

Trends in prefabricated timber building



Phil Ladson & Spencer Calthorpe

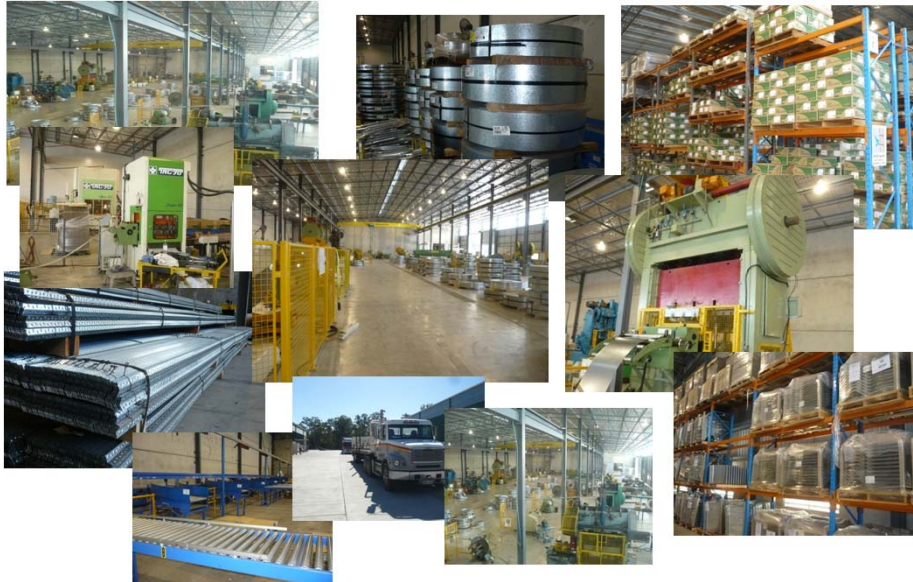


Who is Multinail?

100% Australian family-owned business



Manufacturer of structural products




Manufacturer of machinery



Who is Multinail?

Developer of [^] structural software



MULTINAIL
Australia

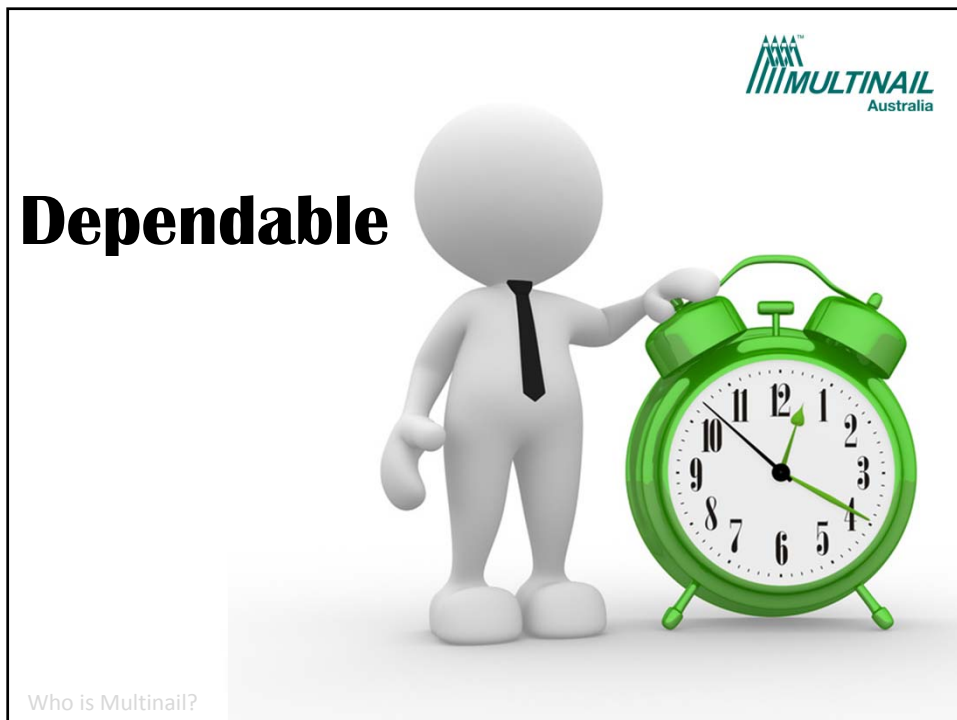
Who is Multinail?



MULTINAIL
Australia

Innovative

Who is Multinail?



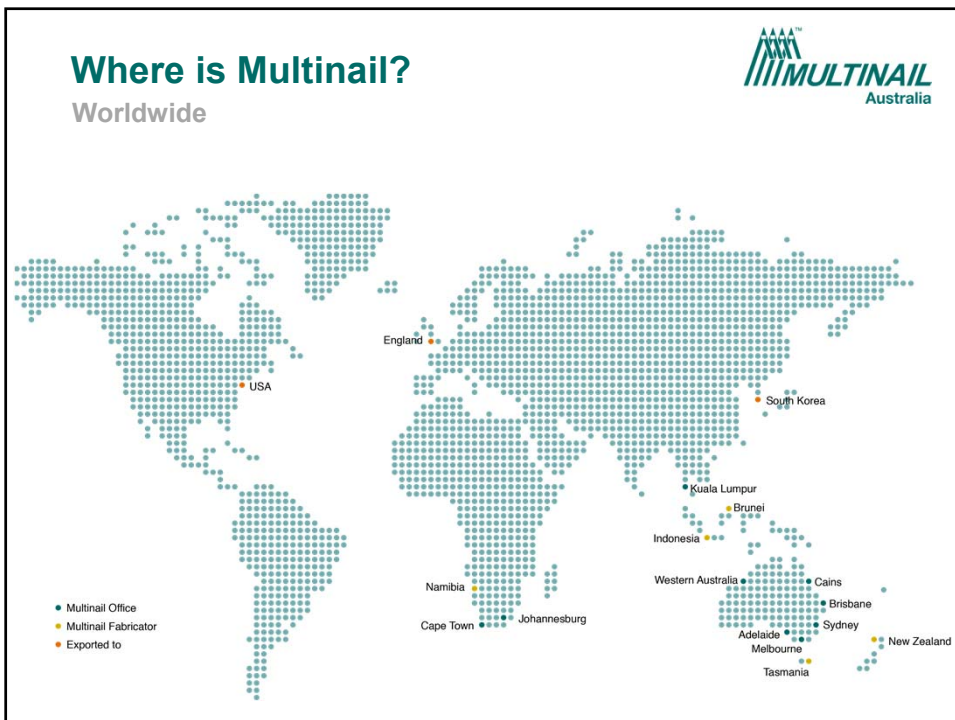
What is Multinail?

'Single Source' systems supplier



Where is Multinail?

Worldwide

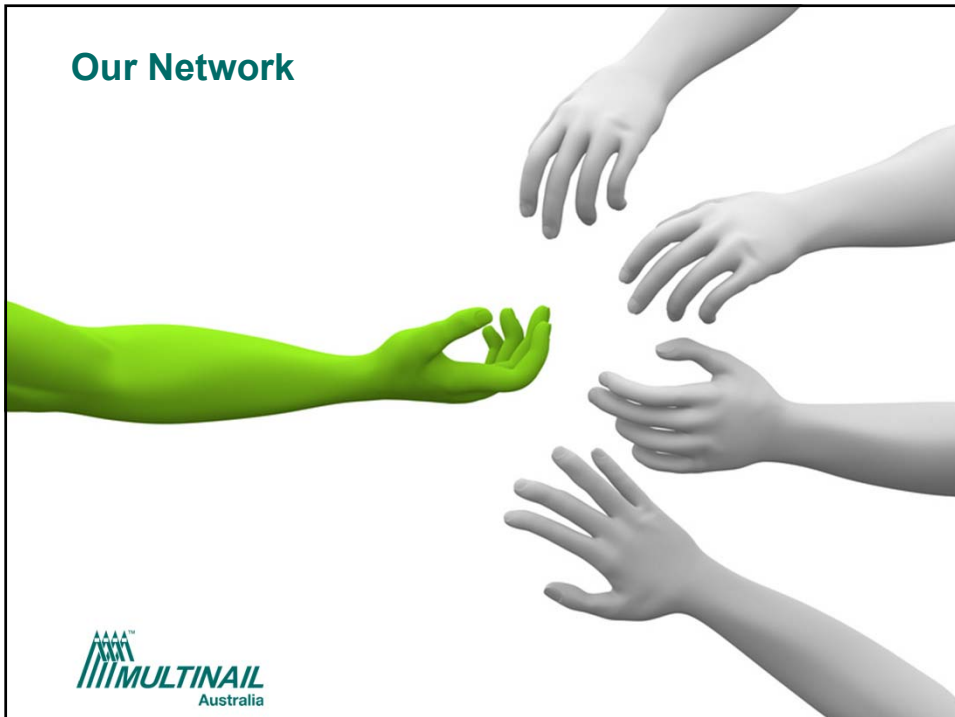


Where is Multinail?

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?

Roof panelisation



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Roof panelisation



Tag
Your turn
Spencer

We can handle **most** challenges



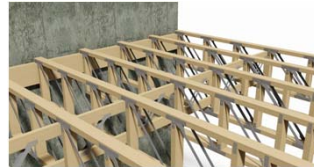
Where is pre-fabrication going?



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



Roof Frame
2%



Wall Frame
20%



Ground Floor
95%

Source: Woodard, A (2013) *Prefabricated Ground Floor Systems*, FWPA, Melbourne VIC

Intervention required

Spark needed



Residential prefabrication developments

FTMA/FWPA initiative



**Prefabricated
Lightweight Timber Ground
Floor Systems R&D Project**

Dr Alastair Woodard

Funded by



Residential prefabrication developments
FTMA/FWPA initiative



Industry Association
Coordination



Residential prefabrication developments
FTMA/FWPA initiative



Steering Committee
Constituted

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

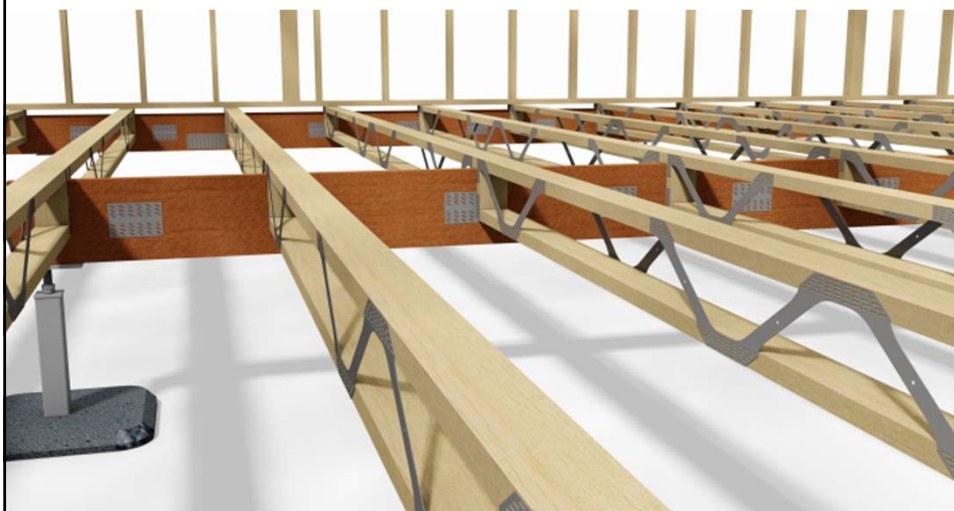


- Guaranteed *quality* ...in a controlled factory environment,
- *Flexibility* in design and *optimization* of materials,
- Reduced material waste and *zero* on-site *waste*,
- *Speed* of on-site construction...no waiting for slab curing, typically 5-7 days,
- *Simplified* plumbing...now ...a 'parallel' ...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



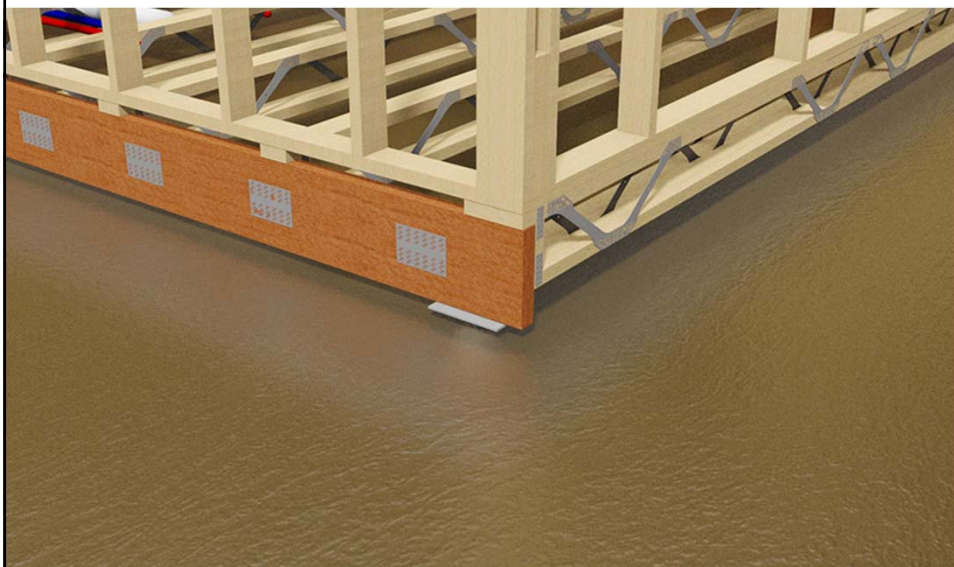
Residential construction

Timber Ground floors



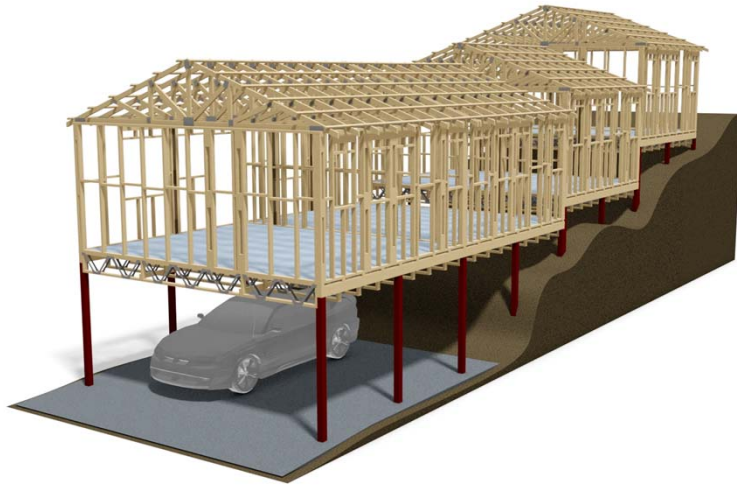
Solutions

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



Multi-residential developments

Multi-storey



Multi-residential developments

Multi-storey



Commercial prefabrication developments

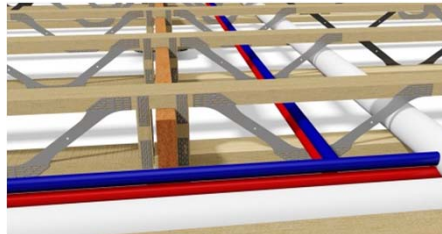


Opportunities

Building height reduction

Service accommodation

Modular manufacturing



Commercial prefabrication developments



Capabilities



Large load (7.5kPa)



Long Span (10.4m; 3.0 Pa)

Commercial prefabrication developments

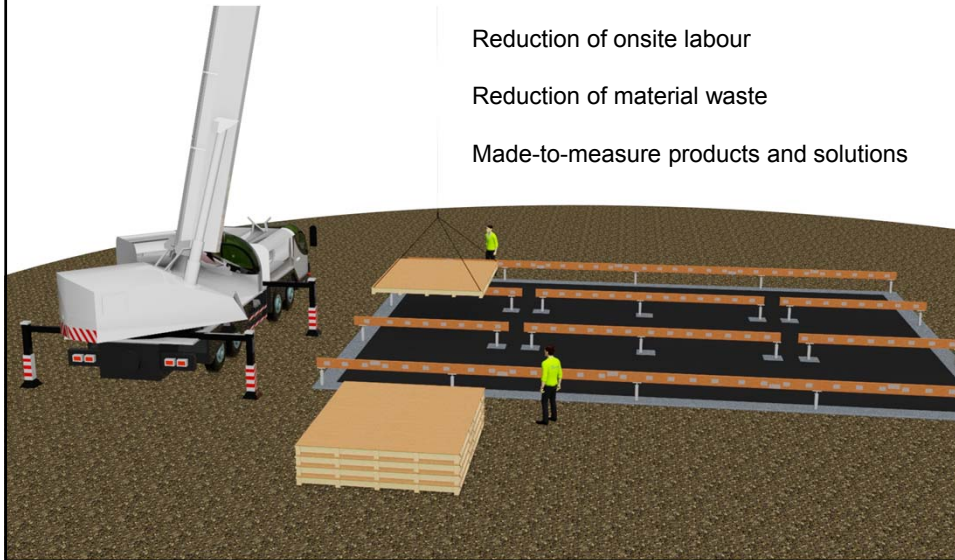


Speed of construction

Reduction of onsite labour

Reduction of material waste

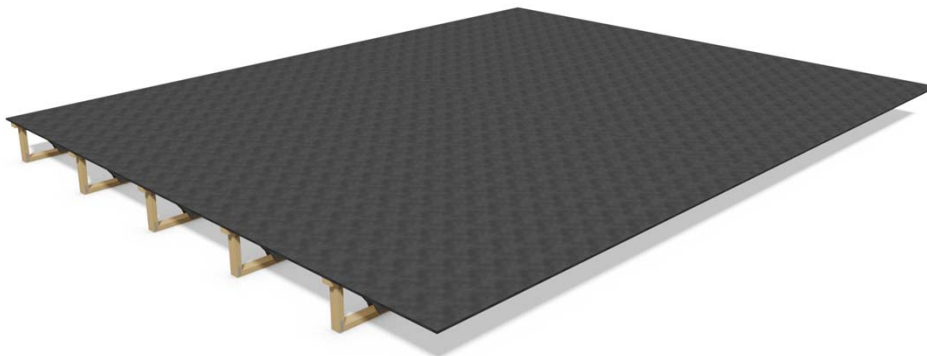
Made-to-measure products and solutions



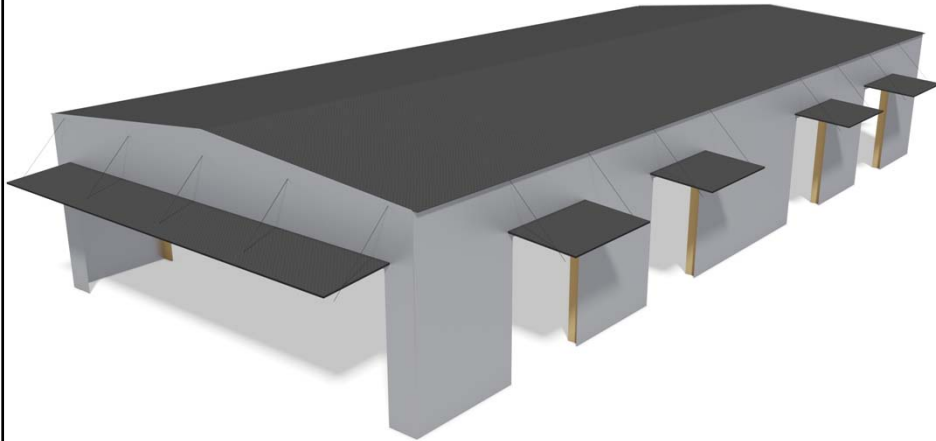
Industrial prefabrication developments



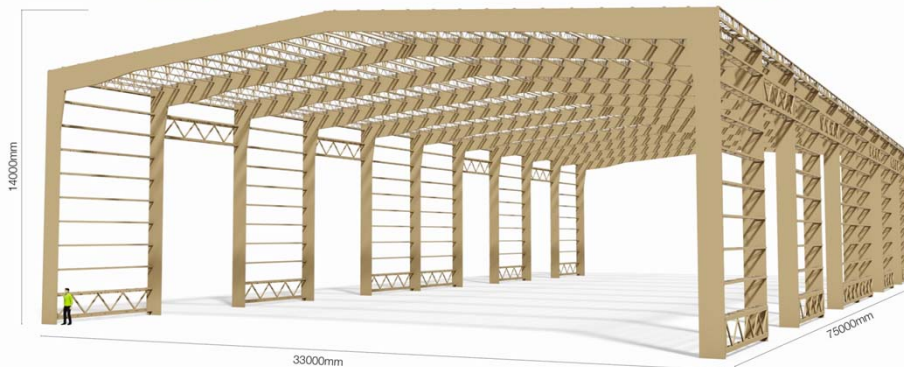
Modular construction is more suited to industrial applications



Industrial prefabrication developments
Turnkey projects



Industrial prefabrication developments
Timber design capabilities



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 includes panelised construction.

*Andrew Dunn (TDA of NSW),
as relayed by Bruce Robb (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*



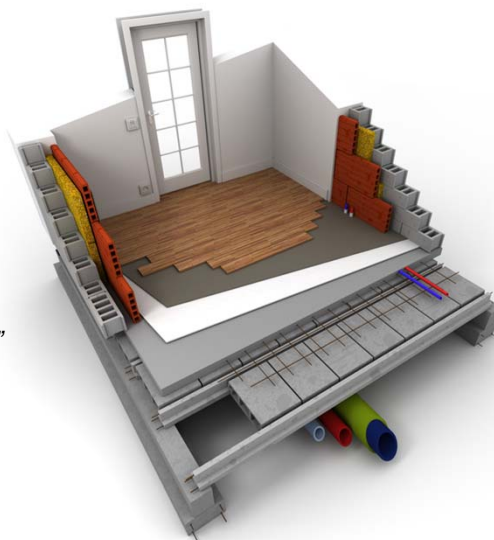
New materials, methods & interest

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





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

