste
- Made-to-measure products and solutions

Industrial prefabrication developments

Modular construction is more suited to industrial applications
Industrial prefabrication developments

Turnkey projects

Industrial prefabrication developments

Timber design capabilities
Residential Systems
Trends to watch
Prefabricated panelisation

90% of housing in Australia uses prefabricated frames and trusses...
Low % of which includes panelised construction;

as opposed to,

70% of housing in Europe uses prefabricated frames and trusses...
90% of which is includes panelised construction.

Andrew Dunn (TDA of NSW),
as relayed by Bruce Robit (Blirt)
(TQ; ‘Get Fabricated’ seminar 2013)

Prefabricated panelisation
Zones of full modular manufacture
The writing is on the wall...

Lightweight cladding preference

...in Australia...

- 40% are over the age of forty,
- 24% are over the age of fifty,
- around 8,000 are expected to leave the trade in the next ten years,
- only 50% of those vacancies will be replaced by the current number of apprentices completing their training.

Australian Brick & Block-laying Foundation Ltd
as relayed by Bruce Robb (Blirt) at the TQ;
‘Get Fabricated’ seminar 2013

New materials, methods & interest

Energy, Sound, carbon efficiencies

“2,900,00 hits for ‘prefabricated wall & floor systems’”

Bruce Robb (Blirt) at the TQ;
‘Get Fabricated’ seminar 2013
Change is inevitable
Adapt or die

Tag
Back to you Phil
To summarize...

You have the...
We have
the...

Innovative, cost effective solutions
In order to thrive be...

Innovative

In order to adapt be...

Agile
In order to survive be...

**Dependable**

What can Multinail do for you?

- Assist you from concept to reality,
- Offer specific engineering solutions for light weight timber construction,
- Ensuring BCA compliance with all MN engineered products
- Assist with estimating and tendering processes,
- Cassette and modular construction to reduce development life cycles.
We look forward to hearing from you...

+61 (7) 3297-3250

Thank you

Phil Ladson & Spencer Calthorpe