

# CONCRETE MASONRY AND ROOF TILE

## INDUSTRY SUSTAINABILITY SNAPSHOT 2024

### INDUSTRY INTRODUCTION

The Concrete Masonry Association of Australia (CMAA) and the Australian Roofing Tile Association (ARTA) are committed to a more sustainable future. We know that change won't happen overnight, but our members have started taking positive steps to reduce their impacts and contribute towards a more sustainable future for our industry.

Together we discussed how far we have come and looked forward to what we need to do next. We will work together to drive positive change in our industry.

### WHO WE ARE



The Concrete Masonry Association of Australia (CMAA) is the peak body that represents Australia's concrete masonry manufacturers. Concrete Masonry includes bricks, blocks, pavers and retaining walls. CMAA monitors, develops and researches technical issues in the concrete masonry industry.



The Australian Roofing Tile Association (ARTA) represents roof tile manufacturers nationally and our members include the major industry leaders. We strive to push for sustainable and innovative roofing solutions Australians can be proud of. We assist our members with technical resources and research whilst advocating for industry collaboration.

### ABOUT CONCRETE BUILDING PRODUCTS

Concrete is the most widely used building material in the world, and the second most consumed commodity after water. It plays an integral role in delivering durable and resilient housing and infrastructure.

Concrete masonry and roof tiles make up about a third of the concrete product industry.

### OUR INDUSTRY

Australia's concrete product industry currently employs over 40,000 people and its concrete product manufacturing industry is worth approximately \$3.2 billion. Approximately 29 million cubic metres of pre-mixed concrete is produced in Australia each year. Concrete masonry makes up about a third of the concrete product industry.

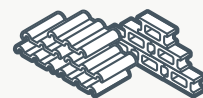


>\$1B

Worth



Employs over  
12,000  
people



Approx  
10M m<sup>3</sup>  
of concrete product produced

Figures are based on a one-third share of concrete product industry



# BENEFITS OF CONCRETE BUILDING PRODUCTS

## AFFORDABLE

Concrete is a cost-effective material and the price tends to remain more consistent than other materials.

## DURABLE

Concrete building products have been protecting communities from extreme temperatures and weather events for thousands of years. Our members have warranties for up to 50 years!

## FIRE RESISTANT

Concrete building products are non-combustible. This means they do not burn and are unlikely to contribute to fire spreading in a dwelling.

## VERSATILE

Concrete building products are contemporary and stylish. Individual units are available in a variety of shapes, formations and colours.

## LOW MAINTENANCE

Concrete building products are low maintenance and undergo strict quality assurance before being sold.

## THERMAL MASS

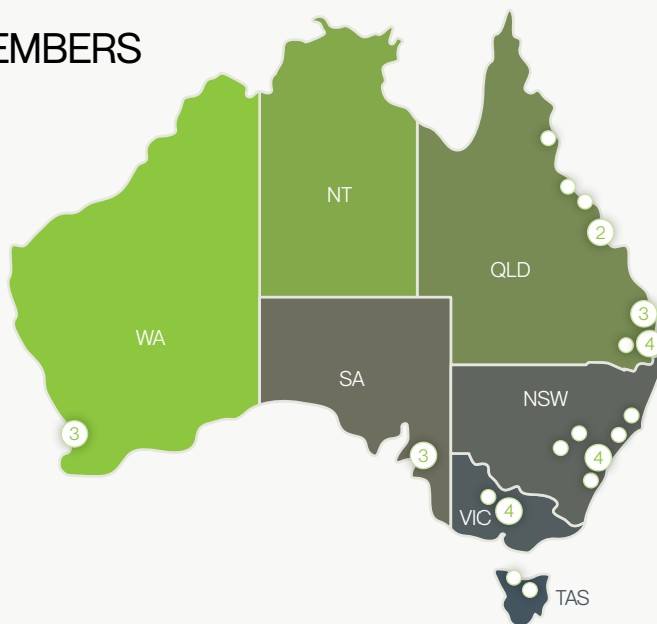
Concrete can absorb and store heat that can be used for passively heating or cooling environments. This reduces the need for energy-intensive heating and cooling solutions.

## CIRCULAR ECONOMY

The industry uses recycled material from other waste streams such as secondary aggregates and Supplementary Cementitious Materials (SCMs). Waste is also used as an alternative fuel in cement kilns. Concrete structures are increasingly being repurposed and reused at the end of their useful life, rather than being demolished. Where the asset is no longer fit for purpose, concrete can be crushed and used to replace primary aggregates.

Find out more about circular economy on page 4.

## OUR MEMBERS



## A SNAPSHOT OF OUR MEMBERS

14 members

30+ factories

100% Australian-owned

40% family-owned

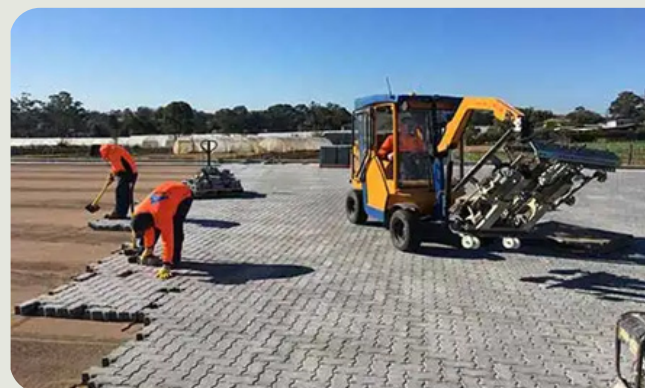
- ③ multiple manufacturing locations
- single manufacturing location

## CASE STUDY

### LEPPINGTON BUS DEPOT

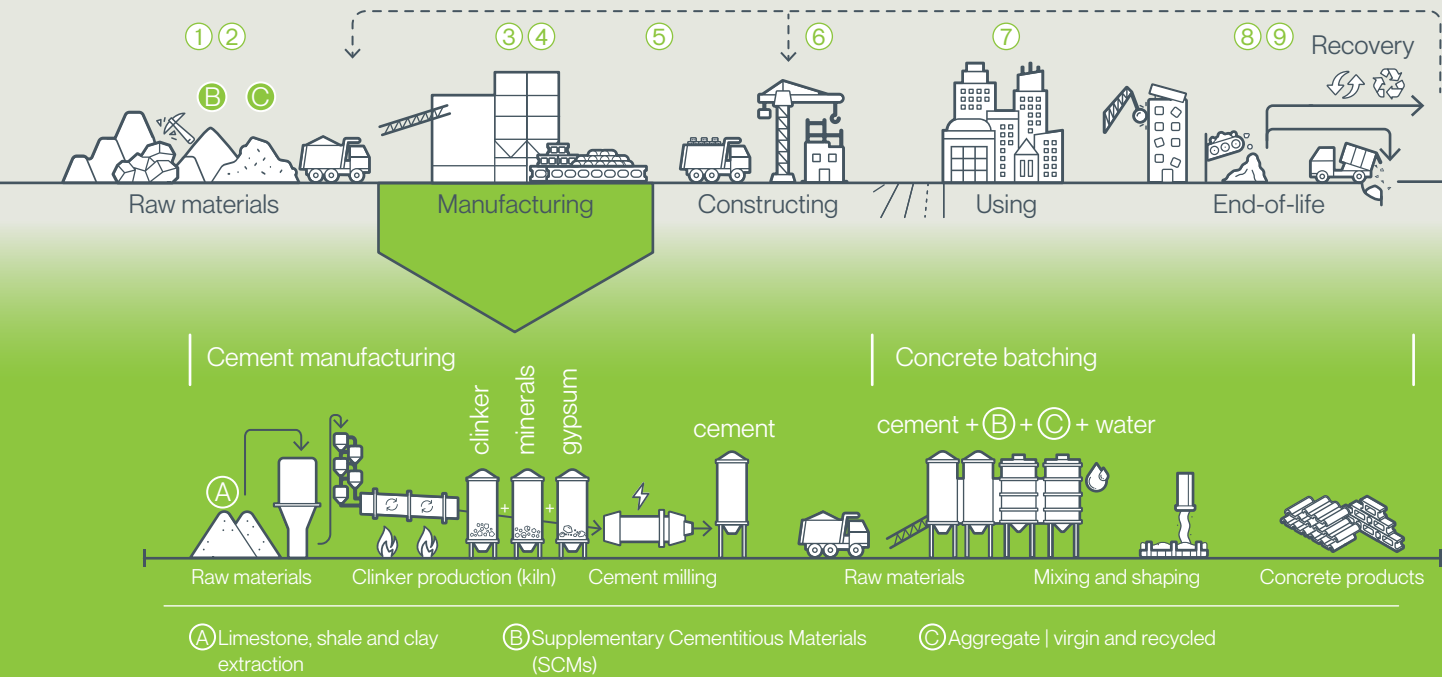
Interline Bus Services, a bus company that operates in South West Sydney, needed a new bus depot for its 120 buses. The council's development application required the new bus depot in Leppington to store 200 kilolitres (kl) of water on site.

- Austral Masonry used 7,000 meters of commercial paving and 1,000 meters of permeable paving.
- Two permeable paving pits store the required 200 kL of water on site and eliminate the need for drains and stormwater pipes. One pit is on the far corner of the hardstand and the other is used for staff parking.



Construction of the Leppington bus depot made from Permeable Interlocking Concrete Pavements.

## OUR PROCESSES



## LOCAL AND SUSTAINABLE MANUFACTURING

1. We use locally sourced materials.
2. We use recycled materials.
3. We are using more cement alternatives.
4. We employ locally.
5. We use recyclable packaging.
6. We comply with Australian laws and legislation.
7. Our members' products have desirable thermal characteristics that can reduce operational energy in a well designed building.
8. Our members' products have a long lifespan reducing the need to rebuild frequently.
9. Our members support the circular economy through schemes to reduce, reuse and recycle concrete masonry products and roof tiles.

## MEMBER HIGHLIGHTS

### ISLAND BLOCK & PAVING

Island Block & Paving have achieved Global GreenTag GreenRate Level A certification. Some of their products, including Blocks for the Future, Bricks for the Future, Pavers for the Future and Freestone Blocks for the Future, are manufactured with 38% recycled glass aggregate, which is a by-product derived from recycled glass container bottles.

The top three benefits identified in the GreenRate certification are:

- low toxicity
- post consumer recycled content
- durability.

### GB MASONRY

Our members are working out ways to use more recycled materials. GB Masonry's new GB Aura range combines cement, sand and aggregates containing 17% total recycled material, including glass and ash.

### ADBRI MASONRY

Adbri Masonry are reducing energy emissions with a transition to renewable energy sources. In 2019, the first solar array was installed on the roof of the Townsville factory. Throughout 2020, solar arrays have been installed on the Nowra, Bendigo, Campbellfield and Euro factories, taking Adbri Masonry's total renewable energy generation capacity to 600 kW.

Source: Adbri Masonry



# MOVING TOWARDS A LOWER EMISSIONS FUTURE

Our members are taking steps to reduce operational emissions, which lowers the embodied carbon of their products.

We are:

- finding ways to make our factories more energy efficient
- using alternative energy sources like solar
- using electric or fuel-efficient fleet vehicles (including forklifts)
- using less cement by replacing it with alternative materials like supplementary cementitious materials (SCMs)
- using more effective mix designs to reduce cement content and improve concrete production efficiency
- electrifying factories and curing chambers using renewable electricity to reduce the use of gas.

## MEMBER EPDS

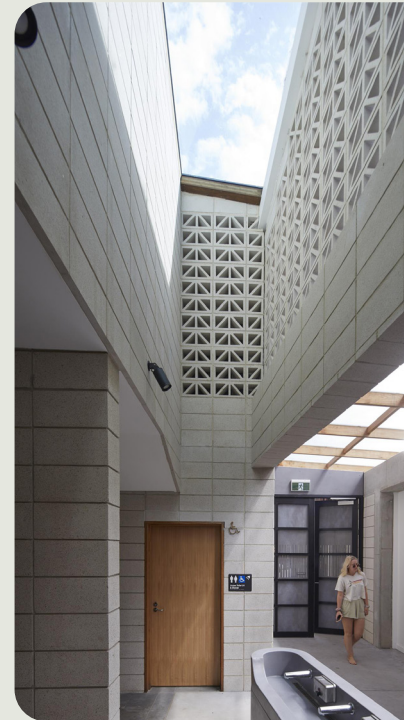
### WHAT IS AN EPD?

An EPD tells the environmental story of a product over its life cycle in a clear, simple format that can be understood by a wide audience. It is science-based, independently verified and publicly available. EPDs are often compared to the nutrition labels on food products.

Some of our members are already producing EPDs for their products.

[Adbri - Masonry Products](#)

[Austral Masonry - GB Masonry Range](#)



## MORTARLESS MASONRY

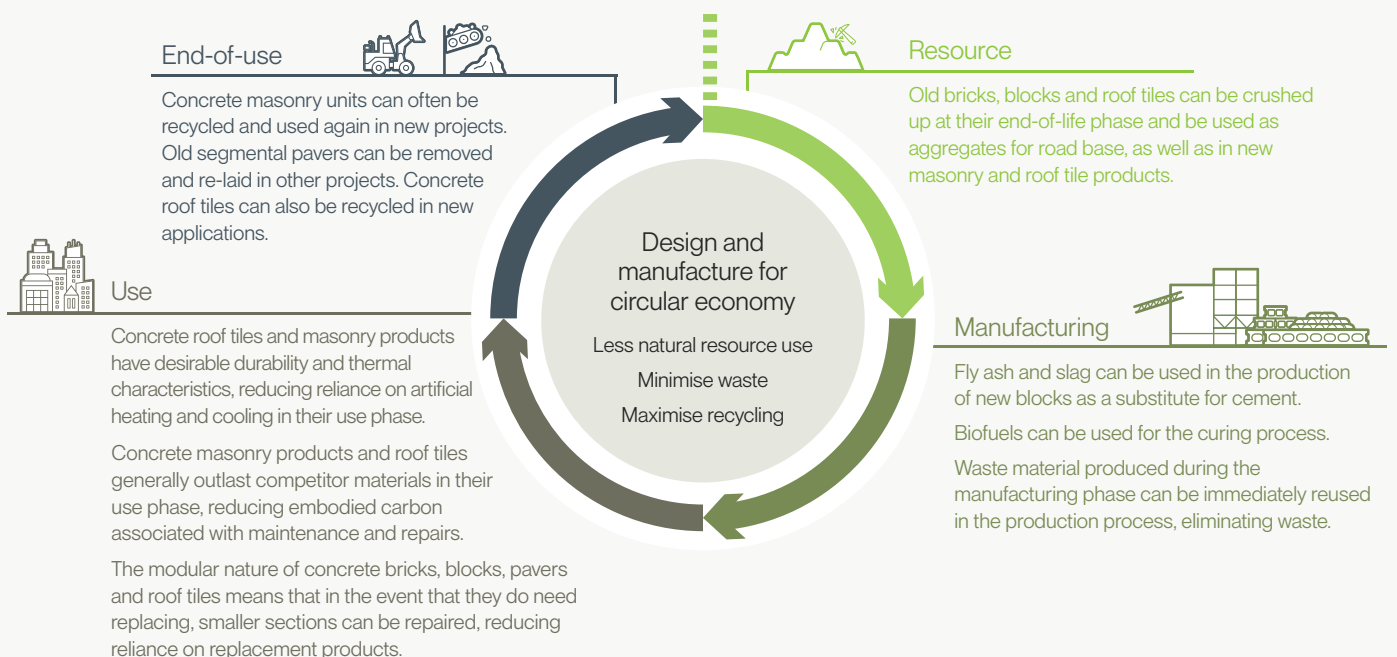
A mortarless masonry system uses blocks that interlock to provide a strong, durable and cost-effective construction method. This method requires significantly less mortar than standard construction practices.

CMAA is currently working with QUT to develop and publish simple and generic design guidelines for mortarless masonry systems that can be used with member products.

## BENEFITS OF CONCRETE PAVERS

Concrete pavers can be included within flexible and permeable pavement systems and are a low maintenance material that can be easily repaired and replaced as required. Segmental concrete pavements are immediately trafficable after being laid and compacted, reducing construction timelines.

## CIRCULAR ECONOMY





## WHERE ARE WE NOW?

Through a series of workshops held in 2023 our members identified several sustainability initiatives that are already in place.

### WATER USAGE

Our members continue to look for opportunities to reduce the water needed in their manufacturing processes.

This includes:

- using dry-cast concrete over wet-cast to significantly reduce water use
- using admixtures as an alternative to steam curing to strengthen concrete
- using recycled water including reclaimed water from local councils, grey water, and water captured and reclaimed from the manufacturing facilities.

### RECYCLING AND REDUCING MATERIALS

We aim to use recycled and repurposed materials over raw materials in our mixtures.

Examples include:

- fly ash – a by-product from coal-fired plants
- sand and other aggregates
- crushed down roof tiles for repurposing as an aggregate in permeable concrete paving systems.

Our members are also looking for more sustainable packaging options. Some of our members have introduced initiatives to collect, recycle and reuse pallets.

### PERMEABLE INTERLOCKING CONCRETE PAVEMENTS

Permeable Interlocking Concrete Pavements (PICPs) can be used as a part of a fully or partially permeable system that can capture, treat and even recycle rain and surface water runoff. Permeable pavements can also reduce pollution in our waterways and mitigate downstream flood events. Permeable systems work by allowing stormwater runoff to infiltrate through special voids in the pavement surface and into the ground below where it can be harvested, or returned to the natural water table at a controlled rate.

## SUPPORTING INDUSTRY



### THE AUSTRALIAN BRICK & BLOCKLAYING TRAINING FOUNDATION (ABBTF)

The ABBTF aims to promote careers in the brick and blocklaying industry to young Australians and job seekers. CMAA members contribute to the ABBTF through levies on the sale of concrete masonry products. Their training activities include school programs, webinars, career expos, trade programs, Youth Ambassador programs, incentive programs, retention programs and training subsidies.



### GOLDEN TROWEL COMPETITION

The Golden Trowel Competition is an Australian blocklaying competition that addresses the skill shortage within the trade. The biennial competition sees young and apprentice bricklayers build a concrete structure under time pressure, which is then judged on precision, craftsmanship and compliance with design specifications. This initiative empowers apprentice bricklayers and allows them to connect with recruiters to fill the skill shortage gap within the industry.

## CITY OF BELMONT CAR PARK CASE STUDY



In 2018, the city of Belmont in Western Australia constructed a car park using Midland Brick permeable pavers. They opted to use the car parking bays to capture, retain and allow the infiltration of stormwater off of the adjacent road.

Not only does the permeable pavement allow water to infiltrate, it also assists in supporting adjacent trees that were planted during the winter of 2019.

The pavement enables water and oxygen infiltration into the root zone, preventing tree roots from uplifting and damaging the surface. It also promotes tree growth, ultimately extends the pavement lifespan and creates a fully shaded car park.

# CASE STUDIES

## RECONCILIATION ACTION PLANS

BGC, the parent company for Midland Brick, released its Reflect Action Plan for the August 2022 to Feb 2024 period.

Committing to a Reflect RAP means the company is developing ideas on how relationships with Aboriginal and Torres Strait Islander stakeholders can look like, deciding on their vision for reconciliation and exploring what they can influence.

Some of the current partnerships and activities undertaken by BGC are:

- working with the Foundation for Indigenous Sustainable Health (FISH Program) to build homes for Aboriginal and Torres Strait Islander peoples with the goal of them owning the home
- working with the Waalitj Hub to help create business opportunities for Aboriginal business within construction, manufacturing and mining
- working with the Waalitj Foundation and several of its employment programs to create sustainable employment opportunities for Aboriginal and Torres Strait Islander peoples
- partnering with Kambarang Services to deliver sessions on RAP and cultural awareness



Source: [Midland Brick](#)

- partnering with Kolbang Electrical, NEO Concrete, Prosperity Gateway Bricklaying to develop apprenticeship programs for Aboriginal and Torres Strait Islander people
- identifying procurement opportunities that support Aboriginal and Torres Strait Islander businesses
- offering traineeships and apprenticeships to support Aboriginal and Torres Strait Islander people in construction.

### OUR MEMBERS: CMAA

#### SPONSORING:



### ARTA

#### NATIONAL:



#### STATE:



#### STATE:



#### REGIONAL

