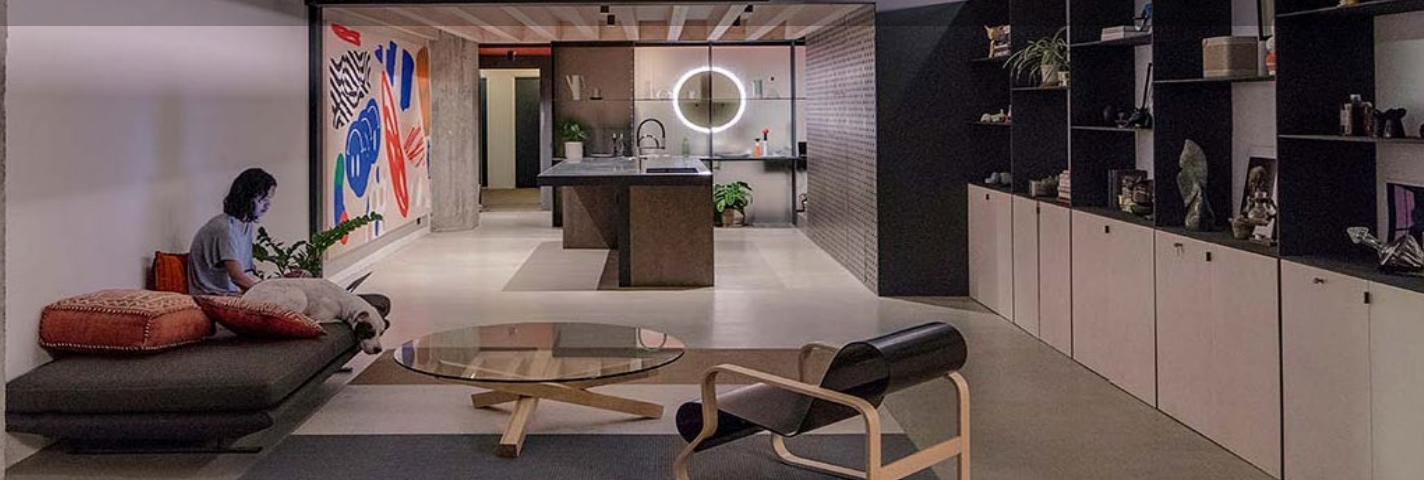


SUSTAINABLE USE OF RESOURCES



Cement & Concrete plays an important role in the circular economy - utilising materials that would otherwise go to waste.

Concrete is recyclable^[1]

Concrete is 100% recyclable. Concrete buildings can be repurposed, reused or recycled into useful new applications.

Repurposing Buildings

Concrete remains strong and durable throughout its life and concrete buildings can be reused and repurposed long after their original design life has expired, maximising the use of resources and minimising the volumes of surplus materials in the circular economy loop.

Concrete and Design for Disassembly (DfD)

Concrete's durability, strength, fire resistance and flexibility in design and application give it a significant advantage for disassembly and reuse.

Design for Disassembly (DfD)^[2] is a concept for assessing materials and structures according to how readily they can be 'deconstructed' and re-used. Applying this concept, designers, builders, occupants and communities can realise significant economic and environmental benefits by reducing the consumption of raw materials, as well as lowering waste during construction, renovation and demolition.

References:

- [1] A review of recycled aggregate in concrete applications (2018) Tam V, Soomro M, and Evangelista A.
- [2] Decarbonisation Pathways for the Australian Cement and Concrete Sector (2021) VDZ - Section 6.1.4
- [3] Guide to Concrete Construction (2020) CCAA - Section 2
- [4] Decarbonisation Pathways for the Australian Cement and Concrete Sector (2021) VDZ - Section 5.1

The use of recycled aggregates is reducing demand for natural resources

Sand and aggregate are important ingredients of concrete, and as we exhaust supplies from existing quarries we need to go further afield to find new reserves.

Increasingly, the industry is turning to recycled aggregates - a by-product of concrete demolition waste - as a viable and sustainable substitute to virgin raw materials.

Additionally, the construction industry is utilising recycled concrete and other recycled products (such as crushed glass) primarily in road construction, with smaller amounts used in concrete production.

The use of recycled concrete aggregates is a clear and obvious example of the circular economy at play, reducing the use of natural resources and reducing landfill. It provides a significant opportunity for the concrete industry to contribute to the sustainability of the modern built environment.

The cement and concrete industry is a significant user of industrial by-products

Industrial by-products like fly ash from power stations and slag from steel production can be used as Supplementary Cementitious Materials (SCMs) to replace Portland Cement as a binder in concrete. Typically, 30-50%^[3] of cement content can be replaced by SCMs that would otherwise end up in landfill.

In cement production, combustible waste materials including spent oils, rubber, plastics, wood waste and municipal garbage can be used as an energy source in the kiln as a substitute of fossil fuels. These fuel substitutes reduce the industry's carbon footprint^[4].



Find out more.

SUSTAINABLE FOR LIFE

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