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WESTERN SYDNEY
UNIVERSITY



Centre for
Smart Modern Construction



c4SMC INTER-UNIVERSITY ACADEMIC ROUND TABLE

14th November 2018

Presentation Title

Name

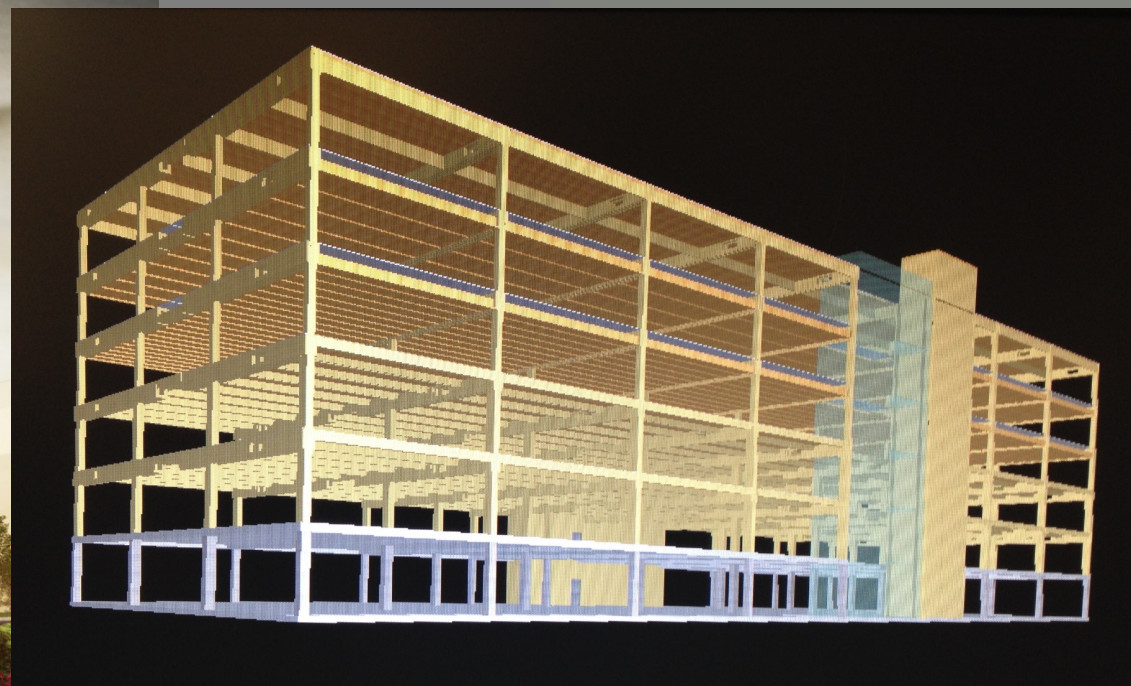
Affiliation/post/other

Construction as Production – The Rise of Timber

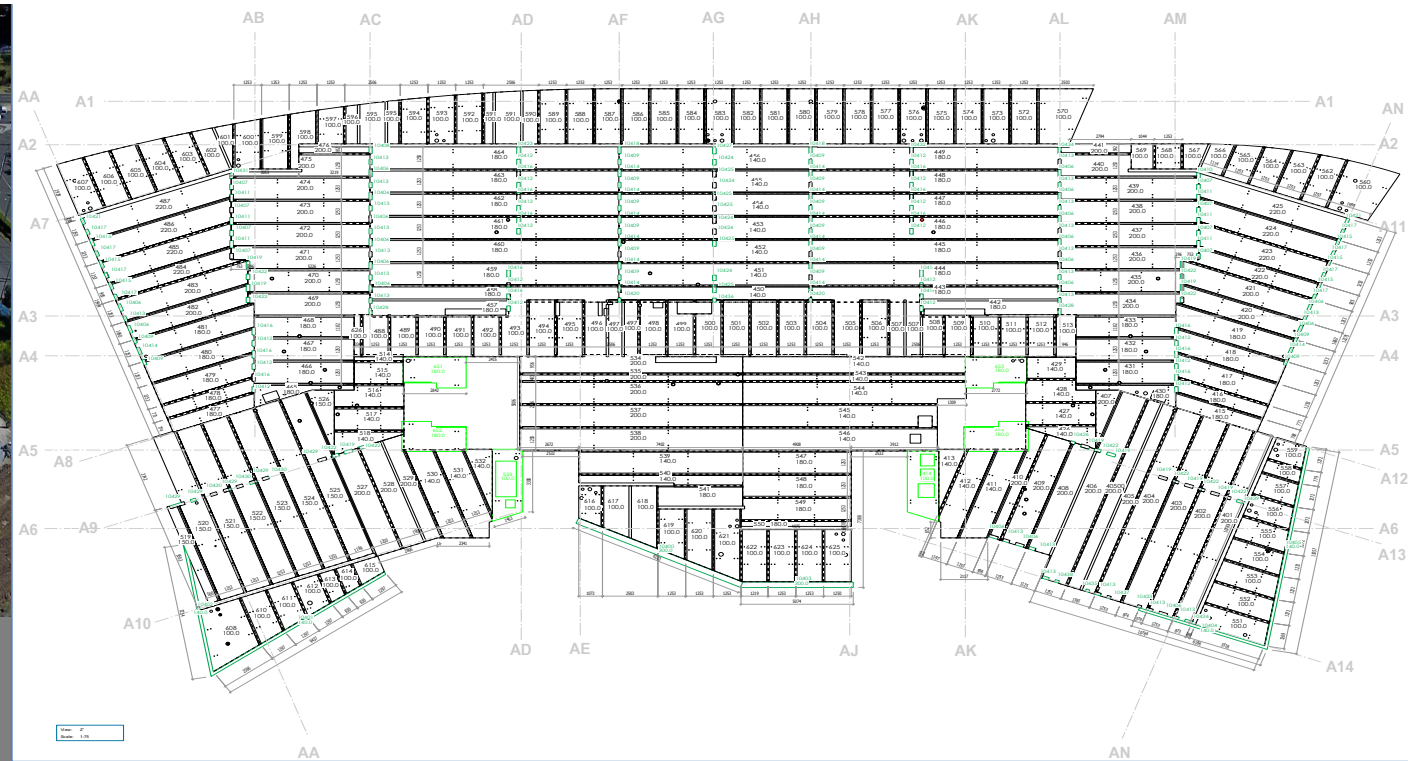
Prof. Perry Forsythe (UTS)



Project 1: Can timber be cost/time/design competitive?



- Outcome – Yes, but:
 - Must design for timber – collaboration is important
 - Recognition of cost sensitivity parts
 - Need for speed - time dependent prelim. costs (18-20%) must be slashed



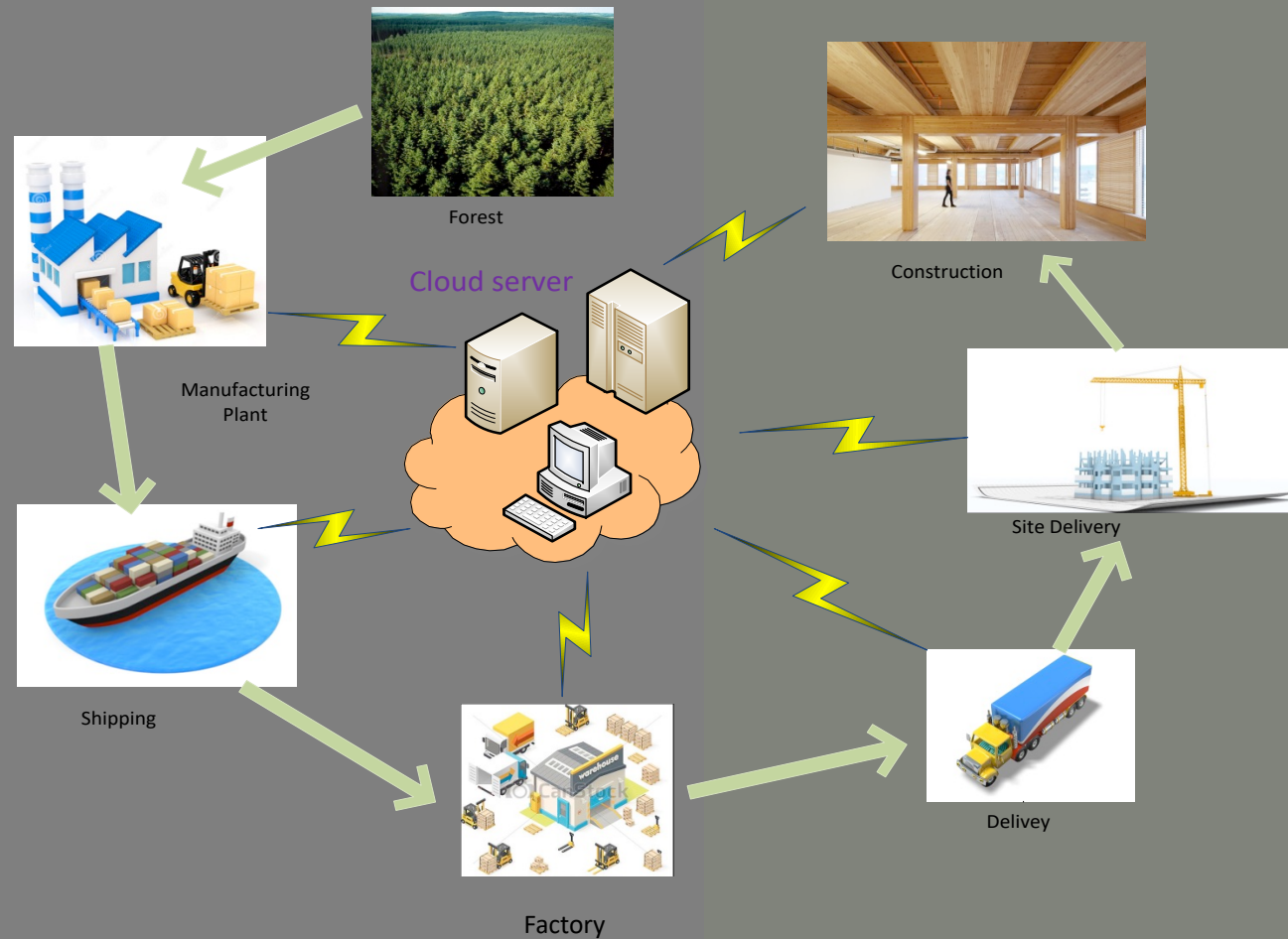
Projects 2 & 3: Installation productivity of Prefab Timber (time/motion study)

- Install rates m²/hour;
- Crane cycle defines productivity onsite,
- Informs DFMA principles
- Identifies where time is lost



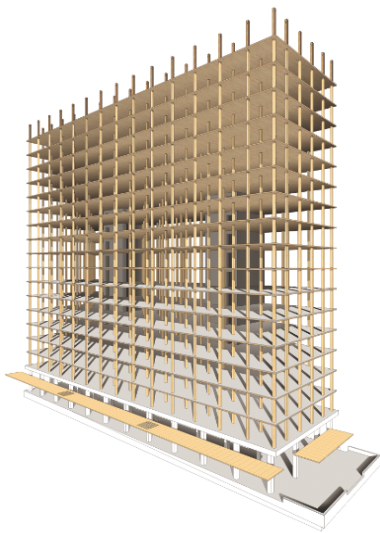
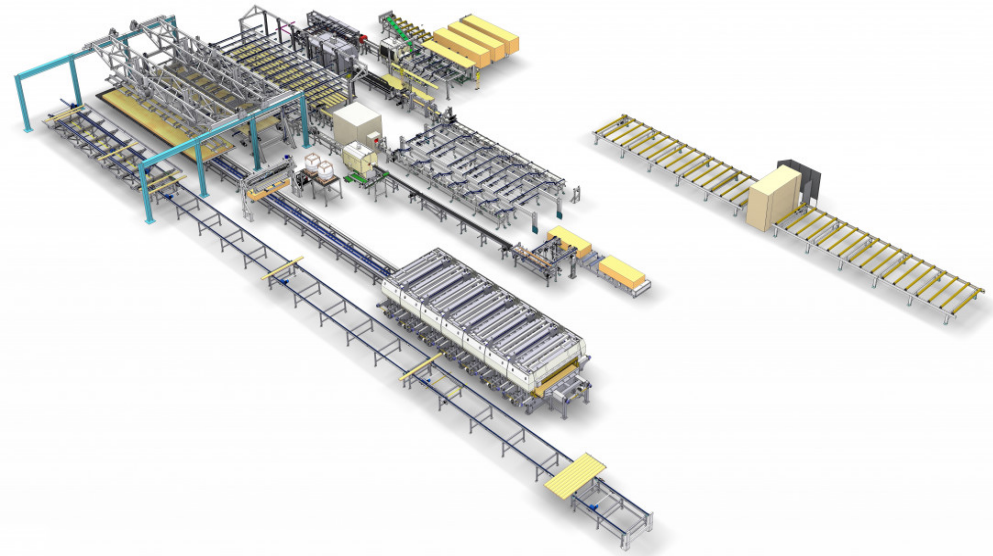
Project 4: Logistics/RFID/Object tracking provides:

- Monitors flow/waste
- Measures productivity (speed)
- Object specific instruction
- Planning install sequencing



Project 6: Gottstein Fellowship

- State-of-art in Production line techniques
- Mass vs Customisability
- File-to-factory techniques
- Minimising WIP, Inventory, Machine time
- Delivery certainty for clients



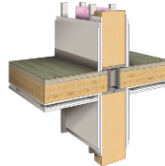
hybrid mass timber and concrete core structure



CLT floor slabs with glulam columns and steel connectors



partial encapsulation during construction



completed construction



Product Platforms – Mass Customisation

- Common in car manufacture:
 - Common components/modular assemblies to develop multiple types of cars
 - Economies of scale, Reduced design development cost/time
 - Reduced complexity/lower risk



Timber Product Platforms – Mass Customisation

- How to make it work in construction?
 - Right ratio of design flexibility vs predetermined design
 - Rights inputs: Models exist to help



End