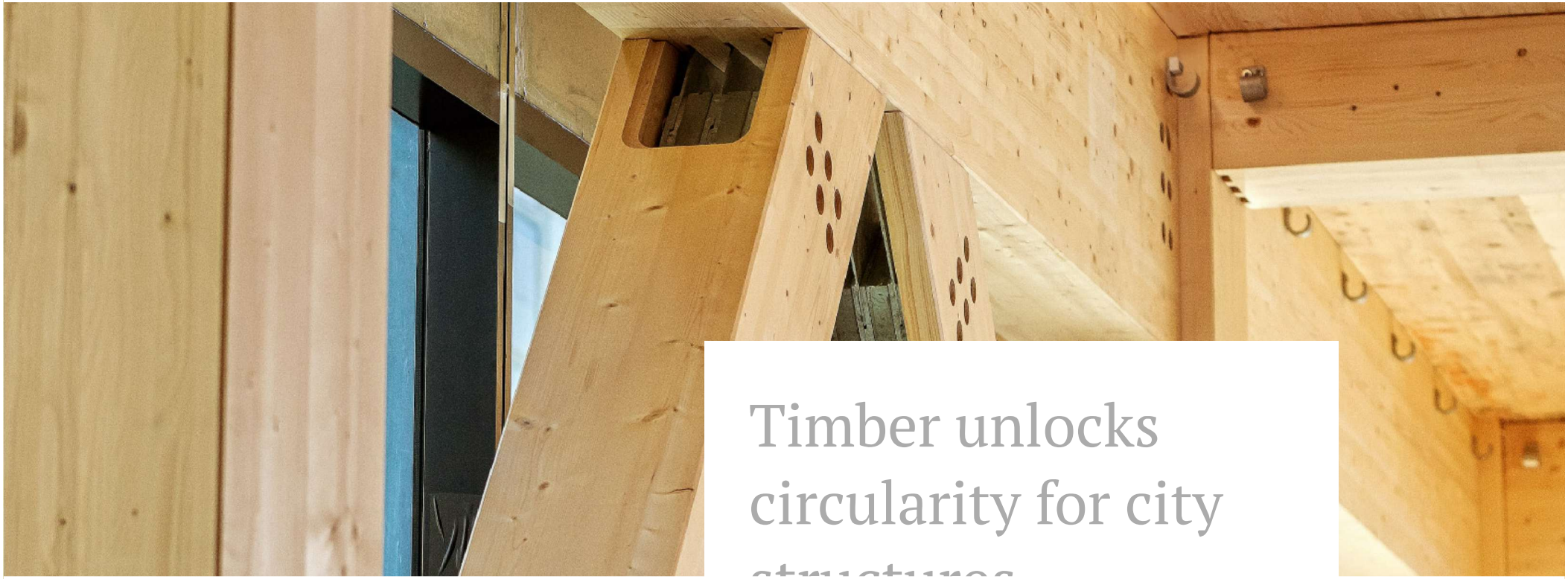


Timber unlocks circularity for city structures

26 June 2025 | 6 min | Article

By Jodie Bricout, Ralph Belperio, Callum Lillywhite and Pratik Shrestha

As the global population heads toward a projected peak of 10.3 billion people by the mid-2080s[1] up from 8.2 billion in 2024 – the demand for buildings and infrastructure to accommodate more people is accelerating. From buildings to work, study, and live within, and structures that allow us to move around and live our lives, our growing cities and towns must respond to increasingly complex needs.

At the same time, the built environment is under pressure to do more with less – with every structure, new or existing, expected to achieve greater carbon emissions reductions, materials efficiency, and waste reduction.

In this article, we explore the use of sustainable timber and integrating circular economy principles throughout the lifecycle of a structure.

Key takeaways

- Circular economy mindset shift is required to unlock long term value in our materials and infrastructure
- Timber is a powerful enabler for more sustainable buildings and infrastructure
- Challenges such as timber supply chain pressure are real, but can be addressed
- Digital approaches can provide visibility of sustainable materials across a project, and supply chain lifecycle

is forecast to be between 37 Mt CO_2e and 64 Mt CO_2e per year up to 2030, with the buildings sector accounting for more than 40 per cent of the total[2]. These sectors are also a significant consumer of raw materials, leading to materials and supply chain pressures.

Timber as an alternative, low-carbon footprint, construction material is growing in popularity due to its multitude of benefits:

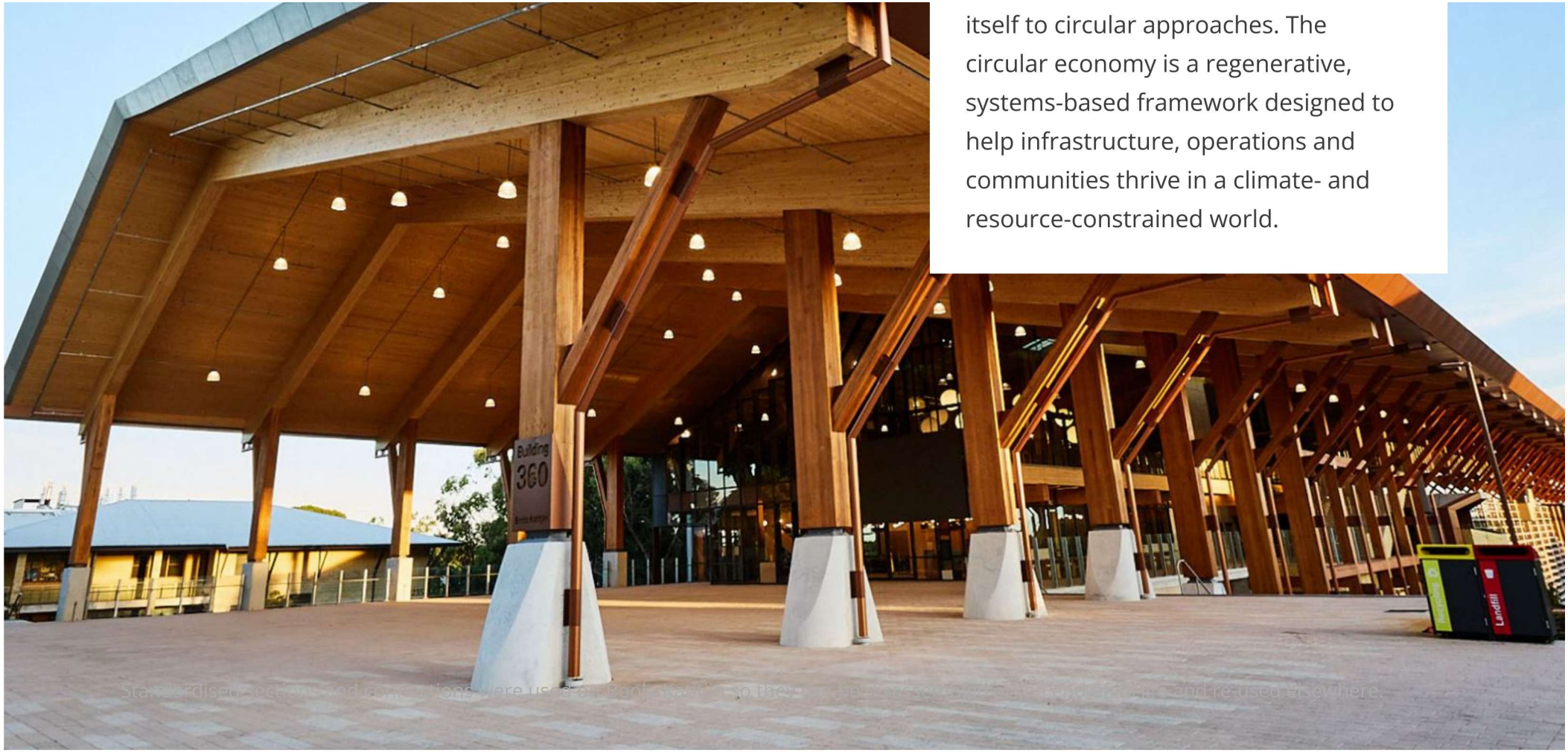
Timber can be **prefabricated**, potentially reducing construction timeframes and on-site construction waste

Timber can be used in **a wide range of structural applications**, and can be a lightweight solution for challenging projects

Timber's potential for disassembly and reuse supports more resilient, localised, and **adaptive supply chains**

Research has shown that the **biophilic effect of timber** in buildings may reduce occupant stress, and connect users with nature[3]

The greatest success comes from considering the use of timber early in the project strategy, planning and design stages, to support supply chain efficiencies and its efficient use.



itself to circular approaches. The circular economy is a regenerative, systems-based framework designed to help infrastructure, operations and communities thrive in a climate- and resource-constrained world.

or safely returned to nature. It drives us to choose more sustainable materials, approach construction differently, and design flexible and resilient infrastructure systems.

The recognition globally that a sharp shift to circular approaches is required is gaining momentum as research shows that while renewable energy can mitigate approximately 55 per cent of global emissions, circular production and consumption methods are necessary to tackle the remaining 45 per cent[4]. The use of timber in traditional and, increasingly, non-traditional applications, offers a powerful lever for change.

Boola Katitjin, a catalyst for Australia's sustainably sourced timber industry

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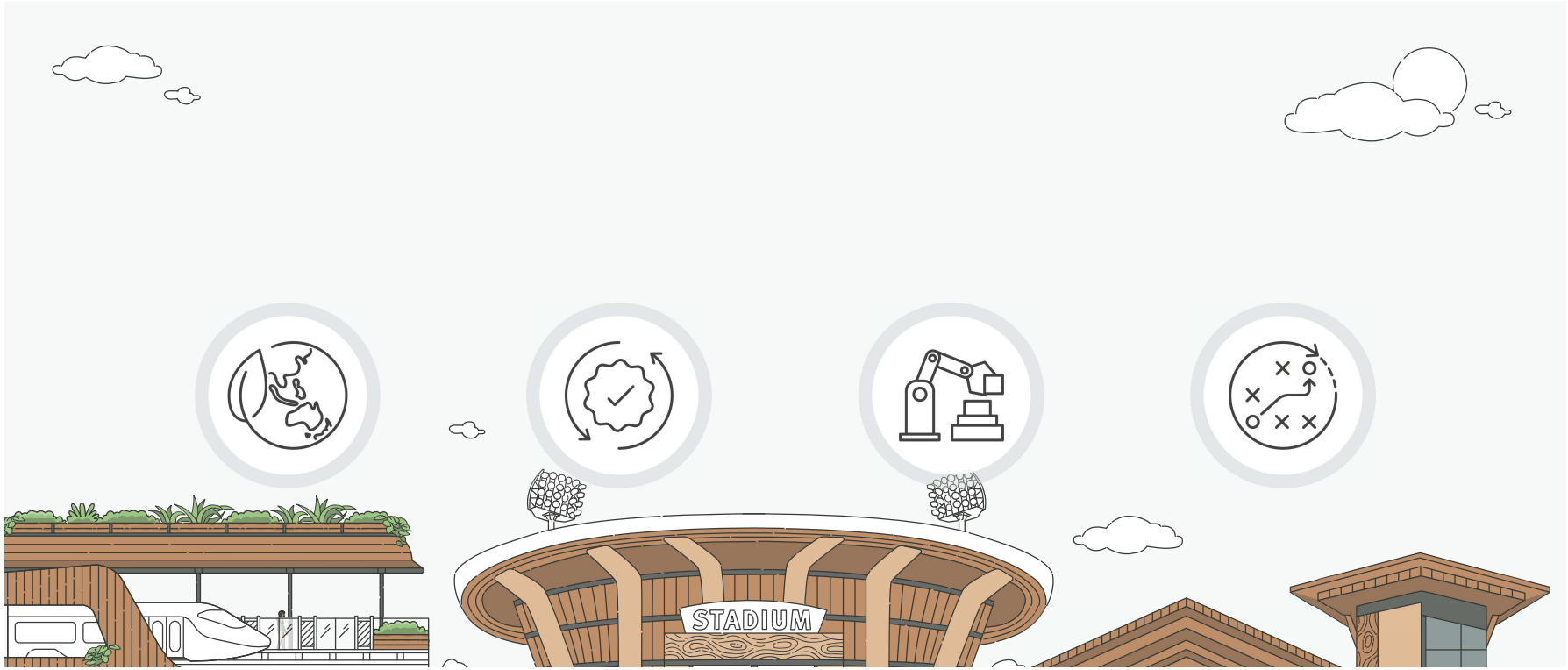
informed upfront decisions, implementing practical design practices, and maintaining ongoing management strategies.

Hover over the icons below to learn more.



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