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NEW BEGINNINGS: UNLEASHING THE FORCE OF MANUFACTURING FOR BETTER BUILDING

Dr Bronwyn Evans AM, Chair – Building 4.0 CRC
24.10.2024, NAGOYA



Australian Government
Department of Industry,
Science and Resources

Cooperative Research
Centres Program



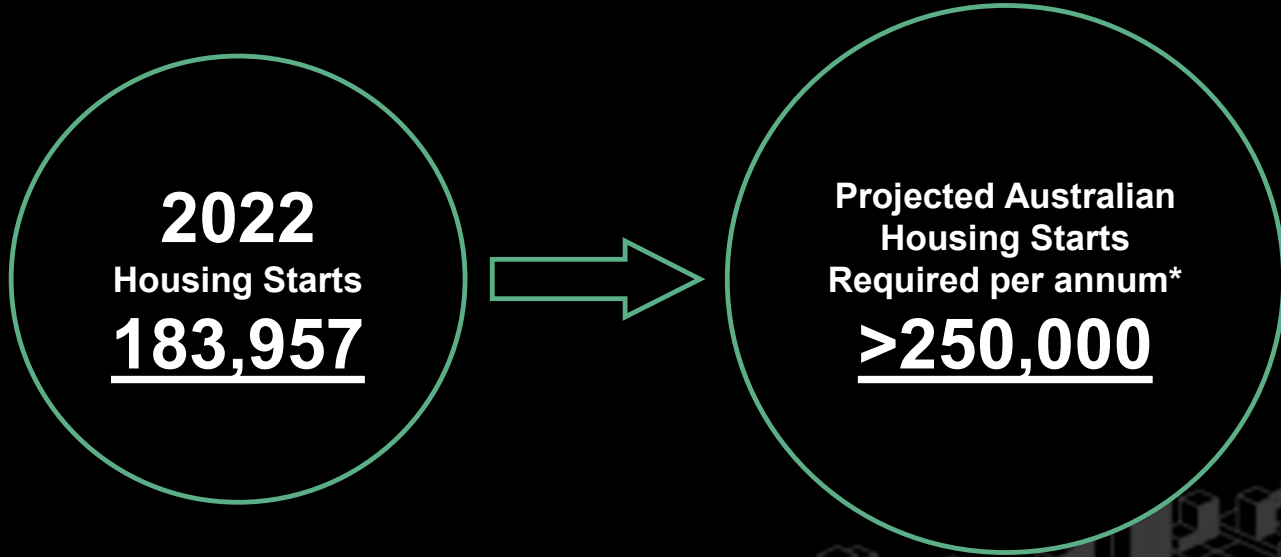
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Japan <> Australia Bilateral Relationship

-
- *Economic Engagement*
 - *Investment and Trade*
 - *Shared Values of Trust and Respect*
 - *Defence and Security Cooperation*
 - *Regional Cooperation*
 - *People-to-People Connection*



Where we need to be...



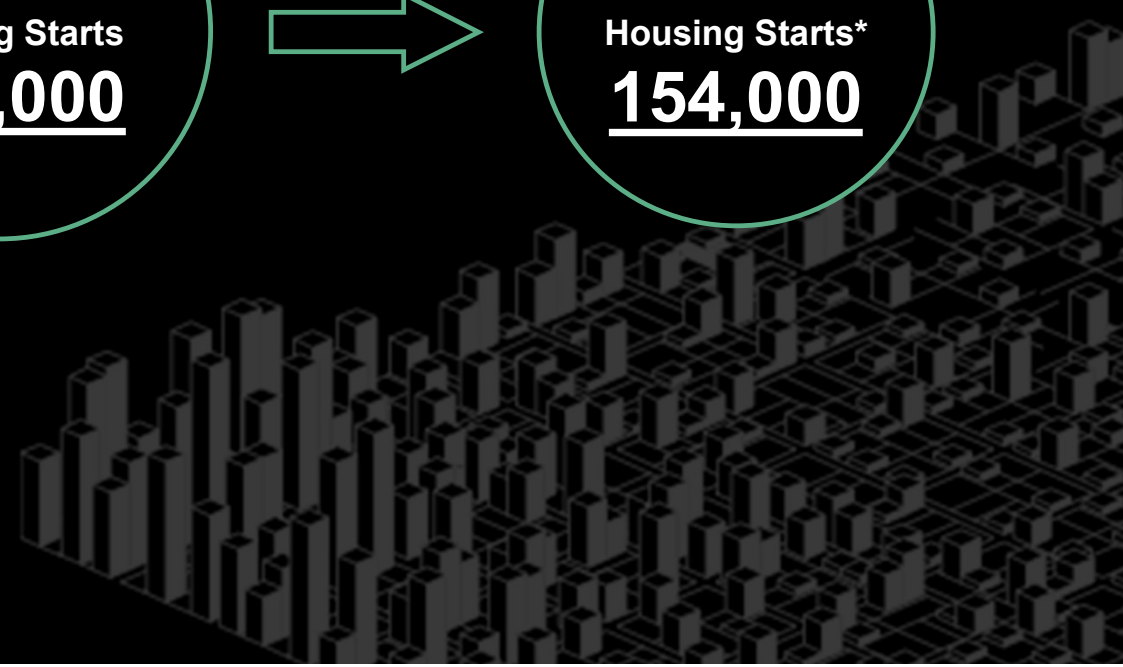
* There is no commonly agree figure for Australia's housing supply shortfall. This figure is a combination of NHFIC, 2022-23 Report, (378k total); AHURI #401 (50k additional p.a.); Tony Richards, AFR 29.5.23 (67k p.a.); and the Commonwealth Government Target under its Housing Accord of 1.2M over the next 5 years (250k p.a.).

Where we are...

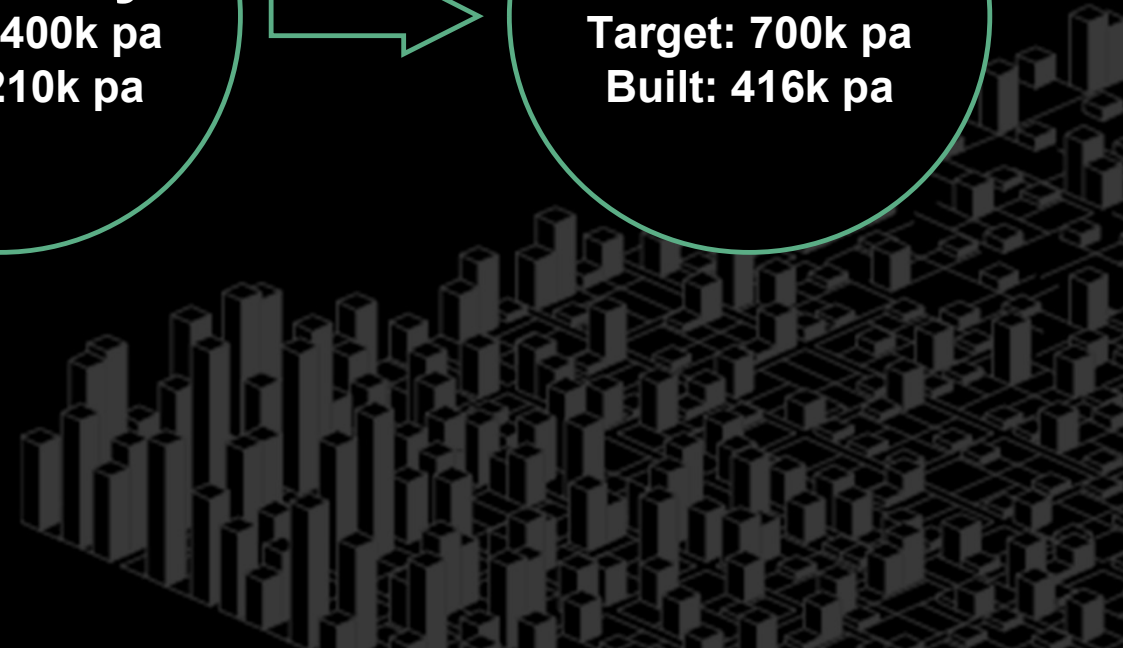
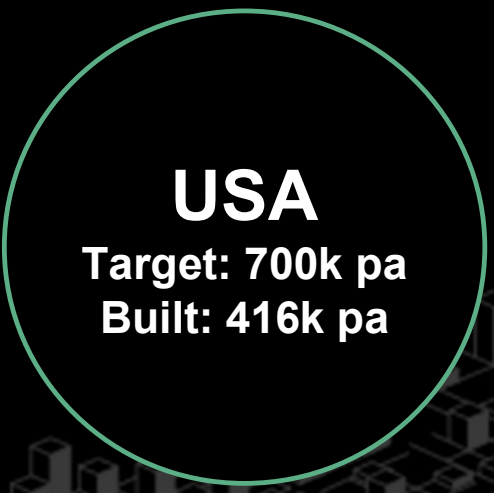


* Carlos Cacho, AFR, November 8, 2023.

* <https://www.afr.com/property/commercial/the-end-of-the-home-building-boom-is-nigh-survey-20231106-p5ehzj#:~:text=Record rate of failures,over the next five years.>



Where are other countries...

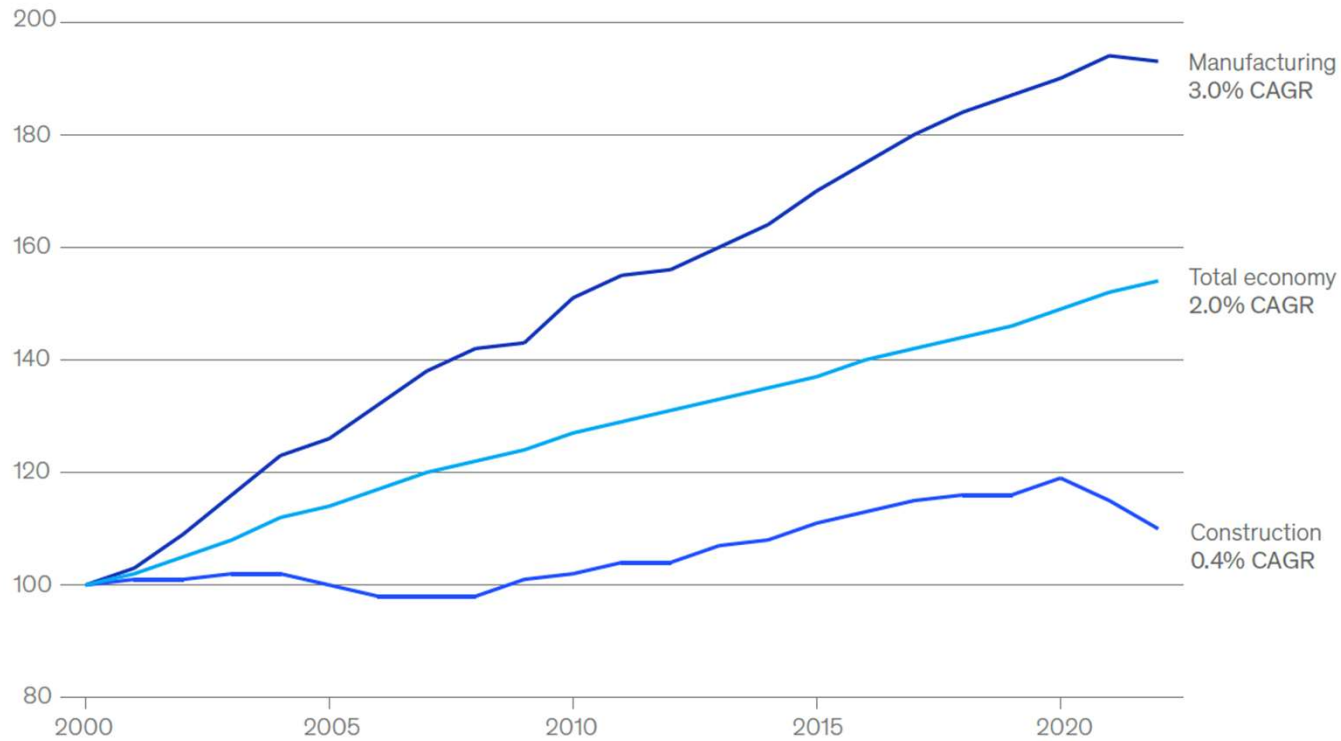


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Problem: Productivity is declining

Labor productivity in construction continues to lag behind productivity in manufacturing and the total economy.

Real gross value added per hour worked (global),¹ 2000–22 (index: 2000 = 100)



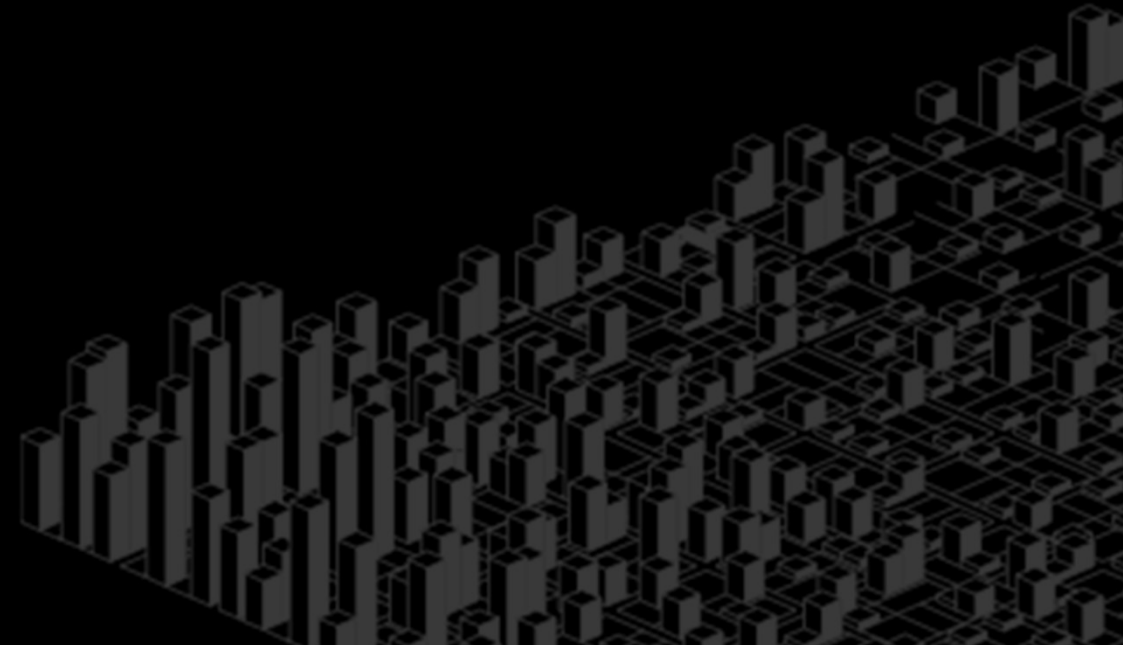
**Delivering on construction productivity is no longer optional, McKinsey & Company*



So what can we do?

- *Unleash the full force of manufacturing on the building industry.*
- *Leverage new technologies and digital tools.*
- *Improve building sustainability to accelerate decarbonisation.*
- *Build the future leaders and capacity of the industry.*

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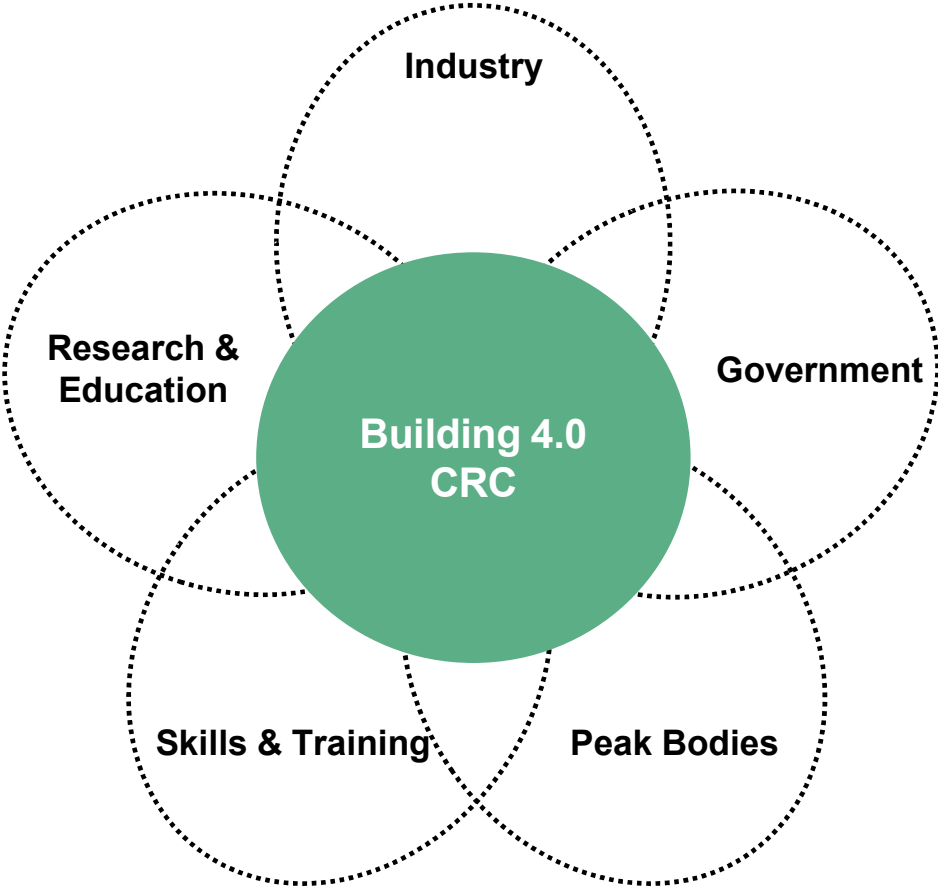


Building 4.0 CRC

Creating an ecosystem that brings together research, government and industry. Leveraging world-class Australian capability.



Unique Reach of Partners



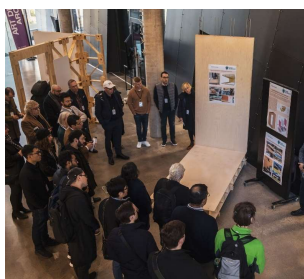
Building 4.0 CRC specialises in R&D that leverages our unique reach within the building innovation ecosystem.



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Building 4.0 CRC

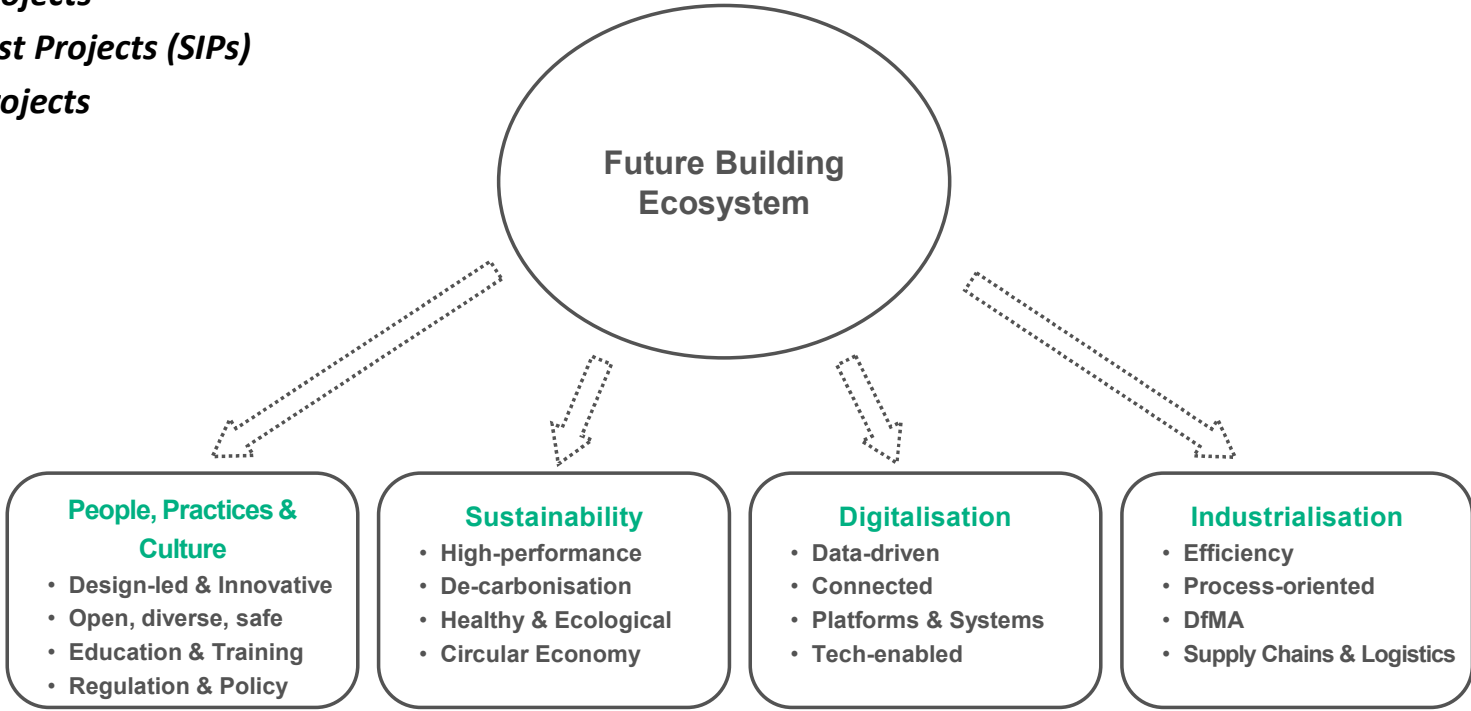


Our Approach — four thematic areas

Our collaborative research takes place in four main areas.

Three types of projects:

- *Traditional Projects*
- *Shared Interest Projects (SIPs)*
- *Lighthouse Projects*

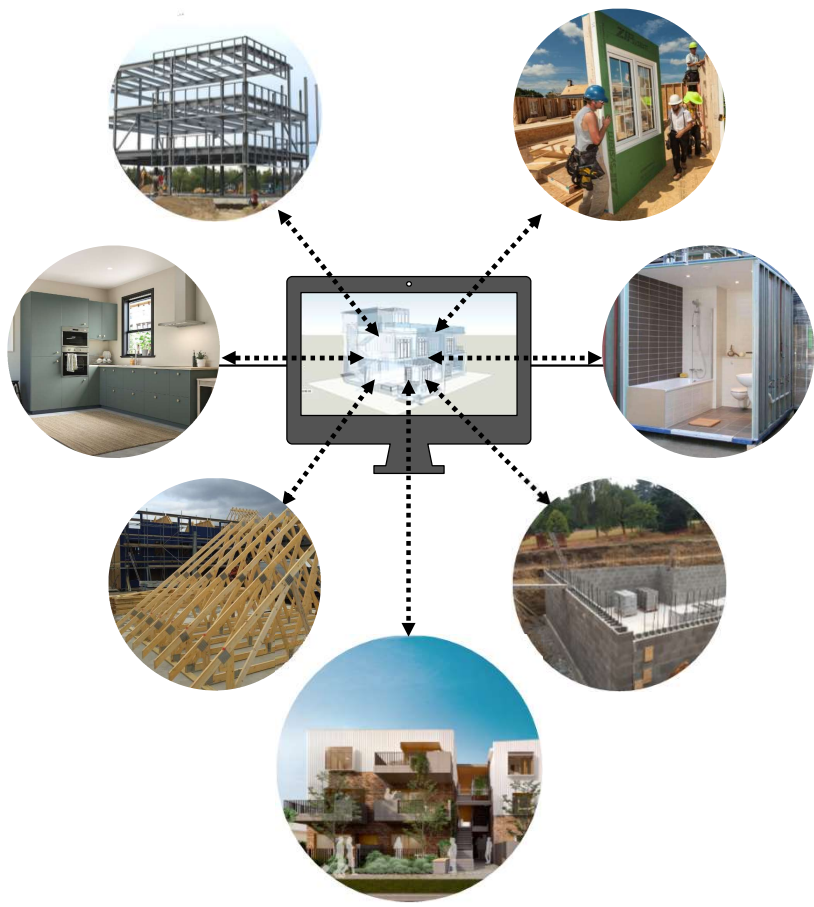


Sample Projects


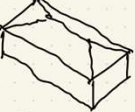
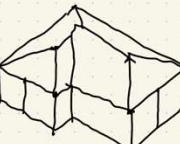
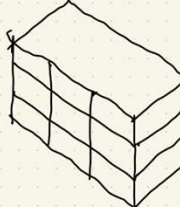
Using the ecosystem to create and test ideas. Moving from ideas to implementation.



Homes NSW MMC Program



Kit-of-Parts Approach

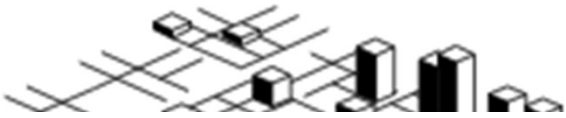
ASSET TYPE	LOCATION	MARKET DIAGNOSTIC	DELIVERY METHODOLOGY
 SECONDARY DWELLING	<ul style="list-style-type: none"> • Inner Urban • <u>Outer Urban</u> • Regional • Remote 	<ul style="list-style-type: none"> • Labour • Materials • Manufacturing • Knowledge 	<ul style="list-style-type: none"> • Volumetric Modular • Flat-Pack • Componentised
 STANDARD KEY WORKER HOUSE	<ul style="list-style-type: none"> • Inner Urban • <u>Outer Urban</u> • Regional • <u>Remote</u> 	<ul style="list-style-type: none"> • Labour • Materials • Manufacturing • Knowledge 	<ul style="list-style-type: none"> • Volumetric Modular
 URBAN DUPLEX	<ul style="list-style-type: none"> • Inner Urban • <u>Outer Urban</u> • Regional • Remote 	<ul style="list-style-type: none"> • Labour • Materials • Manufacturing • Knowledge 	<ul style="list-style-type: none"> • Volumetric Modular • Flat-packed
 LOW-RISE FLATS	<ul style="list-style-type: none"> • Inner Urban • <u>Outer Urban</u> • Regional • Remote 	<ul style="list-style-type: none"> • Labour • Materials • Manufacturing • Knowledge 	<ul style="list-style-type: none"> • Flat-Pack • Componentised

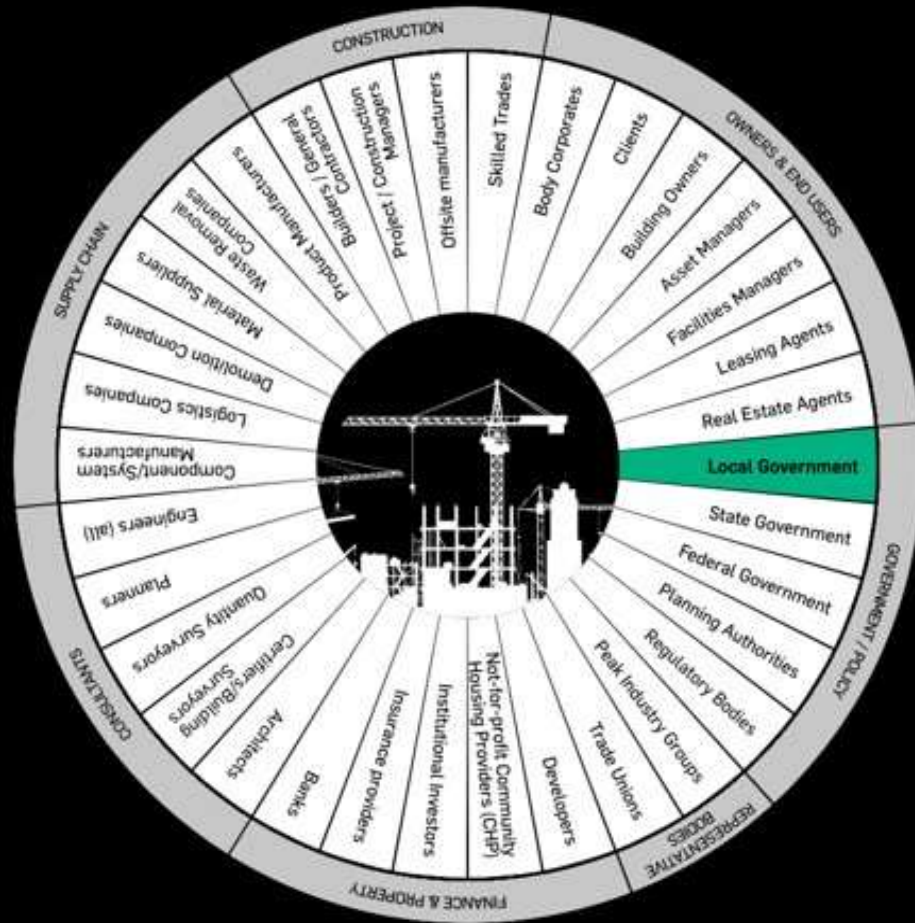
Commonality of parts across all building types

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Building Circularity 4.0:
First steps for industry
adoption.

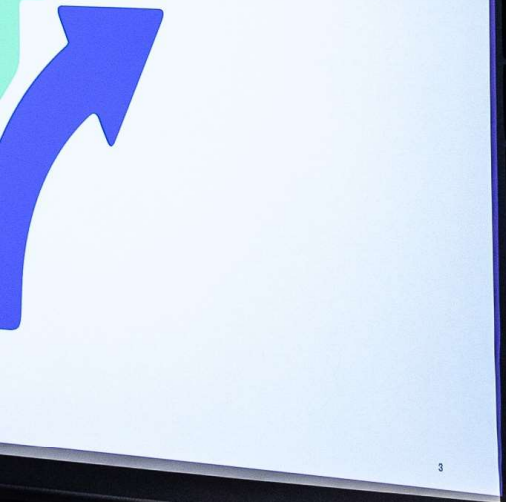
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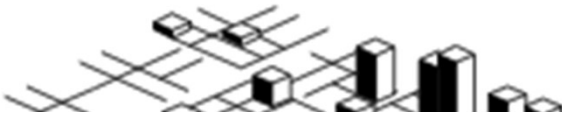
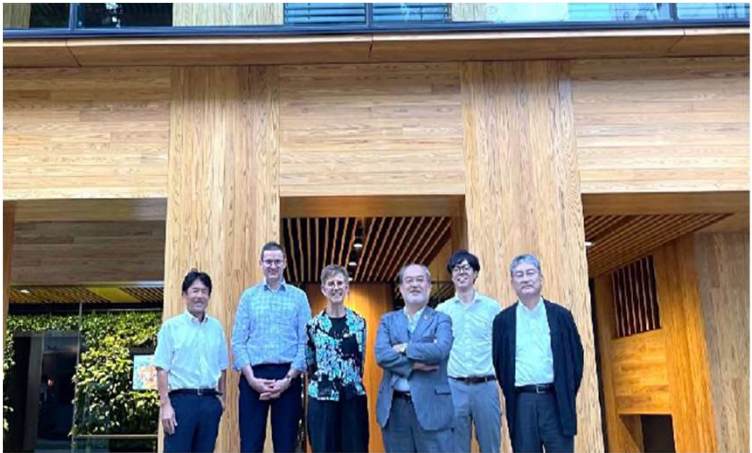
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International Study Exchanges

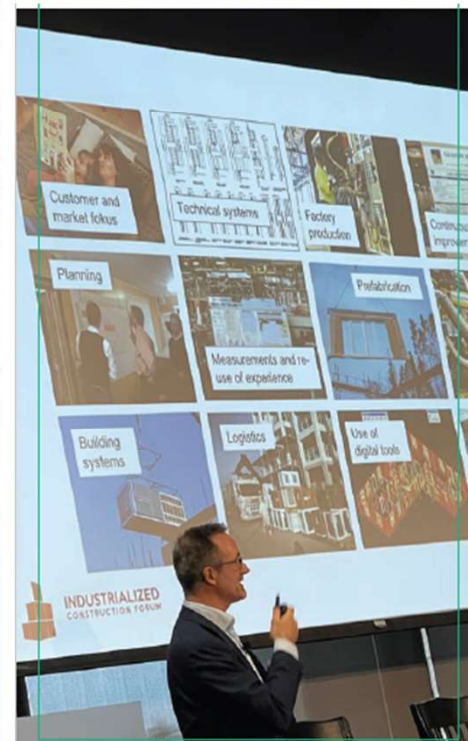
Sharing and partnerships on a global stage.



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The Future...

- *Continue to use our ecosystem to bring together research, government and industry.*
- *Continue to leverage world-class Australian capability.*
- *Continue to build on the strength of the Australia <> Japan relationship.*
- • *Continue to create and test ideas.*
- *Continue to share and partner on a global stage.*



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