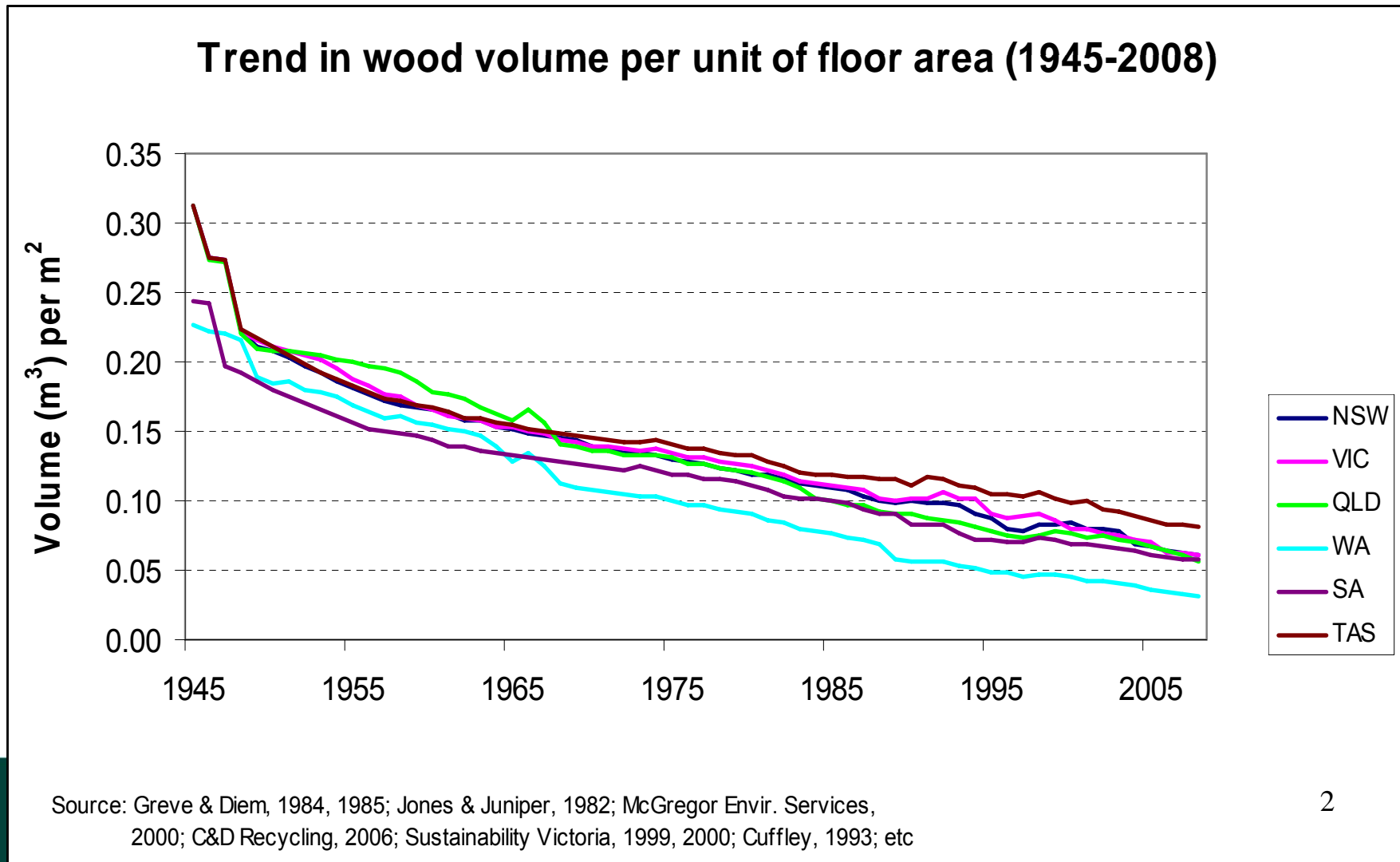


# Innovative Prefabricated Building Systems

**Giving it a go**

# The challenge for the wood industry



# The challenge for the housing industry

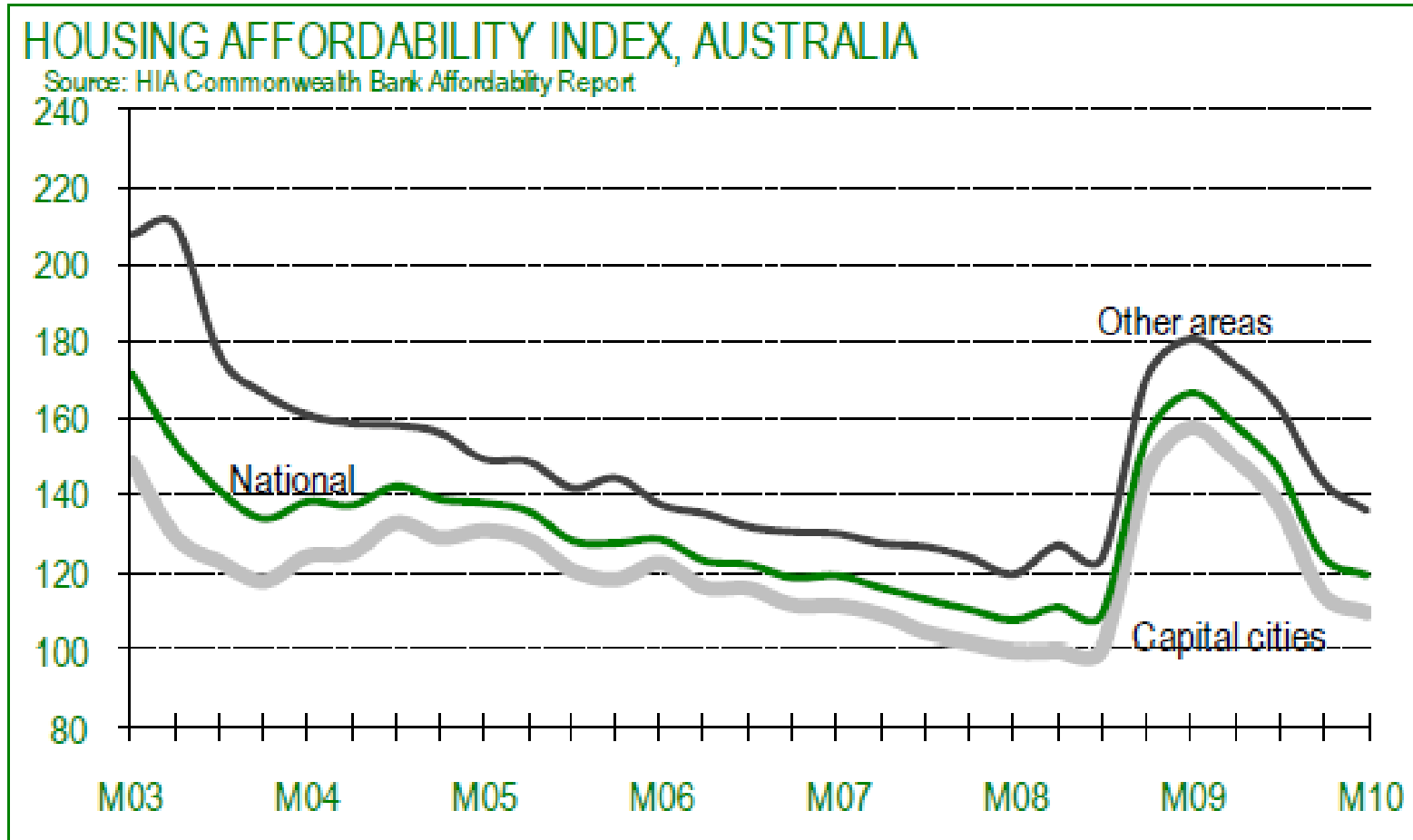
 **Leading the way**  
*Everyone. Everywhere. Everyday.*

- Housing Lead Times; Approval to Completion
  - 53% of private dwellings take 9 months to complete.
  - 31% of private dwellings will take up to 18 months to complete.

Source: BIS Shrapnel, Building in Australia 2008

# The challenge for the consumer!

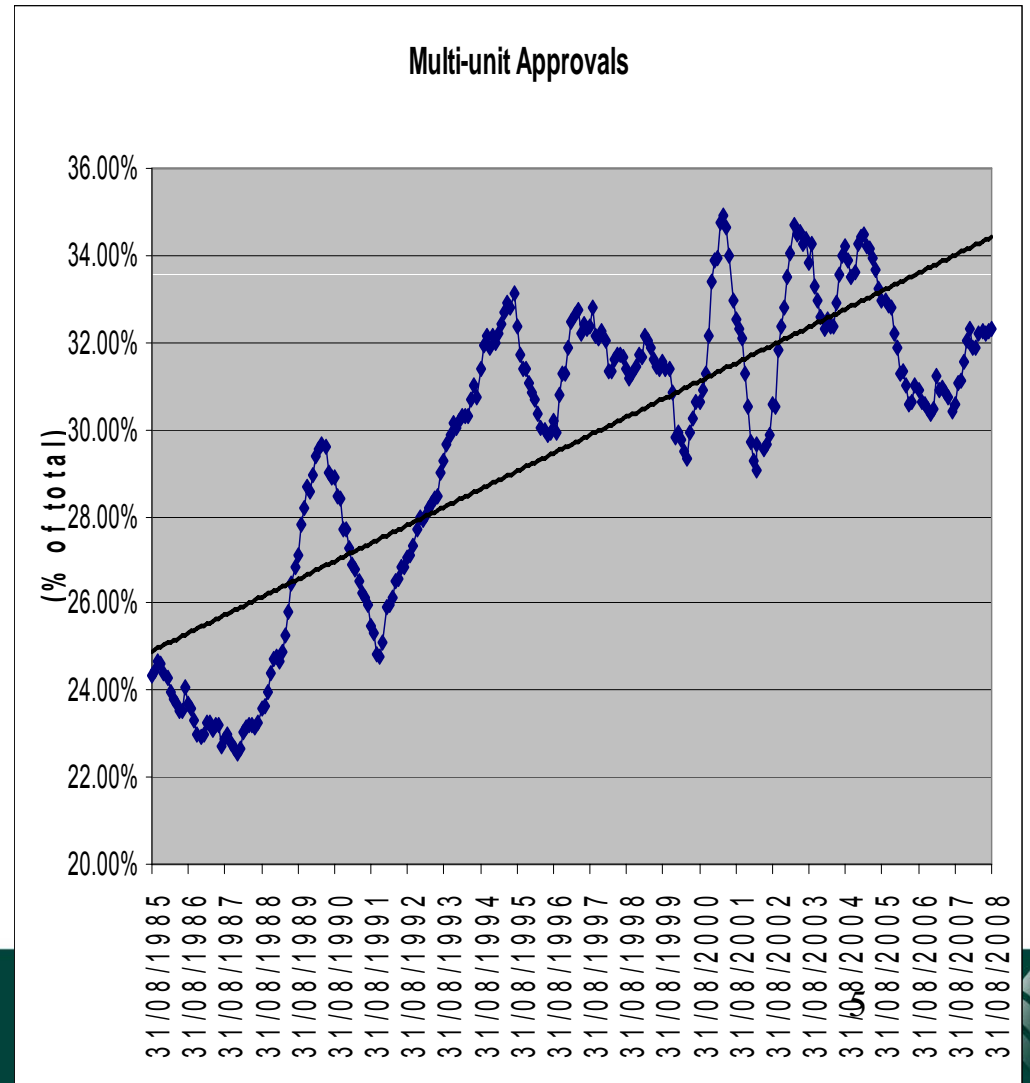
 **Leading the way**  
*Everyone. Everywhere. Everyday.*



# The direction we are heading



Share of Multi-unit starts  
could reach 43-47% by  
2020



# Alternative building systems

## How to build faster and at lower cost – in wood



Building Systems		Single Dwellings		Multi - Residential		Schools/Offices/Industrial buildings. Class 3, 9		
		Levels	1-2	1-2	≤3	≤3	≤2	≤2
	\$ Value	Low	High	Low	High	medium	High	High
Timber Frame/Sub floor		Green	Red	Yellow	Red	Red	Red	Red
Panelized Building Systems		Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red
Moment Resistant Frames (STIC)		Red	Yellow	Red	Yellow	Yellow	Yellow	Yellow
Composite systems		Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

Green	DTS provisions
Yellow	Requires an alternative solution that exists
Red	Requires an alternative solution but no commercial solution

The cost of this house in NT is \$450K  **Leading the way**  
*Everyone. Everywhere. Everyday.*



# Our Prefabricated Concepts

 **Leading the way**  
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Final\_A[1].mov



# Our flat pack panelised building system

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Building Type	Floor Area m2	Estimated costs
1 Bedroom	65	\$155,000
2 Bedroom	86	\$185,000
3 Bedroom	119	\$245,000

Budget includes:

Floor, wall and roof panel & truss system

Windows, doors, fit-out

Site labour

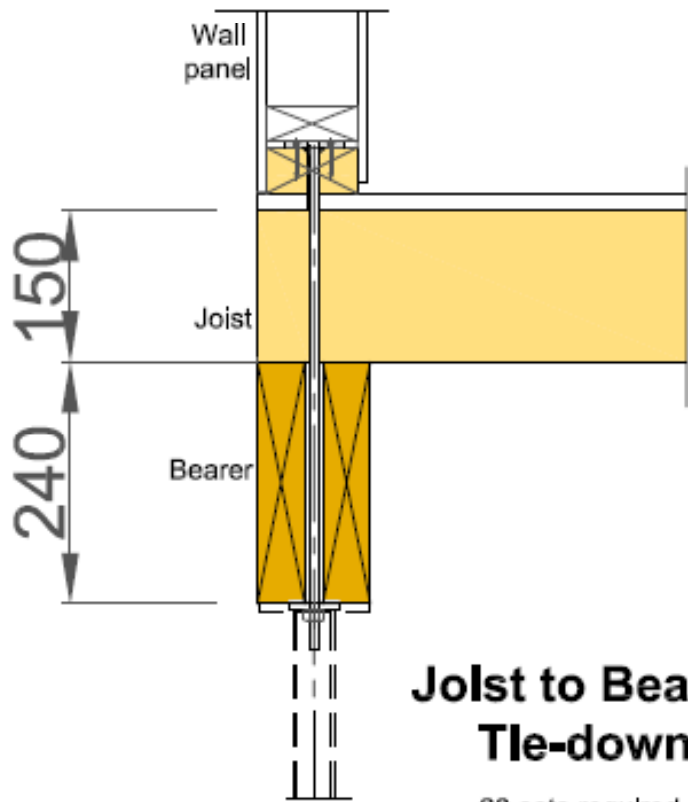
Electrical and Plumbing subcontracting

Builders preliminaries and margin

Freight estimated at \$10K



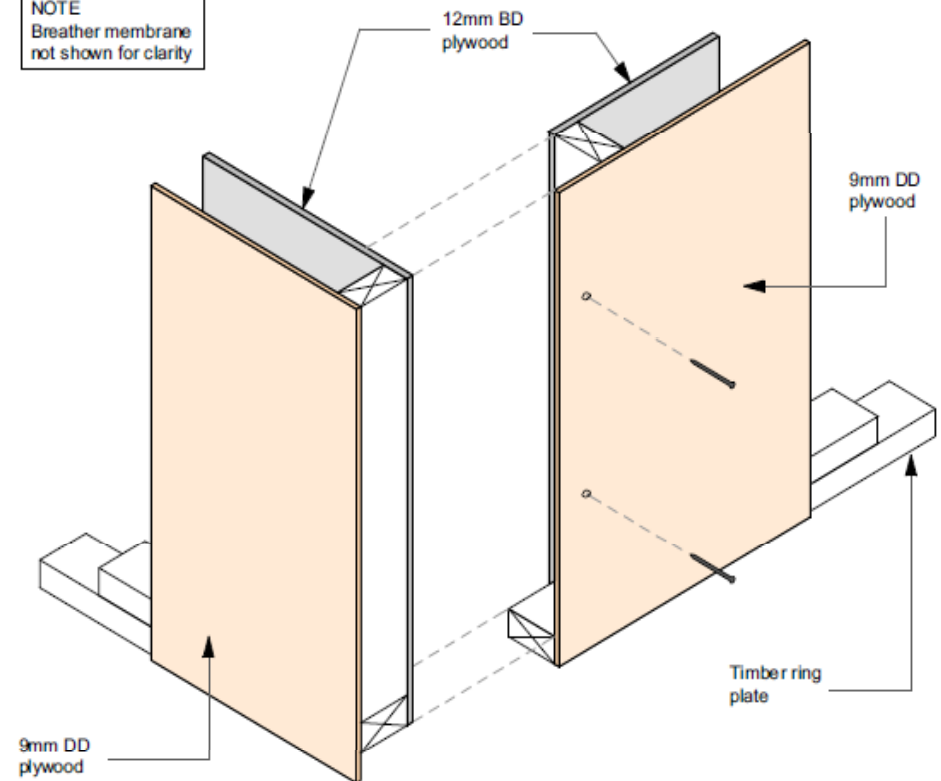
# The components



## Jolst to Bearer Tie-down

28 sets required

NOTE  
Breather membrane  
not shown for clarity



# 3 days to lock up Leading the way Everyone. Everywhere. Everyday.



# Where to Next?

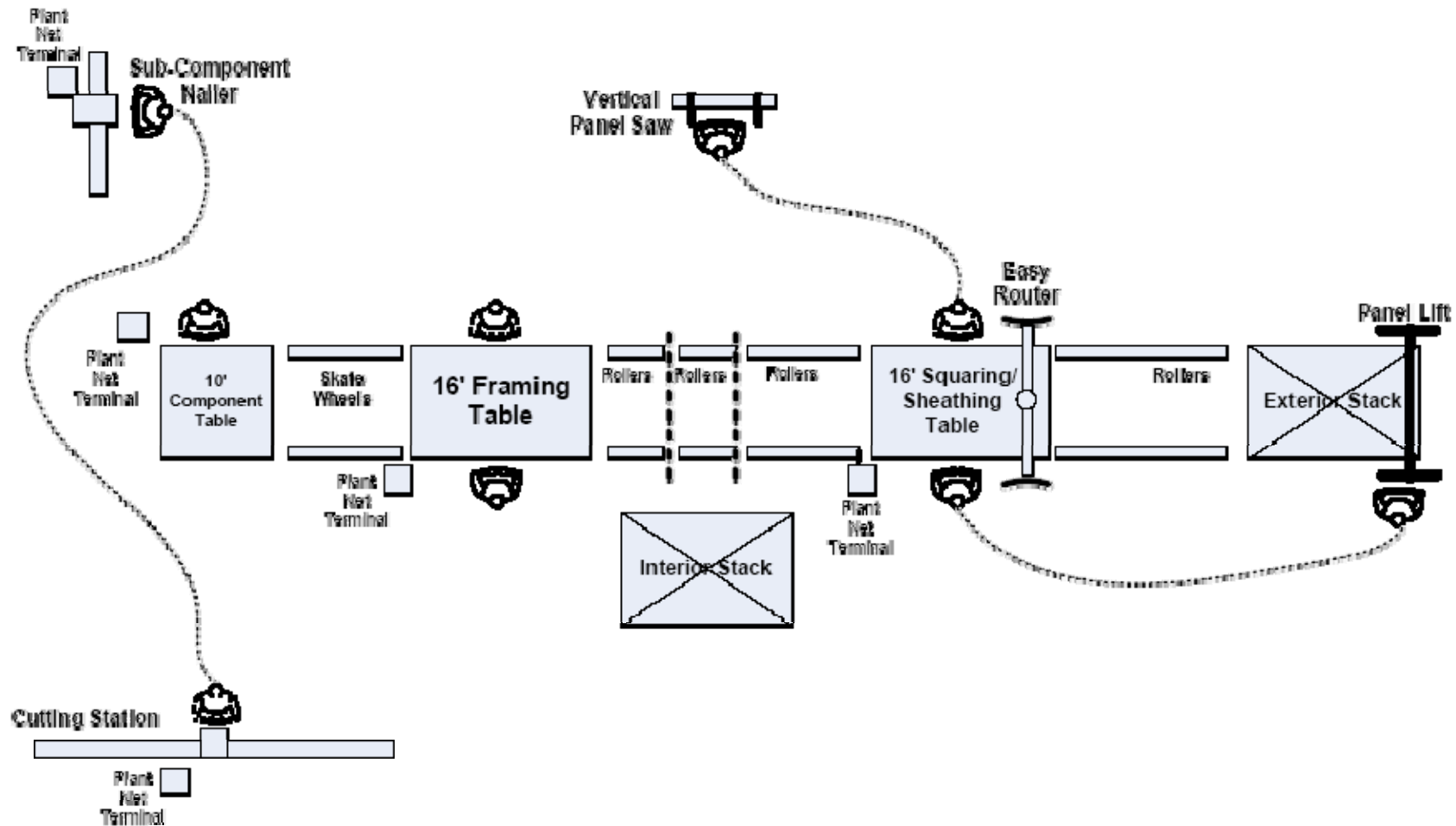
 **Leading the way**  
*Everyone. Everywhere. Everyday.*



single pod from only **\$79,000**<sub>+GST</sub>



# Equipment to frame and sheath panels is standard



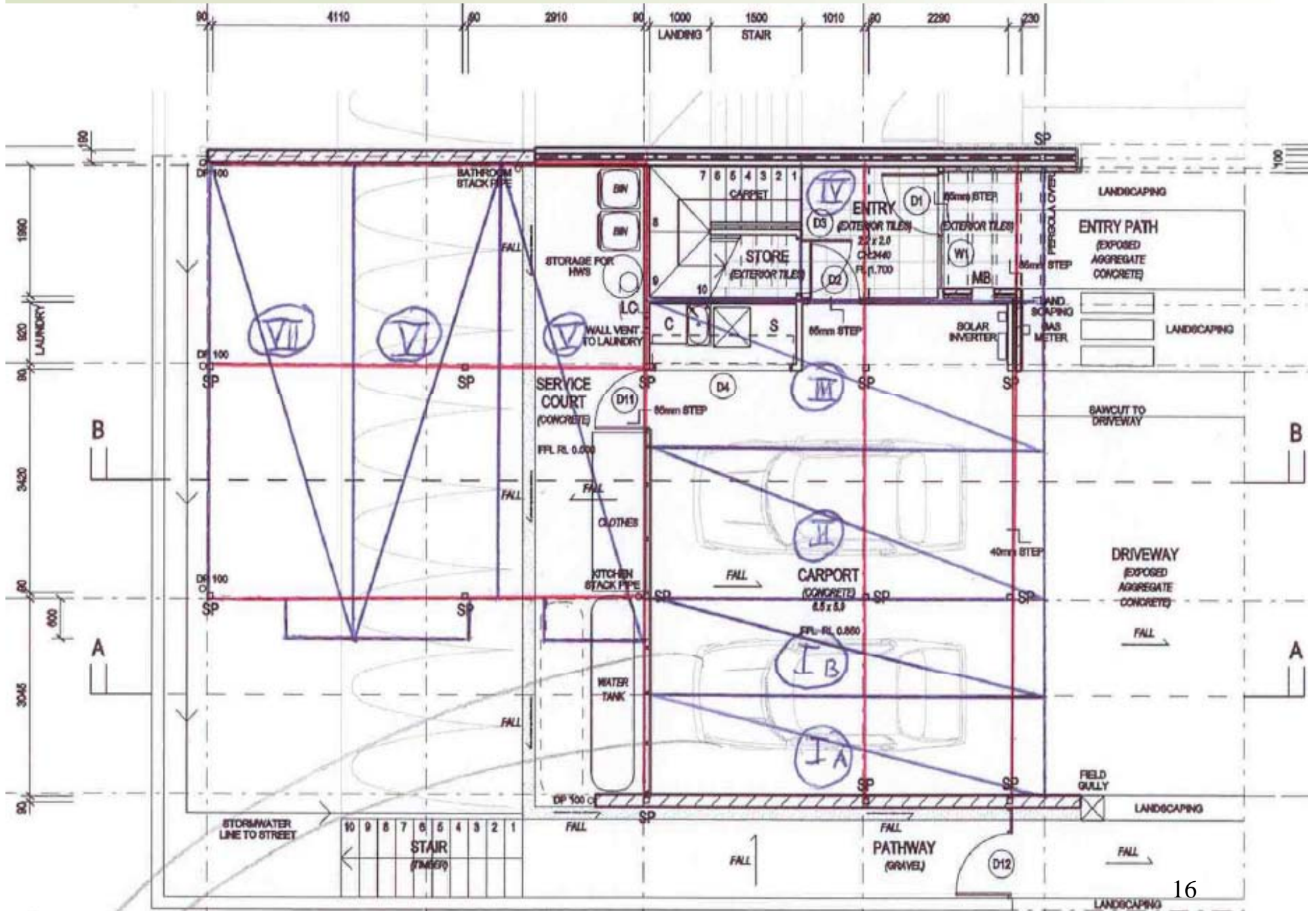
# Panelised Floor Systems

		Conventional floor systems	Stressed-skin panels (SSP)
Construction parameters	Skin-to-joist connection	Non-structural	Structural
	Composite characteristic of floor structure	None	Yes
Structural responses	Stiffness of floor structure	—	↑
	Load/stress distribution in floor structure	—	↑
	Ultimate resistance of floor structure	—	↑

## Floor Stiffness

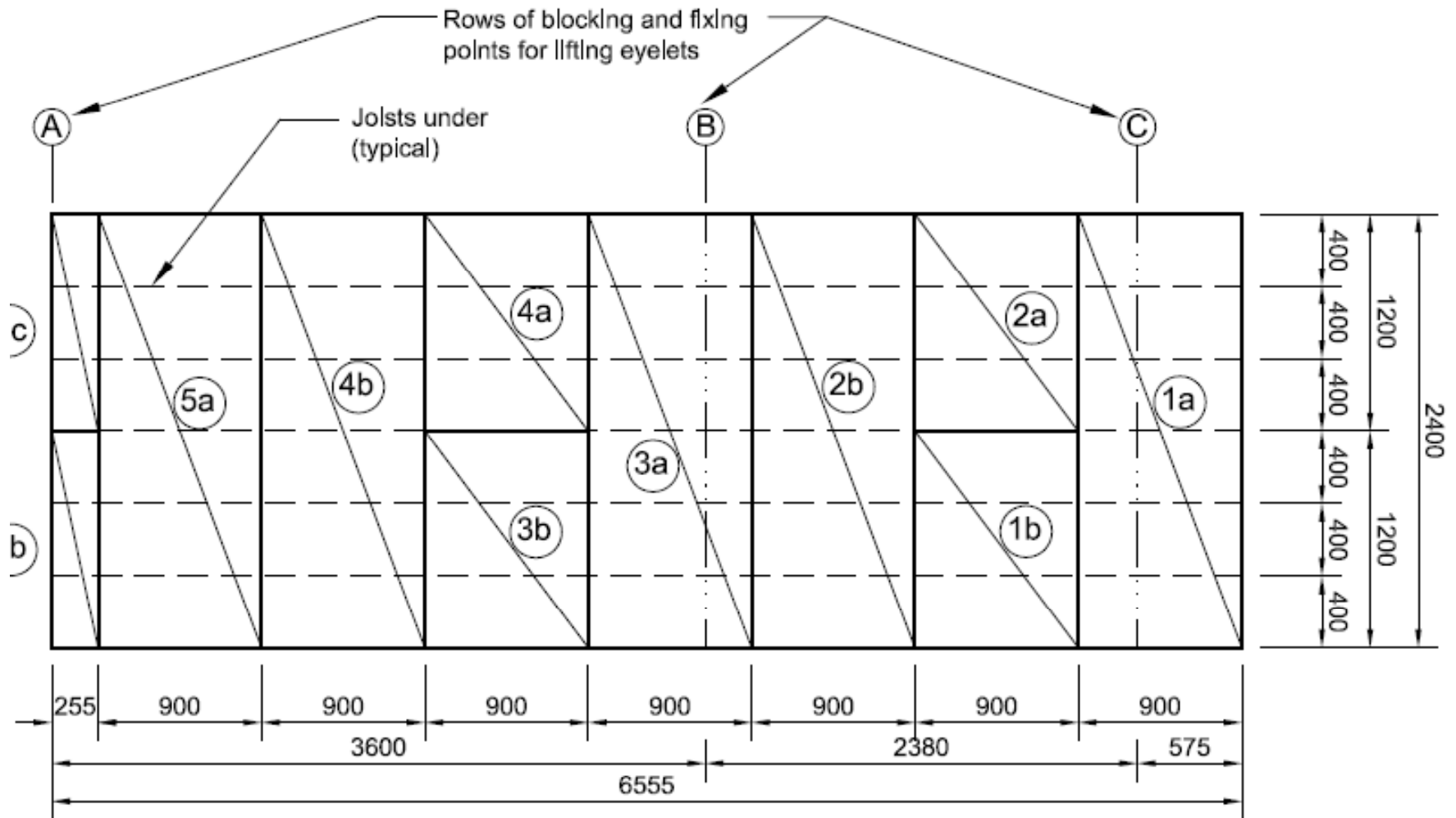
- T-section SSP shows an increase of about 30%.
- Box-section SSP displays an increase of about 75%







# The floor panel



# Panelised Building System –

1. Suitable for industrial scale prefabrication at F&T plants
2. Integrated building system
3. Suitable for high set or slab on ground construction.
4. Flat pack panels suitable for construction in remote areas where transport and skills are costly
5. Suitable for sloped sites, multi-storey & commercial buildings
6. Light weight, safe and easy to install
7. Improves onsite OH&S, quality and speed of construction.



# 3 day build