

# BRICKWORKS

LIMITED

21 September 2022

Australian Securities Exchange  
Attention: **Companies Department**

## BY ELECTRONIC LODGEMENT

Dear Sir / Madam

Please find attached for immediate release to the market the FY2022 Sustainability Report for Brickworks Limited.

This announcement has been authorised for release by the Brickworks Board of Directors.

Yours faithfully

BRICKWORKS LIMITED



**Susan Leppinus**  
Company Secretary

**Brickworks Limited**

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PROUDLY SUPPORTS



SUSTAINABILITY REPORT

2022

**BRICKWORKS**

## About this

# Report

*This Sustainability Report is Brickworks Limited's (Brickworks) fourth stand-alone Sustainability Report and is intended to complement the Annual Report, providing expanded disclosure on non-financial performance, impacts and opportunities. It is informed by the Global Reporting Initiative (GRI) Standards, a leading independent environmental, social and governance reporting standard.*

This Sustainability Report provides detailed information on the issues that have been identified as most significant through materiality reviews and validation processes previously completed. Brickworks' material sustainability issues were reviewed internally in FY21, expanding on the materiality review conducted in FY19, with the assistance of EY. The review included analysis of stakeholder feedback received over the last year and industry trends. Further information is available in the Stakeholder Engagement and Materiality Assessment Process sections of this report.

The boundary of the Sustainability Report covers operations where Brickworks Limited has operational control. Throughout FY19 to FY22, Brickworks acquired North American businesses Glen-Gery, Sioux City, Redland Brick, Illinois Brick Company and Capital Brick. Since FY21, integration of these operations into Brickworks' Management Systems has been ongoing. This year's Sustainability Report includes key aspects of the North American annual business performance, covering safety, workplace profile, environmental compliance, natural gas and electricity use, collective bargaining statistics, company changes, partnerships, risk and governance. Non-financial data presented in this report includes discontinued operations.

The reporting period for most topics is 1 August 2021 to 31 July 2022, aligned with the Brickworks' financial year. An exception is energy and carbon data, where the reporting period is 1 July 2021 to 30 June 2022, aligned with the National Greenhouse and Energy Reporting (NGER) Scheme. The workforce demographic data for Australia is taken from the WGEA report, which is based on 31 March 2022, however the total workforce figure is at 31 July 2022. Details of fundraising efforts for the Children's Cancer Institute are for the 2021 calendar year.

As part of Brickworks' expanded disclosure, a Limited Assurance review was performed in accordance with the International Standard on Assurance Engagements (ISAE) 3000 for metrics internally identified as significant risks, for both the Australian and North American businesses, including:

- Lost time injury frequency rate (LTIFR)
- Total recordable injury frequency rate (TRIFR)
- Environmental fines
- Scope 1 and 2 greenhouse gas emissions and energy consumption (Australia and North America)
- Natural gas energy intensity trend (North America)

A copy of the Limited Assurance Statement from this audit is included in this report.

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A message from the

# Managing Director

At Brickworks, we understand our long-term responsibilities, and the impact and influence we have on the environment, our customers, employees, communities, and shareholders. We take great pride in manufacturing our products in a sustainable way, creating sustainable developments and beautiful products that last forever. We integrate sustainability and innovation into product design, resulting in greater energy and resource efficiency over the operational lifetime of a building.

## Continued focus on safety

Continual improvement in health and safety is a key requirement and underpinned by the Brickworks Health and Safety Management System. Encouragingly, the total recordable injury rate has decreased from 14.3 in FY21 to 11.7 in FY22. The lost time injury frequency rate also decreased to 1.1 in FY22 from 2.9 the previous year.

This improvement is largely attributable to the implementation of successful Australian health and safety technology and programs into the North American operations. For example, safety lead and lag indicator statistics are available on mobile apps supporting risk reduction in real time and building safety capability.

New KPIs have been rolled out this year including Near Miss Frequency Rate and ranking injuries by severity. For example, severity ranking is in place for Australian statistics that show during FY22 injury severity sat in either the not life altering (Class 3) or temporarily life altering (Class 2) levels. Additional KPIs in development include further improvement of contractor statistics.

## Advancing our inclusive culture

Brickworks recognises that sustaining a strong culture, driven by the diversity and inclusion of our people, is critical to our long-term success. For that reason, I lead the Diversity Council, a forum with our most senior managers of the organisation that enables us to frame and set our strategic approach in regards to Diversity. A part of this strategy has been in setting our Diversity targets towards our stretch target of 35% female senior executives by 2025. Brickworks is proud of its success

to date, improving gender diversity in the Australian executive team from 7% female representation in 2015 to 26.5% in 2022 and from 15% in 2020 to 21% in 2022 in our North American Operations. Unfortunately, FY22 has seen a slight decrease in female senior executive representation compared to FY2021, from 28.1% to 26.5% in Australia and from 23% to 21% in North America, and this area will receive significant focus during FY23.

The Covid 19 Pandemic has had an influence on our recruitment and selection as well as contributing to some turnover of staff. As we return to work post Covid 19 we continue to focus on attracting more senior women into the business. Overall however we have seen a positive overall increase of female employees of 2% in Australia and North America, building a critical future pipeline.

## Customer focused sustainable product portfolio

As enablers of safe, resilient and sustainable buildings, at Brickworks, we see a strong future for bricks and concrete products. Our products are manufactured to provide resilience. They are durable, fire-proof, contain thermal mass for energy efficient design, excellent acoustic properties, and no indoor air emissions (VOCs); and our clay bricks hold a 100-year guarantee.

During FY22, 6% of product volume in Australia was verified as sustainable by third party labels and is expected to increase to 11% this calendar year. We are continuing to verify our sustainable products and have identified 57% of the product volume in our Australian portfolio have environmental or social benefits. There is also a range of opportunities across our North American products.

Measured recycled content of Australian building products was 47% higher than the previous year. This is approximately 17% of Australian building products total production by weight.

## Our approach to a low carbon future

Brickworks has long understood the step change carbon emission reductions possible through manufacturing excellence and has a long-term strategic focus in driving our global kiln refurbishment program to improve

energy efficiency beyond international benchmarks. This is underpinned by our stretch target for a 10% increase in gas efficiency at Austral Brick plants by 2030.

In Australia, carbon emissions have followed a general downward trend, with a 42% decrease compared to the base year 2005/06 (Scope 1 and 2). The decrease is attributed to efficiencies gained from alternate fuels, manufacturing consolidation, equipment upgrades and operational improvements.

Australian business has seen a 7% improvement in gas efficiency since FY18, and the North American business has seen an 8.6% energy efficiency improvement since acquisition in FY19. This year will also see the commissioning of the state-of-the-art new Horsley Park Plant 2, which will set the standard for brick manufacturing with best-in-class fuel efficiency, productivity and product quality.

As an industry leader using over 12% bioenergy in manufacturing in Australia, we understand the critical role renewable bioenergy can have in producing low-carbon products.

We are assessing the feasibility of renewable bioenergy generation at our brick plants with leading technology provider Delorean Corporation. If successful, each facility has the potential to provide a significant source of renewable energy. A comprehensive feasibility assessment is underway for the Horsley Park NSW location for the potential to produce approximately 210,000 GJ p.a. in Stage 1.

In Victoria, we are now progressing with surveys and preparation for 1.7 MW solar power generation capacity at our major Wollert brick facility.

### **Risk management reporting**

Reinforcing our commitment to transparency, we released our first Taskforce for Climate-related Financial Disclosure (TCFD) Statement in February, summarising climate scenario analysis, identifying risks and responses.

Brickworks has now published two Modern Slavery Statements, outlining modern slavery risk disclosure in our supply chains.

### **Rehabilitation and Property**

Site rehabilitation is central to our business model. FY22 saw the successful end of life rehabilitation of 220,000 m<sup>2</sup> at the Horsley Park Plant 23 quarry in New South Wales to create the new Oakdale East industrial site.

Many of our quarries are located in centralised urban areas and are often transferred into the Property Trust Joint Venture with Goodman at end of life for final rehabilitation into industrial estates.

In July 2022 Brickworks launched its Manufacturing Trust adding to the existing Industrial Trust Joint Venture and extending its partnership with Goodman. This is an opportunity to maximise the value of assets over the longer term, leveraging Goodman's rehabilitation expertise.

Goodman is a leader in environmental social governance (ESG). Where possible, Goodman aims to enhance the local environment through initiatives such as land rehabilitation, water sensitive urban design, green corridors and using native species in landscaping.

Progressive rehabilitation for our ongoing operations is also a key sustainability strategy. The area of progressive rehabilitation completed in Australia in FY22 was 50,173m<sup>2</sup>.

### **Driving sustainability performance**

We are on track to meet our sustainability targets within our "Build for Living: Towards 2025" strategy, as we aim to ensure a long-term sustainable future for our business and a positive impact on the world around us.

During FY22, significant annual progress was made against our targets in many areas. Mains water reduced by 7.5% from FY21, 100 community engagement activities were undertaken and \$282,217 was collected for Children's Cancer institute with over \$4.4 million contributions since 2002. We provided 67 continuous professional development sessions covering topics such as energy efficiency, code compliance, sustainable and life cycle design. Focus will continue to drive targets further during FY23.

I would like to thank everyone working across the Brickworks Group for their dedication and hard work. I am incredibly proud of our continued improvements in safety and our employees' day-to-day demonstration of our corporate values. Progress against our sustainability strategy demonstrates sustainability achievement and I am excited about the continued journey ahead.

**LINDSAY PARTRIDGE AM**

Managing Director

# About Us

*Brickworks Limited (Brickworks) is an ASX200 publicly listed company, with a long and successful history, dating back to 1934.*

Brickworks is one of the world’s leading providers of building products, employing 1,187 employees across its Australian operations (permanent and part time employees, excluding casuals) and 932 employees in North America.

From bricks to concrete products, pavers, roofing tiles and timber battens, Brickworks offers a full suite of building products.



Brickworks has a diversified corporate structure that has delivered stability of earnings over the long term. Following several acquisitions in North America, there are now four divisions within the Brickworks Group structure:

- Building Products Australia
- Building Products North America
- Property
- Investments

This report covers the key operating divisions of Building Products Australia and Building Products North America. The Property division consists primarily of Joint Venture Property Trusts with Goodman Group (an Industrial Property Trust and the Brickworks Manufacturing Trust). An overview of the sustainability achievements from these Property Trusts is provided in this report.

Brickworks’ headquarters are in Horsley Park, NSW, approximately 45kms west of Sydney’s CBD. Brickworks has a vast network of operational sites and display centres in Australia and North America. As of 31 July 2022, Brickworks operates 38 manufacturing sites and 61 quarries, comprising:

- 12 Brick plants (Australia)
- 8 Brick plants (North America)
- 2 Roof tile plants (Australia)
- 1 Timber batten plant (Australia)
- 11 Masonry plants (Australia)
- 1 Stone plant (North America)
- 2 Precast plants (Australia)
- 1 Cement terminal (JV) (Australia)
- 39 Quarries (Australia)
- 22 Quarries (North America)

In addition, the Building Products Group has an extensive network of Design Studios, Displays and Masonry Supply Centres across major capital cities in Australia and North America, complemented by an extensive reseller network.

For FY22, Brickworks’ total revenue was \$1,093 million (AUD). This included Building Products Australia revenue of \$694 million, across three major divisions – Austral Bricks, Bristile Roofing and Concrete Products and revenue of \$399 million (AUD) for Building Products North America.

# Backed by Brickworks

Local expertise. Global quality. Brickworks Building Products are one of Australia's biggest building material producers. With heritage going all the way back to one of Australia's founding brick producers, we're proud of our reputation for design, innovation and sustainability.

## BRICKWORKS

### AUSTRALIA

 australbricks

 australmasonry

 australprecast

 southern cross  
cement

 bristileroofting

 BOWRAL BRICKS

DANIEL ROBERTSON

NUBRICK

GB Masonry

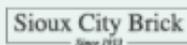
URBANSTONE

Terraçade

 CAPITAL BATTENS

### NORTH AMERICA

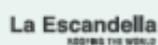
 Glen-Gery

 Sioux City Brick  
Since 1913

Lawrenceville  
BRICK

Cushwa  
BRICK

### EXCLUSIVE DISTRIBUTOR

 La Escandella  
ROOFING THE WORLD

 S.ANSELMO  
VENAFIA DA ROTTAFRANCA

 la paloma  
cerámicas

 CERÁMICAS  
KEOPE

# Organisational

## Changes

### Building Products Australia

#### Austral Masonry

The construction of a \$75 million masonry plant at Oakdale East in Sydney reached practical completion in July 2021. The commissioning process was completed during the first half of FY22, with the plant now fully operational. This new facility, with a capacity of 300,000 tonnes per year, incorporates the latest block-making technology, and will deliver lower costs and a broader product range.

The new facility contains a 240kW rooftop solar PV system and a closed loop water recycling system, for the capture, treatment and reuse of process water. The site also comprises a new Design Studio which includes a 113kW rooftop solar PV system.

This project will also include an associated value-added facility, to create products such as polished pavers and split face retaining walls.

Austral Masonry completed the acquisition of a Masonry plant in Mackay, from National Masonry, in April 2022. This plant will produce around 12,000 tonnes of masonry block per annum.

#### Austral Bricks

Construction of the new Horsley Park Plant 2 facility is well advanced, albeit has been impacted significantly by wet weather delays and trade availability issues. This facility, with a capacity to manufacture 130 million bricks per year, will be the most advanced brick plant in the world, delivering best in its class fuel efficiency, and setting a new standard for brick manufacturing.

### Building Products North America

#### Glen-Gery

Building Products North America is progressing its Focussed Capital Expenditure Program.

Plant rationalisation and upgrades have continued during FY22, with the closure of the York and Caledonia

sites and completion of extensive upgrades to the Hanley plant. The Hanley plant in Pennsylvania is focussed on premium architectural products, with upgrades to the clay preparation area, the extruder and the setting line to deliver much improved manufacturing efficiency, product quality and a broader product range.

The rationalisation program has resulted in the transition from 16 plants to 9 in North America.

A new design studio in central New York City was officially opened in March 2022. Together with the Philadelphia and Baltimore studios, these facilities will further enhance Glen-Gery's strong reputation for premium products and competitive position in the high value architectural segment.

On 2 August 2021, Brickworks completed the acquisition of certain assets of Southfield Corporation, including Illinois Brick Company ("IBC").

IBC is the largest independently owned and operated brick distributor in the U.S., with 17 showrooms and distribution yards, all located in Illinois and Indiana.

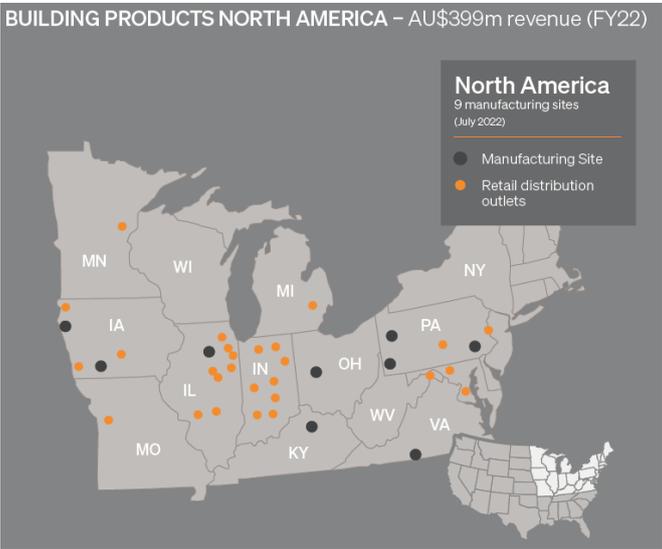
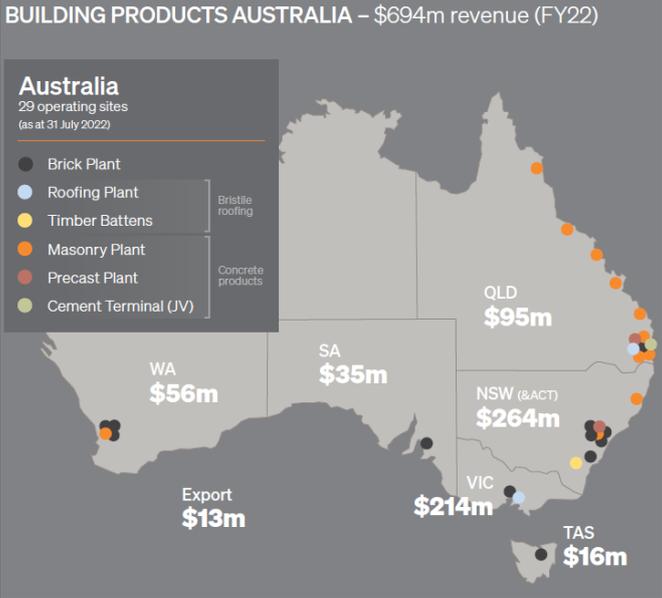
Building Products North America now has significant scale, with circa 932 employees, 8 brick plants, 1 manufactured stone plant, and 25 company owned retail outlets.

# Brickworks at a

# Glance

Brickworks has a diversified corporate structure that has delivered stability of earnings over the long term. There are four divisions within the Brickworks Group structure that span Australia and North America: Building Products Australia, Building Products North America, Property and Investments.

EARNINGS BEFORE INTEREST AND TAXES BY DIVISION	Investments: \$181m	Building Products (Aus): \$153m
	Property: \$644m	Building Products (US): \$25m



Number of factories

**38**

Number of retail outlets

**65**

Group Revenue AUD

**\$1,093m**

Number of Employees

**2,119**

**BRICKWORKS**

# Our business

We create beautiful products  
that last forever

# Who we are and what we make

Our building products play a key role in increasing sustainable home ratings to help our customers achieve their sustainable home design goals.



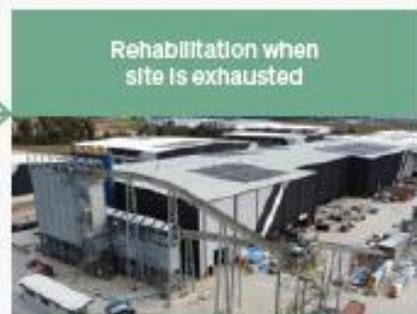
## 17% recycled content in raw materials in Australia

- Recycled clay infrastructure projects, flyash and by-products.



## Locally sourced natural raw materials

Clay and shale are the most abundant sedimentary rocks and the key ingredient for our bricks.



## Rehabilitation when site is exhausted

### Commercial Warehouses

- Land rehabilitated and converted into commercial buildings incorporating leading Sustainability design initiatives
- GreenStar ratings
- Energy efficient design
- Renewable energy
- Water sensitive urban design



## Sustainable Manufacturing

- Investment in pollution control
- Responsible water management, minimising potable water use in water stressed areas



## Resilient Products

Doubling products with sustainable attributes:

- Australia's first carbon-neutral brick
- Beautiful products with long life expectancy – 100 year warranty on clay bricks
- High thermal mass for energy efficient buildings
- Resilient to climatic events such as fire, flood and storms
- Reusable and recyclable
- Locally manufactured by an Australian owned company



## Homes and Buildings

Promoting safe and resilient environmental design:

- Sustainable Home Guide to help customers achieve sustainable home design goals
- Rewarding leading environmental design with complimentary carbon offsets for carbon neutral bricks for selected projects
- Thermal research and lifecycle education into energy efficient building design
- Continuous Professional Development tools on leading environmental design aspects for architects

Transport – Minimum efficiency standard for vehicles (Euro V min) Truck replacement occurs every five years

# Goodman Brickworks Property Trust

# Sustainability

In July 2022, our partnership with Goodman was expanded with the launch of the Goodman Brickworks Manufacturing Trust Joint Venture, adding to the existing Industrial Trust Joint Venture. The Manufacturing Trust is an opportunity to maximise the value of assets over the longer term. Manufacturing sites within the trust will be tenanted by Brickworks subsidiaries with some opportunities to develop sites to improve utilisation.

Goodman is a leader in environmental social governance (ESG) with a long-term, people-focused approach that looks to achieve positive outcomes for their business, stakeholders and the communities in which they operate. Goodman has implemented its 2030 sustainability strategy which covers all its partnerships around the world, including the Goodman Brickworks Joint Venture (JV). An example of this successful partnership is the development and operations at the Oakdale Industrial Estate, NSW.

The Oakdale Industrial Estate is Sydney's next generation industrial estate. It is an established industrial precinct, ideally located within western Sydney's logistics hub of Eastern Creek, Kemps Creek and Horsley Park. Set over 440 hectares, the estate offers a huge number of development opportunities for brand new, purpose-built warehouse, distribution and logistics facilities from 4,000 m<sup>2</sup>.

Goodman's 2030 sustainability strategy includes several specific environmental, social and governance targets, including the ambition to have carbon neutral operations by 2025, using 100% renewable energy and targeting 400MW of solar PV installed globally by 2025.

Highlights for the Oakdale Industrial Estate include:

- Sustainable design initiatives incorporated into the developments including:
  - LED lighting
  - Solar PV
  - Electric vehicle charging
  - Translucent roof sheeting
  - Energy and water monitoring

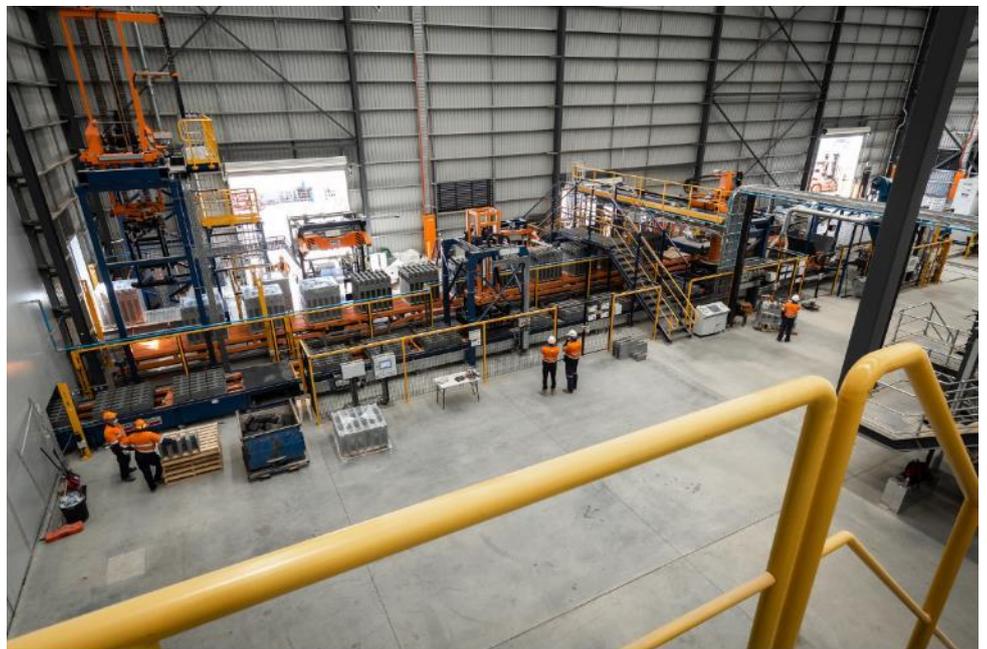
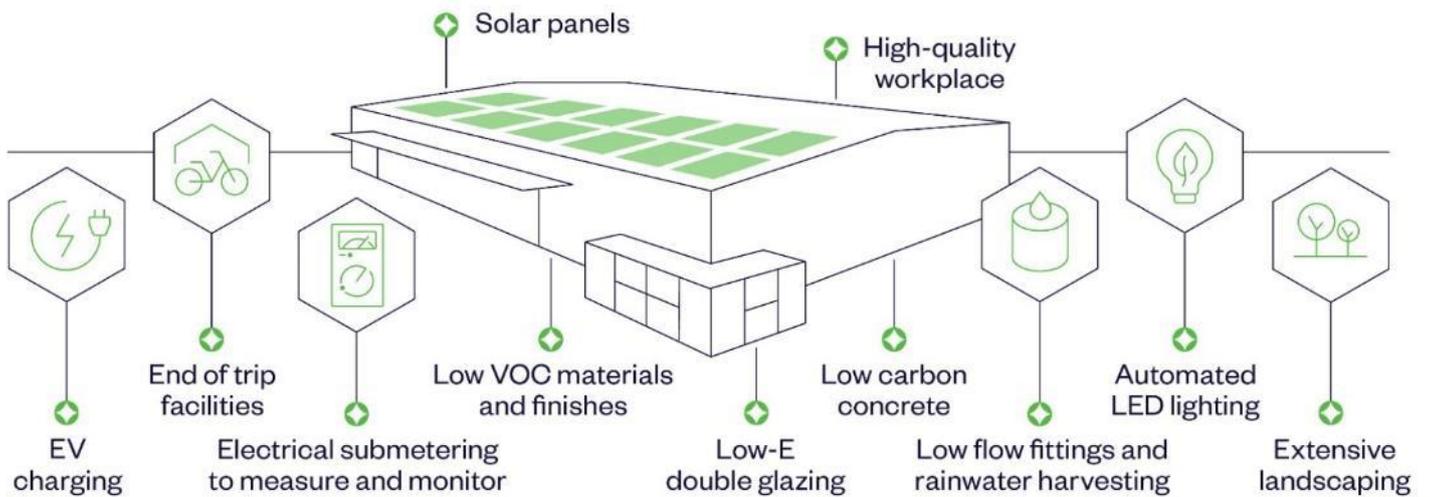
- Drought tolerant landscaping
- Rainwater harvesting with smart irrigation systems
- Water Sensitive Urban Design
- Estate-wide Biodiversity Management Plan
- 5 Star Green Star Design & As Built v1.2 rating for Building 1A, Oakdale South
- 5 Star Green Star Performance rating for Building 5, Oakdale Central
- 4 Star Green Star Performance rating for Building 6, Oakdale Central
- Approximately 7.3 MW of solar PV installed to date across the estate including the 1.7MW system on Building 5A Oakdale South, leased to DHL. An additional 7MW is currently forecasted for install, including a 3.5MW system for Coles at Oakdale West.
- An onsite café at Oakdale Central, providing a convenient food and beverage option for staff and visitors.
- A master planned (DA lodged) café at the entry to Oakdale West
- The precinct is centrally located with good access to the M7 and M4 Motorways
- Assessment of energy and water efficiency measures are underway across the stabilised buildings at Oakdale
- Strategic partnership with DHL on sustainability measures, including smart building technology and embodied carbon reduction measures.
- Strategic partnership with Australia Post on sustainability initiatives such as EV charging and solar PV.

## Carbon Neutral Developments

- Goodman has committed to measuring, reducing and offsetting the upfront embodied carbon in its new developments globally. A large component of the embodied carbon footprint in new buildings is concrete and steel, representing up to 70%.
- Oakdale South Building 2A and 2B will be among the first industrial developments certified as carbon neutral under Climate

Active's Carbon Neutral Product certification in FY23.

- Further to initiatives that Austral Precast is undertaking, Goodman is investigating additional measures that could lead to further carbon reductions, including refining panel size, thickness, mix design, reinforcement, and material supply chain.



# Towards 2025

## Significant annual progress against our 2025 targets

	Target	Our Progress	Status
	<b>Thermal Design</b> We will provide leading research on passive solar thermal design, enabling reduced lifetime energy use.	\$250,000 committed to new thermal research with University of Newcastle.	✓✓
	<b>Life Cycle Education</b> We will support design tools, guidance, and information to incorporate life cycle thinking into building design.	Provided 67 continuous professional development sessions resulting in over 808 in person attendees and 18,000 online views.	✓✓
	<b>Sustainable Products</b> By 2025 we will double our volume of products sold in Australia that hold leading sustainable qualities.	Over 6% of product volume in Australia was verified as sustainable by third party labels, expected to increase to 11% this calendar year	✓✓
	<b>Supply Chain</b> Continuing to reduce supply chain risks.	Modern Slavery Roadmap completed.	✓✓
	<b>Governance</b> Business Ethics and Whistle-blower Programs.	Governance programs formalised. Continued annual training.	✓✓✓
	<b>Safety</b> Continue reductions in injury rates.	Injury rates reduced by 43% in Australia and 53% in North America since FY19. Clear safety roadmap for U.S. business.	✓✓
	<b>Engagement</b> Existing target of 100 community engagement activities annually.	100 community engagement activities, meeting our target of 100.	✓✓✓
	<b>Community Support</b> Supporting charities like the Children's Cancer Institute.	\$282,217 contributed to Children's Cancer institute in 2021 calendar year and over \$4.4 million contributions since 2002.	✓
	<b>Diversity and Inclusion</b> Stretch target: 35% female senior executives. Develop and implement a Diversity and Inclusion Strategy.	26.5% female senior executive in Australia, introduced new company value "Inclusive – connected by diversity."	✓✓
	<b>Carbon</b> Invest in the transition to the hydrogen fuel economy.	Hydrogen feasibility preliminary desktop study completed by Murdoch University. Partnership with Delorean exploring renewable gas options.	✓✓
	<b>Water</b> Reduce potable water use in water stressed areas.	7.5% less mains water usage in Australia v FY21.	✓✓
	<b>Rehabilitation</b> Drive progressive rehabilitation.	270,173m <sup>2</sup> land rehabilitated in Australia in FY22.	✓✓✓
	<b>Circular Economy</b> Year on year increase in recycled material use.	47% increase in recycled material use from FY21, 17% recycled content in raw materials in Australia.	✓✓✓
	<b>Emission Control</b> Over \$2 million investment in emission abatement.	Over \$3 million invested in emission abatement.	✓✓✓
	<b>Energy Efficiency</b> Stretch target: 10% increase in gas efficiency at Austral Bricks plant by 2030.	Total gas efficiency at Austral Bricks plant has improved by 4.2% and natural gas efficiency has improved by 7.0% since 2018.	✓✓

\*Key: ✓✓✓ Achieved ✓✓ Materially Progressed ✓ Progressed



**BRICKWORKS**

# Environment

Brickworks is committed to managing its operations in an environmentally sustainable manner, whilst considering economic and social influences.



# Environmental

## Performance

### Environmental Management System

Brickworks Building Products Australia monitors its environmental performance and compliance in accordance with its Safety Health and Environmental Management System (SHEMS), aligned with ISO14001:2004, utilised across the company.

Manufacturing and raw material sites across Australia have regular internal and external audits. Any issues reported as either a hazard or an incident are rectified in a timely manner. During FY22, 11 external environmental site audits were undertaken at manufacturing sites, and 13 mining compliance audits (including environmental compliance) were undertaken at quarry sites.

Hazard and incident reporting are undertaken in Australia in accordance with the Risk Management Framework, involving assessment of the likelihood of an event occurring, the potential impact of each event and the controls and processes in place to continually mitigate each risk. This information is reported to Divisional and Group management and issues of material concern are reported to the Board monthly.

Core environmental components of the SHEMS are established within an online platform to assist in maintaining and auditing compliance. This platform now provides a centralised database of our environmental licence conditions, hazards, incidents, complaints, monitoring and reporting requirements for all Australian and North American sites. Standard Operating Procedures for significant risks at each Australian site are trained, reviewed, and updated regularly. Annual reviews and training continued during FY22.

Brickworks Building Products North America monitors its environmental performance and compliance to meet

the requirements of each authorising entity. A key focus for FY22 was the continued development and integration of the SHEMS environmental framework across North American operations, which is now 79% implemented.

During FY22 a peer review of our SHEMS was completed by WSP Golder to identify the steps required to align the system with ISO14001:2015.

### Compliance<sup>1</sup>

Brickworks treats all non-compliance instances with the utmost importance. Details of incidents, notices and complaints are raised at the weekly General Managers' meeting, attended by the Managing Director. Each non-compliance incident is investigated and tracked to ensure corrective actions are undertaken within deadlines.

	FY22		FY21	
	Aust.	U.S.	Aust.	U.S.
<b>Prosecutions</b>	0	0	0	0
<b>Penalty Notices</b>	1	1	0	2

### Brickworks Compliance Statistics

Incident reporting procedures and training are a central part of the SHEMS, raising awareness and identifying corrective and preventative actions.

The Australian business received one penalty notice during FY22. Golden Grove Plant received a penalty notice for stack emissions exceeding the post-emission abatement hydrogen fluoride limit in June 2022 resulting in a \$1,094 penalty. This was due to a temporary issue with the hydrogen fluoride pollution abatement scrubber that is now corrected. Focus on pollution control equipment checklists will continue

<sup>1</sup> Reported environmental fines and penalties include those received and paid during the reporting year (ending 31 July). Penalties received regarding property notices are excluded.

during FY23 and the target remains at zero environmental fines and continued risk reduction.

The North American business received one penalty notice during FY22. Pittsburgh Plant Quarry received a penalty notice for water discharge exceeding the aluminium limit in the third quarter of 2021 as a result of pond capacity and design issues that were not addressed by the previous site owner. The sediment pond cleanout and redesign were required to remedy the issue (refer also to the Water Environmental Program below). These corrective actions were immediately instituted under guidance from the Pennsylvania State Agency and the penalty was reduced from \$2,150 to \$1,850 (USD) and issued in January 2022. The FY23 target remains at zero environmental fines and continued risk reduction.

### Environmental risk management

Brickworks implements a systematic risk management program that identifies and controls impacts to the environment in line with legislation and authorised Brickworks environmental policies.

Critical risks are identified based on the consequence and likelihood for an issue to occur and the potential environmental impact should that issue occur. A risk priority model has been utilised to rate the impact of a specific risk. Key risk areas receive specific focus including our air and water management programs.

### Air Environmental Program

Brickworks is committed to minimising its impact on the environment and complies with environmental law and community standards as they evolve. Brickworks' ongoing Air Environmental Program identifies investment plans for emissions abatement technology across Australian sites.

All brick factories hold licences issued by the state environmental regulator and are required to meet emissions limits that the regulator deems acceptable to the environment and human health. To monitor compliance with emissions limits, qualified air monitoring consultants are engaged to test air emissions for parameters specified in licences. Should an exceedance of the emissions limits occur, the matter is reported in line with licence or regulatory requirements. An investigation and corrective actions are undertaken in accordance with Brickworks' SHEMS.

Brickworks other building products divisions generally have no specific air emissions limits within licences however, emissions are limited to the provisions of state and local laws.

Investments are made into upgrading kilns, plant control systems and emission control technologies. Limestone scrubbers will be installed at the Austral Bricks Horsley Park brick manufacturing facilities. The staged rollout program commenced in FY20, with a scrubber installed at Plant 23.



**EMISSION CONTROL**  
Over \$2 million investment in emission abatement

The Air Environmental Program will continue identifying investments in leading environmental initiatives. During FY19-FY21, over \$5.6M (AUD) was invested in emissions abatement scrubber equipment installed at Horsley Park Plant 23 and being constructed at Plant 22.

This expenditure exceeds the 2025 goal over \$2M (AUD) additional investment in emissions abatement. Future investments in environmental initiatives, as part of the Air Environmental Program, will be considered in relation to capital expenditure, technical projects and stakeholder collaboration.

The Golden Grove plant has scheduled scrubber refurbishments during a December 2022 shutdown which will also see the scrubber stack extended to improve dispersion of kiln gasses and reduce odour at ground level as required by the Environment Protection Authority.

An investment of \$1.0M (USD) in upgrades to the North American Pittsburgh Plant kiln pollution control equipment was completed in April 2022. The upgrades have improved the general condition, reliability, and overall operation of the existing pollution control device.

Most of Brickworks' large Australian facilities trigger reporting requirements under the National Pollutant Inventory (NPI). Brickworks estimates its emissions using a calculation tool that incorporates monitoring results and NPI's emissions estimation technique manuals. The latest NPI emissions data is displayed on Brickworks' website [www.brickworks.com.au/sustainability/](http://www.brickworks.com.au/sustainability/) and can be downloaded by searching "Austral Brick" at [www.npi.gov.au/npi-data/latest-data](http://www.npi.gov.au/npi-data/latest-data).

All plants in North America report to the Toxics Release Inventory (TRI). The TRI is a resource for learning about toxic chemical releases and pollution prevention activities reported by industrial and federal facilities within the U.S. TRI data supports informed decision-making by communities, government agencies, companies, and others. The latest TRI emission data can be downloaded from [www.epa.gov/toxics-release-inventory-tri-program](http://www.epa.gov/toxics-release-inventory-tri-program) and Brickworks' website [www.brickworks.com.au/sustainability/](http://www.brickworks.com.au/sustainability/)

### Water Environmental Program

The Water Environmental Program identifies investments in leading environmental initiatives across Australia. Brickworks closely monitors its water use and discharge, investing in water capture systems to ensure the quality of water discharge through appropriate treatment systems.

Brickworks complies with stringent environmental regulations to ensure that activities, in particular raw material quarrying, minimise impact local bodies of surface water and groundwater. Brickworks ensures the quality of discharged process water by using settling ponds and pH neutralisation systems, where required. In FY22 Brickworks continued to improve its water management systems by installation of telemetry systems at two Queensland quarry sites, system design and automatic dosing at Horsley Park, New South Wales and upgrades to the water treatment dosing system at Jandakot in Western Australia.

Further works are proposed or under investigation in FY23, including water treatment and/or reuse systems for Gympie, Dandenong, Jandakot, and Wetherill Park, and High Efficiency Sediment basins at Cardup South Quarry & The Rocks Quarry.

High priority environmental initiatives are also identified across the Glen-Gery business. When Glen-Gery's Pittsburgh Plant was acquired in February 2020, Brickworks identified erosion and sediment controls would need improvement. Working with the Pennsylvania Department of Environmental Protection, Brickworks developed plans to reduce the sediment discharged off site. Improvements included the construction and expansion of sediment ponds, repairs to spillways and addition of skimmer dewatering devices during FY22.



Image: Glen-Gery Pittsburgh Pond 1

#### Resilient water systems ensured water quality throughout flood events

The FY21 improvements at Ford Rd and German Church Road quarry implemented high efficiency sediment basins and operations have been focused on ensuring they are working to the best capacity. This design was tested during an over 1 in 200 year event flood event in February and March 2022 where the basins worked up to and beyond their design capacity. Through the innovative design and operations responsiveness during the event, we were able to dewater our clay quarries, minimise the impact of the event on the environment and on our extraction operations. The Queensland Department of Environment and Science congratulated Brickworks on its good water management during the event. The automatic dosing systems concept is now being rolled out across several of our other quarries nationally.



Image: German Church Rd

Ford Rd

# Carbon and Energy

## Energy Efficiency and Security

### Energy Security

Brickworks undertakes energy management activities as business-as-usual, including weekly senior management energy efficiency reviews and annual identification of energy management opportunities. Brickworks proactively engages in energy policy reform through its membership with the Energy Users Association of Australia, the Australian Industry Group, and Manufacturing Australia, advocating for affordability and reliability during the energy decarbonisation transition. Brickworks supports calls to decarbonise the gas network as a way forward to assist Brickworks in reducing its Scope 1 emissions from the consumption of natural gas.

### Natural Gas Strategy

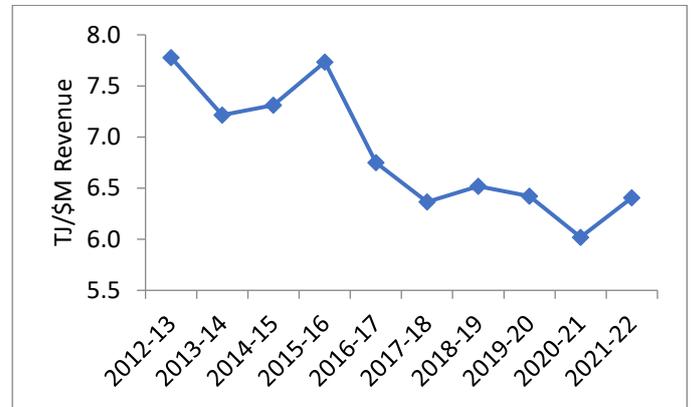
Brickworks is a wholesale gas market participant in each of the Short-Term Trading Markets in Sydney, Brisbane and Adelaide and the Declared Wholesale Gas Market in Victoria. Transitioning to wholesale gas arrangements has allowed Brickworks to control sourcing and manage its gas needs. Brickworks utilises internally generated daily gas consumption forecasts to manage wholesale gas market costs, identify kiln and dryer issues, and manage the variability of landfill gas supplies. Kiln gas efficiency across different products is quantified and acts as a feedback loop into operational improvement activities. Wholesale gas arrangements have allowed Brickworks to manage its gas costs better and improve its energy efficiency monitoring.

### Energy BBP Australia

Brickworks continues to reduce energy intensity across the business. Since FY13, energy intensity (energy

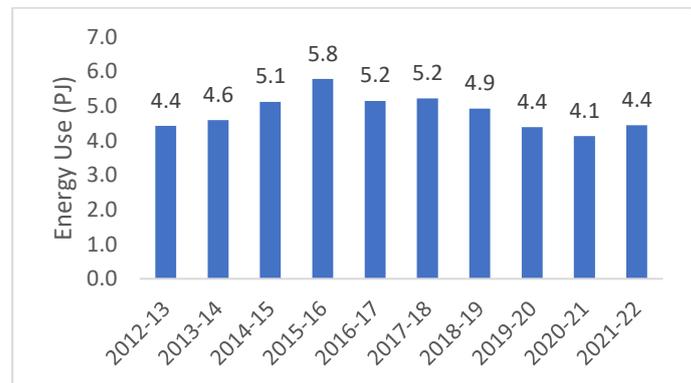
consumption vs revenue) has improved by 17.6% in Brickworks Building Products (BBP) Australia to 6.4 TJ per million dollars (AUD) of revenue. Energy intensity increased by 6.4% from FY21, reflecting revenue fluctuations in between FY21 and FY22 due to factors such as product mix.

BBP Australia Energy Intensity (TJ/\$M Revenue)



In FY22, BBP Australia's total energy usage was 4.4PJ, a 7% increase from 4.1PJ the previous year, reflecting increased production volumes.

BBP Australia Total Energy Consumption (PJ)<sup>2</sup>

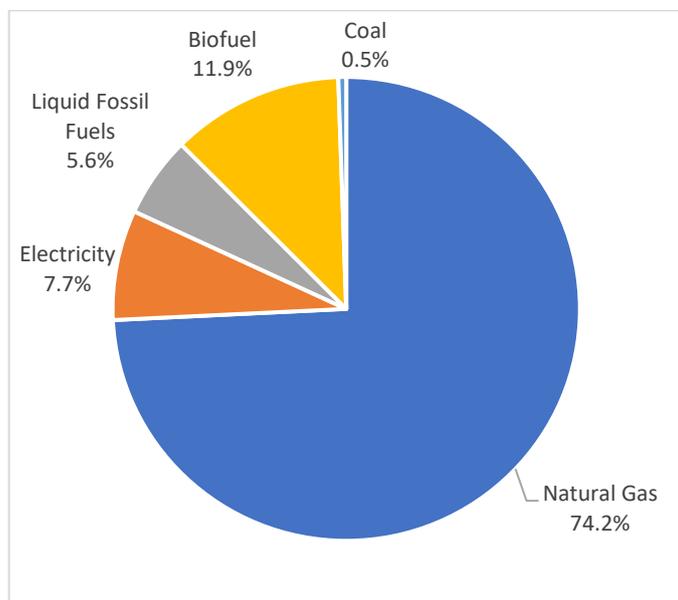


The majority (74%, 3.3 PJ) of the company's Australian energy requirements comes from natural gas, largely

<sup>3</sup> Total energy consumption is for Australian operations only. Energy consumption associated with recently acquired North American operations will continue to be monitored and reported, if material to the group.

used at Austral Bricks' manufacturing facilities. Gas efficiency is measured at a factory level and results are reported to the Managing Director weekly.

#### BBP Australia FY22 Energy Mix



In FY22, alternative biofuels made up 12% of Brickworks' Australian energy mix, similar to FY21. Biofuel sources include landfill gas and sawdust. Austral Bricks Horsley Park Plant 21 and 23 both continue to substitute natural gas with landfill gas, sourced from neighbouring landfills.

Sawdust is the primary fuel used to fire the kiln at Austral Bricks Longford, TAS, and is acquired from various Tasmanian sawmills. We continue to investigate ways to increase our biofuels content.

#### Energy BBP North America

Brickworks North America has now developed energy reporting for natural gas, electricity, liquid fuels and lubricants used in mining and manufacturing. During FY23 this will be expanded to also include all fleet fuels to cover all Scope 1 and Scope 2 energy sources. This will enable year on year energy intensity trend reporting.

During FY22, energy usage was 2.02PJ across 10 clay brick factories owned by Brickworks Building Products North America in operation with two factories being retired (York and Caledonia). All North American factories are fuelled by natural gas and contributes to 89% (1.79PJ) of the operation's energy consumption.

#### Ongoing Energy Efficiency

Energy efficiency is a focal point, managed using audits, regular maintenance and upgrades. Heat recovery systems are used in all Australian brick manufacturing facilities. Gas efficiency opportunities KPIs are reviewed on a regular basis. The KPI trend reporting will continue to trigger additional energy efficiency actions to maintain efficiency.

#### Carbon

Australian greenhouse gas emissions are reported and audited for the Australian National Greenhouse and Energy Reporting Scheme (NGERS). Scope 1 and Scope 2 carbon emissions are determined using the methodology and factors outlined within NGERS. Reported carbon emissions are for the reporting period 1 July 2021 to 30 June 2022.

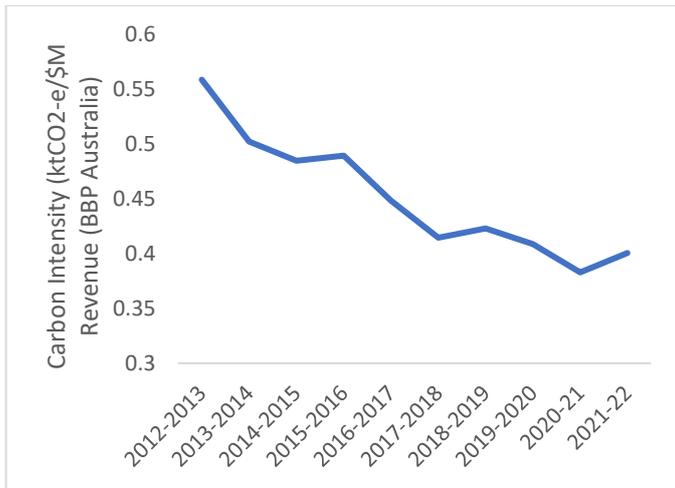
Although Brickworks' North American operations are not required to report carbon emissions to the U.S. regulator, the greenhouse gas inventory for our North America operations has been reported and audited for the first time in FY22 using the US EPA Emission Factors for Greenhouse Gas Inventories.

Brickworks North America has now developed greenhouse reporting for natural gas, electricity, liquid fuels and lubricants used in mining and manufacturing. During FY23 this will be expanded to also include all fleet fuels to cover all Scope 1 and Scope 2 greenhouse gas sources. This will enable year on year greenhouse gas intensity trend reporting.

Brickworks continues to reduce energy intensity across the business. Since FY13, greenhouse gas intensity (greenhouse gas emissions vs revenue) has improved by 28% in BBP Australia to 0.40 ktonne CO<sub>2e</sub> per million dollars (\$AUD) of revenue.

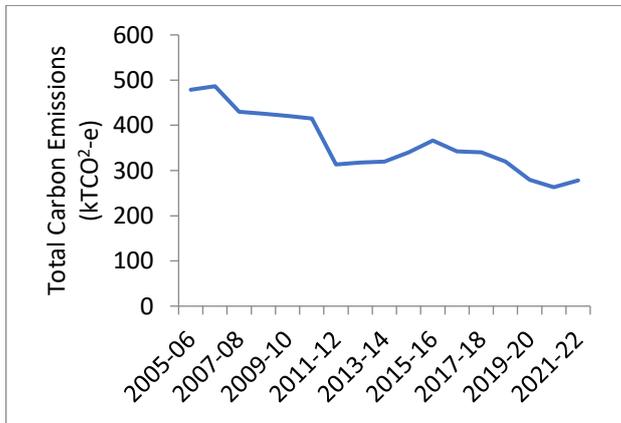
Carbon intensity for Australia was slightly higher (4.6%) than the previous year, reflecting revenue fluctuations in between FY21 and FY22 due to factors such as product mix.

**BBP Australia Carbon Intensity (ktCO<sub>2</sub>-e/\$M Revenue)**



Carbon emissions have followed a general downward trend, with a 42% decrease compared to the base year 2005/06 (Scope 1 and 2). The decrease is attributed to efficiencies gained from alternate fuels, manufacturing consolidation, equipment upgrades and operational improvements.

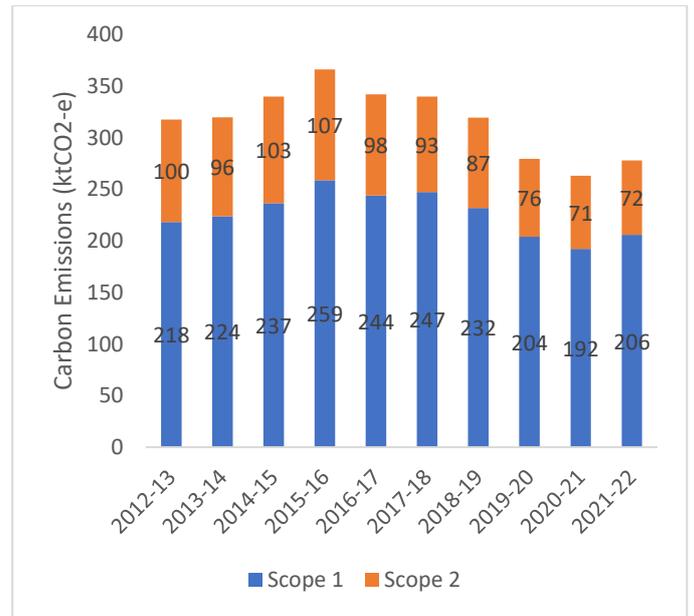
**BBP Australia Carbon Emissions Since 2005 (ktCO<sub>2</sub>-e)**



In FY22, our Australian operations emissions were 206,043 tonne CO<sub>2</sub>e (Scope 1) and 72,285 tonne CO<sub>2</sub>e (Scope 2), a 5.7% increase on the previous year due to an increase in production.

Our North American emissions were 120,675 tonne CO<sub>2</sub>e (Scope 1) and 18,040 tonne CO<sub>2</sub>e (Scope 2). Site consolidations have led to a 12% decrease in reported Scope 2 emissions compared to FY21. During FY23 greenhouse gas reporting will be expanded to also include all fleet fuels.

**BBP Australia Total Carbon Emissions**



Brickworks' greenhouse gas emissions and energy data is publicly available on the Clean Energy Regulators website [www.cleanenergyregulator.com.au](http://www.cleanenergyregulator.com.au)

A copy of the Limited Assurance report for energy and carbon data is contained within the Appendix 1.

**Scope 3 carbon emissions**

Brickworks is currently in the process of building a Scope 3 inventory of its material sources including cement. Life-cycle emissions data is currently available for all Australian made clay bricks on request through the Climate Active Carbon Neutral Certification. We have recently published an Environmental Product Disclosure (EPD) for Austral Masonry Gympie and we are developing an expanded library of EPD's for our products.

## Climate-related

# Strategy

Brickworks commitment to reducing energy use and carbon emissions is driven by Our Approach to a Low Carbon Future, Low Emission Technology Statement

### Image: Climate-related Strategy, Targets and Programs

	Manufacturing Excellence and Efficiency Strategy	Sustainable Design and Product Strategy	Alternative Energy and Biofuels Strategy	Renewable Electricity and Gas Purchasing Strategy
<b>Strategy Focus Area</b>	Achieve global leadership in leading manufacturing excellence and efficiency	Responding to an increase in consumer preferences for products with leading sustainability attributes and low carbon options	Harness circular economy opportunities by investing in technology suppliers and biogas technology partners	Responding to any uncertainty in the gas and renewables market with leading expert analysis and planning
<b>Deliverables</b>	10% increase in gas efficiency at Austral Bricks plants by 2030 (FY18 baseline)	Double volume of products with leading sustainability attributes by 2025 from FY19  Invest in research for thermal design and lifecycle education  (Refer to Responsible Business section for further details)	Expand on >12% of energy as biofuels in AU through investment in a pipeline of innovative projects.  Invest in the transition to the hydrogen economy through the Brickworks Hydrogen Feasibility Project.	Optimise purchasing and partnership opportunities to support manufacturing excellence and efficiency.

### Understanding Carbon Risks and Opportunities

We are incrementally adopting the recommendations of the leading carbon risk framework, Task Force on Climate-Related Financial Disclosures (TCFD), such as using climate scenarios to identify risks and developing climate-related strategy and programs. Our first TCFD Statement was externally validated then published on our website in February 2022 and we will continue to report on progress updates.

### Climate Related Strategy and Programs

During FY22, we continued our approach to a low carbon future as set out in a Low Emission Technology Statement, which can be downloaded from [www.brickworks.com.au/sustainability](http://www.brickworks.com.au/sustainability)

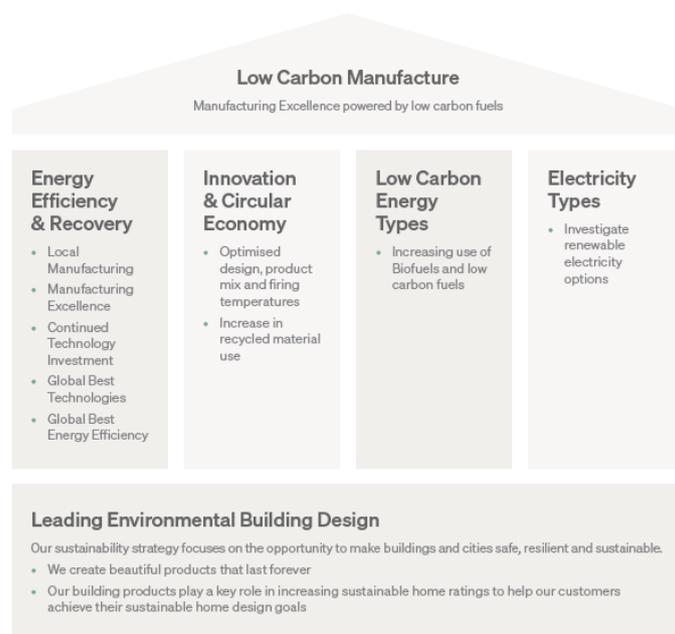


Image: Low Emission Technology Focus Areas

## Manufacturing Excellence and Efficiency Strategy

A key strategic focus area is to achieve global leadership in leading manufacturing excellence and efficiency. To achieve this, Brickworks is investing in energy efficiency.

### Investing in Energy Efficiency Towards 2030

Since its inception, Brickworks Building Products has invested in the latest kiln, equipment and manufacturing technologies to improve productivity, product quality and energy efficiency.

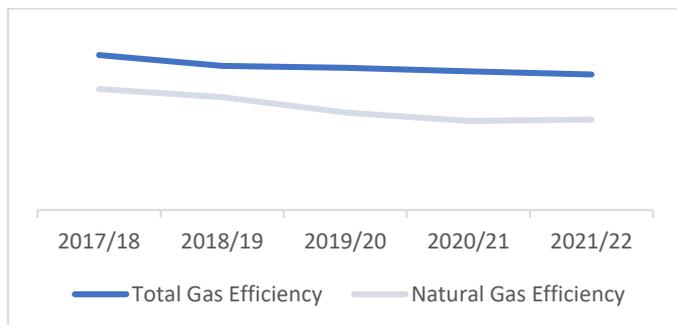
FY18 marked the start of a strategic 10-year investment vision to drive energy efficiency across Australia. By 2030, major plant upgrades are expected to improve total gas efficiency across Austral Bricks Australia by stretch target 10%, based on FY18 levels.



**ENERGY EFFICIENCY**  
Stretch target: 10% increase in gas efficiency at Austral Bricks plant by 2030  
Baseline FY18

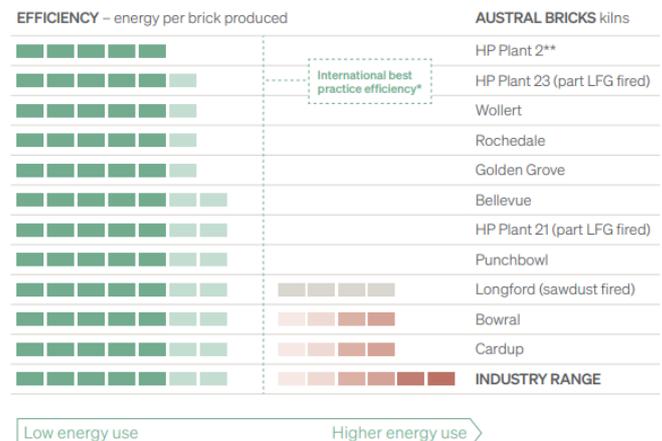
During FY19, the Austral Bricks Horsley Park Plant 22 kiln was shut down in preparation for an upgrade to a state of the art brick manufacturing facility. Plant 22 is expected to commence commissioning in FY23. The graph below depicts Austral Bricks Gas efficiency trend. Total gas efficiency (including landfill gas at Horsley Park and sawdust at Longford) has improved by 4.18% since FY18. Natural gas efficiency has improved by 7.05% since FY18.

### Austral Bricks Gas Efficiency (GJ/'000 Standard Brick Equivalent)



Continued investment into energy efficiency and recovery has improved many Austral Bricks kilns to exceed international leading energy efficiency benchmarks. Strategic focus areas include opportunities to upgrade remaining kilns.

## Brickworks Building Products – Australia Natural Gas and Electricity Usage



\* International Benchmark – Energy Efficiency target set by Brick Development Association (UK) (Specific Energy Consumption per tonne)  
\*\* Expected design efficiency

### Efficiency upgrades - Horsley Park, NSW, Plant 22 upgrade

FY23 will see the commissioning of the state-of-the-art new Horsley Park Plant 2, which will set the standard for brick manufacturing with best-in-class fuel efficiency, productivity, and product quality.

Brickworks has a long history of investing in the latest kiln and manufacturing technologies which is a key approach in how Brickworks has driven a general downward trend in carbon emissions.



Image: Plant 22 kiln, state-of-the-art brick making facility.

### Energy Efficiency in North America

Site consolidations in North America moves production to more efficient factories. Pre-rationalisation, Glen-Gery, Redland and Sioux City operated 15 factories at less than 50% of capacity with an average kiln age of 42 years.

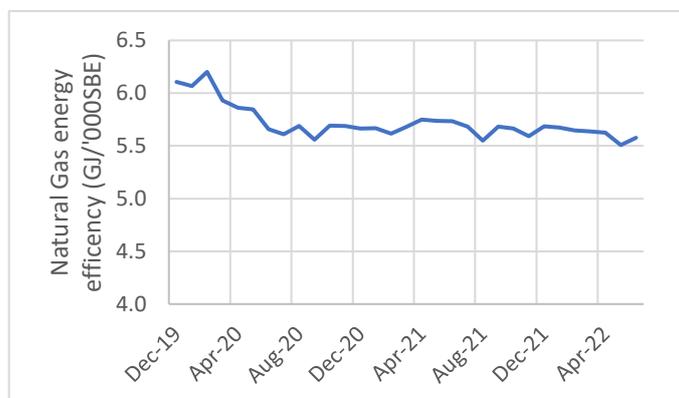
Closure and consolidations of the much older and less fuel-efficient factories has resulted in eight factories operating at 84% of capacity with an average kiln age of approximately 24 years. This has led to an 8.6% improvement in gas efficiency from the 2019 calendar year to FY22.

### Site consolidations in North America moves production to more efficient factories

The closure of two extremely old, unreliable, and inefficient facilities (York 1950's, Caledonia 1950's) will allow for consolidation of similar processes. York molded handmade product will be moved to the much more fuel efficient Mid-Atlantic Plant in Pennsylvania and the Caledonia full size and thin brick products will be moved to the much newer, fuel-efficient Pittsburgh, Pennsylvania facility.

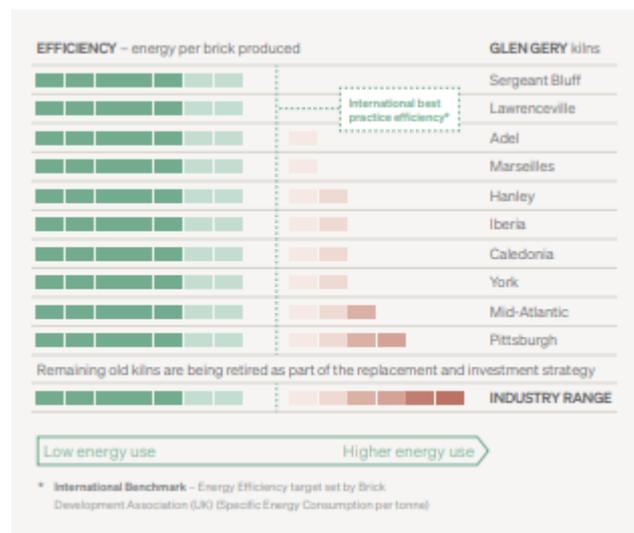
Plant consolidation has extended the run time of the existing factories and reduced the number of factories with seasonal closures from seven factories to four.

### BBP North America Natural Gas Efficiency 12 month rolling average



Further investment into energy efficiency and recovery will drive North American kilns towards international leading energy efficiency benchmarks. Further kiln efficiency projects flagged for our Iberia, Adel and Pittsburgh plants.

### Brickworks Building Products – North American Natural Gas and Electricity Usage



Our Iberia, Ohio Plant is scheduled for upgrades to the dryers and adjustments to the kiln burners.

The Adel Plant in Iowa is modifying a petcoke fueled kiln to allow for natural gas fueling. While Brickworks has not operated this kiln since its acquisition, this upgrade will allow for a much cleaner burning fuel and eliminate the petcoke fuel waste.

Improvements to existing equipment, optimising the kiln firing curve and changes to raw materials to increase firing efficiency are scheduled for the Pittsburgh, PA Plant.

Upgrades will provide improvements in productivity, product quality and energy efficiency.

### Vehicle and Logistics Efficiency

Brickworks continuously modernises its trucks after five years to provide up to date safety features for the community and public and improved fuel efficiency. In FY22, nine trucks were ordered for replacement with Euro V specification. In NSW and WA, drivers have received fuel efficiency training.

### Alternative Energy and Biofuels Strategy

#### Biofuels

Brickworks has long-since used biogas and sawdust for renewable energy generation. The Alternative Fuels Program saw Brickworks Australia achieve 12% energy use composition of biofuels in FY22.

Austral Bricks Horsley Park, NSW, Plant 21 has used landfill gas since 2013, and Plant 23 since 2014. The combustion of landfill gas emits 10 times less carbon

than natural gas. Horsley Park used 220,073 GJ of landfill gas throughout the year, offsetting approximately 9925 tonnes of carbon, equivalent to the energy used in over 1,700 homes for one year<sup>3</sup>.

Sawdust is the main fuel source at Austral Bricks Longford, Tas. The site used 13,521 tonnes or 140,626 GJ of sawdust throughout the year. While the use of sawdust is less energy efficient than natural gas, its renewable component means that net carbon emissions from the combustion of sawdust is 40 times lower than natural gas, offsetting 7,077 tonnes of carbon, equivalent to removing approximately 2,300 cars from the road each year<sup>4</sup>.

We continue to investigate ways to increase our biofuels content. Austral Bricks has partnered with Western Sydney University, Macquarie University and Global renewables to repurpose recovered organic materials as alternative raw materials for brick production. Pending EPA approval, composted municipal organic waste will be used as recycled content within our bricks, reducing waste sent to landfills and associated greenhouse gas emissions. The project will reduce fuel and raw materials used in brick production and produces a durable, economically viable, and environmentally friendly brick product. This

project has received a grant under the NSW Circular Challenge Funding Scheme.

### Exploring additional biofuels opportunities

Brickworks is assessing the feasibility of a renewable bioenergy facility to be located next to a brick plant in Horsley Park NSW. We have partnered with Delorean Corporation to undertake a comprehensive feasibility assessment on the development of an anaerobic digestion facility that converts organic waste into renewable gas. Stage 1 of the feasibility study has shown that, if developed, the facility has the potential to produce approximately 210,000 GJ p.a. of renewable gas. If the project receives approval to proceed, the facility could reduce Brickworks scope 1 emissions by approximately 10,794 tCO<sub>2</sub> p.a. through the displacement of natural gas. Renewable bioenergy facilities provide a pathway to begin the transition to decarbonising natural gas consumption.

As an industry leader using over 12% bioenergy in manufacturing in Australia, we understand the critical role renewable bioenergy can have in producing low-carbon products. For this reason, Brickworks has also launched the Bioenergy Innovation Challenge, to explore even more bioenergy solutions by connecting with over 100,000 innovators, 600 Universities across 120 countries.

## Bioenergy Innovation Challenge

Driving the supply of renewable bioenergy capacity

Bioenergy has so much potential for Australia and US manufacturing. Did you know that the Australian Renewable Energy Agency estimates bioenergy could make up 33% of industrial heat processing requirements, (244 PJ of energy worth), or through renewable gas grid injection?

Driving the supply of renewable bioenergy generation will provide greener options for manufacturing, and provide circular economy benefits for waste sources.

As an industry leader in using over 12% bioenergy in manufacturing, we understand the critical role renewable bioenergy can have in producing low carbon products.

### Brickworks Bioenergy Challenge Elements

Element Type	Details
Partnership	Recently we were also pleased to announce a collaboration agreement with Delorean, whereby we will work together to investigate the feasibility of developing green synthetic natural gas facilities at our brick plants. If successful, each facility has the potential to displace up to 100,000 gigajoules per annum of fossil fuel gas with renewable biomethane.
Innovation Challenge	Supporting the Global Innovation Marketplace LEO. Connecting with over 100,000 innovators, 600 Universities across 120 countries. Sourcing innovative ways to incorporate bioenergy into the manufacture of bricks, masonry, precast and roof tiles.
Case Studies	Sharing case studies of our successful bioenergy projects, resulting in 12% of our energy being sourced from bioenergy.
Specifying bioenergy and circular economy sources	Sharing details on the type of bioenergy and circular economy reuse opportunities at Brickworks with potential sources.

<sup>3</sup> Based on 125GJ per Household  
<https://www.abs.gov.au/statistics/industry/energy/energy-account-australia/latest-release>

<sup>4</sup> Assuming a less fuel efficient car that emits around 3 tCO<sub>2</sub>e per year.  
<https://www.energy.gov.au/households/transport>

## Renewables Electricity and Gas Purchasing Strategy

### Renewable Electricity

Our Rockhampton and Sydney Oakdale masonry sites now have solar generation capacity. 55.5kW of solar was installed and commissioned at our Rockhampton plant in February 2022, reducing our scope 2 emissions for this site by 14%. The 113kW and 240kW solar systems for Oakdale were installed prior to commencing manufacturing, reducing our scope 2 emissions by 16% from the outset.

In Victoria, we are now progressing with surveys and preparation for 1.7MW solar power generation capacity at our major Wollert brick facility.

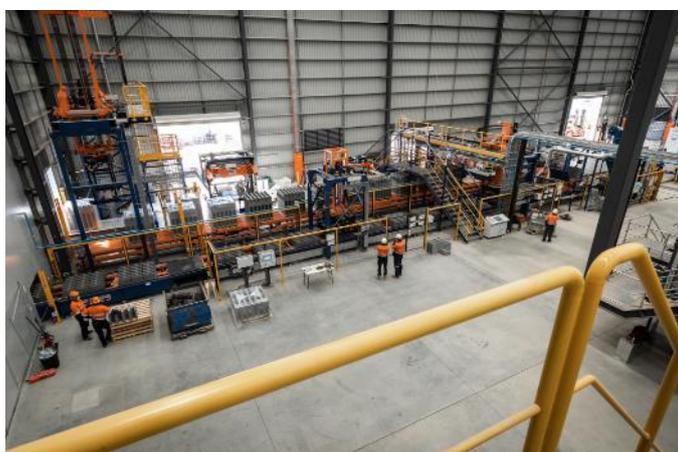


Image: Oakdale



Image: Rockhampton

### Hydrogen

Hydrogen is expected to play a key role in the decarbonisation of sectors, such as the replacement of natural gas. Renewable hydrogen, produced through electrolysis from water using renewable electricity, can provide industry with emission-free energy. As a large gas user, this fuel may help Brickworks to meet its greenhouse gas emissions reduction targets.

Brickworks is investing in the transition to a hydrogen fuel economy through desktop and lab-scale trials, in partnership with Murdoch University. In FY22 a preliminary desktop study was completed by Murdoch University to understand the effect of and ability to use hydrogen in the brickmaking process. This study identified plant infrastructure considerations under multiple scenarios for hydrogen use.

#### Brickworks Partners with AGL in Hydrogen Study

Brickworks has joined with AGL Energy and other South Australian and major natural gas buyers such to examine a potential green hydrogen plant in South Australia that could serve domestic and export markets with clean fuel. The study is one of several early-stage proposals AGL Energy are completing for large-scale green hydrogen production around Australia.

The feasibility study, being carried out by independent advisory firm GHD Advisory, will map key operational and commercial plans for the project, outline the development of a production timeline and is expected to be completed by the end of the year.

*AGL ASX announcement 17 June 2022*



**CARBON**  
Invest in the transition to the hydrogen fuel economy

# Resources

## Waste and Water

### Waste

Brickworks is progressing towards a circular economy by closing the loop, thus minimising production waste and reusing and recovering resources in the value chain. Opportunities for the reuse of waste are a key focus area for the brick and concrete businesses to decrease material costs, increase resource efficiency and drive a circular economy. Brickworks' 2025 target is for a year-on-year increase in recycled material use.



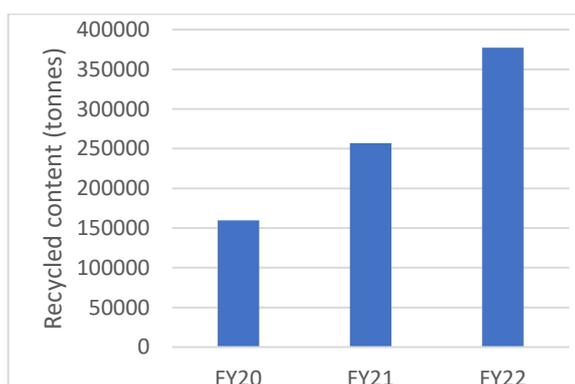
**CIRCULAR ECONOMY**  
Year on year increase in recycled material use

Measurement of recycled material use requires careful quantification of received materials against standardised definitions and procedures. During FY22, continuous improvement in our measurement procedures have enabled Brickworks to further quantify recycled content use.

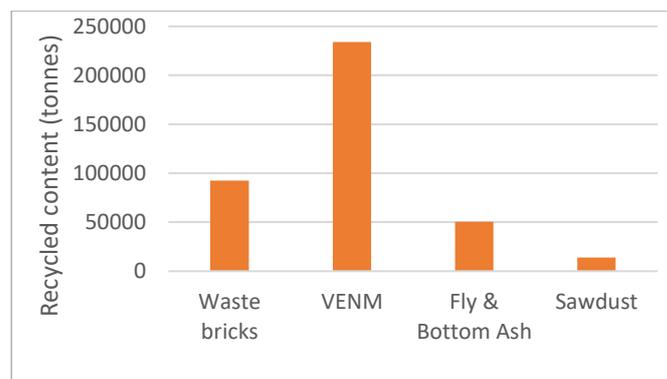
### Recycled Content

Measured recycled content of Australian building products was 47% higher than the previous year. A total of 377,286 tonnes of recycled material was used in place of raw materials, such as clay and cement. This is approximately 17% of Australian building products total production by weight. A further 13,899 tonnes of sawdust was used in place of natural gas.

#### Recycled content of Building Products Australia



#### Recycled materials used in FY22 Building Products Australia



### Virgin Excavated Natural Materials

During FY22, 234,206 tonnes of recycled clay material from waste from construction projects also known as Virgin Excavated Natural Materials (VENM) was recycled into bricks, 63% increase on the previous year's 143,469 tonnes used. This equates to approximately 32% of the clay requirements at both Rochedale, Qld and Horsley Park, NSW.

### Sawdust

Natural gas is substituted with sawdust, a waste product sourced from multiple Tasmanian sawmills. Austral Bricks Longford, TAS uses sawdust as the main kiln fuel. In FY22, 13,521 tonnes of sawdust were used, approximately 83% of the site's kiln fuel requirements and a 2.8% increase on the previous year.

#### Reuse of tunnel material in Brisbane

In FY22, Brisbane's \$5.4 billion Cross-River Rail project were looking for ways to re-use the underground waste materials that were created during the extensive tunnel project. Our Rochedale facility in Queensland were able to help and reused this waste to create bricks.

It is with great pride that we work towards the reduction of waste material in our environment and more sustainable use of the earth's resources.



Image: Rochdale

### Fly Ash and Bottom Ash

Fly ash and bottom ash are used as cement substitutes at five of Brickworks cement product facilities. 50,595 tonnes of ash product was used in FY22, a 45% increase on the previous year. This is the result of the new Austral Masonry Plant opening at Oakdale, NSW.

Further investigations are underway for ash products derived from waste to energy incineration.

#### Working towards Lightweight Lower Carbon Masonry Products

We are working with our key customers to increase sustainable products provided. Light weight and lower carbon masonry products are a considerable focus for Brickworks. These products will be verified through an Environmental Product Disclosure (EPD) process that will demonstrate lower carbon.

### Grog

Grog is a term used in clay brickmaking to describe fired and unfired production waste. 100% of grog produced at our Australian and North American brick factories is returned to the raw material mix and used as a substitute for quarried material. Grog reuse consisted of 92,485 tonnes in the product mix in Australia during FY22.

### Waste Management

Brickworks is committed to minimising the amount of waste sent to landfill from its manufacturing facilities. In addition to the reuse of production waste, sites are provided with recycling bins to enable source

separation of recyclable wastes, including metals, cardboard, oil, concrete, batteries, ink cartridges, paper and comingled waste streams.

#### Capital Battens

Capital Battens manufactures 25-30,000 m<sup>3</sup> of timber battens which are used in approximately 26,000 houses in Australia annually. All by-products created during manufacturing process are sold to surrounding industries. The bark is used to make tanbark and garden mulch. Sawdust provides a clean and sanitary material for horse stable bedding. Woodchip and other mixed by-product is used as raw materials and biofuels at a local papermaking factory.



#### North America's recycled content

Glen-Gery provides a range of products with recycled content. Adel, Hanley, Iberia, Marseilles, Landmark and Sergeant Bluff plants all produce products with recycled content. Recycled content reduces the amount of material we have to extract from our quarries.



Photo: Adel, Iowa

## Hazardous Waste

Brickworks is committed to ensuring the safe handling and disposal of hazardous waste. Brickworks activities generate minimal hazardous waste, such as batteries, globes, hydrocarbons, used cylinders and small quantities of spent chemicals. Sites are provided with the appropriate facilities and services to ensure that hazardous waste is disposed of in accordance with waste legislation.

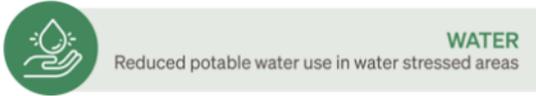
Hazardous waste management is captured within the Environmental Management System, with waste management requirements included in the monthly environmental inspection checklist for each operational site.

# Water

Fresh water is a limited and often restricted resource across all states of Australia and North America and is critical to Brickworks’ production process.

## Approach

Brickworks’ 2025 target is to reduce potable water usage in water stressed areas.



Water resource management is most important in water stressed areas. The World Resources Institute (WRI) ranks water stress, drought risk and riverine flood risk in the Aqueduct Water Risk Atlas. Brickworks' Australian and North American factory and quarry locations are mapped onto the WRI Aqueduct Water Risk Atlas.

The majority of our Australian and North American sites are located in low to medium-low risk areas, with only one operation located in the high water-risk area. Water efficiency at this one hard rock quarry will be a key focus for the water efficiency program.

Water risk area	L	L-M	M-H	H	EH
Risk score	0-1	1-2	2-3	3-4	4-5
Sites in area	40%	50%	9%	1%	0%

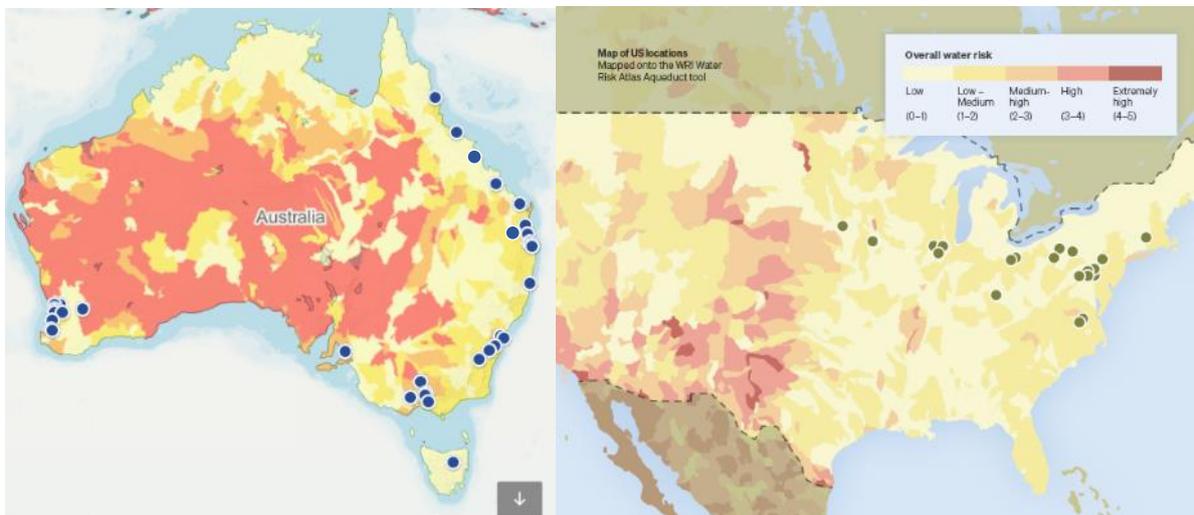
Potable water use is monitored and reported to management monthly through the national operations reporting system. The use of non-potable water is prioritised at Brickworks quarrying and manufacturing facilities, with runoff and bore water the major water supplies. Recycled water, including runoff, is captured and reused on-site for activities such as dust suppression. Mains (potable) water is used when other options are unavailable. Potable water savings are driven through Brickworks’ Environmental Water Program, which identifies and tracks key projects through site specific management plans.

## Performance

Mains water usage is collected on a monthly basis and reported quarterly to the management team.

Projects to reduce potable mains water identified last year are now in potable water use savings during FY22. Water reduction initiatives included rainwater tank installations for our medium-high risk sites, and water meter installation and monitoring to detect leaks.

**Map of Australian and North American locations overlaid onto the WRI Water Risk Atlas Aqueduct tool**



**Rainwater tanks**

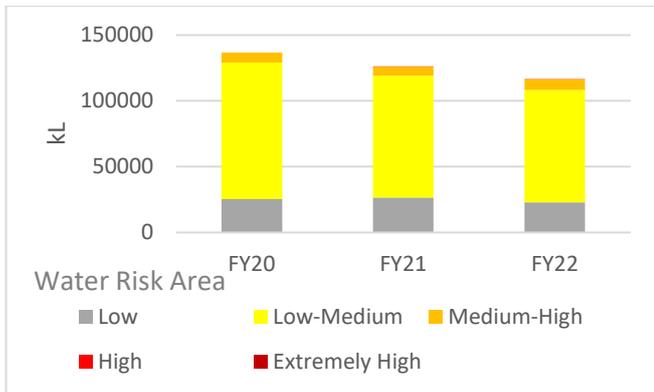
Austral Bricks Golden Grove, SA plant is located within the WRI medium-high water risk area. The site identified excess quarry sump water as a non-potable water source and has purchased rainwater tanks. The project is expected to show a significant reduction in mains water usage in FY23.

**Innovative alternative to steam**

Switching steam for an accelerant at our Austral Masonry Cairns site, Qld has allowed us to decommission the site’s boiler, realising an over 50% reduction in water usage and a 4200kL water in FY22 saving compared to FY21.

During FY22, 117 ML of potable mains water use was recorded at sites in Australia, a 7.5% decrease compared to the previous year and a 15% decrease since 2020.

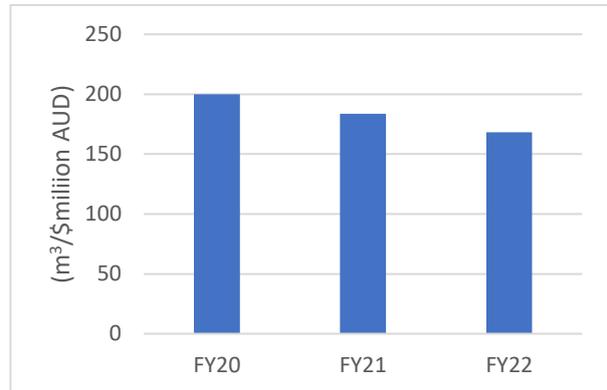
**Total Potable Water Use in Australia by Water Risk Area**



Brickworks’ only site located within a high-risk water area is located in the wheatbelt region of Western Australia. During FY22, the site used 140kL of potable water, representing 0.12% of the total potable water use. Potable water use increased from FY21 due to an increase in production however kL per tonne extracted has decreased by 22%. An investigation into alternative water sources such as bores will be completed.

Total potable water intensity is measured for the Australian operations to enable year on year comparison. Potable water use intensity for FY22 was 168kL<sup>5</sup> of potable water per million dollars of revenue (AUD) which is a reduction of 8% from last year and 16% decrease from FY20.

**Total potable water use intensity by revenue – Australia**



<sup>5</sup> Equivalent to 233 m<sup>3</sup> / \$million US

# Biodiversity and Progressive

# Rehabilitation

Brickworks recognises that its activities have an impact on the natural environment. Brickworks is committed to meeting applicable regulations and development conditions in place to protect and manage biodiversity and habitat.

Biodiversity is included within Brickworks responsibility for environmental protection as outlined in our environment policy. This policy is located on the Brickworks website. Although biodiversity is not considered a material issue or risk, biodiversity impacts are identified on a site-by-site basis.

Through our Safety Health and Environment Management system (aligned to ISO14001:2014) we identify environmental aspects and impacts at all operational sites and conduct regular monitoring and management activities. Where clearing is permitted and necessary, we follow detailed clearing procedures and undertake progressive rehabilitation to approved performance criteria.

Progressive rehabilitation is a key strategy for minimising environmental risk, end-of-life closure costs and achieving increased efficiency by reducing double handling of rehabilitation materials.

The area of progressive rehabilitation completed in Australia in FY22 was 50,173m<sup>2</sup>. Progressive rehabilitation is driven across the business by adding available land reviews to annual rehabilitation planning.

End of life rehabilitation in the form of recontouring and redevelopment was also completed over an area of 220,000 m<sup>2</sup> at the Horsley Park Plant 23 quarry in New South Wales to create the new Oakdale East industrial site.

We have significant experience in rehabilitating our sites. Many of our quarries are located in centralised urban areas and are often transferred into the Property Trust Joint Venture with Goodman at end of life for final rehabilitation into industrial estates. Where possible, we aim to enhance the local environment through initiatives such as land rehabilitation, water sensitive

urban design, green corridors and using native species in landscaping.



**REHABILITATION**  
Drive progressive rehabilitation

## Rehabilitation success improves storm water management

Rehabilitation of areas within our New Berrima Quarry in NSW has resulted in avoiding the need for additional water treatment of stormwater run off. This was due to the quick establishment of thick grass coverage avoiding costly stormwater controls. The resource regulator has commended Brickworks on such a successful rehabilitation result in such a short period of time.



Haul road before



Haul road after (sealed and spray grassed — thick grass now on verges)



Dam #5 untreated — During construction



Dam #5 untreated — After construction and rehabilitation. Water quality is acceptable for discharge



Central bund before



Central bund after spray grassing

### **Understanding emerging biodiversity frameworks**

We are working with our consultant partners, raising awareness and understanding of emerging nature-related risk and opportunity management and disclosure frameworks.

### **Our expertise in industrial rehabilitation**

Rochedale Motorway estate is a great example of the Property Trust Joint Venture with Goodman in action.

In FY22 there was further development at the Rochedale Motorway Estate, previously one of our clay quarries. A new 16,870 square metre purpose-built service centre facility for CHEP, a global leader in packaging solutions and approximately 10,000 square metre facility has now opened with Woolworths' new Customer Fulfilment Centre.

Designed with environmental performance in mind, the CHEP facility is earmarked to be Goodman's most sustainable development in Queensland. Environmental features include a 450kw solar system, which is anticipated to generate approximately 700MWh per annum. In addition, the property will have LED lighting in the office and warehouse, rainwater reticulation, fully integrated wastewater treatment plant, solar hot water, and movement sensor lighting.

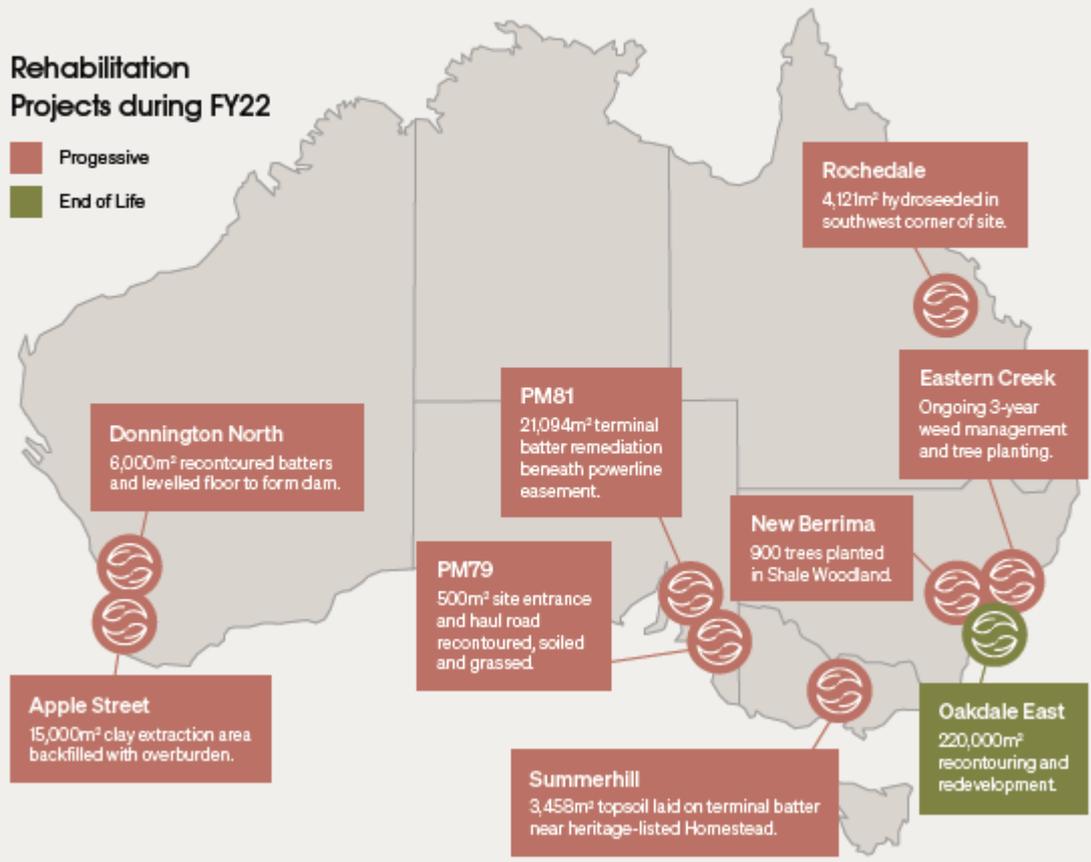
The Woolworths CFC also includes smart metering to help monitor and reduce energy consumption. It features 850 solar panels that will provide approximately 20% of the site's total annual electricity consumption.



Image: Rochedale Estate

## Rehabilitation Projects during FY22

- Progressive
- End of Life





# Our people and community

Sustaining a strong culture driven by diverse and talented people is critical to our long-term success

## Our Global

# Workforce

### COVID-19 Response

Brickworks has monitored the coronavirus disease (COVID-19) since January 2020, acting with caution and following stringent health advice from company doctors and government health orders. Brickworks implemented a COVID-19 business continuity plan to minimise the chance of COVID-19 spreading throughout the business. A set of regularly updated COVID-19 Guidelines are published on the Brickworks website, for both customers and employees.

The health and wellbeing of employees and customers is of the upmost importance to the company. Brickworks has been prepared since 2014, with fully equipped biological kits in place at all operational sites, enabling the company to act swiftly to manage this pandemic threat.

Remote working in response to COVID-19 has been effective across the business. Work from home risk assessments were undertaken to ensure the safety of remote working employees. A survey was sent to employees following the remote working experience, with positive feedback. Business planning and scenario modelling tools have been developed to support decision making.

### Further COVID-19 Response Australia

During FY22, implementation of COVID-19 responses continued to develop to ensure the continued health and well-being of employees and customers.

Recognising the important role of vaccinations, Brickworks implemented Vaccination Leave provisions, to allow employees time for obtaining vaccinations. Rapid Antigen Testing was implemented at all Brickworks sites providing an additional level of worker safety.

During FY22, positive COVID-19 cases were identified and controlled on Australian Brickworks sites.

### Further COVID-19 Response North America

In North America, COVID-19 has affected staff, with 1037 staff absences recording 402 positive employee COVID-19 cases since the start of the pandemic. We continue to complete daily temperature checks and remain current with Centers for Disease Control and Prevention guidelines for isolation and quarantine.

### Our Workplace Australia and US

Key Employment Data	Australia	US
Total Workforce	1187	932
Total female breakdown	25% (up from 23% in FY21)**	22% (up from 20% in FY21)
Female Senior Executives	26.5% (down from 28% in FY21)**	21%
Average age of employees	43.5	45.9
Employees aged 50 and over	35%	42.3%
Average length of service	9.4 years	11.3 years

Workplace Profile	Aus. Total**	Aus. Female*,**	US Total	US Female*
Management	21%	23%	21%	27%
Professionals	7%	37%	3%	31%
Tech/Trades	17%	6%	1%	0%
Administration	14%	75%	16%	66%
Sales	9%	52%	6%	18%
Operators/ Labourers	34%	3%	52%	8%

\*Note: Female % is a fraction of each profile type.

\*\* from WGEA data 2022

### Culture and Engagement

At Brickworks, we continue to focus on the culture of our people with the “We are Brickworks” Values and behaviours. During FY22, our values were refreshed with new employees from a variety of backgrounds and divisions. We introduced a new value of “Inclusive – connected by diversity” and North America launched

the 'WE ARE BRICKWORKS' Values and Behaviors across our sites in the United States.

Fostering our culture by embracing our uniqueness, and creating an environment where everyone feels welcomed, heard and respected, is important to us. In turn, our globally inclusive culture inspires and empowers all of us to unite, belong and grow.

Inclusion cultivates and preserves the bond between our colleagues, customers and partners and recognises the strength in our differences. We believe diversity of thought provides us with the opportunity to transform and accelerate change within our company, industry and the communities we serve.

### Employee Retention

Employee retention continues to be a strong focus across the company. A tough labour market has seen an increase in demand in talent across all industries. Our renewed focus on our employee value proposition has inspired us to commence implementation of an employee engagement survey platform to promote an open feedback culture.

Real time survey results will be available for managers to view, and respond to individual comments. Results are obtained across a number of key metrics to holistically measure our employees' engagement.

Employee Turnover	Aus. FY21	Aus. FY22*	North America FY21	North America FY22*
Voluntary	13%	16%	32%	33.5%
Total	17%	18%	42%	46%

Brickworks Australia FY22 employee voluntary turnover (resignations and retirement) was 16%, with a total turnover of 18%. Brickworks monitors employee retention numbers and exit survey data is regularly reviewed to ensure our employee value proposition is aligned with the feedback from our employees.

Brickworks North America employee voluntary turnover was 33.5%, with a total turnover of 46%. The FY22 employee turnover increase was driven by two factors. In the first quarter, labor market competition drove

higher than normal voluntary turnover in employees with less than one month of hire and one year of hire. In addition, the plant closures of York and Caledonia were contributing factors to the increase in overall turnover.

The North American business has developed a strategy to address retention concerns in FY23. The strategy includes: market competitive compensation and incentives adjustments; financial support for education in the skilled trades; flexible work schedules where appropriate; and employee culture and engagement survey launch.

### Talent Pipelines

At Brickworks, we aim to provide an employee experience that aids staff growth and development. Brickworks is committed to investing in the talent of our people, through formalised graduate, apprentice, cadetships, mentoring and succession planning programs.

North America launched its second cohort of the Graduate Program, The Brew Crew, designed to encourage company awareness, support professional and personal skill development, and promote organisational engagement. The first cohort entered the second phase of the program, Brew Masters, to continue their professional development with the company. The Brew Crew and Brew Masters consist of emerging professionals, under the age of 25, who are provided networking, mentoring, and learning opportunities focused on the business and their careers.

Brickworks has continued to develop its talent pipeline entry points by launching the Cadet Program. This is a structured pathway which provides foundational level industry experience for those undertaking their undergraduate degree. Those who are identified as having leadership potential can apply to the Graduate Program upon completion of their studies.

Brickworks has embedded Mentoring Programs since 2018 and FY21 saw the successful launch of an internally managed program. The program allows participants to develop mentoring skills and continues Brickworks' commitment to developing a culture of mentorship and growth.

### Driving a Learning Culture

Brickworks is committed to creating a strong Learning Culture. All managers and employees are encouraged to undertake two hours of learning every week and further their professional development by accessing our study assistance program. Structured development programs are made accessible to meet business and individual learning requirements.

### Diversity and Inclusion

Brickworks is committed to creating a diverse and inclusive culture, where all employees are treated with dignity and respect, valued for their contributions and diverse backgrounds, experiences and perspectives. By valuing diversity and inclusion, Brickworks will:

- Deliver improved customer service, business performance and strengthen corporate reputation
- Gain competitive advantage by understanding and reflecting customers and local communities
- Engage employees by providing an open, fair and diverse work environment.

Brickworks is committed to ensuring equal opportunities, eliminating all forms of discrimination, harassment, bullying and victimisation in the workplace. A revised Diversity and Equal Opportunity Policy was launched in FY21 with a stronger focus on sexual harassment. Training and education is provided on the policy. The board is notified of complaints and non-compliances against the policy including incidence of sexist behaviour.

### Advancing our inclusive culture

Brickworks recognises that sustaining a strong culture, driven by the diversity and inclusion of our people, is critical to our long-term success. For that reason, the Diversity Council, led by the Managing Director, sets our strategic approach and provides oversight of our Diversity targets towards our stretch target of 35% female senior executives in Australia by 2025.

Unfortunately, in FY22 we saw a decrease in female senior executive representation from 28.1% to 26.5%,

and 21% in North America, which was influenced in part by interruptions relating to the COVID pandemic. Our continued focus on attracting more women into the business saw an increase of 2% in Australia and North America, building a critical future pipeline.

Our Diversity and Inclusion Strategy consists of 6 pillars:

- 1) Create a more gender-balanced workforce at all levels
- 2) Engage and empower everyone in the business
- 3) Increase opportunities for flexible working
- 4) Increase leader accountability for diversity and inclusion
- 5) Improve leader capability to address inappropriate behaviours and encourage psychological safety
- 6) Support hiring and retention of under-represented groups.

### International Women's Day 2022

Brickworks celebrated International Women's Day on 8<sup>th</sup> March with guest speaker Lisa McInnes-Smith. Lisa is in the top echelon of corporate speakers and has presented to more than one million people across twenty-two countries and authored seven bestselling books. Brickworks honoured this year's theme of #BreakTheBias by encouraging participation from all employees, men and women, in support of our newest value, Inclusive. Lisa drew from her own personal experience and delivered universal take away messages for all to model in day-to-day life, both at work and in the home. A diverse group of management and staff across the organisation were invited to reflect on what International Women's Day meant to them.



Photos: international women's day

### Collective Bargaining Agreements (CBAs)

A total of 74% of wages employees in Australia are covered by a collective bargaining agreement and 35% of agreements are union based. There has been a shift over the last few years of employees seeking non-union agreements with the Company.

Employees at the Brickworks North America Sergeant Bluff, IA plant voted to decertify the union reducing the number of union plants to 5. The number of non-union

plants remained at 4 due to the closure of the Caledonia plant. During FY22, one collective bargaining agreement was successfully negotiated and executed at the Mid-Atlantic Plant.

With the purchase of the IBC/Southfield distribution business, North America assumed 6 CBA's, covering 9 yard locations, consisting of 40 truck drivers and yard workers. During FY22, two CBAs were successfully negotiated and executed at the Naperville and Chicago, IL locations.

There are 486 labour and distribution employees in the North American manufacturing plants and distribution yards. Of those, 62% are union based employees covered by collective bargaining agreements. The remaining employees are not covered by any type of agreement.

Brickworks Equal Opportunity Policy prevents unlawful discrimination, including a person's industrial activity, union membership and political beliefs. Brickworks supports and advocates for Freedom of Association.

### Percentage of Employees Covered by Collective Bargaining Agreements

	Australia <sup>1</sup>	North America <sup>2</sup>
Collective Bargaining Agreement	74 %	62%
No Agreement	26 %	38%

### Composition of Collective Bargaining Agreements

Union Based	35%	100%
Non-Union Based	65%	0%

<sup>1</sup> Wages Employees Australia

<sup>2</sup> Labour / Distribution Employees North America

### Compliance

A number of Fair Work conciliations have resulted in settlements, with no fines or non-monetary sanctions received in FY22.

# Health

## and Safety

*There is no task that we undertake that is so important that we can't take the time to find a safe way to do it.*

### Strategy

Brickworks is committed to minimising the risks to health and safety of its employees, contractors, and the general public. Capable Safety Leadership plays a key role in achieving this at Brickworks, fostering a robust safety culture and a framework for identifying and effectively managing health and safety risks. Continual improvement in health and safety is underpinned by Brickworks Health and Safety Management System, which clearly defines roles, responsibilities, accountabilities, and targets to achieve its health and safety policy commitment. This management system is mature and aligned to ISO 45001.

The welfare of people on Brickworks sites continues to be of paramount importance. Brickworks health and safety strategy encompasses a number of activities which include; assigned safety training for all employees and company contractors, diligently controlled contractor management, with mandatory permit to work, pre-screening and induction processes, Random Alcohol drug and other substance fit for work testing, employee psychosocial health program supported by qualified Mental health first aiders, emergency preparedness procedures reducing safety risks for unplanned events, the presence of safety lead indicator program building safety capacity within Brickworks and a scheduled external safety system audit program to validate the effective application of these safety activities within the business.

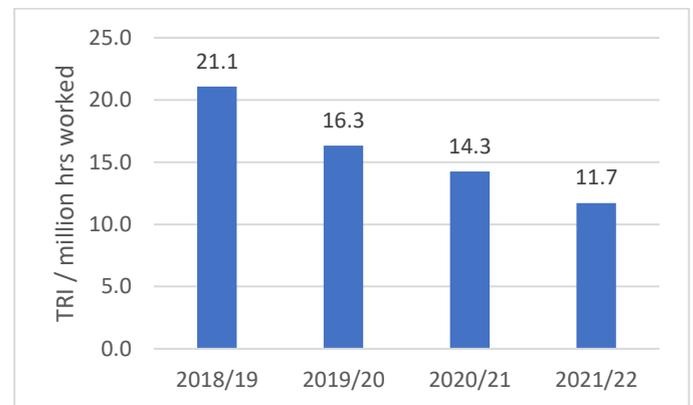
Our 2025 strategy target is for continued reductions in injury rates for company employees, contractors, and others.

**SAFETY**  
Continued reductions in injury rates



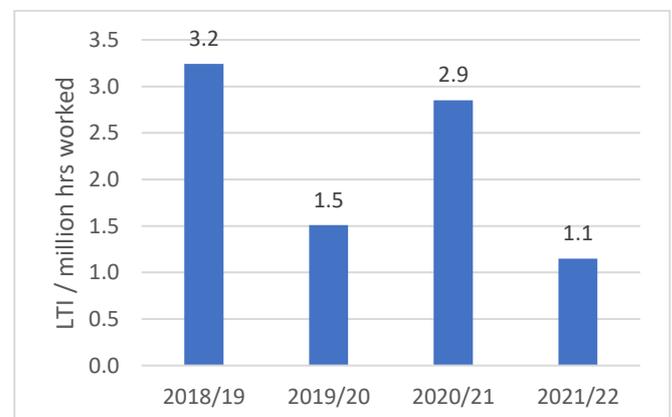
### Performance (Group)

Brickworks consolidated total recordable injury frequency rate has improved year on year since the acquisition of the North American operation in December 2018. Total Recordable Injury Frequency Rate (Brickworks)



The total recordable injury frequency rate decreased to 11.7 in FY22 from 14.3 the previous year. This improvement is largely attributable to the implementation of successful Australian health and safety technology and programs into the North American operations.

### Lost Time Injury Frequency Rate (Brickworks)



The lost time injury frequency rate also decreased to 1.1 in FY22 from 2.9 the previous year.

Currently contractors are excluded from reported injury frequency rates. Contractor injury frequency rates are in development with a focus on quality and accurate data.

### Performance (Australia)

The lost time injury frequency rate for Australian operations FY22 remained in line with the previous year's results. The LTIFR was 0.4. The total recordable injury frequency rate TRIFR was 11.1. This increased marginally from FY21 results.

Brickworks continues with its presence of safety strategy, using lead indicators, targets, and management accountability to drive improved health and safety outcomes. There were over 20,189 eLearning Safety courses completed by company employees and contractors, 474 random alcohol drugs and other substance tests, maintained 197 qualified mental health first aiders and 1,889 workplace inspections undertaken in FY22. Brickworks framework for identifying and effectively managing health and safety risks controlled over 2,126 identified hazards FY22. In addition to this Brickworks has a near miss reporting culture, having a near miss frequency rate NMFR of 20.05 for FY22.

Injury severity for recordable injuries is now categorised into three classes for Brickworks workers; Class 1 being an injury that is permanently life altering, Class 2 temporarily life altering, Class 3 an injury that is not life altering. For Brickworks employees in FY22, there were no class 1 injuries, 23 percent of the total recordable injuries were class 2 with 77 percent being recordable injuries that were not life altering.

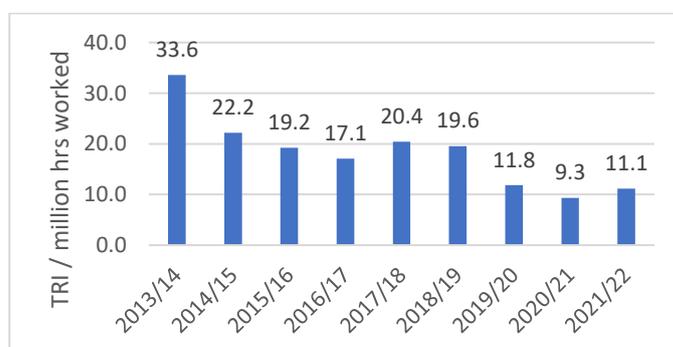
### Respirable Dust and Silica

Brickworks has strict controls to manage the risk of respirable dusts and fibres. Worker health monitoring exceeds government regulations. A rigorous program of static and worker exposure monitoring is ongoing at all Brickworks sites, conducted by two qualified in-house occupational hygienists. The focus on silica dust controls includes the purchase and use of specialised state of the art respirator fit testing equipment to ensure effective worker respiratory protection.

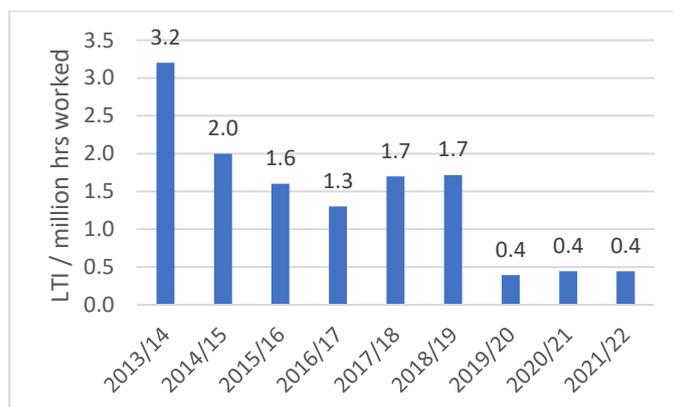
### Key Highlights FY2022

- No employee, contractor or bystander fatalities have been recorded over the last 3 years.
- Executive and middle management Health and Safety training and legal briefings
- Computerisation and reporting of health and safety management system Data in Australian and North American operations
- Brickworks building a core competency – Silica and hygiene management
- The growth of the presence of safety program driving safety capacity in Brickworks through visible lead safety indicators

Total Recordable Injury Frequency Rate (Australia)



Lost Time Injury Frequency Rate (Australia)



### WHS Cloud Based Software

Brickworks' SHEMS system has now been digitised to three-dimensional online modules, using a cloud based WHS software platform. This moves away from a paper based system that isolates data at a plant level and allows a centralised health and safety risk database.

This central database facilitates advanced data analytics and reporting capabilities, increases record collection including photo attachments and automates action management.

The system has allowed Brickworks to adopt new safety management strategies such as the presence of safety program and knowledge sharing between its Australian and North American operations.

### Presence of safety awards

Brickworks has introduced a new safety award that recognises the workplace with the best presence of safety indicators based on our online platform statistics. This encourages our teams to focus on improving their leading safety indicators such as hazard identification and control, safety device checks, safety training, safety contacts and workplace inspections.

### Performance (North America)

The lost time injury frequency rate for North America operations FY22 improved from the previous year's results. The LTIFR was 1.9. The total recordable injury frequency rate TRIFR was 12.3. This was a 69% and 41% improvement on FY21 rates, respectively.

Improvement in health and safety is a key requirement and Brickworks is focusing on integrating the success of the Australian health and safety management system into the North American business.

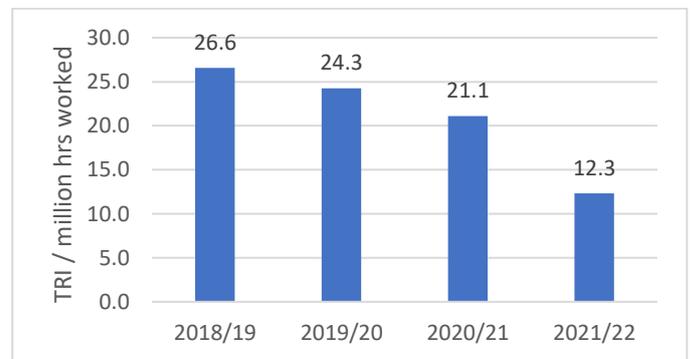
A clear safety roadmap has been established to rollout the management system, which is aligned to ISO 45001, and clearly defines roles, responsibilities, accountabilities and targets. The safety roadmap will support reduced injury rates. A team of people are focused on the integration and progress is reported monthly to the Brickworks Board of Directors.

Significant progress was achieved on the safety roadmap during FY22. The continued rollout of key elements of the Health and Safety Management System resulted in the implementation of the health and safety policy, performance reporting, communication boards, workplace safety committees and programs for health and safety auditing and assessment, orientation, toolbox talks and safety interactions.

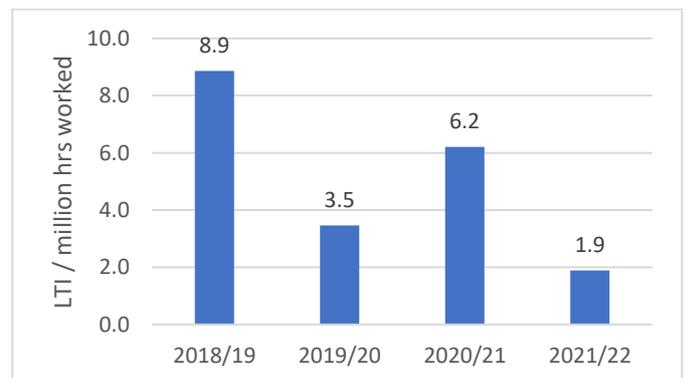
We continued a focus on training in FY22 with our Safety Skills E learning platform launched in February. This allows compliance training to be completed online with courses automatically assigned throughout the year. The new employee safety orientation program was also implemented outlining the required training for the first five days on the job including assigned mentors and weekly training checks. Safety leadership training was conducted in FY22 and trained 41 new leaders and provided refresher training for 27 leaders.

The Pennsylvania Department of Labour and Industry approved the Application for Certification of the Workplace Safety Committee effective 30 July 2022. The certification of the Pennsylvania safety committee entitles the Company to receive a 5% discount in workers' compensation rates for Pennsylvania factories.

### Total Recordable Injury Frequency Rate (North America)



### Lost Time Injury Frequency Rate (North America)



## Respirable Dust and Silica

We continue to use a third party contractor to conduct silica sampling and we continue to look into controls to reduce silica exposure.

### Key Highlights

- No employee or contractor fatalities recorded FY21
- Continued focus on harmonizing Brickworks Australia's successful Health and Safety management systems into North America to reduce injury rates
- Significant progress was achieved on the safety roadmap during FY22
- Launched eLearning platform
- Continued of management and employee behavioral safety training
- Commercial driver compliance

### OSHA Voluntary Protection Program

The Glen-Gery Shoemakersville Plant was approved for continued site-based participation in the Occupational Safety and Health Administration's (OSHA) VPP (Voluntary Protection Program) as a STAR participant after undergoing recertification in

July 2021. Participants of VPP serve as a role model for other employers, workers, and unions by operating excellent safety and health management programs. Achieving a level of worker protection that goes above and beyond compliance with government regulations is commendable. There are currently only 2,200 work sites in over 400 industries that participate in VPP. The Mid-Atlantic Plant is currently the only Brick Plant holding the VPP Star Status.

### Safe + Sound Week

All our North American locations participated in Safe + Sound Week the week of August 9, 2021. Safe + Sound Week is an OSHA nationwide event held each August that recognizes the successes of workplace health and safety programs and offers information and ideas on how to keep America's workers safe.

Employees participated in toolbox talks, hazard hunts, signed a commitment to working safely, were "caught working safely" and enjoyed a lunch at week's end where a presentation was given reviewing the 2020-2021 incident statistics as well as the path moving forward to reduce injuries.

# Community

# Engagement

Maintaining positive relationships with stakeholders is paramount to business success. Brickworks is embedded in local communities where the business operates, with many employees living in the local area. With a reliance on local goods, services, markets and natural resources, developing mutually beneficial relationships helps business and communities.

Brickworks has strong attendance at community forums, such as consultation for development applications and community group meetings. Company representatives maintain strong relationships with legislative and regulatory authorities and are involved with industry groups to promote issues, such as sustainable building products.

Brickworks has developed community engagement plans at relevant sites, identifying the socio-political context, community concerns and expectations and when and how to engage. In FY22, we completed 100 recorded community activities. Engagement activities included stakeholder meetings, site visits, investigating and resolving complaints, donations and other forms of support for community members and projects. These events help us strengthen and maintain community relationships.

## ENGAGEMENT

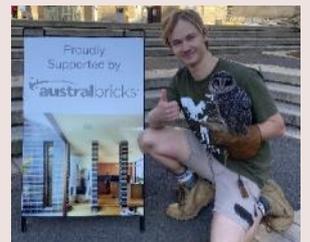
100 Community activities each year



### Wingecarribee Council Events – Earth Hour and Greener Footprint Fair

Council’s intention with these festivals is to bring together local businesses, environmental groups and residents to inspire a new generation of change and creating a better future.

NSW Austral Bricks sponsored Australian Wildlife Sanctuary, WIRES, Feathered Friends Free Flight Bird Sanctuary, and Search Dogs Sydney to attend the event and showcase animal care, local volunteer opportunities and wildlife support.



### New Berrima Quarry Revegetation Project

NSW Austral Bricks joined forces with Greening Australia and Southern Highlands Landcare Network in planting 800 trees along the Wingecarribee River to extend the wildlife corridors between habitats.



## Community

# Support

*Brickworks is committed to social responsibility in our communities, and we aim to make a valued contribution to our communities.*

### Children's Cancer Institute

Brickworks is a long-standing partner with the Children's Cancer Institute (CCI), the only independent medical research institute in Australia dedicated to research into the causes, cure and prevention of childhood cancer, so that they can reach their ultimate goal of one day curing every child of cancer.

Brickworks became partner of CCI in 2002 with the first pledge made towards the CCI Capital Appeal of \$70,000. To date, Brickworks' total partner value exceeds \$4.4 million dollars, comprising of direct and indirect sources of revenue, including corporate and staff donations, state fundraising, sponsorships and supporting CCI events.

The reporting period for the CCI partnership is the 2021 calendar year and the team at Brickworks raised \$282, 217, helping CCI move closer to achieving the vision of curing all children with cancer.

One of the highlights for early 2022, was the '86k for a Cure' campaign that had teams in every state and 55 staff focussing on their wellbeing and getting active by walking or running 86k in March and also fundraising an incredible \$50,044.

#### COMMUNITY SUPPORT

Supporting charities like Children's Cancer Institute



Brickworks staff offer their time and efforts to drive a range of fundraising activities for CCI, including the Diamond Ball, CEO Dare to Cure and Build for a Cure initiative. Fundraising efforts were significantly impacted, with most events cancelled due to COVID-19 restrictions. The Brickworks Charity Committee implemented the 2021 CCI Engagement Plan to enable suitable fundraising activities to occur during the COVID-19 pandemic.

### Staff Donations

The ongoing company support for CCI's work has been supplemented with staff donations, primarily through the Casual Friday program. In return for a payroll donation of \$2 per week, staff are issued with a 'Care for Cancer Kids' shirt to wear with their casual clothes on Fridays. 2021 saw the Brickworks staff contribute an amazing \$53, 232 through the Casual Friday program with Brickworks matching this doubling the donation and impact.





# Responsible Business

We continue to lead the way through design, style, innovation, sustainability and collaboration.

## Innovation and

# Sustainable Products

### Approach to Sustainable Products - Strategy and Targets

Brickworks is one of the world's leading manufacturers of quality building products. Our purpose has sustainability at our core – to create beautiful products that last forever. The built environment is the fabric of our cities and our lives and Brickworks' products form part of this ever-changing fabric. Our sustainability strategy focuses on the opportunity to make buildings and cities safe, resilient and sustainable. Our central sustainability commitment is to drive leading environmental building design through thermal design, lifecycle education and providing sustainable products.

#### Thermal design

We will provide research on passive solar thermal design, enabling reduced lifetime energy use.

#### Life cycle education

We will support design tools, guidance and information to incorporate life cycle thinking into building design.

#### Sustainable products

By 2025, we will double our volume of products sold in Australia that hold leading sustainable qualities.

### Sustainable Benefits of Brickworks Products

#### Sustainable Buildings are Resilient

At Brickworks, we see a strong future for bricks, masonry, roof tiles and precast. They are critical enablers of the achievement of the UN Sustainable Development Goal 11, "Make cities and human settlements inclusive, safe, resilient and sustainable" and, supported by continued demand, presents a strong opportunity to transition to a low-carbon, circular economy.



**Make cities and human settlements inclusive, safe, resilient and sustainable**

Our bricks and concrete products are manufactured to provide resilience. They are durable, fire-proof, contain thermal mass for energy efficient design, excellent

acoustic properties and no indoor air emissions (VOCs); and our clay bricks hold a 100-year guarantee.

### Thermal Design, Resilience and Life Cycle Education

#### THERMAL DESIGN

We will provide leading research on passive solar thermal design, enabling reduced lifetime energy use.

#### New Thermal Research

Brickworks provides leading research on thermal design enabling reduced lifetime energy use, including 'Best Building Products for Higher NatHERS Ratings' based on independent research from the University of Newcastle. This research highlights that bricks and brick veneer enable higher ratings in the National House Energy Rating Scheme (NatHERS) than lightweight, increasing GreenStar Home ratings.



# Supporting sustainable design

—  
Why customers select our carbon neutral bricks as a sustainable product.



*"We chose bricks as a sustainable product for thermal comfort."*



### **West Heidelberg Social Housing**

**Project:** Tarakan Street, West Heidelberg, VIC  
**Architect:** NH Architecture and Bird de la Coeur  
**Product:** Austral Bricks VIC Indulgence Praline

*"We chose bricks for their extremely high durability and very low maintenance."*



### **Naples Street by Edition Office**

**Project:** 17 Naples Street, Box Rd South, VIC  
**Architect:** Edition Office  
**Product:** 230x110x76mm Bowral Bricks Simmental Sliver  
*6-star rated house, which has been designed to make use of the site's access to northern sun*

*"We chose bricks for their organic texture and having access to a carbon neutral product."*



### **White Gum Valley House**

**Project:** MDC Residence  
**Architect:** MDC Architects  
**Product:** Face brick: Jamison, 13,000 units (ex NSW). Internals: Verticore 3,300 (ex Bellevue)  
*Featured on 'My Aussie Build' airing in 2021 on 9Life.*

## Our Sustainable Product Portfolio

### Meeting Customer Expectations

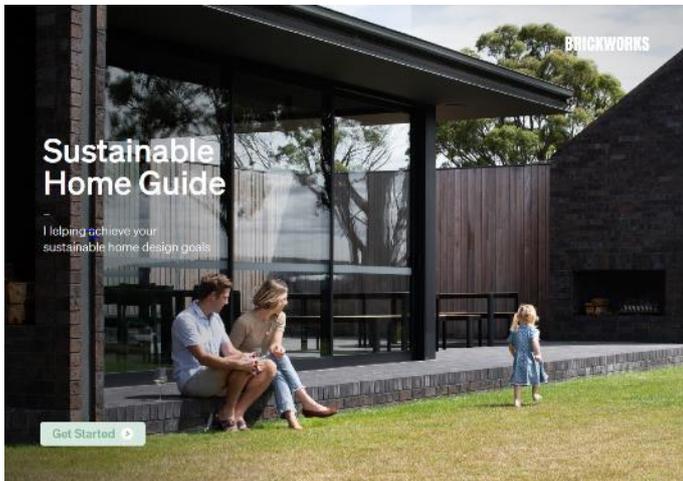
Today, the world is changing more rapidly than ever before. Architects, builders and customers are increasingly working to address the challenges associated with developing sustainable buildings, reusing waste products, reducing carbon emissions and developing smart, resilient cities.

Brickworks' product development process is customer driven, responding to consumer preferences. Our deep manufacturing capabilities and product knowledge combine with strong architects, builders and customer relationships to identify and optimise new product development.

Our focus is to provide a wide range of thermal mass product options with high recycled content and lower embodied carbon across roofing and walling products.

### Sustainable Product Portfolio

Our Sustainable Home Guide outlines how our products contribute to GreenStar Homes and LEED for Homes. Brickworks offers a range of products that help designers achieve sustainable design ratings, including National Home Energy Rating (NatHERS), Green Star Homes and LEED for Homes.



### Lower Carbon Products

Brickworks' commitment to manufacturing excellence means our products are produced in some of the world's leading energy efficient kilns. In addition, Brickworks continues to make incremental improvements to our clay bricks through ongoing research to increase the core percentage volume to lower the weight of bricks. Development of new core patterns will reduce the amount of clay, the energy

needed to fire the bricks, the fuel required for delivery and will make the bricks lighter for bricklayers.

The addition of reclaimed or recycled materials into our clay bricks has lowered the energy demand during manufacture, reduced product weight and minimised the amount of virgin raw materials required. Substitution of cementitious materials in our concrete products minimises the amount of virgin raw materials and embodied carbon.

### Lightweight Bricks – Increased Void

Increasing voids reduces raw material requirements and supports energy efficiency. During FY22 focus has continued on increased voids across a range of bricks and factories. Four of our brick factories have increased the voids in their bricks with maintained or improved product quality. We have another high volume plant that completed trials in FY22 and expect to progress to implementation in FY23.

### Working towards Lightweight Lower Carbon Masonry Products

We are working with our key customers to increase sustainable products provided. Light weight and lower carbon masonry products are a considerable focus for Brickworks. These products will be verified through an Environmental Product Declaration (EPD) process that will report and demonstrate lower carbon.



### Made with Renewables Masonry

In FY22, our Rockhampton and Sydney Oakdale masonry manufacturing sites had solar generation capacity installed. Solar Energy (Renewable Energy) makes up to 10-20% of the total energy used for

producing masonry products at Rockhampton, Qld and Oakdale, NSW sites. The products from these sites are new entrants to our Made with Renewable Energy Product Portfolio, a growing list of products using over 10% of renewable energy in manufacturing.

These sustainable products claims are being verified by the Good Environmental Choice Australia (GECA) ecolabel certification process, supporting quality product information. Moving forward, EPDs can be added to demonstrate the lower carbon impact of using renewable electricity.

#### Climate Active Carbon Neutral

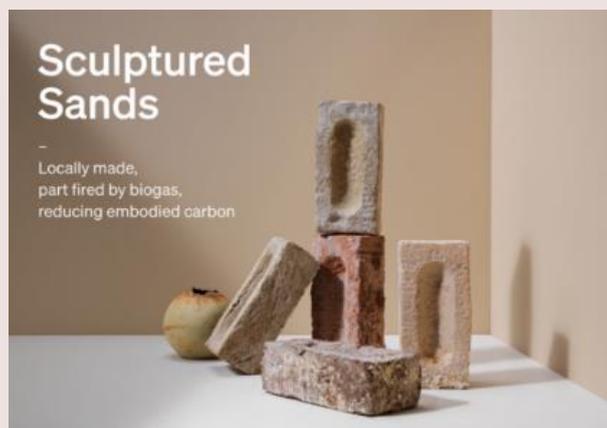
Brickworks is proud to be Australia's first brick and paver manufacturer to achieve important Climate Active Product Certifications.

The first certification was achieved in 2014, for Austral Bricks Longford in Tasmania. All of our bricks and pavers manufactured here are made sustainably using low emissions biofuel.

Brickworks has extended its carbon neutral offer, launching a second Climate Active product in August 2021. A carbon neutral calculator was developed with the assistance of Energetics to calculate life cycle emissions (cradle to grave) for all Brickworks Australian made clay bricks and pavers.

The new Climate Active certification enables any brick or paver made in Australia to be carbon neutral, providing a platform to meet the 2025 target to 'double the volume of products sold in Australia that hold leading sustainable qualities. The focus will be to reward leading environmental design with complementary carbon offsets for carbon neutral bricks on selected projects.

#### Sculptured Sands part fired by biogas



#### Providing Carbon Neutral for Masonry Products

An Environmental Product Declaration (EPD) has been completed for masonry produced at Gympie, Qld. We are investigating Climate Active certification for the Aura Block, manufactured with high recycled concrete and low cement at Gympie, Qld.

#### Providing Lower Carbon GreenStar Precast Panels

Austral Precast utilises material substitution to provide GreenStar rated concrete. Our NSW Precast plant has the ability to batch their own GreenStar mixes and our facility in Queensland has panels with 1-2 GreenStar ratings available.

#### Lower Carbon Roof Tile Research and Development

Bristle Roofing partnered with Swinburne University of Technology in Melbourne, Vic, to optimise the mix design of concrete roof tiles with a focus on reducing cement requirements.

#### Biogas and Biomass Fired Products

In addition to Brickworks' expanding range of carbon neutral bricks, we continue to develop lower embodied carbon products. During FY21 we expanded our Sculptured Sands range, producing multi-hued soft colours, part fired with biogas from our Horsley Park Plant 21 facility in NSW, reducing embodied carbon.

All products from our Longford plant, TAS including the Daniel Robertson range, are part fired by biomass with the kiln's main fuel source being sawdust. Many products from our Horsley Park Plant 23, NSW are part fired by biogas.

# Verifying our sustainable products

Products with clear environmental or social benefits, including lower embodied carbon, use of renewable energy, recycled content and health and well-being benefits.

## Lower Embodied Carbon Products

- ▶ Climate Active Carbon Neutral
- ▶ Use of renewable energy
- ▶ Low Carbon products

### Verified products:

**Climate Active Carbon Neutral**  
Longford  
Opt-In



**Made with Renewables**  
10–20% Solar  
Rockhampton Masonry  
Blocks and Pavers



### Verification to come:

**Sculptured Sands**  
Part fired with biogas



**Lower Carbon Masonry Blocks**  
Yatala and Caloundra



**Made with Renewables 10%+**  
Oakdale, Horsley Park Plant 1  
+ Future solar investigations



## Recycled Content Products

- ▶ Masonry with Flyash
- ▶ Masonry with Glass
- ▶ Greenstar Precast
- ▶ Recycled Bricks

### Verified products:

**Greenstar Precast Panels**



### Verification to come:

>20% recycled content bricks  
Rochedale and Horsley Park



## Health and Wellbeing Benefits

- Follow GBCA Responsible Product Framework

### Verified products:

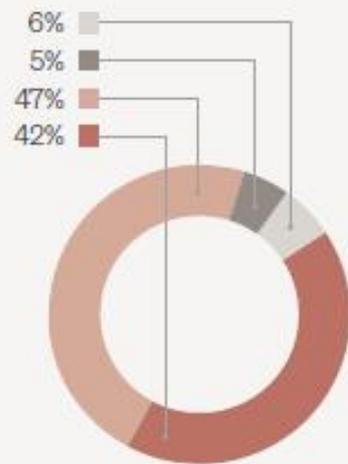
Bowral Bricks  
Nubrik Range  
Wollert

**Declare.**

## Sustainable Products Volume

*Australia*

Verified  
Submitted  
To be verified  
Next focus



## Recycled Content

Currently 17% of raw materials used to manufacture Brickworks Australia products are recycled, including recycled clay from Australian infrastructure projects, fly ash and by-products. To meet customer expectations, Brickworks is investigating sustainable product labels for products that contain a high percentage of recycled material.

### High recycled content Austral Bricks

Rochedale and Horsley Park, Plant 1 are understood to have recycled content over 20%. We are working towards validation and labelling of these products to show case this sustainable attribute. Our operations often assist various projects meet their own sustainability goals by recycling their waste. For example, our Rochedale plant recently assisted the Brisbane Cross River Rail project with recycling spoil from the tunnel construction project.

### North America's recycled content

Glen-Gery provides numerous products with recycled content. Adel, Hanley, Iberia, Marseilles, Landmark and Sergeant Bluff plants all produce products with recycled content. Recycled content within these products average around 18% across the Glen-Gery range.



Image: Hanley Products

## Good and Best Practice Products

### Declare

Declare is a platform to share and find healthy building products. Manufacturers voluntarily disclose product

information on easy-to-read Declare labels, which are accessible on a free database used by leading designers, real estate owners, and conscientious homeowners to specify products they know they can trust. This label assists to gain market access to the world's greenest buildings through a direct connection to the Living Building Challenge, Core Green Building, LEED, and WELL Certifications. We currently have two products labelled under Declare, Bowral Bricks and Nubrik from our Wollert plant.

### Environmental Product Disclosures (EPDs)

EPDs are independently verified and registered documents that communicate transparent and comparable data and other relevant environmental information about the life-cycle environmental impact of products. These EPDs are independently verified to ISO 14025 and to the best practice standard EN 15804+A1.

Our GB Masonry Production facility in Gympie now has an EPD for its coloured masonry block collection. We are working towards producing EPDs for additional concrete products as part of expanding our sustainable products portfolio.

### Diversified Facades Options - Glen-Gery Wall System

Glen-Gery Wall Systems powerfully extend the options of designers, architects and builders by providing products and solutions beyond the brick. Glen-Gery systems have been developed to overcome antiquated limitations of space, time and budget while simplifying installation. Systems include Thin Tech, Tru-Brix, Precast and Tilt-up and Terraçade Façade System.

### Terraçade Façade System

Terraçade retains its Ecospecifier Verification to qualify its leading position as a façade system that is worthy to be used in green building projects.

[www.ecospecifier.com.au/products](http://www.ecospecifier.com.au/products)



Rockhampton  
Masonry Blocks and Pavers

# Made with Renewables 10–20%

10–20% of the total energy used  
in the manufacturing of masonry  
products at Rockhampton, QLD  
is solar energy.

## Made with Renewables 10–20%

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products at Rockhampton, QLD  
is solar energy.

**GECA** ✓  
CLAIM AUTHENTICATED



## Performance Against Targets

### SUSTAINABLE PRODUCTS

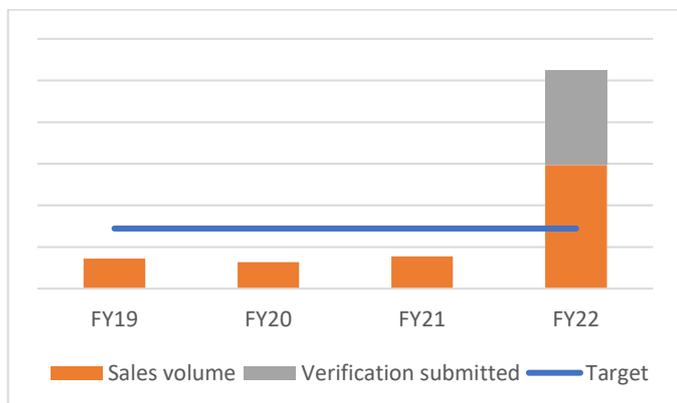
By 2025, we will double our volume of products sold in Australia that hold leading sustainable qualities.

We are investigating indicators within the Sustainable Accounting Standards Board (SASB) Standards including tracking of sustainable products. During FY22, further disclosure on sustainable product volumes was developed.

Categories defining sustainable products include low carbon (Climate Active Carbon Neutral, use of renewable energy, low carbon products), recycled content products (masonry products reducing cement content by the use of alternatives such as bottom-ash, fly-ash, glass, GreenStar precast, recycled bricks waste or recycled raw materials). Good and best practice products provide GreenStar credits, follow the GreenStar Responsible Products framework and/or are Living Building Challenge compliant.

During FY22, 6% of product volume in Australia was verified as sustainable by third party labels and is expected to increase to 11% this calendar year. We are continuing to verify our sustainable products and have identified 57% of the product volume in our Australian portfolio have environmental or social benefits. There is also a range of opportunities across our North American products.

#### Sustainable Product Volumes Australia



A range of sustainable products are also available from our North American operations, including recycled content and diversified façade options.

## Life Cycle Education

### LIFE CYCLE EDUCATION

We will support design tools, guidance and information to incorporate life cycle thinking into building design.

Brickworks Australia hosted 35 Continuous Professional Development (CPD's) and seminars, with a total of 465 attendees during FY22. Brickworks North America hosted 32 seminars and training sessions. Brickworks CPDs and seminars cover a range of topics, including Energy Efficiency and Code Compliance, Sustainable and life cycle design. Some examples of these events are presented below.

Other relevant events undertaken throughout the year included:

- Enduring Design Masterclass - a partnership between Prince's Trust Australia and the University of Queensland, supported by Brickworks, designed to equip participants with a strong, hands-on grounding in the diverse traditional building cultures of Australia and reconnect them with enduring design principles that have stood the test of time.
- Green Magazine's 'Green TALKS series' – Hosted by Melbourne design studio encouraging the broader public to consider lifecycle design in the delivery of new housing.
- The Design Matters Symposium, held at Monash University and supported by Brickworks bringing together leading architects in Melbourne for presentations centred around how good design can improve lives and address societal needs.
- Promoting gender equity in Architecture and Design, supporting a series of Design Studio events with the National Association of Women in Construction (NAWIC) and Parlour, who are actively promoting representation of women in the design and construction, through education and advocacy.



Image: Enduring Design Masterclass



Image: Philadelphia design studio

### Strategic Partnerships

Sustainable building materials are more important than ever before, as we look to meet present and future demand. Brickworks collaborates across the design and construction value chain to promote leading environmental building design and to share expert insights gained from research. Our strategic partnerships allow us to monitor trends and to keep pace with changes in regulatory frameworks. This enables our focus on meeting the requirement for a more sustainable built environment.

In FY22 we collaborated with the following organisations in leading lifecycle education, sustainable manufacturing, gender equity in architecture, and environmentally sustainable design:

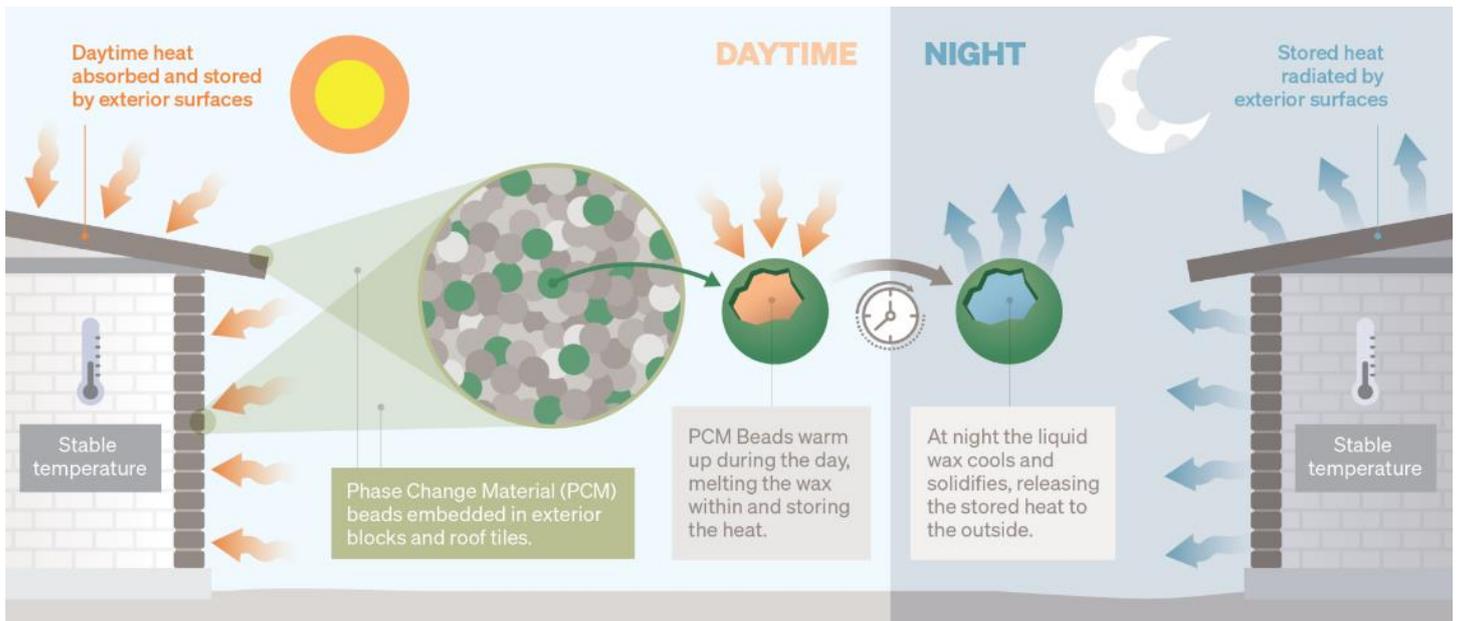
- The Materials and Embodied Carbon Leaders' Alliance bringing together the drive to reduce embodied carbon in the building and construction industry.
- Green Building Council of Australia demonstrating our commitment to the sustainable transformation of the built environment.
- Australian Institute of Architects including the Climate Action and Sustainability Taskforce (CAST) working group.

- Australian Institute of Landscape Architects, who leads a dynamic and respected profession, creating great places to support healthy communities and a sustainable planet
- Staff representing the industry via UDIA Diversity and Inclusion Committee.
- Enduring design education via Robin Boyd Foundation.
- Nightingale Housing through sponsorships. Nightingale Housing is a not-for-profit organisation that provides apartments that are socially, financially and environmentally sustainable. Nightingale believes that homes should be built for people, not profit. Brickworks is pleased to be a preferred supplier to Nightingale.
- Gender Equity in Architecture through ongoing partnership with Parlour. A space to speak bringing together research, informed opinion and resources, generating debate and discussion, expanding the spaces for women in Australian architecture.
- Engineers Australia including providing continuous professional development and seminars promoting enduring design across civil and construction sectors.
- Housing Industry Association and supporting sustainable homes

### Longer Term Sustainable Product Innovation: Phase Change Material Project – Western Sydney Partnership

During FY21, Brickworks and research partner Western Sydney University investigated innovation to improve the thermal performance of building products with Heat Storage Phase Change Materials (PCMs).

PCMs are materials capable of storing and releasing energy based on the temperature of the environment in which they are situated. PCMs possess the ability to change their state, solid to liquid and liquid to solid, with a certain temperature range. These materials absorb energy during the heating process as phase change takes place, and this energy can be transferred to the environment in the phase change range during a reverse cooling process.



### Research to support future 7-star thermal ratings

With the increasing emphasis on the thermal efficiency of Australian house construction, new building regulations for 7-star thermal performance for all new construction are being introduced. Since most current forms of house construction would not comply with this performance requirement, there is a need to establish suitable techniques for this to be achieved.

To address this problem, Brickworks has partnered with the University of Newcastle with a commitment of \$250,000 to further progress thermal research to support these future building regulations.

This new project involves the re-commissioning of the four experimental housing modules on the University of Newcastle campus developed in a previous housing thermal performance study. For each module walling system (insulated brick veneer, insulated cavity brick and lightweight), modifications and adjustments will be made to the building fabric (slab, walls, ceiling and roof where appropriate) to achieve the necessary 7-star performance. The thermal performance of each of the modified modules will be monitored and analysed in a manner similar to the previous investigation for a 12-month period.

### Beaconsfield Housing Project

The Beaconsfield Housing Project is part of a pilot program for WPI that targets older women who do not have the means to purchase a home, providing them with a safe place to live, long term. The project aims to combat disadvantages and discrimination that vulnerable women can face while trying to get access to affordable housing, offering four units that are connected, yet offer full privacy for residents.

The Beaconsfield Housing Project is predominantly made of brick, which were donated by Brickworks. The use of brick was of utmost importance in the Beaconsfield development, as not only does it provide structure, but brick is also relatively maintenance-free, durable, insulating and climate-friendly.



## Risk

# Management

To ensure robust and effective risk management systems are in place and operating effectively, the Board, through the Audit and Risk Committee (ARC), determines the risk profile for the company. It ensures that business initiatives are consistent with its risk appetite, reviews the controls and systems in place to continually mitigate risk, and oversees reporting and compliance requirements.

### Risk Management

A Risk Management Framework has been implemented, consistent with each element of the Australian Risk Management Standard AS/NZS31000:2018. Key elements of the framework development include integration, design, implementation, evaluation and improvement.

Brickworks' Board has adopted a Risk Management Framework that identifies risk appetite for the Group across six different categories (Legal, Health & Safety, Customer Service, Financial, Reputation and Environment), and then considers how each identified risk is placed within that framework.

That framework involves assessment of the likelihood of an event occurring, the potential impact of each event, and the controls and processes in place to continually mitigate each risk.

Risk management is a priority for senior management. Details of risk management and the significant risks that may impact the achievement of the Group's business strategies and financial prospects are included in the Brickworks FY22 Annual Report and the Corporate Governance Statement which can be downloaded from [www.brickworks.com.au/investors/group-overview#corporate-governance](http://www.brickworks.com.au/investors/group-overview#corporate-governance)

### Procurement - Modern Slavery and Supply Chain

Brickworks is committed to respecting and supporting the dignity, well-being and human rights of employees and the supply chain. Brickworks is committed to working collaboratively with its partners and suppliers to ensure business is conducted in an honest and ethical manner. This includes identifying and addressing modern slavery and human rights risks throughout the business and supply chain.

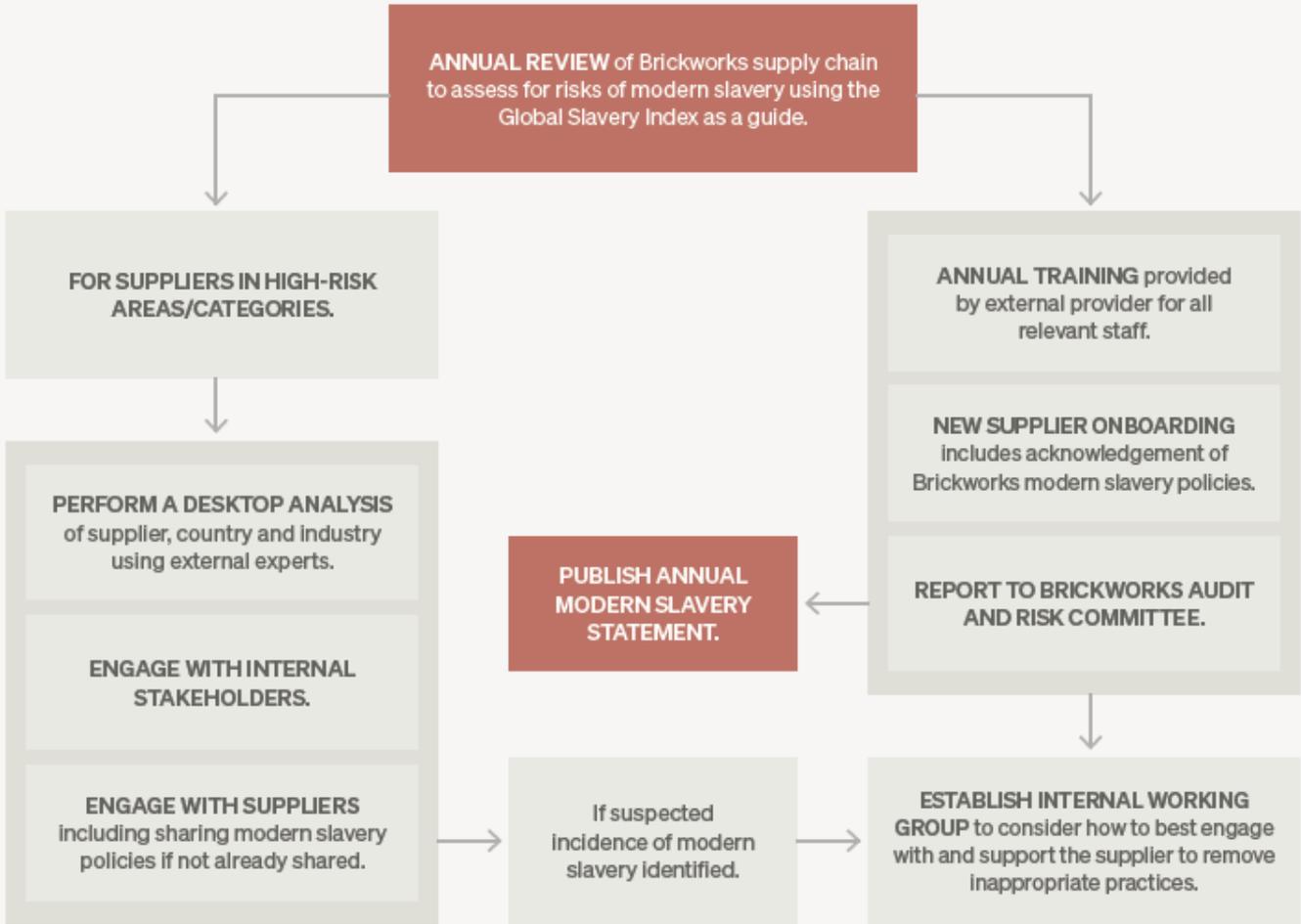
**SUPPLY CHAIN**  
Reduce supply chain risk



Reporting frameworks and requirements to disclose risks of modern slavery in supply chains include the Federal Modern Slavery Act, which came into effect in 2019. Brickworks has now published two Modern Slavery Statements which are available on Brickworks website. The report will be updated on an annual basis.

During FY22, Brickworks engaged experts to assist with further development of its modern slavery management program. Targeted reviews were conducted on some tier 1 suppliers in high-risk geographies. These suppliers were engaged by management who shared Brickworks' modern slavery policy, and the intention to work collaboratively with the supply chain to identify and eradicate any instances of modern slavery.

# Modern Slavery Framework



# Governance

The Brickworks’ Board is committed to developing and maintaining good corporate governance and the company recognises that this is best achieved through its people and their actions.

The company’s long-term future is best served by ensuring that its employees have the highest levels of honesty and integrity. These employees are retained and developed through fair remuneration, appropriate long-term incentives and equity participation in the company. It is also critical to the success of the company that an appropriate culture is nurtured and developed, starting from the Board itself. A Corporate Governance Statement can be found on Brickworks’ investor website [investors.brickworks.com.au](https://investors.brickworks.com.au). The statement has been prepared in line with the principles of the ASX Corporate Governance Council’s “Corporate Governance Principles and Recommendations (4<sup>th</sup> Edition)”.

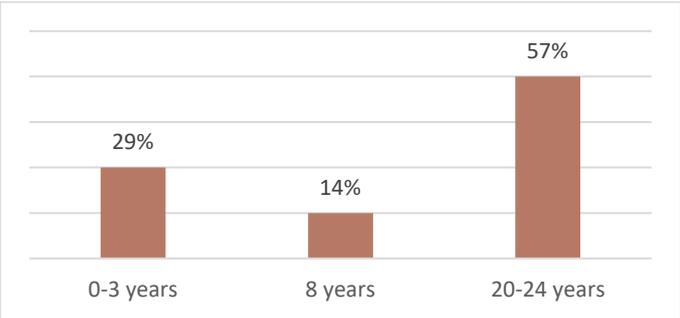
Brickworks has policies and procedures in place that ensure the highest standards of corporate governance, abiding by all Australian laws and the requirements of regulatory authorities in each state.

### Board Succession Planning and Diversity

Robert Webster will retire at the 2022 Annual General Meeting (AGM). Korn Ferry has been appointed to assist in the search for a new independent non-executive director.

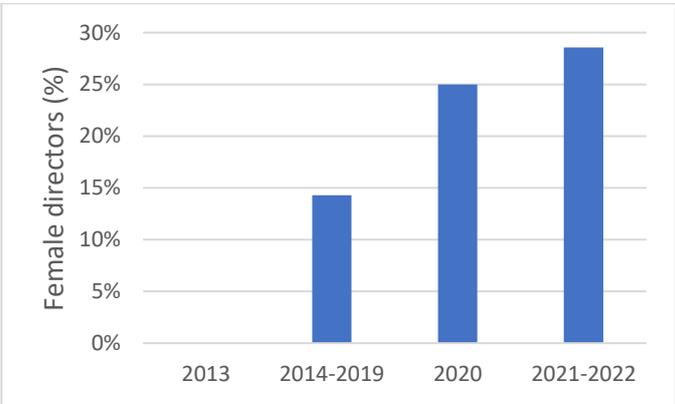
Michael Millner’s current term also concludes at the 2022 AGM. To assist with an orderly transition process, Mr Millner intends to offer himself for re-election at the 2022 AGM before retiring from the Board at the 2023 AGM.

### Board Membership – Tenure of Directors



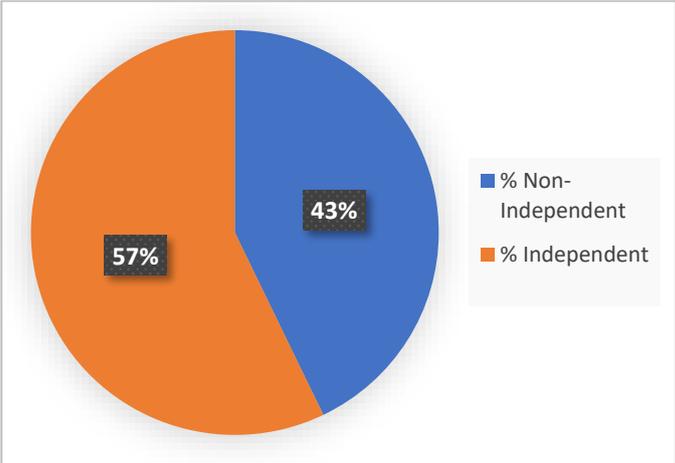
Brickworks recognises the importance of gender diversity in a board. The Board currently comprises seven directors, including two female directors representing 29%. Brickworks goal is to have not less than 30% of its directors of each gender by 2025.

### Gender Diversity % of Female Directors



### Board Independence

The Brickworks Board currently consists of four independent members and three non-independent members.



### Code of Conduct

Brickworks staff are guided by the Brickworks Code of Conduct. The purpose of the code is to set standards of conduct expected of Brickworks employees. The Code

applies to all directors, officers and employees of Brickworks Limited and its controlled entities.

The Code of Conduct is based on the Brickworks values, which underpin the way in which the team acts and behaves at Brickworks. They describe what's important to us, and guide interactions with colleagues, customers, suppliers, contractors and the community.

The Brickworks core values are:

- Care: Sustainably Safe
- Collaborate: Succeed Together
- Exceed: Passionately Play to Win
- Integrity: I Do What I Say
- Innovate: Everyone, Everywhere, Everyday
- Lead: Inspire People
- Inclusive: Connected Through Diversity

Brickworks employees should be respectful, professional and act with honesty and integrity to maintain high ethical standards and uphold Brickworks reputation. High standards of conduct will serve to enhance Brickworks reputation for fair and responsible trading and encourage appropriate behaviour across the business.

All staff are required to undertake annual training on the Code of Conduct through an on-line learning platform. Staff completion of the module is tracked and reported internally.

### **Anti-Bribery and Corruption and Whistle-blower Policies**

The Anti-Bribery and Corruption, and Whistle-blower Policies were introduced in May 2019. All staff are

required to undertake annual on-line training to demonstrate their understanding of the policies. The Whistle-blower Policy provides a mechanism which encourages concerns to be raised about misconduct or any improper state of affairs or behaviour that is inconsistent with the Group's culture, values or policies.

Be Honest @ Brickworks is an anonymous avenue for staff to raise concerns of suspected or actual misconduct. Staff are encouraged to make a report if they see or suspect something wrong such as theft, fraud, dishonesty, harassment, unethical behaviour, workplace safety and environmental hazards or misconduct.

The Be Honest @ Brickworks reporting platform is easily accessible 24/7 from the company's intranet page, and posters containing the contact details are located in all work centres. The platform is administered by Deloitte's Risk Advisory Service.

**GOVERNANCE**  
Business Ethics and Whistleblower Programs



Brickworks aims to improve its performance in business ethics management to align with best practice, with a strategic target to formalise Business Ethics and Whistle-blower programs.

### **Public Policy**

Brickworks Political Donations Policy prohibits the making of Political Donations at any time on behalf of the Brickworks Group, or otherwise, using funds of the Brickworks Group. No political donations were made during FY22.

# Sustainability Disclosure

Our disclosure approach is based on the robust framework and reporting standard set out in the Global Reporting Initiative, to ensure our stakeholders are well informed of our material sustainability issues.



# Stakeholder

## Engagement

Stakeholder engagement is an important part of Brickworks' materiality assessment process. Engaging with internal and external stakeholders supports the company's understanding of the most significant sustainability issues.

During FY21, Brickworks undertook a process of identifying stakeholder groups by considering the individuals and entities that would be affected by, or interested in the company's operations, products and management. These stakeholder groups are set out in the following table.

### Brickworks Internal and External Stakeholders Groups

	Stakeholder Group	Areas of Interest		Key methods of engagement	
<b>Employees</b>	Management Employees	Business performance HR	Corporate governance WHS	Employee Materiality Survey Newsletters Conferences	Team meetings, Performance reviews, Sustainability Strategy
<b>Customers</b>	BKW Business Development Managers (customer perspectives) Architects Developers Customers	Price Quality Reliability Innovation Eco credentials Wellness Reputation	Ethical practices Care Disclosure Building waste Affordable housing	Customer satisfaction surveys, Events (Double talk, international speaker, Continuous Professional Development presentations), Newsletters, Brochures	Website, Education, Materiality survey (customer insights provided by Business Development Managers), Sustainability Strategy
<b>Investors</b>	Investors Analysts Shareholders	Business performance Sustainability Environmental performance Climate related issues	Health and safety HR Regulatory compliance Risk management disclosure	AGM Annual Report Meetings ASX Updates	Sustainability Strategy
<b>Government</b>	Local government State government Federal government	Compliance New and emerging legislation Carbon and energy Investing in new technology	Environmental performance WHS performance HR / EEO / Employment performance Planning issues	Meetings Training Audits and inspections Reporting	Sustainability Strategy
<b>Industry</b>	Competitors Similar Industry/companies	Trends		Analysis of documents Gap analysis	Sustainability Strategy
<b>Community Groups</b>	Local community group organisations Neighbours	Communications Local employment and economy	Environmental performance Disclosure	Group meetings Local events	One on One discussions, Complaints management, Newsletters Site tours
<b>Sustainability organisations</b>	World Business Council for Sustainable Development Sustainable Business Australia Supply Chain Sustainability School	Climate risk Materials use Social licence to operate		Survey Webinars Meetings Training	Newsletters Subscriptions Sustainability Strategy

## Materiality

# Assessment Process

*During FY21, Brickworks conducted a refreshed materiality assessment to support the full assessment undertaken by EY in 2019. The recent review helps Brickworks to understand the most significant sustainability issues for its business and stakeholders. The biannual materiality assessment will also be refreshed during FY23.*

The following four step assessment process was applied to:

- Scan a range of information sources to identify a list of relevant issues. This entailed assessment of industry standards and regulations, media and public disclosures as well as peer benchmarking.
- Engage with internal and external stakeholders, including customers, investors and the industry, to determine what stakeholders regarded as being the most important sustainability issues and themes for Brickworks.
- Prioritise and rank the most material issues identified, including analysis of impacts on the business, stakeholders and the future.
- Validate and prioritise the list of issues with selected stakeholders through interviews with customer representatives, industry ESG experts, investors and the community.

Engagement with stakeholder groups identified the key themes that are most important to them and to Brickworks as:

- Investors: climate risk, safety, labour standards, transparency.
- Customers: delivery times, communications, pricing, quality, customer service.
- Property industry: sustainable innovation, environmental credentials of products, net zero buildings, materials innovation, supply chain traceability.

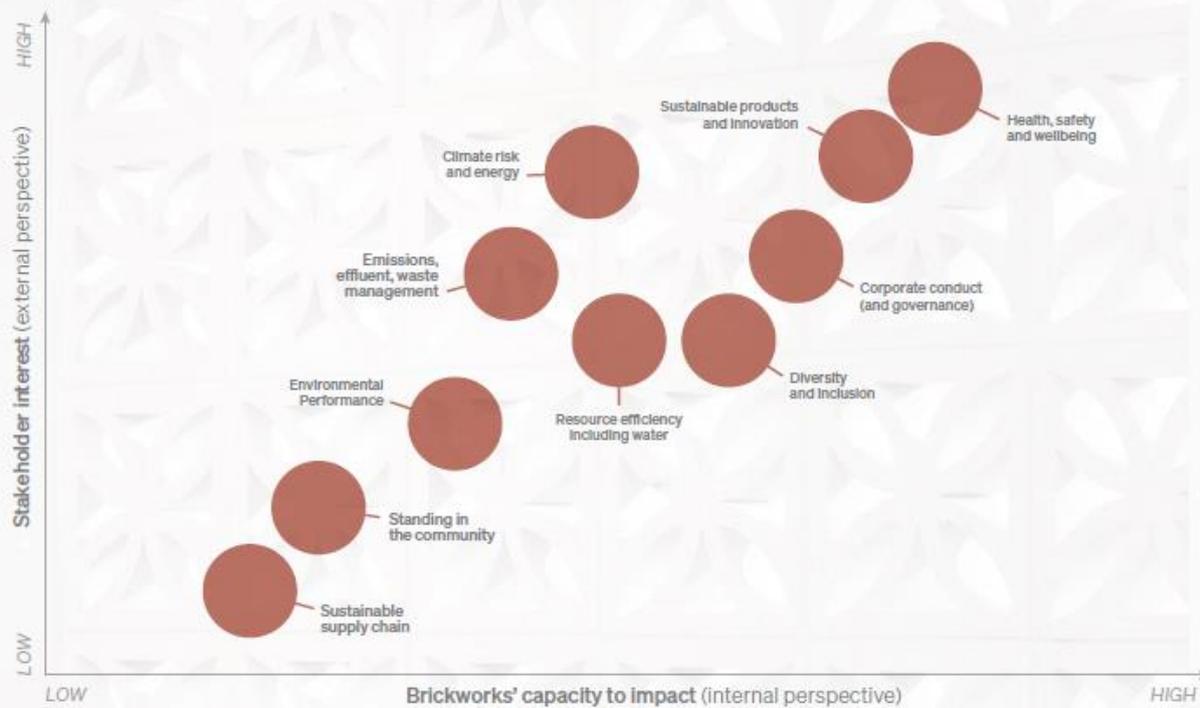
A Materiality Matrix provides an overview of how significant issues were prioritised and ranked according to the two dimensions recommended by the Global Reporting Initiative (GRI) Standards; interest stakeholders have in the issue (y-axis), and the impact Brickworks has on the issue (x-axis).

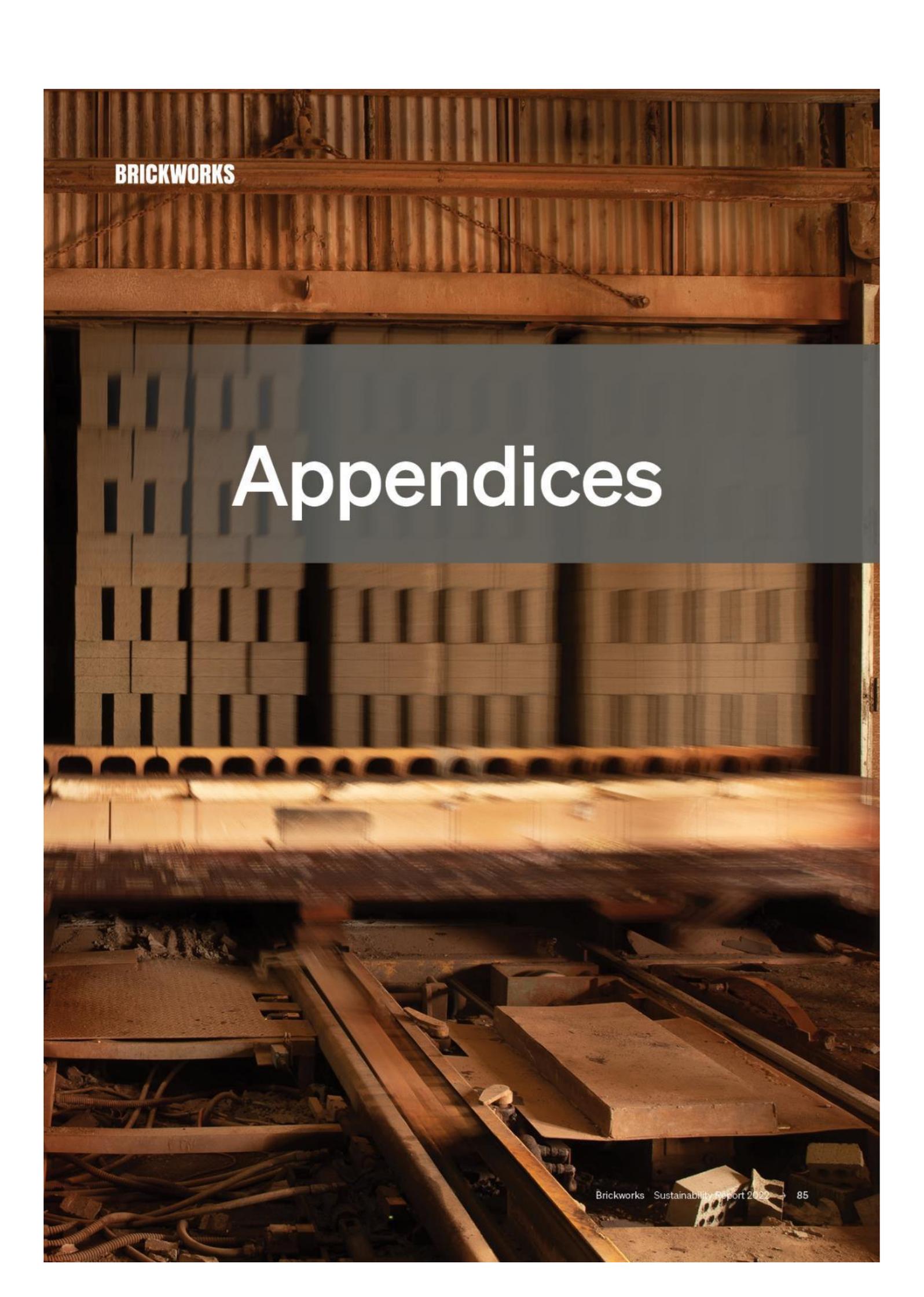
Brickworks consulted with selected internal and external stakeholders to validate the issues identified during stakeholder engagement. Brickworks' most material sustainability issues were validated as:

- Health, Safety and Wellbeing
- Sustainable Products and Innovation
- Corporate Conduct
- Resource Efficiency
- Diversity and Inclusion
- Climate Risk and Energy
- Emissions, Effluent and Waste Management
- Environmental Performance
- Standing in the Community
- Sustainable Supply Chain

## Material Risks Identified in FY21 Materiality Assessment

### Material Risks Identified in FY21 Materiality Assessment





**BRICKWORKS**

# Appendices

# Appendix 1: Audit Assurance Statement

## Independent Limited Assurance Statement (FY22) to the Management and Directors of Brickworks Limited



### Our Conclusion:

Carbon Intelligence Pty Ltd ('Carbon Intel', 'we') was engaged by Brickworks Limited ('Brickworks') to undertake 'limited assurance' as defined by Australian Auditing Standards (hereafter referred to as a 'review' or the 'engagement'), over selected sustainability performance data within Brickworks Sustainability Report for the year ended 31 July 2022. Based on our review and evidence obtained, nothing came to our attention that caused us to believe that the selected sustainability data has not been prepared and presented fairly, in all material respects, in accordance with the criteria defined below.

### Scope of our Engagement

We conducted a review over selected sustainability performance data within the Sustainability Report for the year ended 31 July 2022.

### Engagement Subject Matter

The Subject Matter for our limited assurance engagement included selected sustainability performance data, limited to those aspects listed below, for the year ended 31 July 2022:

#### Australian Operations

- Total Scope 1 & Scope 2 greenhouse gas (GHG) emissions (in tonnes of carbon dioxide equivalent (tCO<sub>2</sub>-e)) \*
- Total energy consumed (in petajoules (PJ)) \*
- Total number and cost (in Australian dollars (AUD\$)) of significant environmental fines and penalties
- Lost Time Injury Frequency Rate (LTIFR)
- Total Recordable Injury Frequency Rate (TRIFR)

\*Reported for the year ended 30 June 2022, to align with the reporting period for the *National Greenhouse and Energy Reporting (NGER)* scheme.

#### US Operations

- Total Scope 1 & Scope 2 GHG emissions (tCO<sub>2</sub>-e) \*
- Total natural gas consumed (in petajoules (PJ)) \*
- Total electricity consumed (in MWh) \*
- Natural gas efficiency 12 month rolling average
- Total number and cost (in US dollars (US\$)) of significant environmental fines and penalties
- Lost Time Injury Frequency Rate (LTIFR) ^
- Total Recordable Injury Frequency Rate (TRIFR) ^

\*Reported for the year ended 30 June 2022, to align with Australian Operations.

The Subject Matter is historical information and does not include Management's forward-looking statements.

### Criteria

In preparing the Sustainability Report, Brickworks were informed by the following criteria:

- Global Reporting Initiative (GRI) Standards
- Brickworks' own publicly disclosed criteria as established in the Sustainability Report.

### Our Responsibilities

Our responsibility is to express a conclusion on the selected sustainability performance data, based on our review and evidence provided by Brickworks. We were also responsible for following the assurance standards, maintaining our independence and confirm that we have met the requirements of the APES 110 Code of Ethics for Professional Accountants and we have the required competencies and experience to conduct this assurance engagement.

### Brickworks' Responsibilities

Brickworks' management is responsible for selecting the Criteria, and for preparing and fairly presenting the Sustainability Report in accordance with that Criteria. This responsibility includes establishing and maintaining internal controls, adequate records, making estimates that are reasonable in the circumstances, and providing the evidence required to support the engagement subject matter.

### Our Approach to Conducting the Engagement

We conducted this review in accordance with the 'International Standard on Assurance Engagements (ISAE) 3000 Revised, Assurance Engagements Other Than Audits or Reviews of Historical Financial Information' and 'Australian Standard on Assurance Engagements (ASAE) 3410 on Greenhouse Gas Statements' and the terms of engagement as agreed with Brickworks.

### Summary of Assurance Procedures Performed

Our review consisted of obtaining the engagement subject matter, making enquiries of persons responsible for preparing the selected sustainability performance data, and applying detailed testing, analytical and other review procedures.

#### Our procedures included:

- Planning the engagement, assessing the risks of misstatement, and designing assurance procedures
- Conducting site reviews and interviews with site and corporate personnel to understand the business, data management systems, and reporting processes
- Conducting interviews with key personnel to understand the process for collecting, collating, calculating, and reporting the selected sustainability performance data
- Checking that the calculation criteria have been appropriately applied in accordance with the methodologies outlined in Brickworks' Criteria
- Undertaking detailed testing and analytical review procedures to support the reasonableness of the data
- Identifying and testing assumptions, source data, and methodologies supporting calculations
- Testing, on a sample basis, to underlying source information to check the accuracy of the data.

We believe that the evidence obtained is sufficient and appropriate to provide a basis for our limited assurance conclusions.

### Limited Assurance

Procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. While we considered the effectiveness of management's internal controls when determining the nature and extent of our procedures, our assurance engagement was not designed to provide assurance on internal controls. Furthermore, our procedures did not include testing controls or performing procedures relating to checking aggregation or calculation of data within or extraction from Financial or IT systems.

### Use of our Assurance Statement

We disclaim any assumption of responsibility for any reliance on this assurance statement to any persons other than management and the Directors of Brickworks, or for any purpose other than that for which it was prepared.

*P Adams*

Dr Paul Adams  
Audit Team Leader, Carbon Intelligence Pty Ltd

5 September 2022