

22 October 2024

Australian Securities Exchange
Attention: **Companies Department**

BY ELECTRONIC LODGEMENT

Brickworks 2024 Sustainability Report

Please see attached the following release on the above subject.

Authorised by

BRICKWORKS LIMITED

Susan Leppinus
Company Secretary



SUSTAINABILITY REPORT

2024

BRICKWORKS

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Austral Masonry
Oakdale Pavers Range

COVER

Project: Mygunyah by the Circus

Location: VIC

Product: Daniel Robertson
in Buff and Austral Bricks
La Paloma in Romero

About this Report

This Sustainability Report is Brickworks Limited's (Brickworks) sixth 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 in FY2023, updating our materiality assessment to align with the updated GRI materiality standards and expanding on the materiality reviews conducted in FY2021 and FY2019. 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. Between FY2019 and FY2022, Brickworks acquired North American businesses Glen-Gery, Sioux City, Redland Brick, Illinois Brick Company and Capital Brick. Since FY2021, integration of these operations into Brickworks' Management Systems has been ongoing. This year's Sustainability Report continues to integrate key aspects of the North American annual business performance, covering safety, workplace profile, environmental compliance, greenhouse gas emissions and energy use, water 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 2023 to 31 July 2024, aligned with the Brickworks financial year. An exception

is energy and carbon data, where the reporting period is 1 July 2023 to 30 June 2024, aligned with the National Greenhouse and Energy Reporting (NGER) Scheme and Scope 3 data is reported for the FY2023 Brickworks reporting period (1 August 2022 to 31 July 2023). The workforce demographic data for Australia is taken from the WGEA report, which is based on 31 March 2024; however, the total workforce figure is at 31 July 2024. Details of fundraising efforts for the Children's Cancer Institute are for the 2023 calendar year.

Our climate disclosure covers governance, risk management, strategy, metrics and targets. This year we have integrated climate disclosure into our Sustainability Report.

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:

- ▶ Group-level scope 1 and 2 GHG emissions (respectively and in total) for the year ended 30 June 2024
- ▶ Scope 3 for Brickworks Building Products Australia and North America
- ▶ The basis for calculating the restatement of the North American GHG emissions baseline for the year ended 30 June 2022 to include restated calcination emissions¹
- ▶ Group-level total energy consumed for the year ended 30 June 2024
- ▶ Group-level basis for calculating total gas and natural gas efficiency improvement percent for the year ended 30 June 2024¹
- ▶ Group level total recordable incident frequency rate (TFIFR) for full time employees (per million hours).

A copy of the Limited Assurance Statement from this audit is included in Appendix 5 of this report.

¹ The assurance of the basis for calculating gas efficiency improvement and the basis for calculating the restatement of North American GHG emissions baseline will only focus on whether the calculation is appropriate and whether it is based on immediate supporting evidence without assuring the completeness and accuracy of supporting evidence.

Project: AVH Reservoir
Location: VIC
Product: Daniel Robertson
Hawthorn 470



A message from the CEO

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.

Our core values ensure that we are committed to sustainability and responsible business, and this can be demonstrated across a range of key areas: sustained decrease in workplace injuries; track record of emissions reductions; sustainable property development; increasing workplace diversity and our long-standing partnership with Children's Cancer Institute.

This year we were recognised by the leading Sustainability ESG rating firm, Sustainalytics, as a top-rated company based on leading ESG Risk Ratings in the construction materials sector. We plan to use this recognition to continue momentum on our sustainability journey.

Continued Focus on Safety

Ongoing improvements in health and safety are central to our operations at Brickworks, driven by our Health and Safety Management System. We are pleased to report that Brickworks total recordable injury frequency rate (TRIFR) has decreased for the sixth consecutive year, dropping from 10.69² in FY2023 to 9.73 in FY2024.

This progress highlights our commitment to minimising risks for our employees, contractors, and the community. Central to this effort is Capable Safety Leadership, which is essential for the development of a strong safety culture and effective risk

management. This leadership approach drives our continuous focus on maintaining the highest safety standards across all aspects of Brickworks operations. Additionally, the Australian health and safety framework continues to be implemented in Brickworks North American operations, reinforcing high safety standards globally and further protecting our workforce and communities.

Looking ahead, our strategy for 2025 is clear: we are committed to achieving further reductions in injury rates for our employees, contractors, and all others involved in Brickworks operations. The focus will remain on continuous improvement, leveraging the strength of our health and safety systems, leadership, technology, and the dedication of our people to drive sustained progress in safety performance. We believe that by maintaining this focus, we can create safer working environments and continue to set new benchmarks in health and safety performance.

Advancing Our Inclusive Culture

At Brickworks, our culture and values drive our success. Through the "We Are Brickworks" initiative, we foster an inclusive environment where employees feel valued. We continue to invest in training and development, creating a dynamic, supportive environment for both employees and customers.

2 Restated to include injuries that occurred in FY2023 that were reclassified FY2024.

Brickworks recognises that sustaining a strong culture, driven by the diversity and inclusion of our people, is critical to our long-term success. We are pleased to have exceeded all of our 2025 gender representation targets. Female directors now represent 33%, exceeding the target of 30%. In Australia, women at the executive level have reached 41.7% (stretch target: 35%), and 26%³ of our total Australian workforce is female (target: 25%).

In North America, female senior executive representation grew from 14% in FY2023 to 15.8% in FY2024. To promote diversity, we expanded recruitment to diverse job boards and launched a new campus recruitment video. Key workforce programs focused on engagement, retention, talent pipeline, and wellness. In 2024, female promotions rose by 33%, and we relaunched the Glen-Gery Technical Academy with new supervisory training for manufacturing staff.

Sustainability Highlights

Our sustainability highlights include significant action on reducing greenhouse gases:

- ▶ A 56% decrease in carbon emissions in Australia, compared to a baseline of 2006. This is supported by 11% of renewable biofuels in the energy mix in Australia, including our sawdust fired Longford operation which has been low carbon and carbon neutral for over 10 years.
- ▶ Greenhouse gas emissions decreased by 22% in FY2024 compared to FY2022, due to subdued market conditions allowing for increased maintenance activities and intermittent plant shutdowns. A 5% improvement in our scope 1 and 2 greenhouse gas intensity for brick production globally puts the Company in a good position to meet the carbon emission target when the demand resumes.
- ▶ 8.6% improvement in gas efficiency in our Australian brick factories compared to FY2018 including a 57% improvement at Plant 2 as a result of commissioning the new state of the art kiln. In North America, we have seen a 19% improvement in energy efficiency since acquisition of the Glen-Gery business in 2019.
- ▶ Brickworks has added 1.2 MW of rooftop solar across multiple sites, generating 934 MWh annually. Upcoming installations include 3 MW in Western Sydney and 1,460 kW in Melbourne, with the Western Sydney plant set to cover 19% of its electricity needs, equivalent to powering 442 Sydney households annually.
- ▶ Importantly, we are continuing to invest in developing feasible renewable biomethane opportunities. This bioenergy transformation strategy is a key element of our decarbonisation strategy.

Sustainable Product Portfolio

We provide labels for sustainable attributes allowing our customers to qualify for credits in sustainable building design and construction certification such as GreenStar.

Over 21% of Brickworks products are verified to provide sustainable building credits for our customers. By 2025, our aim is for 25% of all Brickworks products across Australia and North America to be verified as sustainable.

In addition, 21% of raw materials used in Australia comes from recycled content. Bricks are also low maintenance, fire resistant, non-toxic, recyclable and have a long service life, guaranteed for 100 years and provide thermal mass benefits to house designs.

Brickworks invests significantly in research and development to drive the sustainable design elements of our products and reduce embodied carbon. Significant successes are being progressed in light-weighting, cement substitution, manufacture of new innovative low carbon products, higher recycled content and raw material optimisation.

Brickworks has seen growing demand for thin brick products, largely due to their resilience and lightweight properties. Lightweight brick facing systems such as Thin Tech and Tru-Brix stretch the boundaries of brickwork. These light-weight systems make real brick available for projects where full-size brick isn't economical or practical.

Reducing Whole of Life Carbon

Our goal is to transition to a low carbon economy, while providing high thermal mass products that minimise energy consumption through the operational phase of a home.

Clay bricks are a naturally energy efficient material, absorbing heat energy, storing it and releasing it later into the environment. This thermal lag from thermal mass saves lifetime carbon emissions by reducing demand for artificial heating and cooling in homes.

The thermal mass results in a reduction in energy consumption over the lifetime of a building, with up to 40% reduced heating and cooling loads when combined with insulation, compared to lightweight construction alternatives.

At Brickworks, we are also focussed on reducing embodied carbon through the manufacturing process. Brickworks has over 10 years of experience in providing carbon neutral products from our Longford Tasmania facility using 73% bioenergy of the site's energy mix. Brickworks sees a range of opportunities to replicate the success of this low brick carbon manufacturing through the Brickworks Bioenergy Transformation strategy.

3 Measured 31 March 2024 consistent with WGEA reporting.

Bioenergy Transformation Strategy

Our bioenergy transformation strategy includes:

1. increased use of renewable energy sources, with a focus on bioenergy;
2. best practice manufacturing efficiency, including investment in the latest kiln technology; and
3. innovation in raw materials and product design – including brick voids, on-board fuels, raw material innovation and production innovation.

As an industry leader using 11% bioenergy in manufacturing in Australia, we understand the critical role renewable bioenergy can have in producing low-carbon products.

Renewable bioenergy facilities provide a pathway to begin the transition to decarbonising natural gas consumption. Renewable bioenergy generation also offers the potential to generate carbon offsets on-site, from emission reduction activities such as the diversion of organic waste from landfill.

We are assessing the feasibility of renewable bioenergy generation at our brick plants with leading technology providers. If successful, each facility has the potential to provide a significant source of renewable energy. According to estimates by the Australian Renewable Energy Agency, bioenergy could account for 33% of the industrial heat processing needs by 2030.

We are actively advancing various feasibility studies for a series of projects designed to significantly boost the utilisation of bioenergy. These opportunities encompass harnessing additional landfill gas resources, integrating alternative organic raw materials, and generating on-site bioenergy through anaerobic digestion.

Brickworks is assessing the feasibility of a 253 TJ renewable bioenergy facility to be located next to a brick plant in Horsley Park, NSW. The project recently lodged a development application with the NSW Government.

Brickworks is assessing the feasibility of LFG cleaning to supply our Queensland Rochedale brick manufacturing site.

Approval was also recently received for the trial of organic grape marc, a waste from the wine industry to substitute for natural gas in our South Australian kiln.

Rehabilitation and Property

Site rehabilitation is central to our business model. 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.

FY2023 saw the successful relinquishment of the Horsley Park Plant 3 quarry in New South Wales to facilitate Stages 2 to 4 at the new Oakdale Industrial Estate under the Property Trust Joint Venture.

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.

In addition to this, progressive rehabilitation of available land is also an important part of our sustainability strategy. In FY2024, we progressively rehabilitated 161,076m² of land across our Australia and North American operations.

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 FY2024, significant annual progress was made against our targets in many areas. Mains water reduced by 6% from FY2022, 105 community engagement activities were undertaken and \$469,747 was collected for Children's Cancer institute with over \$5 million contributions since 2002. We provided 75 continuous professional development and education sessions to architects, builders and other customers covering topics such as energy efficiency, code compliance, sustainable and life cycle design. Focus will continue to drive targets further during FY2025.

We are preparing to develop our “Towards 2030” strategy next year, which will build upon our extended climate objectives, including carbon reduction, energy efficiency, and product innovation. This comprehensive strategy will feature quantitative targets across all high-materiality areas within our Australian and North American operations, driving our commitment to sustainability through 2030 and beyond.

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.



MARK ELLENOR
Chief Executive Officer



Hobart Women's Shelter

Research and collaboration have allowed the delivery of two prototype houses, designed to nurture women and children's wellbeing and recovery from homelessness. The project was generously supported by Austral Bricks Tasmania and features carbon neutral bricks from the Daniel Robertson range. Daniel Robertson bricks are manufactured in Brickworks' Austral Bricks Longford operation in Tasmania. This facility was certified carbon neutral in 2013, making it Australia's first certified carbon neutral brick manufacturing plant to date.

CREDITS

Project: Hobart Women's Shelter

Architect: Core Collective and Christ Clinton Architects

Location: TAS

Photography: Adam Gibson

Product: Daniel Robertson, Hawthorn, Cambridge and Daniel Robertson, Overland Pristine, Tarkine



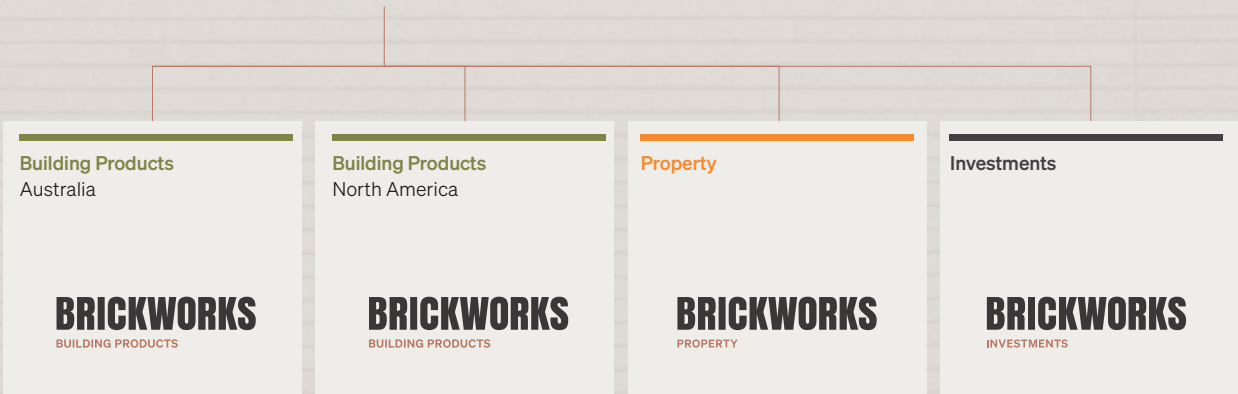
Our business

We create beautiful products
that last forever

Project: Harriet's House
Location: Longford, TAS
Product: Austral Bricks Yarra in Richmond & Access in Ash

BRICKWORKS

LIMITED



EARNINGS BEFORE INTEREST AND TAXES BY DIVISION	Investments:	\$137m	Building Products (Aus):	\$41m
	Property:	\$(110)m	Building Products (US):	\$14m

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 1,852 employees across its Australian and North American operations (permanent and temporary employees, excluding casuals).

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. There are 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.

Investments consists primarily of a 26.1% interest in ASX-listed Washington H. Soul Pattinson ('Soul Patts') (ASX: SOL). Soul Patts is a diversified investment house with a portfolio encompassing strategic investments in major listed companies, a large cap equity portfolio, private equity investments, interests in a wide range of emerging companies and a structured yield portfolio. Investments also includes a 15.3% stake in FBR Limited ('FBR') (ASX: FBR).

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 2024, Brickworks operates 27 manufacturing sites and 40 quarries, comprising:

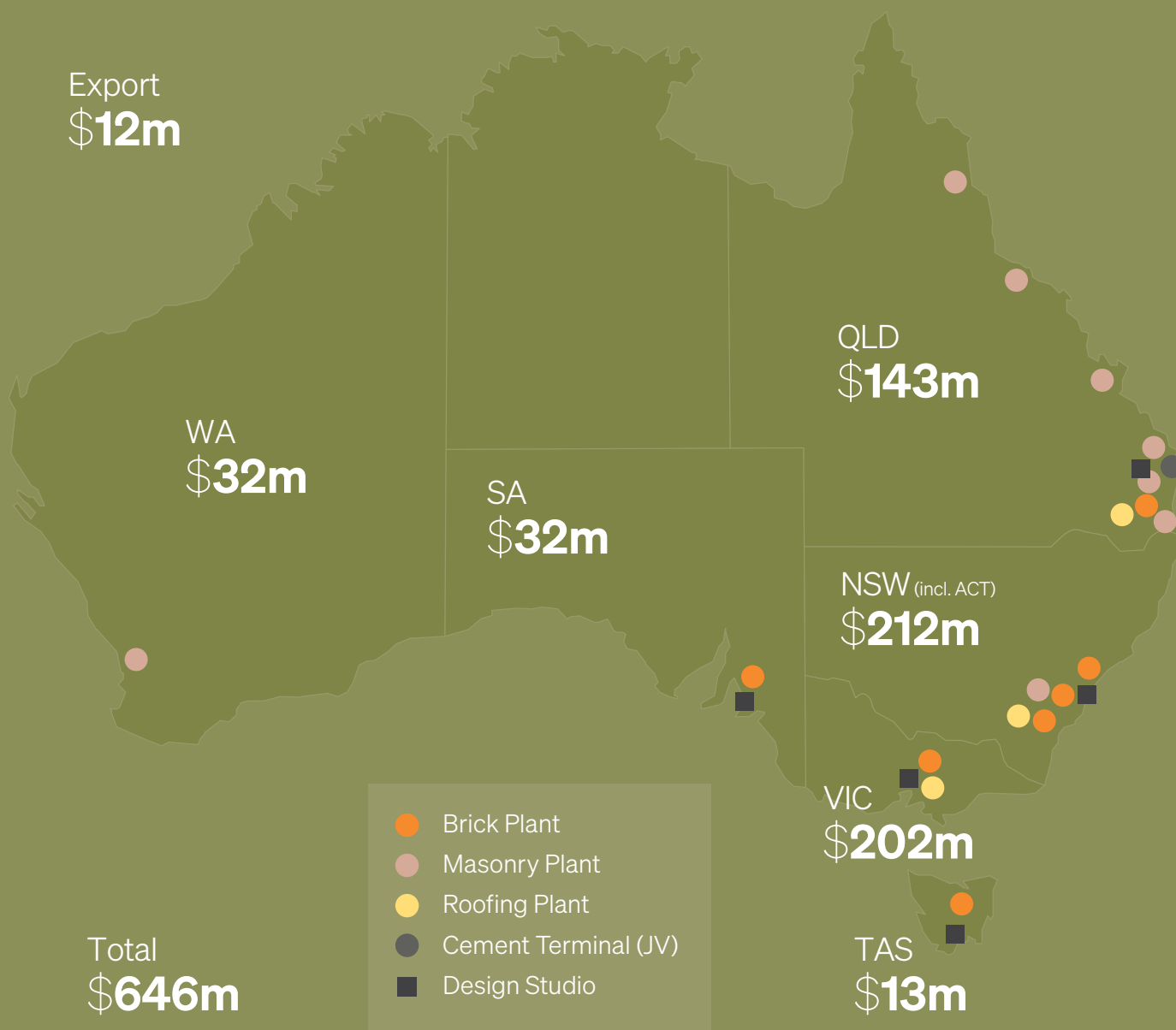
- 7** Brick plants (Australia)
- 8** Brick plants (North America)
- 2** Roof tile plants (Australia)
- 1** Timber batten plant (Australia)
- 8** Masonry plants (Australia)
- 1** Cement terminal (JV) (Australia)
- 37** Quarries (Australia)
- 17** Quarries (North America)

In addition, Building Products 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 FY2024, Brickworks' total revenue from continuing operations was \$1,089 million (AUD). This included Building Products Australia revenue of \$646 million, across three major divisions – Austral Bricks, Bristile Roofing and Concrete Products and revenue of \$442 million (AUD) for Building Products North America.

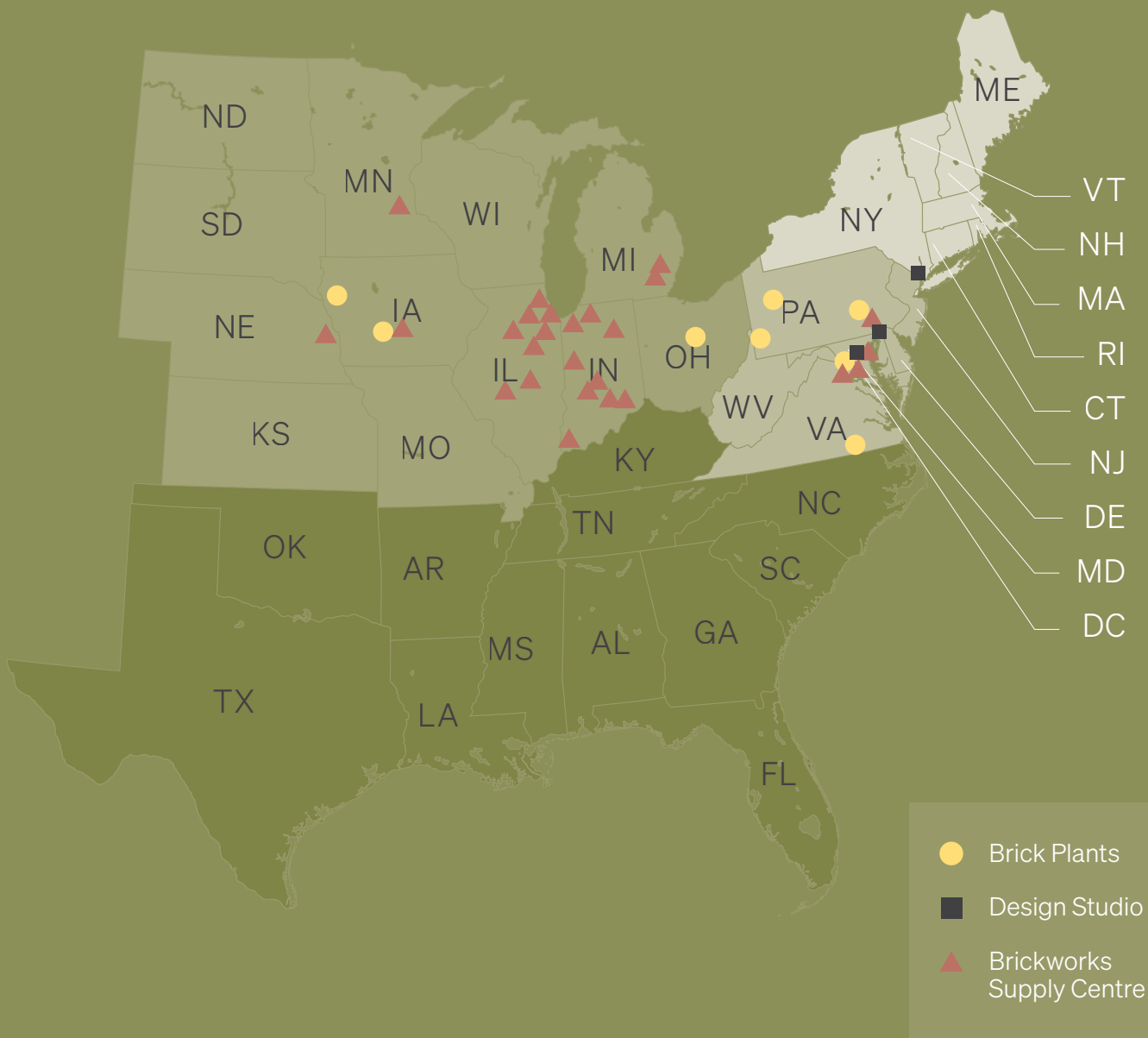
Building Products Australia

Revenue by State and location map



Building Products North America

Location map



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.

AUSTRALIA



NORTH AMERICA



INTERNATIONAL BRANDS





Project: Naples Street
Location: VIC
Product: Bowral Bricks
Simmental Silver



Organisational Changes

Building Products Australia

Building Products Australia has completed a range of portfolio rationalisation initiatives over the past few years, including the exit of brick manufacturing in Western Australia, the closure of Austral Precast and sale of Auswest Timbers.

During FY2024, a range of additional initiatives were implemented to further streamline operations. These included the consolidation of Austral Bricks and Austral Masonry into one operating division, a restructure of Bristle Roofing and a rightsizing of divisional support functions.

Including these initiatives, there was a headcount reduction of 139 staff across Building Products Australia in FY24. Other benefits will also include increased cross-selling opportunities, streamlining of processes and supply chain optimisation.

In response to the subdued market conditions, the Company has taken the opportunity to carry out increased maintenance activities and intermittent plant shutdowns during FY2024, ahead of the anticipated strong demand through the rest of the decade.

In New South Wales, commissioning of the new Horsley Park Plant 2 facility was substantially completed in FY2024. This facility, with a capacity to manufacture 130 million bricks per year, is the most advanced brick plant in the country, delivering best in its class fuel efficiency, and setting a new standard for brick manufacturing.

Late in FY2024, the difficult decision was taken to temporarily cease production at the adjacent Plant 1 brick facility, also at Horsley Park. With Plant 2 now operating at capacity, the Company can meet the current cyclical low level of demand in New South Wales, with a reduced local plant footprint and some additional product transfers from Queensland.

Building Products North America

Glen-Gery

In North America, a five-year brick plant rationalisation program was completed during FY2024. In total, nine plants have been closed, as the business has integrated new bolt-on acquisitions. While disruptive throughout the implementation phase, the end result of this process is a more efficient plant network and a more focussed capital investment program.

During FY2024 a dryer upgrade was completed at the Mid-Atlantic plant. With strong demand for the unique moulded product from this plant, this plant returned to full production in the second half.

The Rocky Ridge plant in Maryland has been comprehensively upgraded and was re-commissioned in the second half of FY2024. This plant will produce a range of moulded bricks specifically tailored for the UK market. In addition, the plant will produce US modular brick, which will support an increase in demand for this product on the east coast, as well as a premium long format brick, which is also growing in popularity. The long format brick will be unmatched in the US market, with no domestic equivalent.

In addition to the rationalisation of brick plants, the Landmark stone plant was closed in December 2023. This was a non-core and highly manual operation, and with increased labour costs considered no longer viable.

Brickworks Goodman Property Trust

In July 2022, our partnership with Goodman was expanded with the launch of the Brickworks Goodman 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 are 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 Brickworks Goodman Joint Venture (JV). An example of this successful partnership is the development and operations at the Oakdale Industrial Estate, NSW.

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 400 MW of solar PV installed globally by 2025.

Oakdale Industrial Estate

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 m².

The precinct is centrally located with good access to the M7 and M4 Motorways.

Local employment

The total number of people employed and inducted across the Estate to date is 5,484 people (Oakdale West – 4,214, Oakdale East – 1,270).

Solar installation

Oakdale Industrial Estate currently has 22.6 MW solar PV installed, including 5.2 MW completed in FY2024. A further 5.3 MW is committed for install in FY25. Average solar PV utilisation rate of 63% across the Oakdale Industrial Estate in FY2024.

EV chargers

Goodman is supporting the transition to zero emissions transport and facilitating this through the installation of EV chargers across its Australian portfolio. 5% of all car parking spaces located within Oakdale Industrial Estate are now fitted with 22 kW dual EV chargers. There are approx. 92 passenger EV chargers installed and operational across Oakdale Industrial Estate as at end FY2024.

Decarbonisation

Goodman is 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%.

A carbon budget has been assigned for each new warehouse development, and a target of a minimum 10% reduction of embodied carbon, against an industry baseline.

Goodman is engaging with builders, suppliers and industry partners to investigate opportunities to reduce embodied carbon associated with materials such as concrete, and conduct trials on suitable alternatives.

In FY2024, Goodman trialled alternative concrete mix designs with increased recycled content at Precinct 5, Oakdale West Estate. These concrete mixes are continuing to be refined with the intention of achieving a lower embodied carbon outcome and implementation across future Oakdale Estate developments.

Oakdale South Building 2A and 2B were among the first industrial developments certified as carbon neutral under Climate Active's Building Upfront Carbon product certification in FY2023. The development resulted in approximately 17,292 tonnes of upfront embodied carbon.

Oakdale West Building 2B also achieved carbon neutral certification under Climate Active's Building Upfront Carbon product certification in FY2023. The development resulted in approximately 13,711 tonnes of upfront embodied carbon. Australia Post is the sole occupant of the facility.

Purchased carbon offsets are with high quality local and international nature-based solutions projects.

In addition, the sandstone base for Ottelia Road was sourced from the WestConnex tunnelling project, leading to a circular waste outcome.

Building certifications

Goodman has a 5 star Green Star Buildings target on all future warehouse developments at Oakdale Industrial Estate.

Building certifications include 5 Star Green Star Design and As Built v1.2 rating for Building 1A, Oakdale South.

In FY2023, a portfolio-wide Green Star Performance rating was extended to all seven buildings at Oakdale Central. A total of 244,764 sqm has now been certified under the tool, achieving a 2 star Green Star rating.

Climate Resilience

Goodman has adopted Task Force on Climate-related Financial Disclosures (TCFD) guidelines and published the first TCFD statement in 2020.

A Climate Resilience Adaptation Plan was conducted at Oakdale Central in FY2024. The assessment determined relatively low vulnerability to climate hazards as well as a low overall initial climate change risk exposure, when considering existing adaptation measures in place to manage risk to extreme weather events.

Biodiversity

Goodman recognises the importance of protecting and enhancing biodiversity across the portfolio.

Across the 440ha Oakdale Estate, Goodman has used the expertise of their team and their ecologists to preserve existing habitats, where possible, and improve the land's biodiversity potential for future flora and fauna.

Over 57 hectares of Biodiversity Management Areas (BMAs) have been created at Oakdale, with over 1 million native flora species planted.

Wildlife corridors connect to strategic biodiversity conservation areas to the north and south of the estate. There is a fauna tunnel within the embankment of Oakdale West's primary access road and bridge.

Habitat established within the BMAs include:

- ▶ kangaroo habitat factored into the BMAs
- ▶ rock piles created for reptile habitat
- ▶ large woody debris relocated for habitat

The Oakdale West Estate is covered by vegetation management plans which have been actively maintained since January 2021. Any land cleared was offset as part of a stringent Biodiversity Conservation Trust Fund in perpetuity.

Oakdale Industrial Estate Native plantings

Estate	Area (ha)	Native Plantings (qty)
Oakdale Central	7	442,530
Oakdale South (inc. watercourse realignment)	27	399,499
Oakdale West	17.7	155,234
Oakdale East	5.8	180,388
Total	57.5	1,177,651

Indigenous engagement

Oakdale Industrial Estate land is traditionally owned by the Dharug Aboriginal people and is home to several significant First Nations sites. As part of Goodman's Indigenous land and vegetation management plan, they have consulted with the appropriate First Nations groups as to how to manage sensitive sites and artifacts found during excavation.

Brickworks Building Products Strategy and Targets




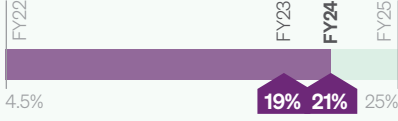

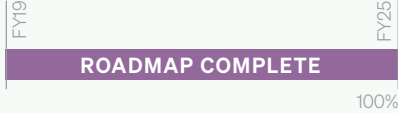



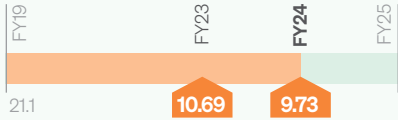

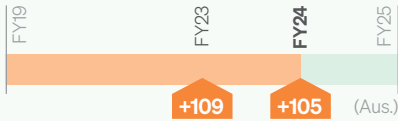




Significant annual progress against our 2025 targets including our 2030 carbon and energy efficiency targets


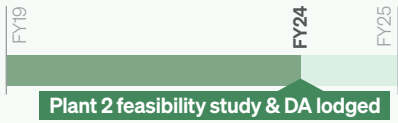

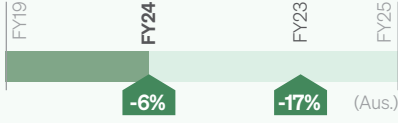

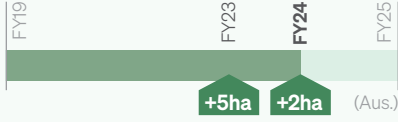

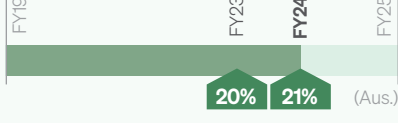


2025 Targets – Build for Living: Towards 2025

During FY2019, Brickworks engaged with internal and external stakeholders to understand what issues matter the most to them. We launched a new sustainability strategy, “Build for Living: Towards 2025” to help us deliver a positive impact for our stakeholders.

2025 Targets – North America Integration


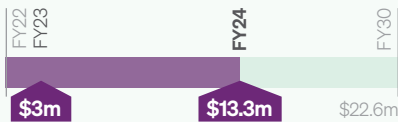



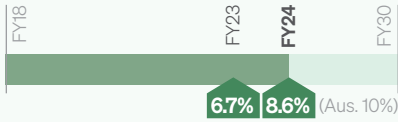
Since launching the Build for Living strategy, Brickworks has made several acquisitions in North America. In FY2023, we enhanced targets to include our North American business in our sustainability goals. The sustainability targets for Safety, Lifecycle and Design, Sustainable Products, and Carbon Transition now apply to both our Australian and North American operations. We are continuing efforts to fully integrate the North American business into the remaining targets, with updates planned for future strategy revisions.


Target	Our Progress	Status
 Life Cycle and Thermal Design and Education We will support design tools, guidance and information to incorporate thermal design and life cycle thinking into building design.	75 continuous professional development and education sessions completed in FY2024. Modelling of 7-star thermal design continuing with University of Newcastle.	 FY19 FY23 FY24 FY25 +42 +75
 Sustainable Products Increase the volume of verified sustainable products to 25%.	21% of product volume was verified as sustainable by third party labels.	 FY22 FY23 FY24 FY25 4.5% 19% 21% 25%
 Supply Chain Continuing to reduce supply chain risks.	Modern Slavery Roadmap completed.	 FY19 FY25 ROADMAP COMPLETE 100%
 Governance Business Ethics and Whistle-blower Programs.	Governance programs formalised. Continued annual training.	 FY19 FY25 PROGRAM COMPLETE 100%
 Safety Continue reductions in injury rates.	Total Recordable Injury Frequency Rates reduced by 54% since FY2019.	 FY19 FY23 FY24 FY25 21.1 10.69 9.73
 Engagement Existing target of 100 community engagement activities annually.	105 community engagement activities, meeting our target of 100 in Australia.	 FY19 FY23 FY24 FY25 +109 +105 (Aus.)
 Community Support Supporting charities like the Children's Cancer Institute.	\$469,747 contributed to Children's Cancer institute in 2023 calendar year and over \$5.3 million contributed since 2002.	 FY19 2022 2023 FY25 \$3.5m \$4.8m \$5.3m (Aus.)
 Diversity and Inclusion Stretch target: 35% female senior executives. Develop and implement a Diversity and Inclusion Strategy.	Target met with 41.7% female senior executives in Australia. Further training on advancing diversity continued in FY2024.	 FY19 FY25 FY24 27% (Aus. 35%) 41.7%

Target	Our Progress	Status
 Carbon Transition Continued investment into developing feasible renewable biomethane opportunities and investment in the transition to the hydrogen fuel economy.	Brickworks is assessing the feasibility of a 253 TJ renewable bioenergy facility to be located next to a brick plant at Horsley Park in Western Sydney. The project recently lodged a development application with the NSW Government. Brickworks is assessing the feasibility of LFG cleaning to supply our Queensland Rochedale brick manufacturing site. Approval was received for the trial of organic grape marc, a waste from the wine industry to substitute for natural gas in our South Australian kiln.	 <p>Plant 2 feasibility study & DA lodged</p>
 Water Reduce potable water use in water stressed areas.	14% increase in mains water usage in Australia compared to FY2023 due to drier climatic conditions. 6% decrease in usage from FY2020. North America had minimal change in their mains water use compared to FY2023.	 <p>(Aus.)</p>
 Rehabilitation Drive progressive rehabilitation.	19,800 m ² land progressively rehabilitated in Australia and 141,276m ² of land progressively rehabilitated in North America in FY2024.	 <p>(Aus.)</p>
 Circular Economy Year on year increase in recycled material use.	Recycled raw materials increased from 20% in FY2023 to 21% recycled content in FY2024 in Australia.	 <p>(Aus.)</p>
 Air Quality Emission Control Over \$2 million investment in emission abatement.	Over \$6 million invested in air quality emission abatement in Australia since FY2019.	 <p>COMPLETE ONGOING \$6m+</p>

2030 Targets – Progress on the ‘Towards 2030’ Strategy

We have set expanded climate objectives as 2030 targets, focusing on carbon reduction, energy efficiency, and product innovation, which will form the core of our upcoming ‘Towards 2030’ strategy update. As we continue to refine this strategy, it will include quantitative targets addressing all key material areas across both our Australian and North American operations.

Target	Our Progress	Status
 Product Innovation Year on year increase in R&D investment in the next generation of clay brick and concrete block wall systems.	\$13.3 million R&D spend since FY2022 into our sustainability innovation strategy focus areas.	 <p>\$3m \$13.3m \$22.6m</p>
 Carbon 15% reduction in Scope 1 and 2 greenhouse gas emissions by 2030 from a FY2022 baseline, across our combined Australian and North American operations.	22% reduction from FY2022 baseline across Australia and North America due to decreased market activity driving temporarily lower production levels.	 <p>TARGET EXCEEDED -6% -15% -22%</p>
 Energy Efficiency Stretch target: 10% increase in gas efficiency at Austral Bricks plant by 2030.	Total gas efficiency and natural gas efficiency has improved by 8.6% since 2018.	 <p>6.7% 8.6% (Aus. 10%)</p>



Mygunyah by the Circus

'Mygunyah by the Circus' is a renovation to a heritage house, which deftly stitches together new and old. The new building uses carbon neutral bricks from the Daniel Robertson range. Daniel Robertson bricks are manufactured in Brickworks' Austral Bricks Longford operation in Tasmania. This facility was certified carbon neutral in 2013, making it Australia's first certified carbon neutral brick manufacturing plant to date.

CREDITS

Project: Mygunyah by the Circus

Architect: Matt Gibson Architecture + Design

Location: VIC

Photography: Derek Swalwell

Product: Daniel Robertson Traditional Buff – Carbon Neutral Bricks & Austral Bricks La Paloma in Romero

Climate-related disclosure

Our climate-related strategy, targets and programs

Climate-related Strategy

Brickworks' commitment to reducing energy use and carbon emissions is driven by our climate-related strategy, targets and programs.

Climate-related Strategy, Programs and Targets

Climate-related Strategy

As companies continue to embrace the global push towards decarbonisation, Brickworks has already dramatically reduced its carbon footprint and is now looking at the feasibility of co-locating bioenergy production on its manufacturing sites.

At Brickworks, our challenge is to reduce the energy intensity in the manufacturing process. To achieve this, we regard the use of biofuels as a key enabler. We also acknowledge a role for carbon neutral offsets, to complement our efforts to drive down emissions.

As one of Australia's industry leaders, we plan to pursue realisable projects, driving the development of bioenergy projects to become a leading player in the energy transition in the "hard to abate" manufacturing sector.

Brickworks has long understood the step change carbon emission reductions possible through manufacturing excellence.

We have 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 per cent increase in gas efficiency at Austral Brick plants by 2030 from FY2018.

The decrease is attributed to efficiencies gained from alternate fuels, manufacturing consolidation, equipment upgrades and operational improvements. Brickworks invested over \$400 million since 2006 in equipment upgrades and operational improvements (including new plants) and carbon reduction strategies.

Our climate-related strategy, targets and programs build on these achievements, focusing on four key areas, including efficiency, lower carbon energy sources, innovation, the appropriate use of offsets and improving the energy efficiency of homes over lifetime operations. Each focus area has deliverables to drive performance.

Climate-related Strategy Performance

In Australia, carbon emissions have followed a general downward trend, with a 56% decrease compared to FY2006 (Scope 1 and 2). Our progress in this area is supported by product redesign, increased use of recycled materials, utilisation of renewable bioenergy such as sawdust and landfill gas in some of our kilns, and capital investments into modern, fuel-efficient production processes. For example, at Horsley Park we have built the most energy efficient brick plant in the country, and decommissioned two kilns that were both more than 40 years old.

Last year we announced a new carbon target: to achieve 15% reduction in Scope 1 and 2 greenhouse gas emissions by 2030, from a 2022 baseline, across our combined Australian and North American operations. In response to the subdued market conditions, the Company has taken the opportunity to carry out increased maintenance activities and intermittent plant shutdowns during FY2024, ahead of the anticipated strong demand through the rest of the decade. This has influenced a reduction in greenhouse gas emissions in FY2024 of 22% compared to the FY2022 baseline.

The carbon target is also underpinned by our stretch target for a 10% increase in gas efficiency at Austral Brick plants by 2030 since FY2018. Since FY2018, which marked the start of a strategic 10-year investment vision to drive energy efficiency, our Austral



Oakdale East
Masonry Plant, NSW

Bricks business has seen an 8% improvement in gas efficiency. In FY2024, our new Horsley Park Plant 2 state-of-the-art brick manufacturing facility completed commissioning, demonstrating 57% improvement in energy intensity compared to FY2018.

Brickworks has added 1.2 MW of rooftop solar across multiple sites, generating 934 MWh annually. Upcoming installations include 3 MW in Western Sydney and 1,460 kW in Melbourne, with the Western Sydney plant set to cover 19% of its electricity needs, equivalent to powering 442 Sydney households annually.

We have also made steady progress in North America. Since our entry into this market in 2018, we have achieved a 19% energy efficiency improvement, primarily through our plant rationalisation and upgrade program.

For hard-to-abate sectors such as brick manufacturing, effective regulation (such as a whole of life-cycle approach to emissions intensity), along with investment and innovation, is critical to ensure the optimal outcomes. We are working with industry-forums to encourage a whole of life-cycle approach to measuring embodied carbon.

Brickworks is enhancing our commitment to investing in renewable biomethane and landfill gas opportunities. The Brickworks Bioenergy Transformation Initiative seeks to lead the market in carbon reduction innovation within the Australian brick and building products sector. More information about this initiative is contained in the climate-related programs section below.

Climate-related Targets

Our climate-related strategy, targets and programs build on our carbon reduction achievements to date, focusing on four key areas, including efficiency, lower carbon energy sources, innovation and improving the energy efficiency of homes over lifetime operations. Each focus area has deliverables to drive performance.

Brickworks also continues a watching brief on the potential transition to the hydrogen fuel economy.

Brickworks invests significantly in research and development to drive the sustainable design elements of our products and reduce embodied carbon. Significant successes are being progressed in light-weighting, cement substitution, manufacture of new innovative low carbon products, higher recycled content and raw material optimisation.

Figure: **Scope 1 and 2 Emissions decarbonisation pathway**

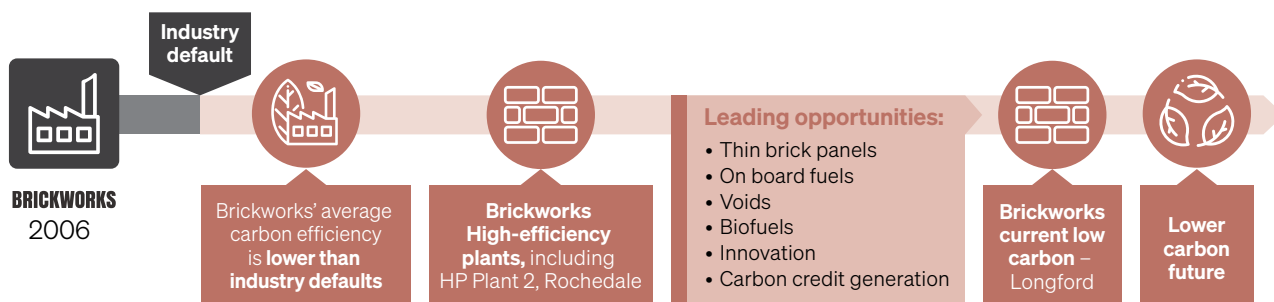


Table: **Climate-related Strategy, Targets and Programs**

	Manufacturing Energy Efficiency Strategy	Lower Carbon Energy Sources	Innovation and Sustainable Products	Improve home energy efficiency over lifetime operations and Value Chain Engagement
STRATEGY FOCUS AREA	Achieve global leadership in leading manufacturing excellence and efficiency	Increasing use of bioenergy and low carbon fuels Renewable Electricity and Gas Purchasing Strategy	Develop the next generation clay brick and concrete block wall systems, through light-weighting, on-board fuels, raw material optimisation and product innovation	Provide thermal mass products such as bricks and roof tiles which can reduce heating and cooling bills by up to 40% annually using cavity brick compared to lightweight construction ⁴
DELIVERABLES	Stretch target for 10% increase in gas efficiency at Austral Bricks plants by 2030 (FY2018 baseline) <i>(More details in the Metrics and Targets section)</i>	15% reduction in Scope 1 and 2 greenhouse gas emissions by 2030, from a 2022 baseline, across our combined Australian and North American operations Continued investment into developing feasible renewable biomethane opportunities Bioenergy Transformation Strategy Complete the Brickworks Hydrogen Project <i>(More details in the Energy and Carbon section)</i>	Year on year increase into R&D investment into the next generation of clay brick and concrete block wall systems. This represents more than \$22.6 million invested by 2030 by Brickworks and our partners Share learnings and explore opportunities with value chain Increase the volume of verified sustainable products to 25% <i>(More details in the Climate strategy – Innovation and Sustainable Products section)</i>	Invest in research for thermal design and lifecycle education Share learnings and explore opportunities with value chain <i>(More details in the Climate strategy – whole of life carbon section)</i>

Climate-related Programs

Bioenergy Transformation Strategy

Our goal is to transition to a low carbon economy, while providing high thermal mass products that minimise energy consumption through the operational phase of a home.

Clay bricks are a naturally energy efficient material, absorbing heat energy, storing it and releasing it later into the environment. This thermal lag from thermal mass saves lifetime carbon emissions by reducing demand for artificial heating and cooling in homes.

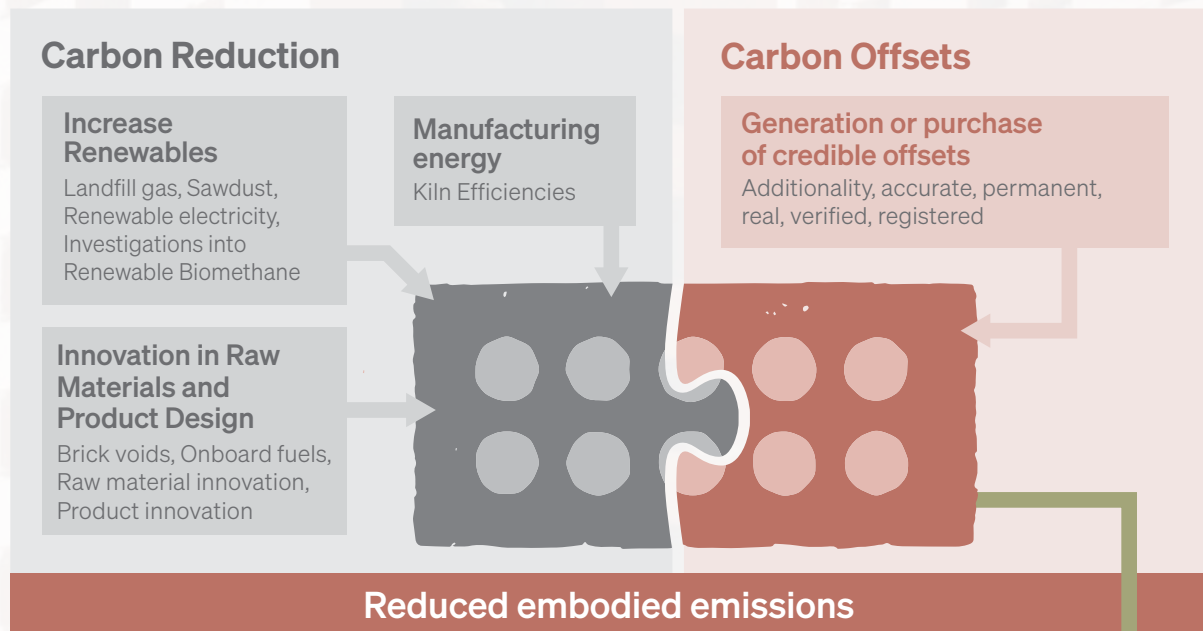
The thermal mass results in a reduction in energy consumption over the lifetime of a building, with up to 40% reduced heating and cooling loads when combined with insulation, compared to lightweight construction alternatives.

At Brickworks, we are also focussed on reducing embodied carbon through the manufacturing process. Brickworks has over 10 years of experience in providing carbon neutral products from our Longford Tasmania facility using 73% bioenergy of the site's energy mix. Brickworks sees a range of opportunities to replicate the success of this low carbon brick manufacturing through the Brickworks Bioenergy Transformation strategy.

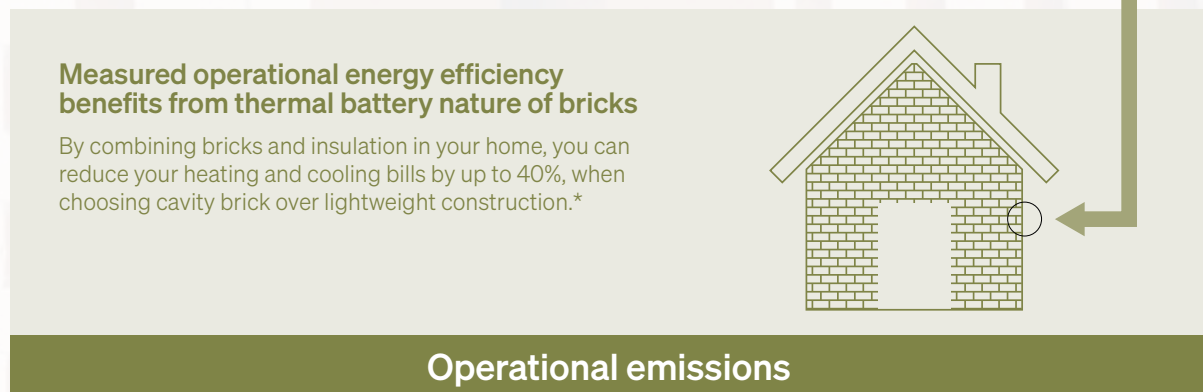
Longford uses 73% bioenergy of the site's energy mix, which has avoided over 70,000 t CO₂-e in emissions over 10 years. Residual 50,000 t CO₂-e of emissions from the lifecycle of brick manufacture and sales from Longford have been offset over the last 10 years. We seek to replicate the success of this low carbon brick manufacturing process across Brickworks sites through the Brickworks Bioenergy Transformation strategy.

4 A Study of the Thermal Performance of Australian Housing, University of Newcastle, 2011–2017. Study is currently being updated to include thermal research in 7 Star Home designs under the Nationwide House Energy Rating Scheme.

Brickworks Bioenergy Transformation strategy towards zero emissions – model for replication on additional sites



Improve operational energy of buildings



* Data derived from tests conducted by the University of Newcastle into the thermal performance of Australian housing. Testing was conducted on a west-facing wall in summer. Full report can be found in the Bricks for Living Brickworks Publication

Project: Bruce Street
Location: VIC
Product: Nubrik Chapel Red

Brickworks Bioenergy Transformation Strategy Goals



11%

Bioenergy used in Energy Mix
Brickworks Australia FY24

Potential bioenergy in Australia's industrial manufacturing energy generation (heat demand) by 2050 – ARENA Bioenergy Roadmap

33%

Bioenergy potential identified
by ARENA Bioenergy
Roadmap by 2030

‘Renewable industrial heat generation benefits from technologies that are mature and in use throughout the world. It is well established in Australia and can still grow. However, low visibility and non-economic barriers impede its development in Australia.’

Australian Renewable Energy Agency (ARENA) Bioenergy Roadmap

Brickworks is a signatory to the Renewable Gas Alliance's Renewable Gas Challenge



Australia

19 operating sites
(as at 31 July 2024)

- Brick Plant
- Masonry Plant
- Roofing Plant
- Cement Terminal (JV)
- Design Studio

Exploring bioenergy opportunity focus area

- On-board fuels including alternative organic materials

Innovation options

- Carbon Neutral option available on all Austral bricks and pavers

Exploring generation of offsets

- Explore plantation carbon sinks and timber production

Innovation options

- Carbon Neutral option available on all Austral bricks and pavers

Exploring Bioenergy opportunity focus areas

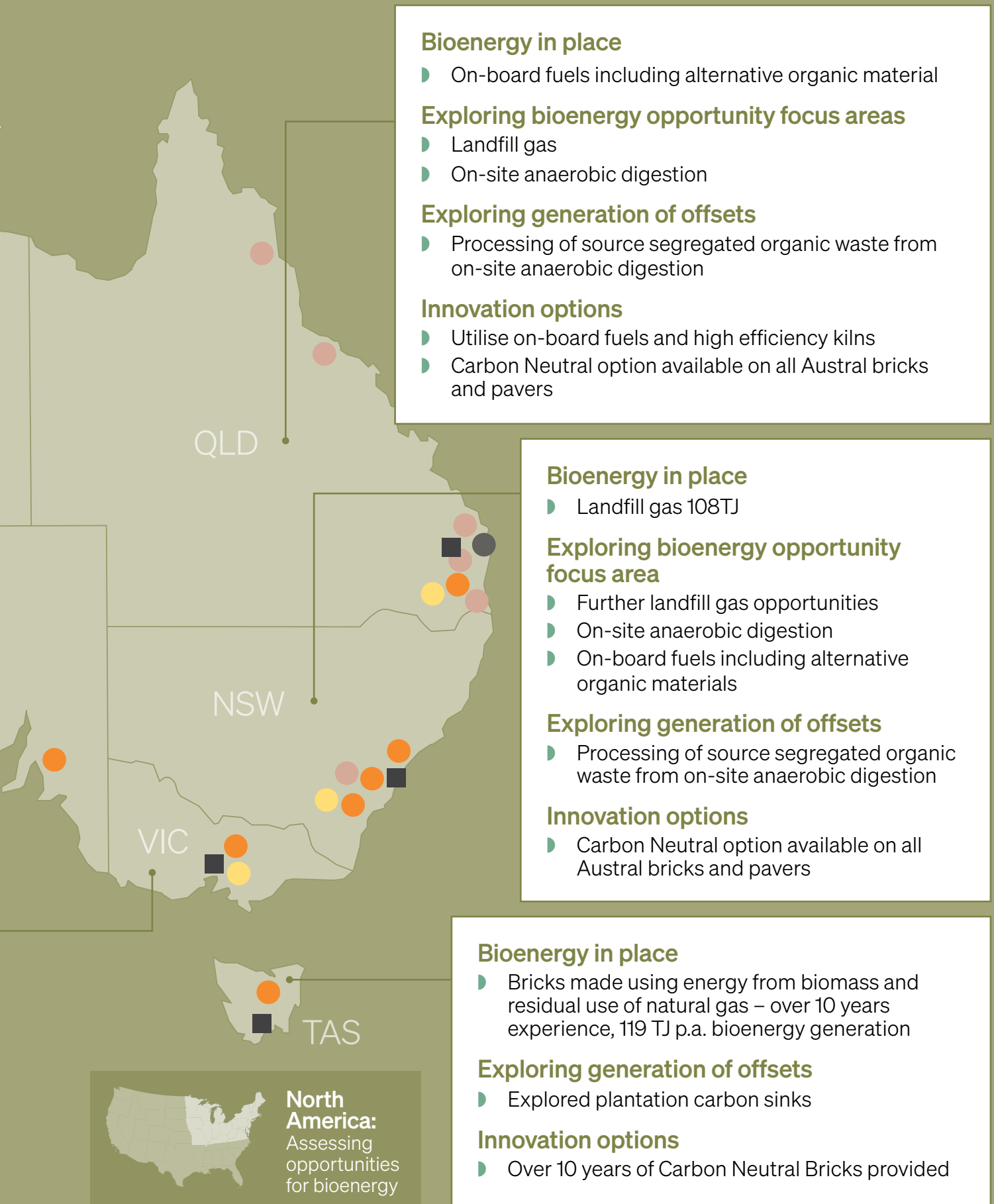
- Landfill gas
- On-site anaerobic digestion

Exploring generation of offsets

- Processing of source segregated organic waste from on-site anaerobic digestion

Innovation options

- Utilise on-board fuels and high efficiency kilns
- Carbon Neutral option available on all Austral bricks and pavers



Solar Program – Installation Program Across Brickworks Sites

Onsite solar rollout continues

- ▶ **Generating (0.65MW)**
 - Rockhampton, Oakdale, Gympie, Ayr, Cairns
- ▶ **Installed (4.28MW)**
 - Plant 2, Yatala, Dandenong and Wollert
- ▶ **In plan (1.46MW)**
 - Wollert on-ground



Total potential Scope 2 savings = 4402 t CO₂e

(average of 16% of Scope 2 emissions for sites with solar installed)

Brickworks is assessing the feasibility of a behind-the-meter renewable gas solution at Austral Bricks Plant 2

Rationale

Brick manufacturing is a hard-to-abate sector

Electrification not an option for very high heat process

Our solution

Anaerobic Digestion

Converting commercial and industrial organic waste into onsite renewable biogas.

Biomethane Production

Assessing the feasibility of behind-the-meter biomethane (renewable gas) production.

The Site

Horsley Park, NSW
(Western Sydney) process

Co-located with new and most advanced brick plant in Australia

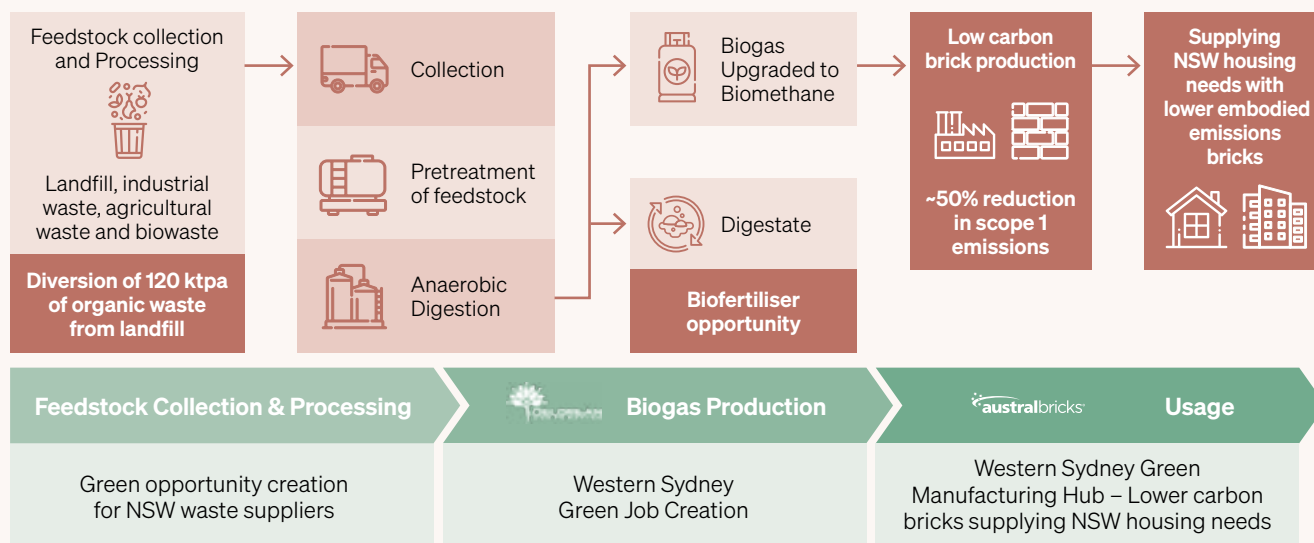
Austral Bricks kiln displaces natural gas with renewable gas



Green Jobs Creation

Green manufacturing supporting 256 FTE's existing Brickworks NSW jobs

Renewable Biomethane Gas provides an Opportunity for Brickworks to Supply NSW Housing Needs with Low Carbon Bricks



Our bioenergy transformation strategy includes:

1. increased use of renewable energy sources, with a focus on bioenergy;
2. best practice manufacturing efficiency, including investment in the latest kiln technology; and
3. innovation in raw materials and product design – including brick voids, on-board fuels, raw material innovation and production innovation.

As an industry leader using 11% bioenergy in manufacturing in Australia, we understand the critical role renewable bioenergy can have in producing low-carbon products.

Renewable bioenergy facilities provide a pathway to begin the transition to decarbonising natural gas consumption. Renewable bioenergy generation also offers the potential to generate carbon offsets on-site, from emission reduction activities such as the diversion of organic waste from landfill.

We are assessing the feasibility of renewable bioenergy generation at our brick plants with leading technology providers. If successful, each facility has the potential to provide a significant source of renewable energy. According to estimates by the Australian Renewable Energy Agency, bioenergy could account for 33% of the industrial heat processing needs by 2030.

As part of this potential bioenergy growth potential, we are actively advancing various feasibility studies for a series of projects designed to significantly boost the utilisation of bioenergy. These opportunities encompass harnessing additional landfill gas resources, integrating alternative organic raw materials, and generating on-site bioenergy through anaerobic digestion.

The decarbonisation of Brickworks' Scope 1 and 2 emissions is driven by our Bioenergy Transformation project, to be funded through regular capital processes with investment into landfill gas cleaning and anaerobic digestion should these projects pass feasibility assessments.

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 (ASX:DEL) 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 253,000 GJ p.a. of renewable gas. If the project receives approval to proceed, the facility could reduce Brickworks Scope 1 emissions by approximately 13,012 tCO₂e p.a. through the displacement of natural gas. Renewable bioenergy facilities provide a pathway to begin the transition to decarbonising natural gas consumption.

Another part of the potential bioenergy growth is the potential availability of renewable biomethane through the existing natural gas network. Bioenergy Australia forecast that biomethane can be rapidly scaled to account for approximately 23% of the total pipeline gas market in Australia by 2030, with over 350PJ of biomethane available for immediate decarbonisation. The Federal Government in Australia is currently expanding the 'Guarantee of Origin' scheme to include biomethane, which would mean Brickworks could contract that biomethane the pipeline network and allocate lower emissions to Brickworks products.

Refining Risks and Opportunities through Engagement with Value Chain

Brickworks is actively collaborating with its value chain to refine key components of carbon risks and opportunities. This includes working with industry bodies to develop embodied carbon tools and review the feasibility of potential targets, as well as encouraging a whole-of-life approach into these tools.

Efforts also focus on refining the cost opportunities associated with biomethane. As a member of Bioenergy Australia, Brickworks continues to advocate for policy and regulatory changes that recognise Scope 1 emission reductions for purchasers of renewable gas.

Brickworks engages with the value chain to encourage a whole-of-life approach to embodied carbon tools through participation in key industry groups, such as MECLA, GBCA, the Australian Institute of Architects, NABERS, BASIX, the National Construction Code (NCC), and the publication of Environmental Product Declarations (EPDs).

Role of Offsets

Carbon offsets help mitigate climate change by allowing organisations and individuals to compensate for their greenhouse gas emissions. Offsets can be valuable for addressing hard-to-eliminate emissions, driving innovation in carbon reduction, and raising climate action awareness.

Carbon neutral offerings are now available on all Australian Austral Bricks products, as an opt-in basis. This is in addition to over 10 years of our Longford bricks range providing carbon neutral bricks.

Our carbon neutral products and operations are certified under Climate Active. Climate Active is an ongoing partnership between the Australian Government and Australian businesses to drive voluntary climate action. It is a rigorous carbon neutral certification scheme, built upon international best-practice standards and GHG protocols and underpinned by carbon accounting and offsets integrity principles. Under Climate Active, only high-quality carbon offsets are allowed for reaching carbon neutrality. All our claims under Climate Active are subject to independent third-party verification to ensure the integrity of the carbon neutral claim.

Further investigations into expanding carbon neutral offerings into different product lines are in progress.

In FY2024, Brickworks evaluated the feasibility of generating carbon offsets from its existing land holdings. Potential opportunities included on-site bioenergy production via anaerobic digestion, as well as plantation carbon sinks and timber production. A thorough review of offset generation through forestry was conducted during the year. Although this option was not feasible at the time, it will be reassessed regularly should conditions change.

Renewable bioenergy generation also offers the potential to generate carbon offsets on-site, from emission reduction activities such as the diversion of organic waste from landfill. This opportunity shows significant promise and is incorporated into the Bioenergy Transformation Strategy.

Brickworks obtains expert guidance and screens the carbon offsets that we procure to ensure they are real, verified and registered. The reviews we have in place are intended to help prevent double counting and reduce the risk of procuring from programs associated with significant social or environmental harm. The purchase of high-quality offsets (defined by Climate Active) is ensured through Brickworks' well developed environmental management system.

As the carbon offset market evolves, we will ensure we are proactive in aligning carbon credit procurement with industry standards and community expectations.

Scope 3 Emissions – Brickworks Building Products

While we are still refining our Scope 3 emissions inventory for FY2024, the indication of the FY2023 estimate for Brickworks Building Products Australia and North America is that Scope 3 emissions are 288 ktCO₂e.⁵ Over 50% of these emissions arise from two single sources:

- ▮ 31% of Scope 3 emissions from cement purchase
- ▮ 29% of Scope 3 emissions from transport contractors upstream (including quarries) and downstream (including deliveries)

Reducing Scope 3 emissions with supplementary cementitious materials

Brickworks is driving a range of projects to reduce Scope 3 carbon emissions arising from cement purchase. These key actions are set out in Brickworks Building Products' Scope 3 cement emissions decarbonisation pathway, including:

- ▮ Successful production trials of low carbon concrete masonry blocks. Successful production trials by Austral Masonry for a low carbon cement blends for masonry blocks and sleepers using Supplementary Cementitious Materials fly-ash and ground granulated blast-furnace slag (GGBFS).
- ▮ Brickworks also sources cement from our Joint Venture Southern Cross Cement, which has lower embodied carbon than industry defaults and will be recognised by Environmental Product Declarations.

- ▮ Brickworks is exploring the feasibility of the production of low carbon calcined kaolin supplementary cementitious materials, suitable for use in premium Austral Masonry products. Production of supplementary cementitious materials offers access to critical raw materials to reduce Brickworks' Scope 3 emissions as well as offering a new low carbon building material product.
- ▮ Brickworks is already working on reducing scope 3 emissions relating to cement as part of our innovation strategies to reduce embodied emissions for our concrete products. Many of our suppliers, including the Southern Cross Cement JV, have Environmental Product Declarations (EPDs) which will allow us to further refine our emissions profile.
- ▮ In FY2023, Brickworks received a prestigious \$1.6 million research grant to collaborate with QUT Associate Professor Yunfei Xi on reducing embodied carbon in lightweight concrete products. This project will support exploration into higher cement reduction opportunities.

Since FY2022, Brickworks has invested \$13.3 million into research and development for kiln efficiencies, light weight products and different fuel types. An increase in successful factory trials has driven an accelerated opportunity for investment into developing low carbon building materials. Brickworks has committed to investment of \$22.6 million into low carbon building materials by 2030.

Transport Efficiency

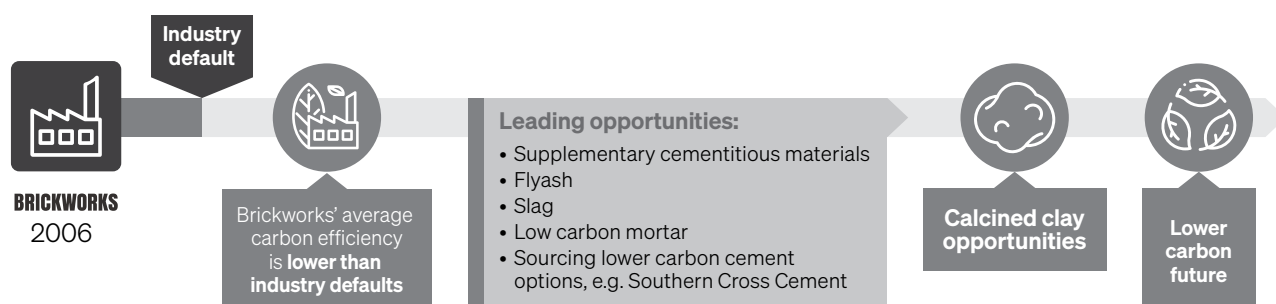
Reducing Scope 3 emissions with Transport Efficiency

The transport of our raw materials and transportation of our products between warehouses and to our customers' accounts for 29% of the Brickworks Building Products Scope 3 emissions. To address this, we are actively streamlining our transportation processes and exploring advanced technologies, such as AI-powered route optimisation, to reduce emissions and improve efficiency.

We are currently finalising Environmental Product Declarations for a wide range of our Australian products. These life cycle analyses will assist us in further refining our Scope 3 emissions.

Further detail on the Scope 3 emissions inventory boundaries and methodology is available in the Energy and Carbon section.

Figure: **Scope 3 Cement Emissions decarbonisation pathway**



⁵ Carbon offsets purchased as part of Brickworks' Climate Active carbon-neutral product offerings were considered immaterial and therefore excluded from the Scope 3 emissions inventory.

Whole of Lifecycle Carbon

The built environment has substantial environmental and social impacts. Sustainable building design offers greater energy and resource efficiency over the operational lifetime of a building. Building product companies have an important role to facilitate innovation through providing durable and naturally sustainable products.

Brickworks is a leading manufacturer 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.

Sustainable Buildings are Resilient

At Brickworks, we see a strong future for bricks, masonry and roof tiles. 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.

Thermal Mass Reduces Lifetime Carbon

Thermal mass products such as bricks and roof tiles can reduce heating and cooling bills by up to 40% annually using cavity brick compared to lightweight construction.⁶ This is because they act like a thermal battery, absorbing heat during high temperatures and releasing heat during cooler temperatures.

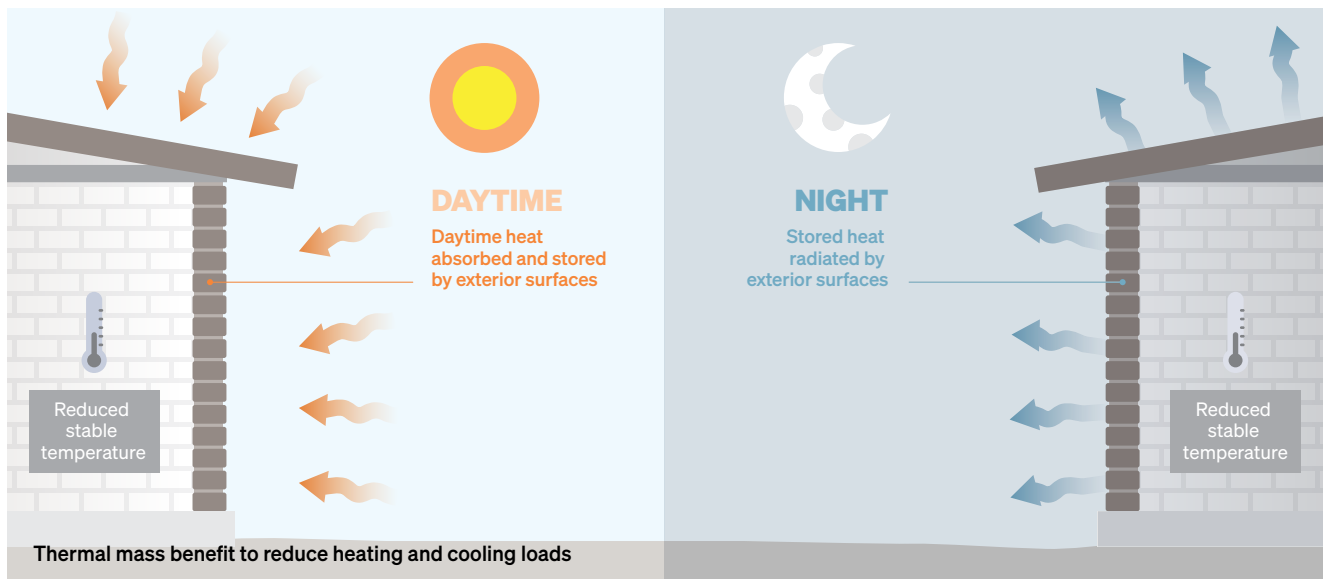
Naturally Sustainable Products

Our bricks and concrete products are manufactured to provide resilience. They are durable, fire-proof, contain thermal mass for energy efficient design, have excellent acoustic properties and no indoor air emissions (VOCs); and our clay bricks hold a 100-year warranty. Bricks are recyclable into products such as road base and into the manufacture of new bricks.

Clay Bricks – Sustainability Features

Thermal mass	✓
Low maintenance	✓
Fire-resistant	✓
Long service life	✓
Non-toxic	✓
Recyclable	✓

⁶ A Study of the Thermal Performance of Australian Housing, University of Newcastle, 2011–2017. Study is currently being updated to include thermal research in 7 Star Home designs under the Nationwide House Energy Rating Scheme.



Sharing thermal mass research with NSW Department of Planning BASIX team

The Building Sustainability Index (BASIX) aims to deliver equitable, effective water and greenhouse gas reductions across the state. BASIX is one of the strongest sustainable planning measures to be undertaken in Australia.

BASIX uses the National House Energy Rating Scheme (NatHERS) to assess home energy rating schemes. 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.

Brickworks was able to share vital thermal research on the benefit of thermal mass with the BASIX team, as well as the opportunity to include lower carbon products into the BASIX embodied carbon product assessment as a cost effective low-emission building product option.

Resilient Low Maintenance Products Reduce Lifetime Carbon

At Brickworks, we believe that the most sustainable buildings are built to last. Embodied carbon in building material replacements can have a significant impact on meeting carbon goals. Building materials that are not resilient lead to increased maintenance requirements and replacement of building materials and associated embodied carbon.

Not only does brick last a very long time, it requires little to no maintenance and can be easily recycled and our clay bricks hold a 100-year warranty. We are supporting industry programs which identify opportunities to reduce building material replacement embodied carbon through improving the resilience of building designs.

Designing for Climate by Think Brick will demonstrate key role for bricks in resilient home design

During FY25, Think Brick will release the performance of housing in future climate scenarios. The research will feature eight locations for climate scenarios forecast in 20 to 40 years. This work will demonstrate the benefits of thermal mass and bricks in future climate scenarios.

Climate-related Opportunities for Brickworks Building Products



Demand for Brickworks' Thin Brick Systems driven by bushfire requirements and structural lightweighting

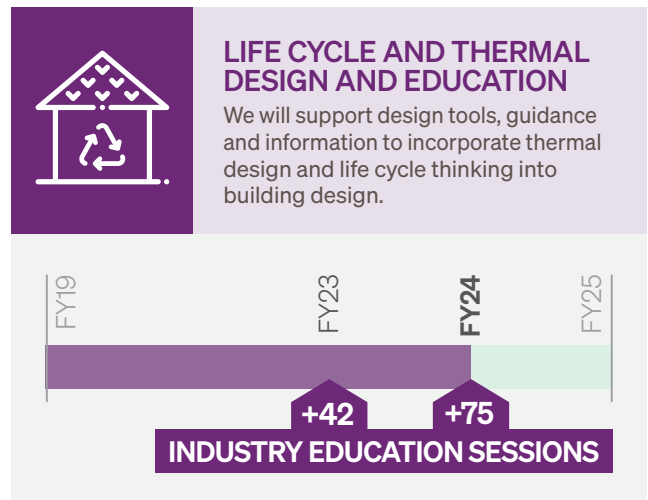
Lightweight brick-facing systems, such as Thin Tech and Tru-Brix, are pushing the boundaries of traditional brickwork. These innovative systems allow the use of real brick in projects where full-size brick is not feasible due to cost or practicality constraints. Brickworks has seen growing demand for thin brick products, largely due to their resilience and lightweight properties.

One example is the use of Tru-Brix to retrofit combustible cladding on a home near a national park. This solution helped the property meet the necessary Bushfire Attack Level (BAL) requirements for high-risk areas.

PBD Architects also used Tru-Brix in the design of Maya in Mona Vale, strategically combining the lightweight thin brick system with full-depth brick. This approach eliminated the need for heavy lintels and shelf angles, reducing structural demands without compromising design integrity.

Life Cycle Education

Our sustainability strategy focuses on the opportunity to make buildings and cities safe, resilient and sustainable. Design that incorporates sustainability brings greater energy and resource efficiency over the operational lifetime of a build.



During FY24, 75 continuous professional development and education sessions were delivered to architects, builders and customers including:

- ▶ Brickworks Australia hosted nine formal Continuing Professional Development events, attracting 675 attendees;
- ▶ 13 events were hosted with Industry Partners focused on sustainability topics in FY2024; and
- ▶ Brickworks North America hosted 53 Continuing Education Seminars and additionally hosted 'Brick School' comprising ten training sessions and a plant tour.

Other relevant events undertaken throughout the year included:

- ▶ Seasonal Design Studio events, hosted by Brickworks Australia in collaboration with Parlour and National Association of Women in Construction (NAWIC), using education and advocacy to promote gender equity in architecture and design.
- ▶ Supporting graduate Architects and Landscape Architects through the Emerging Architects and Graduate Network (EmAGN) and Australian Institute of Landscape Architects (AILA). Collaborating for events like the Generation Exchange series, sustainability masterclasses and design competitions.
- ▶ The Korero / Yarn with Country Event Series invited First Nations Design Practitioners to a conversational panel event, exploring themes of sustainability and connection to country within delivery of the Built Environment.
- ▶ Brickworks North America hosted five events focused on sustainability, totalling 6.5 HSW/LU credits.

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 FY2024 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 National Climate working group.
- ▶ Australian Institute of Landscape Architects, which leads a dynamic and respected profession, creating great places to support healthy communities and a sustainable planet.
- ▶ Enduring design education via Robin Boyd Foundation. This year, we expanded our work with the Robin Boyd Foundation to run a design competition open to all Australian Universities. Students were asked to redesign a dwelling, incorporating best practice sustainability and addressing issues such as density and engagement with First Nations culture.
- ▶ Nightingale Housing through sponsorships. Nightingale Housing is a not-for-profit organisation that provides apartments that are socially, financially and environmentally sustainable. Brickworks is proud 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.
- ▶ Housing Industry Association and supporting sustainable homes.
- ▶ Other organisations: Manufacturing Australia, Institute of Quarrying Australia, Energy Users Association Australia, Think Brick, Australian Roofing Tile Association (ARTA), Australian Sustainable Business Group, Australian Environmental Business Network, and the American Chamber of Commerce (AmCham).

Austral Bricks
Longford Staff



Energy

Security and Renewables

Energy Security

Energy security, reliability and affordability are critical to our business operations. Brickworks is a large natural gas consumer and purchases gas supplies on a wholesale basis. 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. The Australian Energy Market operator continues to forecast potential gas shortfalls during winter periods from as early as 2025. It is critical that new domestic gas projects, such as the Narrabri gas project in NSW, are developed as quickly as possible. New gas supplies for the domestic market are also essential to supply gas-fired generators that will need to generate electricity to firm renewables when the sun isn't shining and the wind isn't blowing.

Brickworks has a long-term relationship with Santos, having entered into a five-year gas supply agreement with Santos in 2020 to deliver gas to its east coast operations. A new eleven-year agreement with Santos will commence in January 2025, providing Brickworks with long-term gas security for its East Coast operations.

Energy Management

Brickworks undertakes business-as-usual energy management activities, including weekly senior management energy efficiency and energy cost reviews. Wholesale gas arrangements have allowed Brickworks to secure long-term gas supply directly from a major gas producer, helping it to manage its gas costs.

Brickworks utilises internally generated daily gas consumption forecasts to manage wholesale gas market costs, identify kiln and dryer efficiency issues, and manage the variability of landfill gas supplies. Kiln gas efficiency across different products is quantified, which acts as a feedback loop into operational improvement activities and helps manage exposure in wholesale gas markets.

Alternative Energy Sources

Biofuels

Brickworks has long-since used biogas and sawdust for renewable energy generation. In FY2024, 11% of Building Products Australia's energy came from renewable or alternative energy sources such as landfill gas or sawdust. These biofuels allow us to avoid the greenhouse gas emissions that would have been released if we used natural gas.

In FY2024 there was a decrease in landfill gas consumption which is attributed to the closure of Plant 3 in NSW in FY2023. In spite of this decrease, we continue to actively advance various feasibility studies for a series of projects designed to significantly boost the utilisation of bioenergy. These opportunities encompass harnessing additional landfill gas resources, integrating alternative organic raw materials and generating on-site bioenergy through anaerobic digestion.

Exploring renewable gas opportunities

The gas we use to fire the bricks in our kilns cannot be easily substituted for alternative renewable energy sources and kilns cannot be electrified. However, Brickworks is leading the industry in supporting the development of a nascent renewable gas market as a commercially viable pathway to decarbonise our business operations.

Brickworks is undertaking a feasibility study into Australia's first manufacturing behind-the-meter renewable biomethane gas project. Partnering with Delorean Corporation, Brickworks is investigating the feasibility of a Bioenergy Facility at Horsley Park in Western Sydney. The project recently lodged a development application with the NSW Government. If the project proceeds into the construction phase, the facility will supply the co-located brick plant with up to fifty per cent of its gas needs with renewable biomethane gas produced from organic waste. The Horsley Park Bioenergy Facility would



Brickworks undertaking a feasibility study into Australia's First Manufacturing Behind-the-Meter Renewable Biomethane Gas Project

Partnering with Delorean Corporation, Brickworks has recently lodged a development application with the NSW Government to develop a Horsley Park Bioenergy Facility in Western Sydney. If the project proceeds to construction, it will reduce the scope 1 emissions of a co-located brick plant by fifty percent by displacing fossil natural gas with renewable biomethane gas.

reduce the brick plant's scope 1 emissions by fifty percent by displacing fossil natural gas with renewable biomethane gas.

The proposed facility will use anaerobic digestion technology to convert organic waste into renewable natural gas for the brick plant. It is expected to supply 253,000 GJ of renewable gas each year, reducing Brickworks annual Scope 1 direct emissions by 13,012 tCO₂e through the displacement of natural gas.

Renewable bioenergy facilities provide a pathway to begin the transition to decarbonising natural gas consumption.

As a member of Bioenergy Australia, Brickworks continues to advocate for policy and regulatory changes that recognise the scope 1 emission reductions for buyers of renewable gas.

CARBON TRANSITION

Continued investment into developing feasible renewable biomethane opportunities and invest in the transition to the hydrogen fuel economy



Renewable Electricity

We are currently increasing our on site renewable electricity generation capacity. With 408 kW of solar systems installed at Rockhampton and Oakdale solar in previous years, Brickworks has installed an additional 1,208 kW capacity of roof-top solar systems across multiple sites in FY2024, capable of generating 934 MWh of renewable electricity each year. Additionally, large solar systems with capacities of 3,000 kW at a Western Sydney brick plant and 1,460 kW at a Melbourne brick plant are planned for installation. The Western Sydney large-scale solar installation will supply approximately 19% of the electricity needs of the brick plant, which is equivalent to the annual electricity needs of 442 average Sydney households.



In North America, we are progressively transitioning our electricity contracts to renewable energy purchase agreements. Recently, we have secured renewable electricity contracts for our Iberia and Rocky Ridge manufacturing sites starting in 2025.



Hydrogen

There remain technical and commercial challenges in the short to medium term for the conversion to zero-emission fuels such as hydrogen. However, hydrogen remains a technology that is a potential future fuel source. Over the long term, being a substantial consumer of gas, this fuel has the potential to assist Brickworks in lowering its greenhouse gas emissions.

Brickworks is investing in the transition to a hydrogen fuel economy through desktop and lab-scale trials, in partnership with Murdoch University. In FY2022 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.

Raising the Awareness of Clean Energy

At Brickworks, our challenge is to reduce the energy intensity in the manufacturing process. To achieve this, we regard the use of biofuels as a key enabler.

This is a critical enabler of the achievement of the UN Sustainable Development Goal 7 “Affordable and clean energy” and UN Sustainable Development Goal 13 “Climate Action”.

As one of Australia’s industry leaders, we plan to pursue realisable projects, driving the development of bio energy projects to become a leading player in the energy transition in the “hard to abate” manufacturing sector.

Raising the profile of successful bioenergy projects aligns with the Australian Renewable Energy Agency (ARENA) Bioenergy Roadmap goals.

‘Renewable industrial heat generation benefits from technologies that are mature and in use throughout the world. It is well established in Australia and can still grow. However, low visibility and non-economic barriers impede its development in Australia.’

– Australian Renewable Energy Agency (ARENA) Bioenergy Roadmap

In FY2024 we continued to collaborate with Bioenergy Australia to support the Renewable Gas Alliance Renewable Gas Challenge. Brickworks:

- supports the development and deployment of biomethane as a decarbonisation pathway;
- identifies the lack of policy currently supporting biomethane projects; and
- calls for urgent certification of biomethane to allow the buyer to recognise the emission reduction.

Innovation and Sustainable Products

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

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. This will be delivered through our sustainable product innovation strategy and targets.

Customer expectations for sustainable building products are described through design principles for more sustainable homes including leading standards such the Greenstar Homes Guide by Green Building Council of Australia, LEED for Homes by U.S. Green Building Council, building codes, regulations and planning measures.

Brickworks' 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) used in the NSW Building Sustainability Index BASIX, Green Star Homes and LEED for Homes.

Brickworks recognises the importance of accurately measuring embodied carbon in building products and incentivising carbon

emission reductions. The inclusion of Climate Active products in planning measures offers customers a range of carbon neutral products today, supported by a robust Australian Government certification scheme which requires participants to commit to emission reductions strategies and targets.

Brickworks is a member of the Green Building Council of Australia. Brickworks was a founding partner and financial supporter of Materials and Embodied Carbon Leaders' Alliance (MECLA) and Chair of Other Materials Working Group and Project Control Group member. This will help align materials indexes with the national standard used by the National Australian Built Environment Rating System (NABERS), already used extensively by the NSW Government and industry to provide sustainability measurements for commercial and retail buildings.



Green Building Council Australia
Member 2023–2024

Naturally Sustainable products

Our bricks and concrete products are manufactured to provide resilience. They are durable, fire-proof, contain thermal mass for energy efficient design, have excellent acoustic properties and no indoor air emissions (VOCs); and our clay bricks hold a 100-year warranty. Bricks are recyclable into products such as road base and into the manufacture of new bricks.

What customers want in sustainable building products

Design principles for more sustainable home are informed by leading standards such as Green Star Homes by Green Building Council of Australia and LEED for Homes by U.S. Green Building Council.

(More information can be found from Brickworks Sustainable Home Guide at www.brickworks.com.au)

Highlights of how Brickworks products contribute to GreenStar Homes and LEED for Homes

An energy efficient home



Home energy use

Thermal mass products such as bricks and roof tiles can reduce heating and cooling bills by 40% annually using cavity brick compared to lightweight construction. This is because they act like a thermal battery, absorbing heat during high temperatures and releasing them during cooler temperatures.

Support home renewable energy

Bristle Roofing partners with specialist energy providers in the solar field to provide solutions to their customers. Brickworks offer training sessions for architects and designers in understanding solar opportunities and incorporating solar into home design.

Carbon Neutral, lower embodied carbon and higher recycled content products

Carbon Neutral products offset carbon emissions from homes. Brickworks has introduced a carbon offset opt-in program for all Austral bricks and pavers, certified under the Australian Government's Climate Active Program. In addition to offering carbon neutral products, Brickworks also continues to reduce carbon emissions towards our 2030 carbon target.

A healthy home



Reduce material toxicity

Brickworks products are the natural healthy choice as they emit zero toxic Volatile Organic Compounds.

Moisture management

Brickworks products are the naturally healthy choice as they breathe and allow moisture to escape. Bricks and roof tiles are also maintenance free, and do not rot or rust.

Air quality

Brickworks products are breathable, allow moisture to escape, and are natural and healthy.

A resilient home



Resilience

Make your home design durable for the long term. Only Austral Bricks and Bristle Roofing* products are guaranteed for 100 years.

Heat resilience

Testing shows roof tiles will reflect more heat away from the home than other commonly used roofing materials. Roof tiles are available in more colour and profile combinations than any other commonly used roofing product in Australia. Bristle Roofing Light Collection provides an elegantly light range of appealing natural tones.

Water resilient

Water run-off from terracotta and concrete tiled roofs is safe to use. Austral Grasspave permeable pavement can contribute to water sensitive urban design by reducing impervious areas which can lead to poor stormwater quality and flow.

Clay Bricks – Sustainability Features

Thermal mass	✓
Low maintenance	✓
Fire-resistant	✓
Long service life	✓
Non-toxic	✓
Recyclable	✓

Thermal mass products such as bricks and roof tiles can reduce heating and cooling bills by up to 40% annually using cavity brick compared to lightweight construction.⁷ This is because they act like a thermal battery, absorbing heat during high temperatures and releasing heat during cooler temperatures.

Sustainable Product Innovation Strategy and Targets

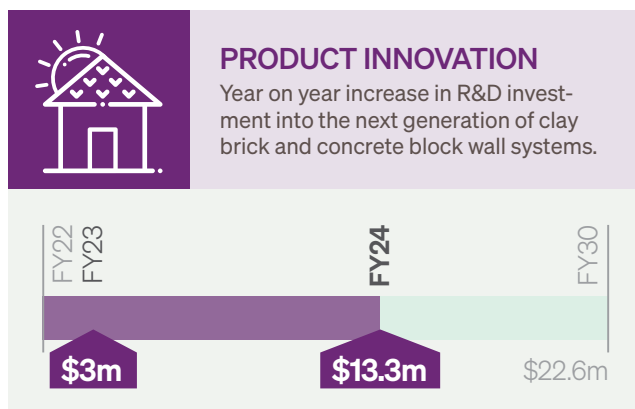
Paired with low carbon energy sources, innovation in raw materials and product design, manufacturing efficiency and the generation and purchase of carbon offset, bricks will continue to play a key role in leading environmental building design. Our sustainable product innovation strategy focus is to provide a wide range of thermal mass product options with high recycled content and lower embodied carbon across roofing and walling products.

Brickworks will use our product strengths to develop the next generation clay brick and concrete block wall systems.

By continuously innovating, we can create a more sustainable future for generations to come.

Brickworks' commitment to innovation in manufacturing excellence and raw material optimisation means our products are produced in some of the world's leading energy efficient kilns. Since FY2022, Brickworks invested \$13.3 million into research and development for kiln efficiencies, light weight products and different fuel and raw material types.

Brickworks' new product innovation target is a year-on-year increase in investment into research and development into the next generation clay brick and concrete block wall systems.



Brickworks continues to make incremental improvements to our clay bricks through ongoing research to increase the core hole volume percentage 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.

By 2030, Brickworks and our partners will invest over \$22.6 million into research and development into our sustainability innovation strategy focus areas, to drive the sustainable design elements of products and reduce embodied carbon. These innovation focus areas include: the thermal mass benefit of products, light-weighting, cement substitution and higher recycled content, raw material optimisation to reduce embodied carbon and increase recycled content, product innovation and sustainable design elements.

During FY2024, strategic research and development projects were successfully completed and embedded into production including new products and efficiency gains. These successful projects highlight the continued potential for significant advancements across our five sustainability innovation focus areas, further outlined below. Highlights include:

- **Thermal mass** – Investment into updating critical thermal mass research demonstrating benefits from thermal mass with the University of Newcastle.
- **Light-weighting, lower cement and higher recycled content** – This year we completed successful production trials of low carbon concrete masonry blocks and progressed the four-year prestigious \$1.6 million research grant collaboration to develop reduced embodied carbon lightweight concrete products.
- **Raw material optimisation** – Demonstration of energy-saving raw material mixes for brick manufacturing, being rolled across Austral Brick operations.
- **Product innovation** – During FY2024, Brickworks continued to grow opportunities for light-weight brick facing systems, Thin Tech and Tru-Brix.
- **Sustainable design elements** – We have increased our sustainable products verified as sustainable by third party labels to 27% of product volume in Australia. This is equivalent to 21% of our product across both Australia and North America.

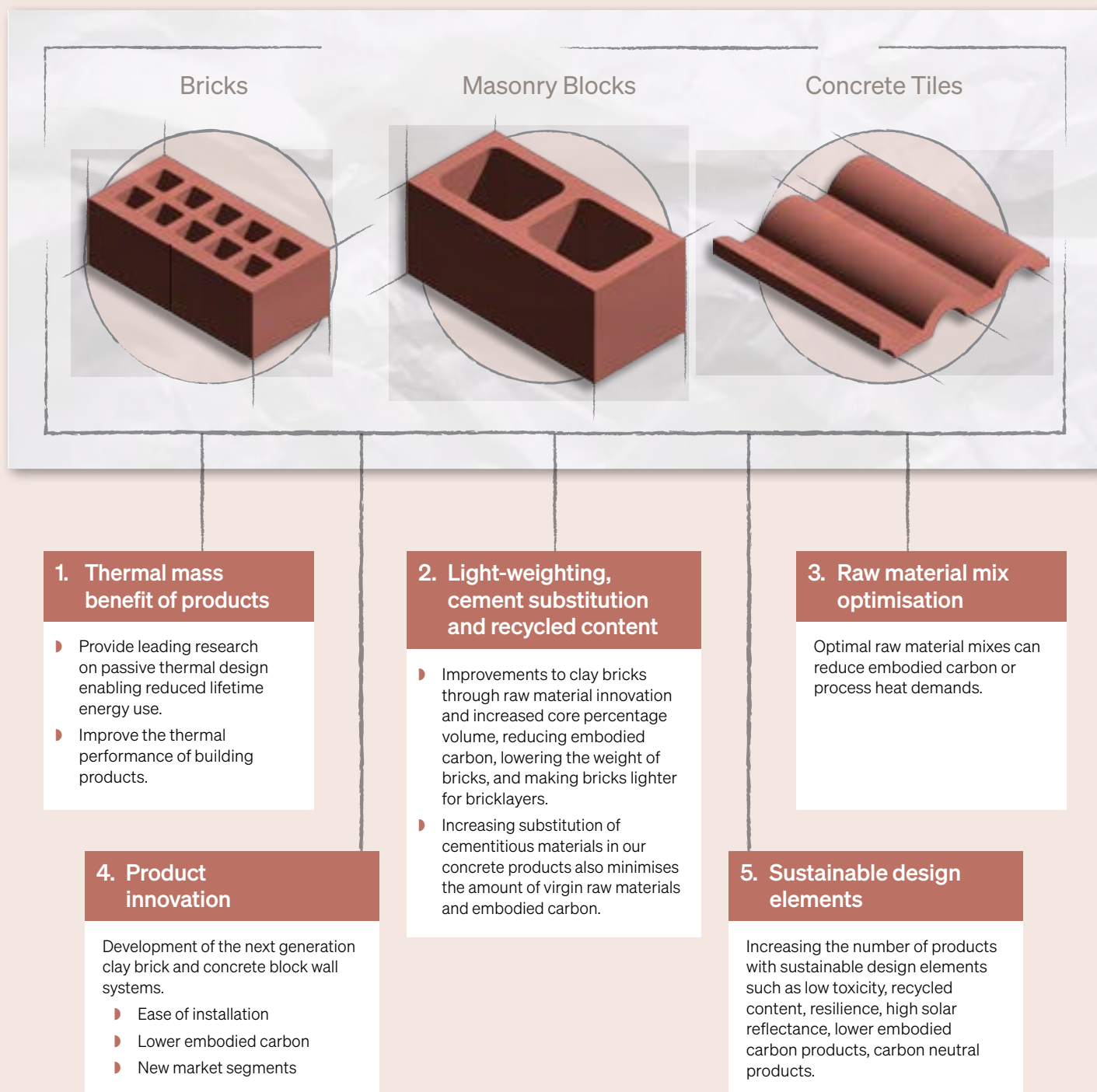
⁷ A Study of the Thermal Performance of Australian Housing, University of Newcastle, 2011–2017.

Research and **development**

Into the next generation clay brick and concrete block wall system

Sustainable Innovation Focus Areas

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 Innovation Progress

Innovation focus 1:

Thermal mass benefit of products

The significant benefit of thermal mass building materials to leading environmental building design is a strength of Brickworks' products and a key focus of our innovation strategy. We are committed to providing leading research on thermal design, enabling reduced lifetime energy use.



THERMAL DESIGN

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

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.



Brickworks is actively working to align the scope of this critical thermal research to changes contained in the National Construction Code 2022 residential energy efficiency provisions due for implementation in October 2023 which include an increase in the thermal performance of homes to the equivalent of a 7 Star energy rating.

To address this problem, Brickworks has partnered with the University of Newcastle with a commitment of \$250,000 to further progress thermal research by incorporating 7 Star Home designs into the 2011–2017 study 'A Study of the Thermal Performance of Australian Housing Phase 2'.



Experimental housing modules at the University of Newcastle

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, cavity brick, insulated cavity brick and lightweight), modifications and adjustments have been 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. The first year results are expected shortly.

Innovation focus 2:

Light-weighting, cement substitution and recycled content

The second key sustainable innovation focus area is light-weighting, cement substitution and recycled content.

Lighter bricks through increased voids

Brickworks' dedication to excellence means our products are fired in some of the leading energy-efficient kilns, with ongoing research to reduce brick weight through enhanced core percentage and innovative core patterns, resulting in savings on clay, energy, fuel, and ease for bricklayers.

Using enhanced clay materials, our Queensland and NSW brick factories have increased core content for some products from 27–28% to 41%, reducing material use by 18%, cutting energy consumption, and maintaining/improving product quality while increasing kiln capacity. These gains are being rolled out across selected Austral Brick products.

Lightweight masonry blocks

Brickworks continues to work towards lightweight lower carbon masonry products. In FY2023 we added an additional high recycled content and lightweight masonry block range to our existing Alpalite lightweight concrete block mixes. In FY2024 we made these options available to all major east coast regions.

Lighter products are not only reducing transportation costs but also significantly alleviating the physical strain on brick and block layers, providing a substantial advantage.

Increased recycled materials

During FY2024, 21% of raw materials was recycled content in Australia, up from 20% in FY2023.

The addition of reclaimed or recycled materials into our products has reduced product weight and minimised the amount of virgin raw materials required.

Cement substitution lowering embodied carbon

Substituting cementitious materials in our concrete products minimises virgin raw materials and embodied carbon. Ongoing research focuses on improving building materials by utilising sources like natural clay, crushed rocks, and specific fly ash types. The goal is to enhance mixing methods for stronger, more efficient materials while reducing conventional cement use and embodied carbon.

Our central goal is to innovate concrete engineering by incorporating tiny mineral particles, optimising rock and component arrangement, and improving products like blocks, roof tiles, and brick mortar. These innovations promise significantly increased strength, enhanced fire resistance, and improved temperature stability while reducing environmental impact, particularly in terms of embodied carbon.

In FY2024, Austral Masonry completed successful production trials of low carbon concrete masonry blocks. Low carbon cement blends were used for masonry blocks and sleepers using activated Supplementary Cementitious Materials fly-ash and GGBFS slag.

Brickworks also sources cement from our Joint Venture Southern Cross Cement, which has lower embodied carbon than industry defaults and will be recognised by Environmental Product Declarations.

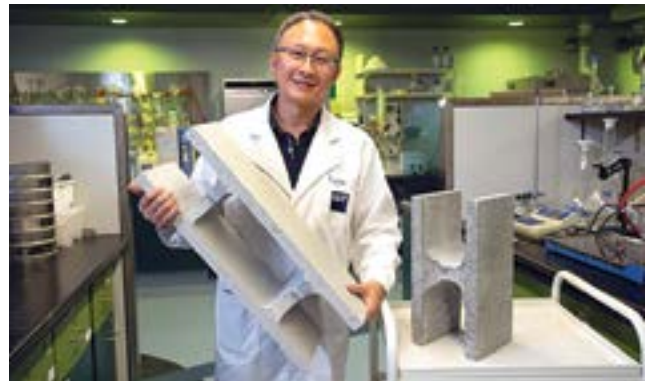
In FY2024, Brickworks continued work on the four-year prestigious \$1.6 million research grant collaboration to develop reduced embodied carbon lightweight concrete products, in collaboration with QUT associate professor Yunfei Xi. This project will support exploration into higher cement reduction opportunities.

Low embodied carbon mortar

Brickworks is supportive of the use of low embodied carbon mortar options currently available on the market in wall systems incorporating Brickworks products. Brickworks continues to support innovations in mortar to improve the ability to clean mortar to support reuse and recycling.

Investigation into calcined kaolin metakaolin

Brickworks is exploring the feasibility of the production of low carbon calcined kaolin supplementary cementitious material, suitable for use in Austral Masonry products. Production of cementitious substitute materials would offer access to critical raw materials to reduce Brickworks' Scope 3 emissions as well as offering a new low carbon building material product.



Low Embodied Carbon Concrete Mix Project

This project is supported by the Brickworks QUT Australian Research Centre Low Embodied Carbon Concrete Mix Project which was launched in FY2023 as a four-year \$1.6 million research grant collaboration to develop reduced embodied carbon lightweight concrete products. The project will create a lower embodied carbon concrete mix using local resources and waste products and aims to increase cementitious substitution rates by the use of activators.

In FY2023, Brickworks was awarded a prestigious \$1.6 million research grant collaboration to develop reduced embodied carbon lightweight concrete products, in collaboration with QUT associate professor Yunfei Xi. This project will support exploration into higher cement reduction opportunities.

The collaboration with QUT and Professor Xi aims to create a lower embodied carbon concrete mix using local resources and waste products, reducing greenhouse gas emissions and enhancing product sustainability.

This partnership secured the ARC grant in a highly competitive field, making Brickworks and QUT the sole recipients from QUT in the first round of the ARC Mid-Career Industry Fellowship scheme.

This effort builds on a three-year Advance Queensland Fellowship grant from 2017–2020, which focused on advanced clay brick mix design, resulting in energy savings and premium product development.

Besides project funding, QUT provides access to world-class expertise in clay and mineral materials characterisation and specialised materials analysis facilities. This collaboration has resulted in a team of materials specialists with five journal publications on clay materials characterisation and international recognition from organisations like the American Ceramic Society for their publication quality.

Supporting Home Renewables – Australian engineered roof solar tiles

Bristle Roofing partners with Volt, a specialist energy provider in the solar field, to provide solutions to their customers. Volt solar tiles integrate with selected Bristle Roofing's tiles.

With Volt, solar tiles are now affordable and accessible for homeowners who want clean and affordable energy to power their homes, and who want to invest in a quality rooftop solar system that is safe and built to last in the harsh climate conditions that we face.



Innovation Focus 3: Raw Material Optimisation

Our third key sustainable innovation focus area is raw material mix optimisation. Optimal raw material mixes can reduce embodied carbon or process heat demands.

Brickworks commitment to innovation continues to be rewarded by significant developments in energy savings and premium product development. Ongoing research into traditional clay materials has provided us with a deep understanding of their physical and chemical properties. This knowledge allows us to successfully develop raw material optimised mixes which require less process heat energy, reducing the embodied carbon of bricks.

The critical element to the raw material mix optimisation is a lower clay percentage. This is enabled by our new Pugmaster clay mixing systems, which increase the density, strength, and resilience in our raw material mixes.

These improved raw material mix designs boost production capacity and improve heat exchange enabling the successful incorporation of on-board fuels such as sawdust waste and low-grade coal fines. These innovations reduce the total energy demand as well as reducing the embodied carbon from manufacturing.

Our Queensland brick operation has adopted energy-saving clay mixes. These mixes have already shown substantial reductions in energy consumption based on successful trials. We are currently in the process of shifting all our factories towards using the next generation of energy-saving clay mixes.

Carbon sequestration in bricks

Brickworks is exploring approaches to quantify carbon sequestration in hard rock components of fired bricks. Brickworks raw material optimisation innovation program is increasing the fraction of hard rock materials in brick clay mix (high in calcium and magnesium). Hard rock components, such as olivine-rich basalt, might have the ability to sequester some of the upfront embodied carbon of a brick over the operational phase of a home.

Upskilling our Manufacturing Team

In support of our research efforts, Brickworks has been nurturing internal expertise by assembling a team of managers with specialised skills and research backgrounds. They are instrumental in challenging conventional practices and, in collaboration with academic experts, driving sustainability initiatives to reduce our carbon footprint.

Innovation Focus 4: Product Innovation

Our fourth key sustainable innovation focus area is product innovation. Brickworks is committed to the development of the next generation clay brick and concrete block wall system. Product innovation is focused on improving the ease of installation and increasing penetration into new market segments.

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

During FY2024, Brickworks continued to grow opportunities for two light-weight brick facing systems, Thin Tech and Tru-Brix, in Australia. These systems stretch the boundaries of brickwork. These light-weight systems make real brick available for projects where full-size brick isn't economical or practical. Brickworks has seen growing demand for thin brick products, largely due to their resilience and lightweight properties.



Thin Tech Plus
Railing System

Australian launch of two new light-weight brick facing systems

Thin Tech – *Stretch the boundaries of brickwork*

The Austral Bricks Thin Tech® system is a strong, durable thin brick veneer system designed in Australia. Each thin brick is secured by hooks to mechanically interlock thin brick to the panel.

Austral Bricks Thin Tech 100-year warranty on brick colour fastness and durability and 50-years on the system.

Tru Brix – *Lighten the load not the look*

The Tru-Brix™ system makes real brick available for projects where full-size brick isn't economical or practical.

Austral Bricks Tru-Brix is offered with extended warranties lasted up to fifty years on the rail and 100 on the bricks.



Innovation Focus 5: Sustainable Design Elements

Our customers select our carbon neutral bricks as sustainable products for thermal comfort, durability, low maintenance, organic texture and access to a carbon neutral product.

Our fifth key sustainable innovation focus area is therefore to increase the number of products with sustainable design elements such as low toxicity, recycled content, resilience, high solar reflectance, low embodied carbon and carbon neutral products.

Categories defining sustainable products include:

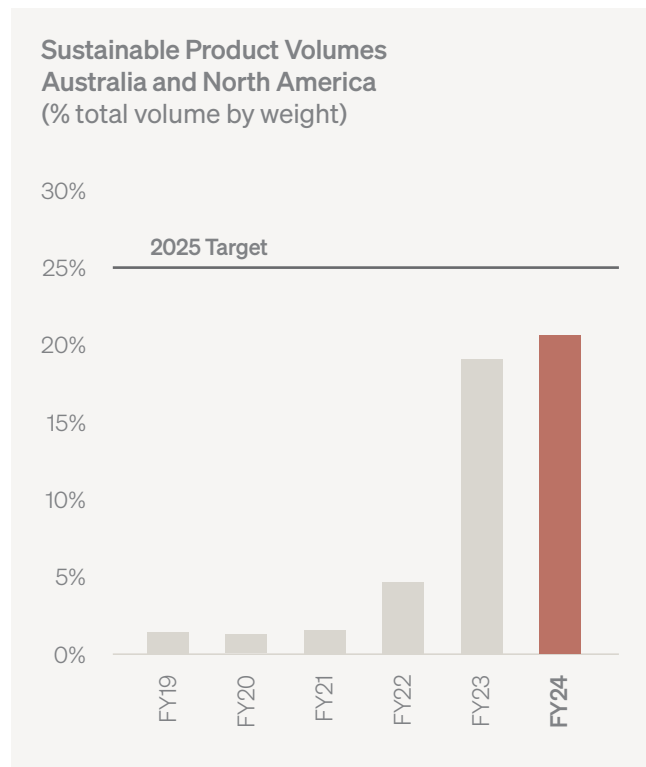
- low carbon (Climate Active Carbon Neutral, use of renewable or alternative energy, low carbon products);
- recycled content products (masonry products reducing cement content by the use of alternatives such as bottom-ash, fly-ash, glass, recycled bricks waste or recycled raw materials); and
- good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



In FY2024 we verified the following products and claims:

- Urbanstone's Australian Granite and our mortar solution, Mortex, are now labelled under Declare as Living Building Challenge Red list free.
- Completed life cycle assessments for the majority of our bricks and masonry products manufactured in Australia; these are currently being externally verified in preparation for publishing our Environmental Product Declarations.

This has increased our sustainable products verified by third party labels from 19% to 21% of our product volume across both Australia and North America. We are continuing to verify our sustainable products and have identified an additional 37% of the product volume in our portfolio of Australian products that will allow our customers to qualify for credits in sustainable building design such as Green Star ratings. There are also a range of opportunities across our North American products including recycled content and diversified façade options.



Our products within the GBCA's Responsible Product Frameworks

Climate active, EPDs and Declare are recognised Product Certification Initiatives in the Green Star rating tools. The Green Building Council of Australia recognises Responsible Products that may contribute to a Green Star rating through its Responsible Credits. Products certified by this initiative have been loaded into the Green Star Responsible Products calculator. Products may be certified by more than one initiative. This may increase the RPV of the product. Information on initiatives, and how products can contribute to a Green Star rating can be found at: <https://new.gbca.org.au/green-star/the-responsible-products-program/>

GB Masonry
Openform
Pavers Range

Project: Mygunyah by the Circus
Location: VIC
Product: Daniel Robertson in Buff and
Austral Bricks La Paloma in Romero



Verifying our sustainable products

Verified sustainable products allow our customers to qualify for credits in sustainable building design and construction certification.

Lower Carbon Products

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

Verified products:

Climate Active Carbon Neutral

Daniel Roberston Longford
Brickworks Australia Customer
Opt-in Carbon Neutral bricks



Made with Renewables

10–20% Solar

Oakdale and Rockhampton
Masonry Blocks and Pavers



Recycled Content Products

- ▶ Recycled content in Bricks
- ▶ Recycled content in Masonry
- ▶ Recycled Bricks

Verification to come:

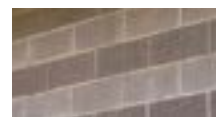
>20% recycled content bricks

Rochedale and Horsley Park

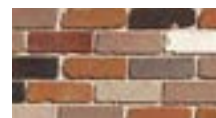
EPD



Masonry with
recycled content



North America
recycled content



Verification to come:

Lower carbon products
verified through EPD

EPD



Health and Wellbeing Benefits

Recognition of health and wellbeing benefits by frameworks such as:

- ▶ GBCA Responsible Product Framework
- ▶ Declare

Verified products:

Bowral Bricks
Nubrik Range
Wollert
Rochedale Bricks and pavers
Mortex
Mortar
Urbanstone
Australian Granite

Declare.

Transparency

Verified products:

GB masonry

EPD

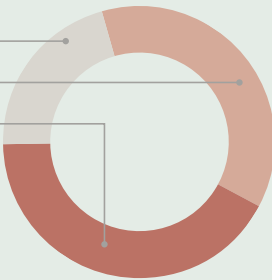
Verification to come:

Majority of Australian Bricks and Masonry

EPD

Sustainable Products Volume

Verified 21%
In progress 37%
Next focus 42%



Daniel
Robertson
Overland
Range



Climate

Risk and Opportunities

Our Approach to Climate Disclosure

We recognise that as a manufacturer of construction and building products, we are an emitter of carbon, particularly through our brick manufacturing operations, which account for the majority of our total (Scope 1 and 2) emissions of 312kt tonnes of CO₂e in 2024 for both Australia and North America.

Carbon emissions from our Australian operations have followed a general downward trend, with a 56% decrease compared to the base year 2005/06. The decrease can be attributed to efficiencies gained from alternate fuels such as landfill gas and sawdust, manufacturing consolidation, equipment upgrades and operational improvements.

We are progressively adopting the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) to improve both our approach in assessing and managing climate-related risks and opportunities and our related external reporting.

We are committed to the continued development of appropriate strategies to identify, manage and respond to climate-related risks and opportunities across our business. This includes building the resilience of our portfolio to consider climate impacts through adapting and responding to market, policy and technological changes by creating innovative solutions and products that support a smooth transition to a low carbon future. We strive to provide transparent disclosure of those risks and opportunities, and how we manage and respond to climate impacts, to help investors and other stakeholders understand our business.

Climate Disclosure

Our climate disclosure covers governance, risk management, strategy, metrics and targets. This year we have integrated climate disclosure into our Sustainability Report, with relevant references including:

- ▶ Climate Governance – disclosed below and in Governance section
- ▶ Climate Risk Management – disclosed in this section
- ▶ Climate Strategy – disclosed in Climate Strategy section
- ▶ Climate Metrics and Targets – disclosed in Energy and Carbon section

Climate Strategy Responses to Transition Risks

Brickworks is developing disclosure on the strategic performance implications under the various scenarios considered, such as potential qualitative or directional implications for Brickworks' value chain, capital allocation decisions, research and development focus.

We have outlined Brickworks Building Products key risks and opportunities based on the Climate-related Risks and Opportunities Strategic Review undertaken based on the scenarios outlined in the Climate Scenario section (Appendix 4).

The tables below outline a description of how climate-related risks and opportunities may affect the business and how these are linked to overall business strategy, vision and the core business model. These tables also include detail on the risks and opportunities identified and how the organisation has responded or plans to respond.

On an ongoing basis we will explain how specific risks and opportunities may have resulted in mitigation measures and operational strategies or adjustments over time.

Advancing Climate Disclosure

In 2021, Brickworks committed to the incremental adoption of TCFD recommendations, publishing our first TCFD report in 2022. In 2023, we introduced a three-year roadmap to further align with these recommendations:

Throughout 2022 and 2023, we implemented various recommendations across governance, strategy, risk management, and metrics and targets, including:

- ▶ establishing a robust governance structure;
- ▶ disclosing transition and physical risks qualitatively; and
- ▶ providing climate metrics and tracking year-on-year progress.

For example, the greenhouse intensity metric for Austral Bricks, a key climate-related indicator, has been reported since 2022.

During FY2024, we achieved the following:

Governance

- ▶ Completed Board training and developed a Board skills matrix
- ▶ Incorporated climate-related KPIs into remuneration

Strategy

- ▶ update on progress with new initiatives and progress against opportunities including stakeholder engagement across the value chain

Risk

- ▶ Brickworks undertook a review of climate change risks across both Australia and North America with a series of workshops with management. The identified risks were then rated in accordance with Brickworks' risk matrix adopting the TCFD framework and horizons of 2030 and 2050. Opportunities were also incorporated into the review,
- ▶ Collaborated with subject matter experts to complete a review of the existing scenarios based on the latest publicly available resources to more closely align the scenarios with those outlined in Sixth Assessment Report (AR6), the latest scientific advice from the Intergovernmental Panel on Climate Change (IPCC) scenario to enhance risk identification and management.

Metrics and Targets

- ▶ Advanced our work on Scope 3 emissions for Australia and North America, with our first inventory estimate for Brickworks Building Products reported in the Energy and Carbon section.
- ▶ Year on year progress against all metrics and targets with historical data for comparison.

Looking ahead to 2025, our outstanding goals include cost quantification of climate risks and opportunities and updating competencies.

Following the release of the Australian Sustainability Reporting Standards (ASRS), our TCFD roadmap has been integrated into an ASRS roadmap. Our experience with TCFD reporting since 2022 has equipped us well for aligning with ASRS requirements. Our roadmap to towards ASRS reporting is presented in the figure on the following page.

Exploring Risk Quantification Approaches on our journey to ASRS Readiness

Brickworks is exploring risk quantification approaches for focus risks and opportunities. Exploring risk quantification approaches has highlighted that investment in renewable biomethane is a key enabler for mitigating potential costs associated with meeting environmental targets. In addition, early results suggest that there may also be significant opportunities, such as an increase in thin brick sales driven by the demand for low-carbon products, which could positively impact profits.

Uncertainty exists in the measurement of the financial impact of these risks and opportunities, necessitating ongoing refinement.

To address this, a range of activities are underway, including the development of embodied carbon tools by industry bodies, consideration of carbon reduction targets, and the incorporation of a whole-of-life approach into these tools. Efforts are also being made to refine biomethane cost opportunities, biogas forecasts (including landfill gas and anaerobic digestion), and green premium estimation for low-carbon products.

Further Risk Details

During FY2024, Brickworks collaborated with subject matter experts to complete a review of the existing scenarios based on the latest publicly available resources. These assumptions are disclosed in Appendix 4.

As part of its TCFD implementation plan, Brickworks has completed an initial qualitative physical risk assessment to better understand the exposure of our sites to projected climate-related hazards. Details of physical risks identified are disclosed in Appendix 4.



The tables below outline a description of how climate-related risks and opportunities affect the business and how these are linked to overall business strategy, vision and the core business model.

Table: Risks – Qualitative and Directional Strategic Performance Implications

Strategic Implications and Strategic Response – Risks	
<p>Focus Risk 1 – Volatility in fossil fuel availability and prices (particularly due to the use of gas as the primary fuel source)</p>	<p>Increased energy costs from changes in carbon or energy policy. The potential introduction of regulatory pricing mechanisms and/or trading systems in Australia would primarily impact our more energy-intensive brick business. The policy environment in which decarbonisation occurs remains unclear, creating uncertainty for business around types and magnitudes of climate-related transition risks and opportunities that it will face. Our strategy is to continue to:</p> <ul style="list-style-type: none"> achieve global leadership in leading manufacturing excellence and efficiency. harness circular economy opportunities by investing in technology, suppliers and partners. respond to any uncertainty in the gas and renewables market with leading expert analysis and planning. continue to enter into long term gas agreements to help provide certainty of cost and supply.
<p>Focus Risk 2 – The transition to low-carbon future and increase in government regulations may result in a cost associated with Brickworks unabated emissions or cost associated with decarbonisation actions</p>	<p>Changes in construction industry standards on materials efficiency and regulation of existing products in buildings, large construction and infrastructure projects, as well as shifts in consumer preferences may result in demand shifts towards low carbon construction materials. Thermal mass materials may have higher embodied energy than some light-weight alternatives, however, offer significant lifecycle thermal efficiency benefits. Our strategy is to continue to:</p> <ul style="list-style-type: none"> respond to an increase in consumer preferences for products with leading sustainability attributes and low carbon options. <p>Need for innovation to develop new technologies to remain competitive. Rapid decarbonisation and technical development with strong economic growth will require investment in innovation to match the rates of technological adoption. Our strategy is to continue to:</p> <ul style="list-style-type: none"> achieve global leadership in leading manufacturing excellence and efficiency. harness circular economy opportunities by investing in technology, suppliers and partners. respond to any uncertainty in the gas and renewables market with leading expert analysis and planning.

Table: Opportunities – Qualitative and Directional Strategic Performance Implications

Strategic Implications and Strategic Response – Opportunities	
<p>Focus Opportunity 1</p> <p>Increasing demand for resilient building material products</p>	<p>Strong economic growth for resilient products. Changes in construction industry standards to further recognise resilience and life cycle energy efficiency. Our bricks and concrete products are manufactured to provide resilience. They are durable, fire-proof, contain thermal mass for energy efficient design, have excellent acoustic properties and no indoor air emissions (VOCs) and our clay bricks hold a 100-year guarantee.</p> <p>These product attributes contribute Goal 11 of the United Nations’ Sustainable Development: “Make cities and human settlements inclusive, safe, resilient and sustainable”.</p> <p>Leading opportunities include:</p> <ul style="list-style-type: none"> Discussions with key embodied carbon tool development schemes to expand scope to include whole of carbon lifecycle including maintenance and operational energy use. Inclusion of lower carbon product options in key embodied carbon tool development schemes. <p>Increasing demand for low-carbon building materials. As the economy shifts to a decarbonised paradigm, endorsed by norms and regulations, and supported by a large number of stakeholders and customers, the market demand for low-carbon products will increase. Should Brickworks decarbonisation keep pace with the market, it will offer a unique opportunity to deliver profitable growth and the business case for further decarbonisation.</p> <p>Brickworks is increasing the range of low carbon products options including:</p> <ul style="list-style-type: none"> Low Carbon bricks – Austral Bricks Longford brick range offers low embodied carbon brick fired by 73% bioenergy. Brickworks’ Climate Active carbon neutral range is also available for all Austral Bricks products. Bricks produced from Horsley Park Plant 1 offer lower carbon bricks compared to industry benchmarks due to being part-fired by renewable bioenergy. Light-weight brick facing systems Thin Tech and Tru-Brix systems stretch the boundaries of brickwork. These light-weight systems make real brick available for projects where full-size brick isn’t economical or practical. Brickworks has seen growing demand for thin brick products, largely due to their resilience and lightweight properties. Brickworks is exploring approaches to quantify carbon sequestration in hard rock components of fired bricks. Brickworks raw material optimisation innovation program is increasing the fraction of hard rock materials in brick clay mix (high in calcium and magnesium). Hard rock components, such as olivine-rich basalt, might have the ability to sequester some of the upfront embodied carbon of a brick over the operational phase of a home. Successful production trials of low carbon concrete masonry blocks – Austral Masonry completed successful production trials of low carbon concrete masonry blocks. Low carbon cement blends were used for masonry blocks and sleepers using activated Supplementary Cementitious Materials fly-ash and GGBFS slag. Brickworks also sources cement from our Joint Venture Southern Cross Cement, which has lower embodied carbon than industry defaults and will be recognised by Environmental Product Declarations. Brickworks is exploring the feasibility of sourcing or producing low carbon calcined kaolin (metakaolin) as a supplementary cementitious material, suitable for use in premium Austral Masonry products. Production of supplementary cementitious materials may offer access to critical raw materials to reduce Brickworks’ Scope 3 emissions as well as offering a new low carbon building material product. <p>Since FY2022, Brickworks has invested \$13.3 million into research and development for kiln efficiencies, light weight products and different fuel types. An increase in successful factory trials has driven an accelerated opportunity for investment into developing low carbon building materials. Brickworks has committed to investment of \$22.6 million into low carbon building materials by 2030.</p>
<p>Focus Opportunity 2</p> <p>Increasing demand for low-carbon building materials</p>	

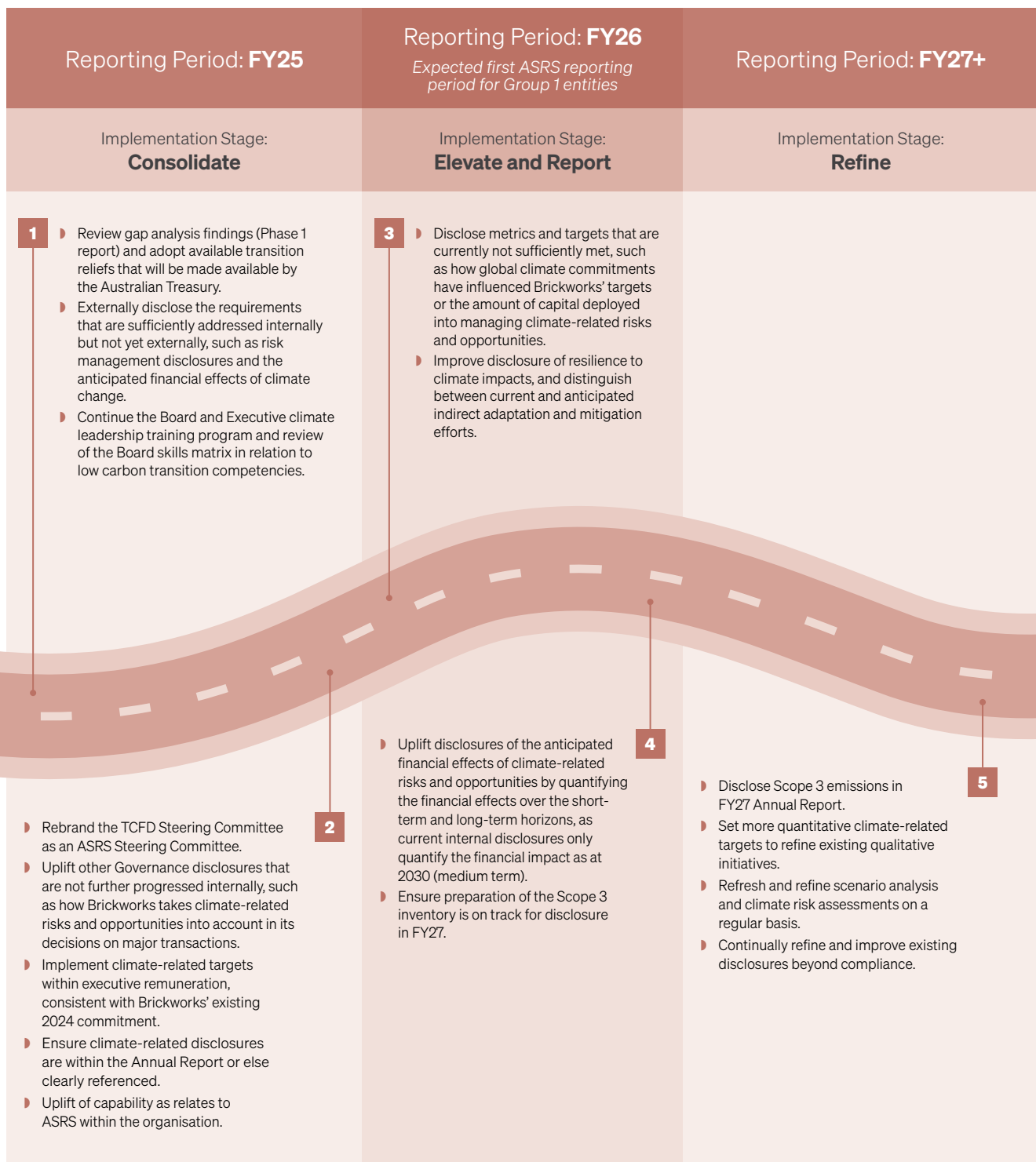
Work to Date – High-level Disclosure and Reporting Readiness Roadmap

TCFD Roadmap

2023	2024	2025
Governance <ul style="list-style-type: none"> Disclose a clear structure of accountabilities at Board level with respect to oversight of climate-related risk and progress towards goals and targets. Disclose a clear structure of management's accountabilities with respect to assessing and managing climate-related risks, issues and opportunities including information on reporting processes, committees, management of climate strategy and target setting. Disclose processes by which climate-related issues are monitored, assessed and reported internally including frequency of discussions, Board, committee and strategy meetings. 	Governance <ul style="list-style-type: none"> Disclose climate competencies, skills and expertise across Board and management-level including how often training and capacity-building is carried out. 	Governance <ul style="list-style-type: none"> Disclose any changes or updates to climate-governance as required. Keep website up to date with publicly available climate policies, Board charters and relevant documentation for suppliers, business partners and customers.
Strategy <ul style="list-style-type: none"> A more detailed description of the scenario analysis process completed including the methodology, time periods, risk criteria and prioritisation process. Detail on the risks and opportunities identified and how the organisation has responded or plans to respond. Progress against key management responses particularly in relation to the key opportunities, and how Brickworks has engaged with stakeholders across its value chain to share learnings and explore opportunities. 	Strategy <ul style="list-style-type: none"> Update on progress with new initiatives and progress against opportunities including stakeholder engagement across the value chain. 	Strategy <ul style="list-style-type: none"> Disclose cost quantification of key climate risks, alongside the methodology, assumptions used and any limitations. A description of how climate-related risks and opportunities affect the business and how these are linked to overall business strategy, vision and the core business model. Disclose strategic performance implications under the various scenarios considered, such as potential qualitative or directional implications for Brickworks' value chain, capital allocation decisions, research and development focus, and potential material financial implications for operating results and/or financial position. Explain how specific risks and opportunities may have resulted in mitigation measures and operational strategies or adjustments over time.
Risk management <ul style="list-style-type: none"> Integration of North American operations into our climate risk assessments. A detailed articulation of the risk management processes specific to the identification, assessment and management of climate-related risks and opportunities. This should include how materiality is determined, how risks are prioritised, process ownership, database management, responsibilities across business units, risk monitoring and internal reporting structures. 	Risk management <ul style="list-style-type: none"> The existing scenarios were reviewed. The scenarios were updated on the latest publicly available resources to more closely align the scenarios with those outlined in AR6 the latest scientific advice from the IPCC. 	Risk management <ul style="list-style-type: none"> Disclosure that reflects adequate maturity of the integration of climate risk identification, assessment and management into Brickworks' overall risk management process.
Metrics & Targets <ul style="list-style-type: none"> Disclose all climate-related datasets and metrics. Disclose detail behind calculation and methodology of climate-related datasets and metrics, e.g. international reporting frameworks where applicable. Investigate potential 2030 and 2050 net zero targets, and more comprehensive analysis of expected capital and operating costs (feasibility). Robust testing of potential emission reduction plan, "stress test" the grounds on which statements are being made, to reduce the risk of misleading disclosures. Consider external third-party assurance over reported metrics and disclosures. 	Metrics & Targets <ul style="list-style-type: none"> Disclose year on year progress against all metrics and targets with historical data for comparison. Disclose any climate-related metrics that have been incorporated into the company remuneration and/or performance scorecards, as well as progress against them. 	

High-level Disclosure and Reporting Readiness Roadmap

ASRS Roadmap



Energy and Carbon

Energy

A key strategic focus area is to achieve industry leadership in manufacturing excellence and efficiency. To achieve this, Brickworks is investing in energy efficiency. Since its inception, Brickworks Building Products has invested in the latest kiln, equipment and manufacturing technologies to improve productivity, product quality and energy efficiency.

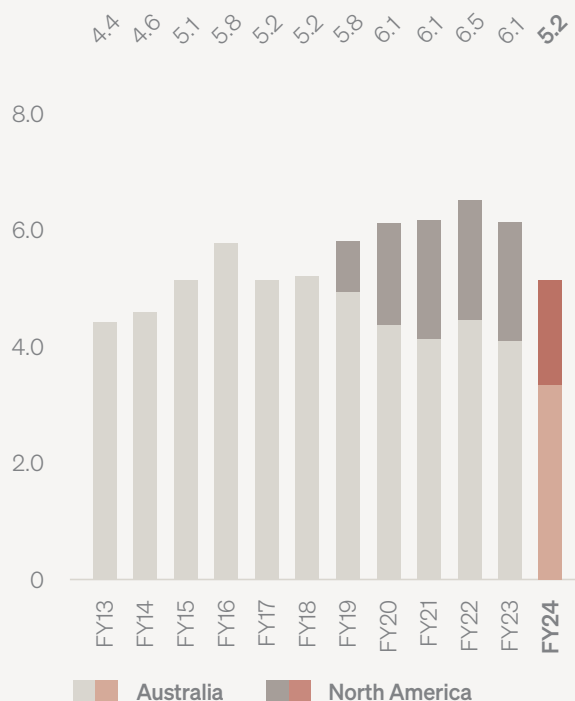
Total energy consumption and greenhouse gas emissions across Brickworks in FY2024 was 5.14PJ, a 16% decrease from FY2023. This reduction is primarily attributed to the subdued market conditions, where the Company has taken the opportunity to carry out increased maintenance activities and intermittent plant shutdowns during FY2024, ahead of the anticipated recovery in demand. In addition to the reduction in absolute energy consumption, these strategic plant shutdowns and maintenance activities have led to an improvement in energy efficiency in brick production.

Energy consumption is broken down by region in Appendix 1.

The majority (78%, 4.03 PJ) of the Company's energy requirements are fulfilled with natural gas, which is used extensively in brick manufacturing. Gas efficiency is measured at a factory level and results are reported to the organisation including the Chief Executive Officer weekly.

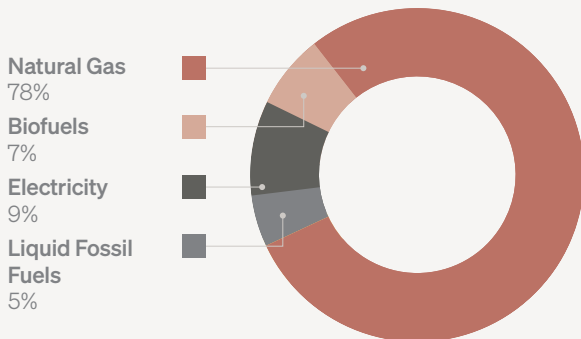
Brickworks Building Products

Total Energy Consumption (PJ)



Brickworks Building Products

FY2024 Energy Mix



Energy Efficiency

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

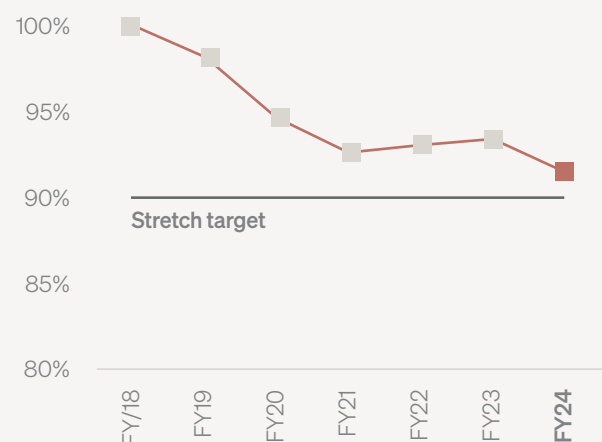
Australia

By 2030, Brickworks Building Products has a stretch target of 10% improvement in gas efficiency across Austral Bricks Australia, based on FY2018 levels.

The graphs below depict Austral Bricks gas efficiency trend. Both natural gas efficiency and total gas efficiency (including biofuels such as landfill gas and sawdust) has improved by 8.6% since FY2018. There was improved performance in the natural gas efficiency in FY2024 compared to FY2023 due to the completion of the new Horsley Park Plant 2 facility in New South Wales and the closure of less efficient plants such as Cardup in Western Australia.

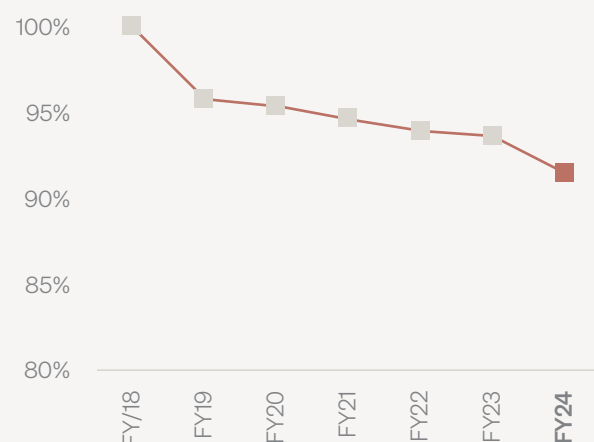
Brickworks Building Products Australia

Natural Gas Efficiency (GJ/'000 Standard brick equivalent) compared to FY2018 baseline



Brickworks Building Products Australia

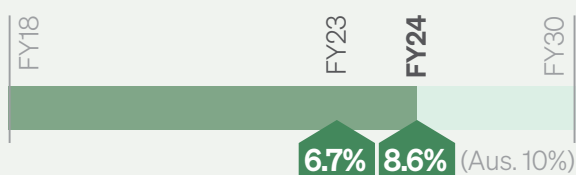
Total Gas Efficiency (GJ/'000 Standard brick equivalent) compared to FY2018 baseline



ENERGY EFFICIENCY

Stretch target: 10% increase in gas efficiency at Austral Bricks plant by 2030

Baseline FY18





Efficiency upgrades – Horsley Park, NSW, Plant 2 upgrade

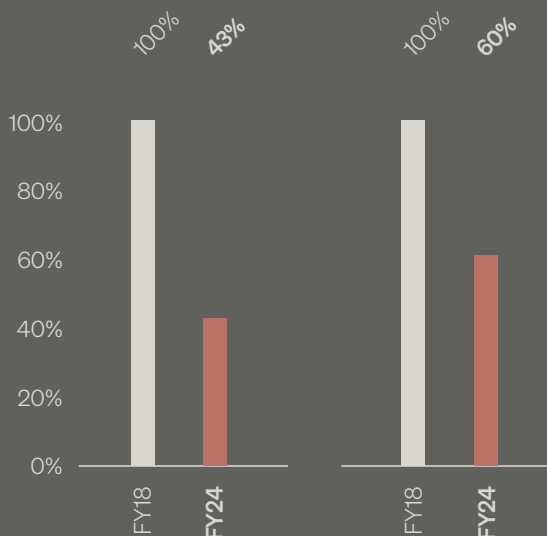
Plant 2 received significant upgrades over the last couple of years. This facility, now has the capacity to manufacture 130 million bricks per year, is the most advanced brick plant in the world, delivering best in its class fuel efficiency, and setting a new standard for brick manufacturing.

This has resulted in a 57% improvement in energy intensity and 40% improvement in greenhouse gas intensity compared to FY2018.

Plant 2 Natural Gas and Greenhouse Gas Efficiency intensity compared to FY2018 base line

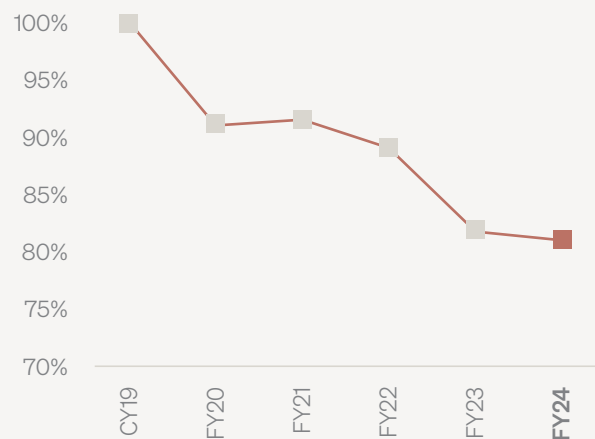
Natural gas intensity
(GJ/'000 SBE)

GHG intensity Scope 1&2 (tCO₂e/tonne product)



Brickworks Building Products North America

Natural Gas Efficiency (GJ/'000 Standard brick equivalent) compared to 2019 calendar year baseline



North America

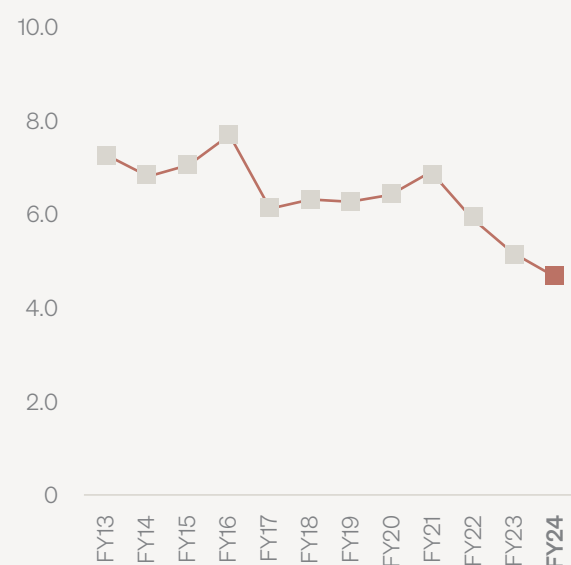
The plant rationalisation program in North America has led to an 18.9% improvement in gas efficiency from the 2019 calendar year to FY2024 and a 1.0% improvement compared to FY2023.

Energy intensity by revenue

Brickworks Building Products Australia and North America continue to reduce energy intensity across the business. Since FY2013, energy intensity by revenue has improved by 43% to 4.7 TJ per million dollars (AUD) of revenue. Energy intensity decreased by 9% from FY2023, reflecting the improvement in energy efficiency achieved from the commissioning of Plant 2 and the rationalisation of plants across North America.

Brickworks Building Products

Energy Intensity
(TJ/\$m Revenue)



Renewable Electricity Generation

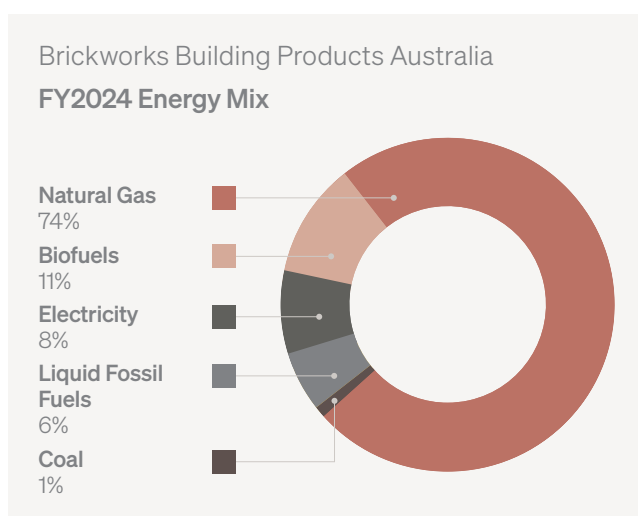
Our Rockhampton (Qld) and Oakdale (NSW) masonry sites continue to generate electricity through 408 kW of onsite solar systems. In addition, our Queensland masonry factories at Cairns, Ayr and Gympie started to generate electricity from the 240 kW solar installations at the end of FY2024. 507MWh of on site generated solar electricity was used for manufacturing in FY2024, a 12% increase from FY2023 and saving an average of 20% of Scope 2 emissions at these sites.

Renewable electricity contracts have been executed for Iberia and Rocky Ridge in North America. It is expected that these sites will commence using renewable electricity in FY2025.



Biofuels use in Australia

For many years Brickworks has used biogas and sawdust for renewable energy generation. In FY2024, 11% of Brickworks Building Products Australia's energy came from renewable or alternative energy sources such as landfill gas or sawdust. These biofuels allow us to avoid the greenhouse gas emissions that would have been released if we used natural gas.



Biofuel sources include landfill gas, sawdust and other biomass products. We continue to investigate ways to increase our biofuels content. Further information is also discussed in the Climate Strategy and Carbon sections.

Sawdust is the main fuel source at Austral Bricks Longford, Tasmania and is a waste acquired from various Tasmanian sawmills. The site used 11,458 tonnes or 119,163 GJ of sawdust throughout the year. While the use of sawdust is less energy efficient than natural gas, its bioenergy component means that net carbon emissions from the combustion of sawdust is 40 times lower than natural gas, avoiding 5,990 tonnes of carbon, equivalent to removing approximately 2,000 cars from the road each year.⁸

Austral Bricks Horsley Park, NSW, Plant 1 has used landfill gas since 2013. The combustion of landfill gas emits 10 times less carbon than natural gas. Horsley Park used 107 PJ of landfill gas throughout the year, avoiding approximately 4,800 tonnes of carbon, equivalent to the energy used in over 850 homes for one year.⁹

There was a decrease in landfill gas consumption in FY2024 due to the closure of Plant 3 in NSW in FY2023. Despite this decrease and the temporary closure of Plant 1 at the end of FY2024, we continue to actively advance various feasibility studies for a series of projects designed to significantly boost the utilisation of bioenergy. These opportunities encompass harnessing additional landfill gas resources and generating on-site bioenergy through anaerobic digestion.

Vehicle and Logistics Efficiency

Brickworks modernises its trucks every five years to provide up to date safety features for the community and public, and improved fuel efficiency. In FY2024, six trucks were delivered for replacement with Euro VI specification in our Australian fleet. All company vehicles are fitted with telematics providing drivers and managers with real time monitoring and feedback on fuel efficiency indicators. Our North American fleet is replaced with more energy efficient vehicles on a regular basis.

Methodology for energy calculations

Reported energy consumption is for the reporting period 1 July 2023 to 30 June 2024. Methodologies for calculating energy and energy efficiencies are further described in Appendix 2.

Carbon

Brickworks continues to reduce greenhouse gas intensity across the business. In 2018 Brickworks acquired businesses within North America and have been working towards reporting full greenhouse gas inventory globally. During FY2023 Brickworks completed the greenhouse gas calculations for the North American operations for historical years from FY2020 through to FY2022 (including fleet emissions) covering all material Scope 1 and Scope 2 greenhouse gas sources.

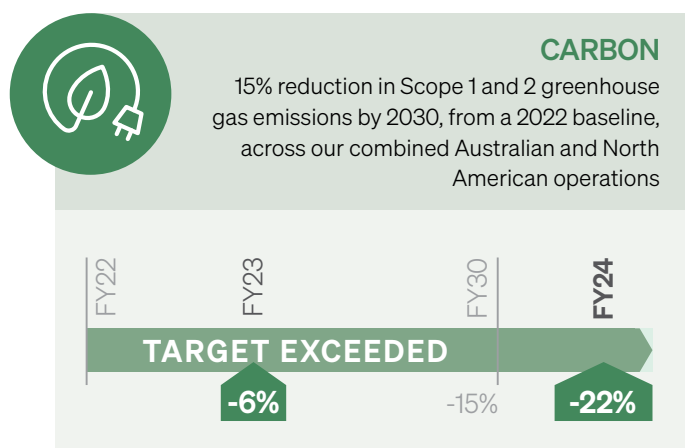
8 Assuming a less fuel-efficient car that emits around 3 tCO₂e per year. <https://www.energy.gov.au/households/transport>.

9 Based on 123.1GJ per household (ABS, Energy Accounts Australia, Latest release, 2020–21 financial year).

Performance against Carbon Target

In FY2023 Brickworks announced its greenhouse gas emissions target to achieve a 15% reduction in Scope 1 and 2 greenhouse gas emissions by 2030, from a 2022 baseline, across our combined Australian and North American operations.

In FY2024, Brickworks Building Products total Scope 1 and 2 greenhouse gas emissions was 311 kilotonnes of carbon dioxide equivalent (ktCO₂e) for both Australian and North American operations. Of these emissions, 97% are attributed to brick manufacturing operations. This is further broken down by region in Appendix 1.



Greenhouse gas emissions have decreased in FY2024 by 22% compared to FY2022. This reduction is primarily attributed to the subdued market conditions, where the Company has taken the opportunity to carry out increased maintenance activities and intermittent plant shutdowns during FY2024, ahead of the anticipated strong demand through the rest of the decade.

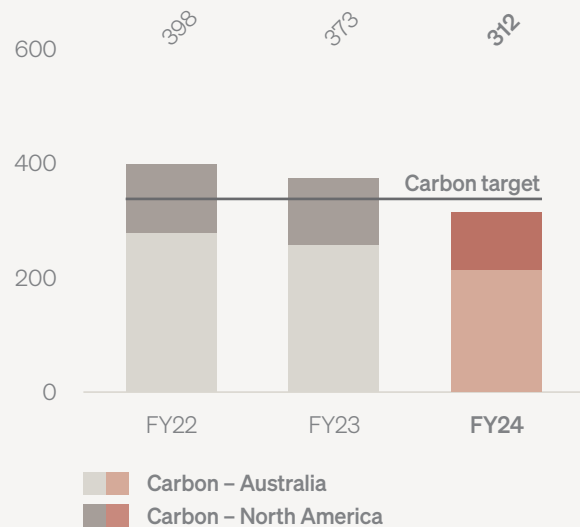
These strategic plant shutdowns and maintenance activities have led to an improvement in our Scope 1 and 2 greenhouse gas intensity for brick production which puts the Company in a good position to meet the carbon emission target when the demand resumes.

Table: **Brickworks Building Products Global Scope 1 and 2 Emissions Since FY2022¹⁰ (ktCO₂e)**

	FY2022	FY2023	FY2024
Scope 1	302	290	244
Scope 2 (location based)	96	83	68
Total	398	373	312

Brickworks Building Products

Total Scope 1 and 2 Greenhouse Gas Emissions¹⁰ (ktCO₂e)



Greenhouse Gas intensity

As Austral Bricks and Glen-Gery make up greater than 97% of Brickworks' Scope 1 and Scope 2 emissions, the relevant greenhouse gas intensity metrics for our operations are emissions per tonne of brick produced. Emissions from concrete products are made up predominantly of Scope 3 emissions largely from the use of cement (refer to our Scope 3 inventory).

The following table sets out our Scope 1 and 2 greenhouse gas emissions intensity per tonne from our brick operations. We have achieved a 5% improvement across the group since FY2022 including a 10% improvement in intensity in our North American brick operations.

This improvement is mainly attributed to the completion of commissioning of the new Horsley Park Plant 2 in Australia and the plant rationalisation across North America.

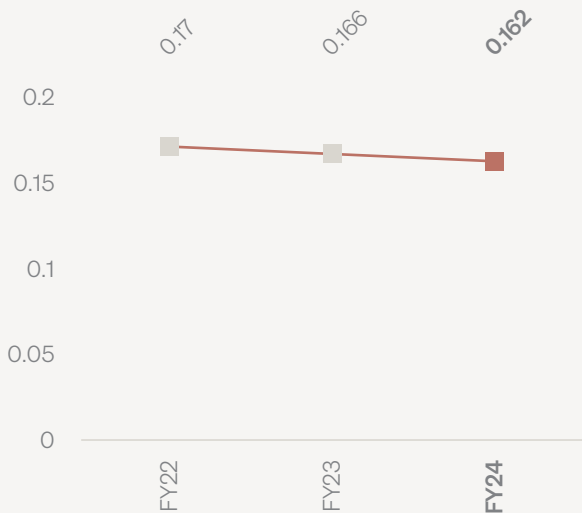
Table: **Greenhouse gas emissions intensity for brick production¹⁰**

(t-CO ₂ /tonne product)	FY2022	FY2023	FY2024	Improvement from FY2022
Australia	0.164	0.162	0.157	4%
North America	0.187	0.175	0.172	8%
Consolidated	0.170	0.166	0.162	5%

¹⁰ FY2022 and FY2023 have been restated using an updated calcination methodology for North America. See more details in the methodology section and Appendix 2 – Basis of preparation.

Brickworks Building Products

Greenhouse gas emissions intensity for brick production (Scope 1 and 2 tCO₂e/tonne product)



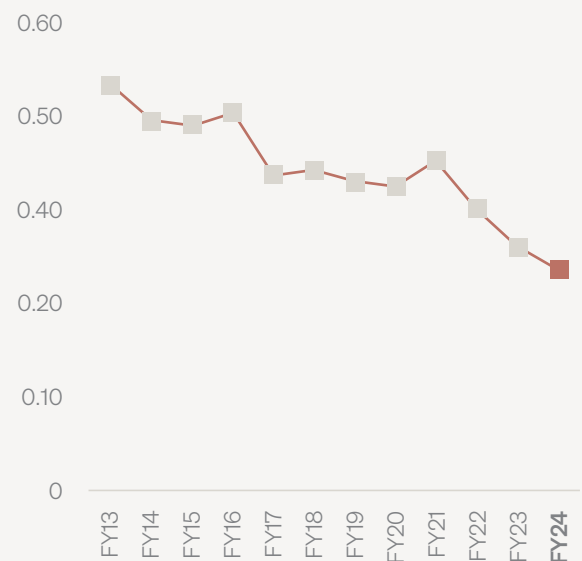
Greenhouse Gas intensity by revenue

Since FY2013, greenhouse gas intensity by revenue has improved by 48% in Brickworks Building Products to 0.29 kilotonne CO₂-e per million dollars (AUD) of revenue.

Carbon intensity was lower (9%) than the previous year, reflecting increased revenue from FY2023 to FY2024 and lower emissions due to plant rationalisations and improved efficiencies.

Brickworks Building Products

Carbon Intensity (ktCO₂e/\$M Revenue)

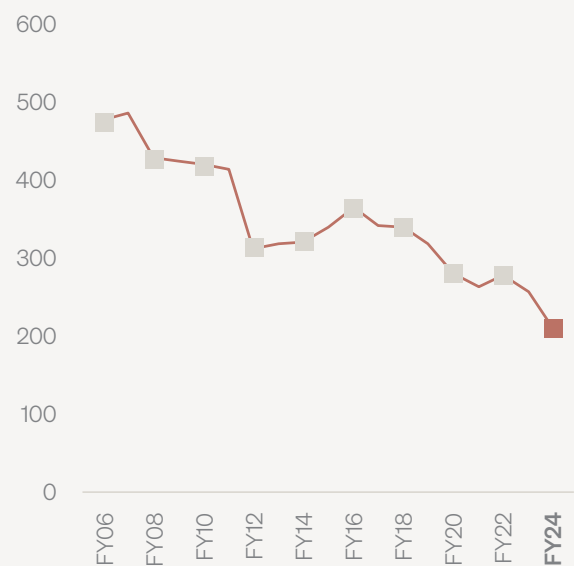


Brickworks Building Products Australia's long-term performance

Carbon emissions have followed a general downward trend, with a 56% 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.

Brickworks Building Products Australia

Greenhouse Gas Emissions Since 2005 (ktCO₂e)



Scope 3 carbon emissions

Scope 3 emissions are indirect greenhouse gas (GHG) emissions that occur throughout a company's value chain but are not directly controlled by the company.

In line with our commitment to incrementally adopt the recommendations of the TCFD and further maturing our climate-related disclosures, we have completed an estimate of our Scope 3 emissions.

Life cycle assessments previously conducted include:

- Climate Active Carbon Neutral Certification Product Disclosure Statements available on the Climate Active website (<https://www.climateactive.org.au/buy-climate-active/certified-members/austral-bricks>);
- the published Environmental Product Disclosure (EPD) for Austral Masonry Gympie which is available on the EPD Australasia website (<https://epd-australasia.com/>); and
- preliminary life cycle analysis completed for other masonry and brick products as part of further expanding our library of EPDs for our products.

Methodology

The Scope 3 emissions inventory for Brickworks Building Products was compiled by an external consultant and has estimated the FY2023 inventory using the following guidelines:

- ▶ The GHG Protocol Corporate Accounting and Reporting Standard (WRI/WBCSD, 2004)
- ▶ The GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (WRI/WBCSD, 2011)

To calculate Brickworks Building Products Scope 3 emissions, the GHG Protocol's Scope 3 Calculation Guidance (WRI/WBCSD, 2013) for specific categories and boundaries was used.

The Scope 3 emissions inventory have been calculated using generic emission factors from various publicly available datasets. Further improvements will be made to Scope 3 emissions reporting as we continue to develop our reporting systems and climate-related disclosures.

Emissions boundary

Recognising that we are early in our Scope 3 reporting, with challenges in sourcing extensive value chain information, our Scope 3 emissions results are based on FY2023 data (1 August 2022 to 31 July 2023) and is currently only available for our Brickworks Building Products Australia and North America Businesses. Joint Ventures and investments are not currently included unless they are a supplier to the Brickworks Building Products businesses (i.e. Southern Cross Cement JV).

The four of the 15 categories of Scope 3 listed in the GHG protocol were chosen as relevant based on our understanding of our Scope 3 emissions profile gained from various life cycle assessments completed and benchmarking against industry peers. The categories included are:

- ▶ Category 1: Purchased goods and services
- ▶ Category 3: Fuel and energy-related activities (not included in Scope 1 and Scope 2)
- ▶ Category 4: Upstream transportation and distribution
- ▶ Category 9: Downstream transportation and distribution

The organisational and reporting boundary will be reviewed as we continue to refine our Scope 3 reporting systems and requirements.

Exclusions

The following categories have been excluded from the Scope 3 inventory in this report:

- ▶ Category 2: Capital goods – In FY2023, the majority of capital expenditure was focused on upgrades and commissioning, particularly for Plant 2, Horsley Park. When emissions from capital expenditure are spread over the capital project's lifespan, they become immaterial.

- ▶ Category 13: Downstream leased assets: Downstream leased assets are managed by the Brickworks Property division and is outside the boundary of the current inventory which is focused on Scope 3 emissions for Brickworks Building Products divisions. Scope 3 emissions reporting systems and processes are required to be further developed for our other divisions.
- ▶ Category 15: Investments: The Brickworks Investment division is excluded due to complex reporting requirements. Further advice and reporting systems are needed to address these.
- ▶ Categories 5–8, 10–12 and 14 have been determined to be immaterial and validated through industry peer benchmarking.

Carbon offsets purchased as part of Brickworks' Climate Active carbon-neutral product offerings were considered immaterial and therefore excluded from the emissions inventory.

Emissions profile analysis

The purchase of cement accounts for 59% of category 1 – purchased goods and services and 31% of Brickworks' total Scope 3 emissions inventory. Brickworks is already working on reducing Scope 3 emissions relating to cement as part of our innovation strategies to reduce embodied emissions for our concrete products. Many of our suppliers, including the Southern Cross Cement JV, have Environmental Product Declarations (EPDs) which will allow us to further refine our emissions profile.

The downstream transport of our products between warehouses and to our customers' accounts for 27% of our total Scope 3 emissions. To address this, we are actively streamlining our transportation processes and exploring advanced technologies, such as AI-powered route optimisation, to reduce emissions and improve efficiency.

We are currently finalising Environmental Product Declarations for a wide range of our Australian products. These life cycle analyses will assist us in further refining our Scope 3 emissions.

Table: **Scope 3 inventory for Brickworks Building Products (ktonnes CO₂e) FY2023**

Category	AUS	NA	Total
Category 1: Purchased goods and services	142	9.5	151
Category 3: Fuel and energy-related activities (not included in Scope 1 and Scope 2)	36	17	53
Category 4: Upstream transportation and distribution	4	0.9	5
Category 9: Downstream transportation and distribution	50	28	78
Total	233	55	288



Austral Bricks
Longford

Methodology and reporting period

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 2023 to 30 June 2024.

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 was reported and audited for the first time in FY2022 using the Greenhouse gas protocol and US EPA Emission Factors for Greenhouse Gas Inventories.

Scope 3 carbon emissions are reported for the Brickworks financial year FY2023. This reporting year runs from 1 August 2022 to 31 July 2023.

Scope 1 emissions calculation methodology update

A default global factor from the IPCC guidelines was used for North American operations to estimate greenhouse gas emissions from calcination in the absence of detailed data. IPCC's global default factor assumes 10% carbonaceous material in clay used for producing bricks, with the IPCC guidelines noting it can vary between 0–30% – with our assurance provider for FY2023 limited assurance suggesting reviewing the calcination methodology for improved accuracy. This finding did not apply to Australian emissions because locally specific calcination emission factors are available through NGERS.

A sampling and testing regime for inorganic carbon in clay used to produce bricks was implemented in North American operations during FY2024, that integrated with existing raw material testing regime. Clay mixes are now tested quarterly using a new procedure for determining the carbon content of clay/shale samples. It is assumed that all inorganic carbon is emitted as carbon dioxide, as per the 2006 IPCC guidelines.

This new methodology is documented in the North America GHG accounting manual.

Impact of change in methodology

Results revealed inorganic carbon content in raw clay materials is less than 1%, substantially lower than the IPCC global default factor but broadly consistent with some of the state-based factors in Australia. This finding led to a reduction of more than 5% in consolidated Scope 1 emissions calculated for the Company. Consequently, the historical carbon emissions for North America including the target baseline for FY2022 have been restated to ensure comparable emissions performance.

The basis for calculating the restated FY2022 North American Scope 1 emissions baseline has been included in the limited assurance audit provided in Appendix 5.

Impact on Baseline and Target

The restatement of the baseline has led to a 25 ktCO₂e reduction in North American and consolidated Scope 1 greenhouse gas emissions for FY2022 – a 5.8% reduction in consolidated Scope 1 greenhouse gas emissions.


FY2022 consolidated baseline Scope 1 emissions were reduced from 423 to 398 ktCO₂e, due to this change in calcination methodology – based on North American Scope 1 emissions for FY2022 reducing from 144 to 120 ktCO₂e.

The impact on target modelling and proposed abatement opportunities is minimal, as no opportunities identified were targeted at calcination emissions.

Further information

Methodologies used for calculating greenhouse gas emissions and energy are further described in Appendix 2.

A copy of the Limited Assurance report for energy and carbon data is contained within Appendix 5.



Harriet's House

Harriet's House by So Architecture is a heritage home set among some of Australia's harshest climatic conditions and which brings beauty to resilient design principles. Carbon Neutral Bricks were chosen in this project for their tactility and low-maintenance qualities, perfect complements to Tasmania's environment and design ethos. So Architecture's design preserves the existing brick dwelling while introducing modern interventions – a testament to resilient architecture in its purest form.

CREDITS

Project: Harriet's House

Architect: SO: Architecture

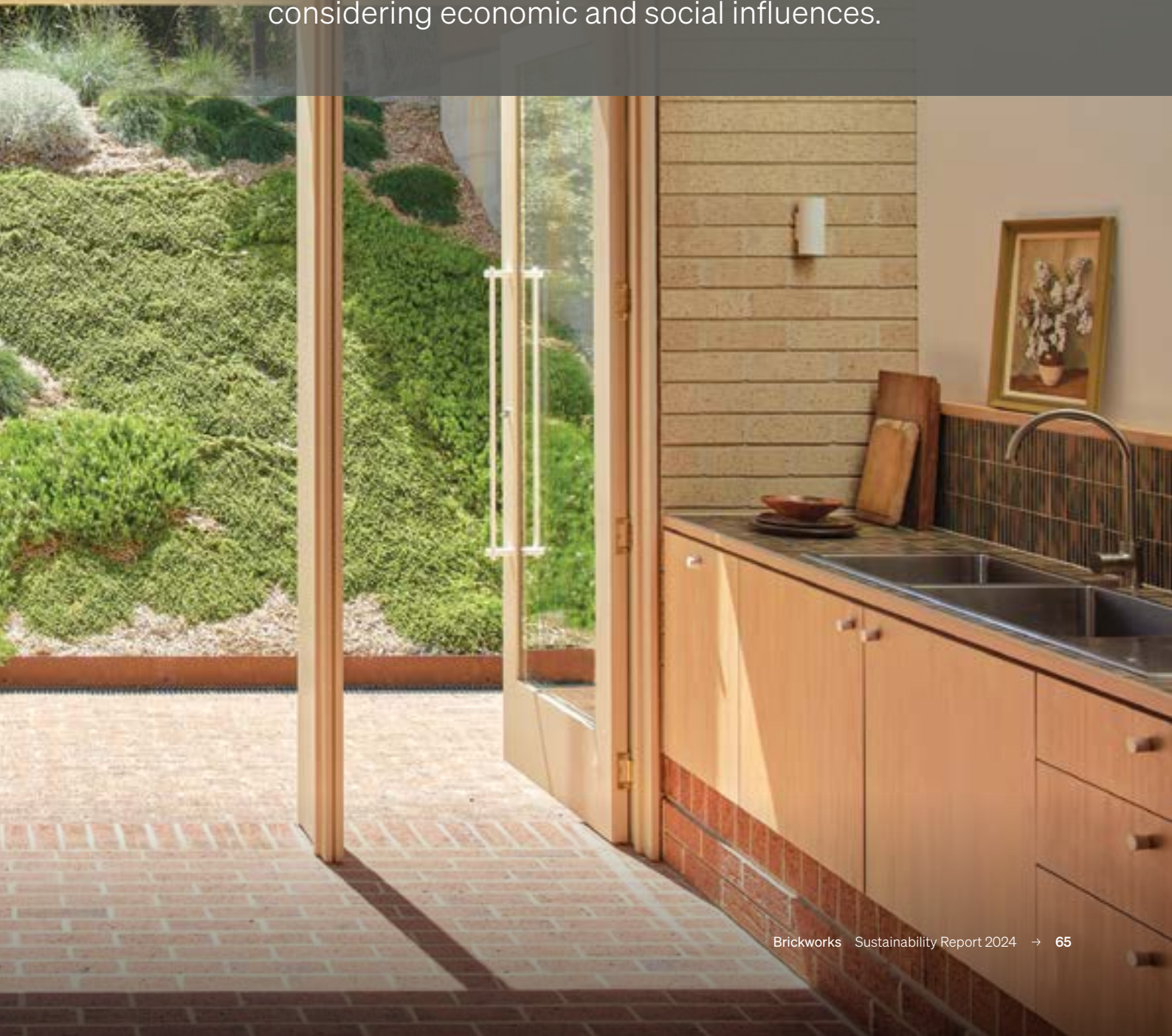
Location: TAS

Photography: Sean Fennessy

Product: Austral Access bricks in 'Ash' and Yarra bricks in 'Richmond'

Environment

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



Environmental

Performance

Environmental Strategy

Brickworks environmental commitment is to establish, operate and rehabilitate Brickworks sites in a manner that promotes optimum environmental outcomes. Brickworks Building Products monitors its environmental performance and compliance in accordance with its Safety Health and Environmental Management System (SHEMS).

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, hazard, incident and complaint reporting, as well as inspections, monitoring and reporting requirements, including any regulatory notices for all sites.

Standard operating procedures for significant risks at each Australian site are trained, reviewed, and updated regularly in the online platform register for standard operating procedures and training. The development and training of site-specific procedures is the focus area for the ongoing enhancement of the North American SHEMS that was rolled out last year.

The Brickworks SHEMS is currently aligned with the Environmental Management System International Standard ISO14001:2004. We are cognisant of revisions to the SHEMS to harmonise with ISO 14001:2015, including updates to better reflect contemporary guidance. These revisions are currently in the process of being scheduled.

Brickworks has identified lead indicators to demonstrate the presence of environmental management, building capacity and resilience into environmental management. These lead indicators include training, monthly site inspections and annual environmental risk reviews, and are integrated into business KPIs linked to incentives and regularly reviewed.

Hazard and incident reporting is undertaken 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. Incidents are now ranked according to severity. This information is reported to Divisional and Group management and issues of material concern are reported to the Board monthly.

Manufacturing and raw material sites are regularly audited. Any issues reported as either a hazard or an incident are rectified in a timely manner. During FY2024, 10 external and 7 internal audits were conducted.

Environmental Performance

During FY2024, Brickworks' subsidiary in North America received fines totalling USD 10,800 in September 2023 resulting from two fines from one contractor-related unauthorised stormwater discharge in May 2023 as disclosed to the regulator. To avoid reoccurrence, full corrective action has been taken including a water and waste corrective action plan with revised procedures and retraining.

We are reinforcing our commitment to zero environmental fines and continued risk reduction across our operations.

Brickworks treats all instances of legal and regulatory non-compliance with the utmost importance. Details of incidents, notices and complaints are raised at the weekly General Managers' meeting, attended by the Chief Executive Officer. Each non-compliance incident is investigated and tracked to ensure corrective actions are undertaken within deadlines. Incident reporting procedures and training are a central part of the SHEMS, raising awareness and identifying corrective and preventative actions.

	FY2024		FY2023	
	Aust.	U.S.	Aust.	U.S.
Prosecutions	0	0	0	0
Penalty Notices	0	2	0	0
Directive Notices	0	0	0	0

In FY2024, Brickworks had zero high severity environmental incidents across Australia and North America, maintaining the historic performance of zero high severity environmental incidents. The majority of incidents recorded were of low severity having no environmental impact and the remaining minority were medium severity.

	FY2024		FY2023	
	Aust.	U.S.	Aust.	U.S.
High severity incidents	0	0	0	0
Medium severity incidents	3	3	8	1
Low severity	37	4	38	3

In FY2024, reportable incidents in Australia reduced from 8 in FY2023 to 5 in FY2024. Brickworks supports clear communication with regulators, and reporting incidents plays an important role in meeting licence conditions and environmental regulations.

Environmental Improvement Strategy

After significant investments in Air and Water Pollution Control Equipment (PCE), our focus is on strengthening PCE maintenance, enhancing procedures and training to boost environmental capabilities. In FY2024, we conducted 2,650 PCE checks, a key indicator of our environmental commitment. Brickworks' environmental improvement strategy has supported the implementation of enhanced site inspection standard operating procedures (SOPs) at both our Australian and North American locations this year. These improvements aim to maximize hazard identification and strengthen our overall environmental capabilities.

Under our environmental improvement strategy, Brickworks implements systematic risk management programs that identify and control impacts to the environment in line with legislation and authorised Brickworks environmental policies.

Key risk areas receive specific focus including our ongoing air and water management programs. Vegetation and biodiversity were identified as new key risk areas during FY2024, and a management program is under development.

Air Environmental Program

Our ongoing Air Environmental Program identifies opportunities for emissions reduction technology at Australian sites while optimizing raw materials, equipment, and maintenance to minimize emissions.

All brick factories hold state-issued licenses with emissions limits deemed safe for the environment and human health. Compliance is ensured through air emissions testing by qualified consultants. Any exceedance triggers reporting, followed by investigations and corrective actions as per 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.

Our 2025 target for emissions control has been clarified to identify that it is air quality emissions control to avoid confusion with greenhouse gas emission controls. The clarified target now reads: *Brickworks is investing in emission abatement equipment to improve air quality emission control. Brickworks is investing over \$2 million in air quality emission control by 2025.*



Investments are made in upgrading kilns, plant control systems, and emission control technologies. In FY2023, limestone scrubbers were installed at Austral Bricks Horsley Park Plant 1 and Plant 2, with a scrubber relocated to Plant 1 after the closure of Plant 3.

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

These investments into air pollution abatement equipment represent over \$6 million invested in air quality emission controls in Australia since FY2019.

The expenditure to date exceeds the 2025 goal over \$2 million (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.

An investment of USD 3.6 million in upgrades to convert and retrofit the existing North American Adel plant in Iowa from petcoke fuel to natural gas was completed in April 2023. The main fuel conversion was completed to allow the kiln to be re-introduced into the production process utilising a much more efficient and reliable fuel source.

Project: Stoney Rise Wine Cellar
Location: TAS
Product: Daniel Robertson
Hawthorn in London and Bowral
Bricks in Bowral Blue



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

All North American plants are also regulated by the U.S. Clean Air Act (CAA). The CAA is designed to protect air quality to support public health, and to be sure all air emitting sites take the necessary actions to ensure operations are not having an adverse environmental effect on the local air quality. The CAA requires Glen-Gery sites to obtain a Title V Air Permit that is renewable every five years. Under each permit is a requirement to report annual emissions to each State in which the operation is taking place.

Water Environmental Program

The Water Environmental Program has identified investments in leading environmental initiatives and is now more focussed on building capacity via improved PCE checks, procedures and training. Brickworks closely monitors its water use and discharge, investing in water capture systems to ensure the quality of water discharge through appropriate treatment systems. During FY2024 Brickworks invested over \$545k (AUD) in Australia in water management systems.

Brickworks complies with stringent environmental regulations to ensure that activities, in particular raw material quarrying, minimise impact on 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 FY2024 Brickworks continued to improve its water management systems by installation in New South Wales of a chemical dosing system to its existing High Efficiency Sediment basin at Horsley Park and an oil and grease waste water separator at Punchbowl.

Taskforce for Nature-based financial disclosure (TNFD)

The TNFD was released in FY2024 and Brickworks is progressively reviewing and assessing our requirements and implementation strategies.

The systems and processes that have been put in place as part of our climate-related financial disclosure development will assist Brickworks with implementation and reporting where required.

The risks considered within the TNFD include pollution controls, biosecurity, clearing and rehabilitation procedures, and resource usage, among others.

As described above, Brickworks has an environmental management system aligned to ISO14001. This addresses direct environmental and nature-based risks within the business. Many of the issues raised within TNFD already have systems and procedures in place as part of this management system (such as pollution controls, biosecurity, clearing and rehabilitation procedures).

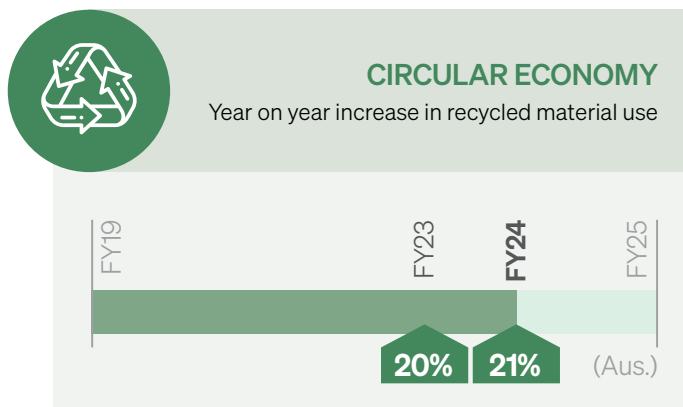
Our current sustainability strategy also addresses numerous nature-based risks including reducing resource usage through increasing recycled content, water resource usage, progressive rehabilitation of our extraction areas and our air and water risk programs. Progress in these programs has been discussed throughout this sustainability report.

Resources

Waste and Water

Waste

Brickworks' target for 2025 is a continuous improvement of recycled material use in our building products. This is a step we are taking to progress towards a circular economy. Waste reuse is a key focus area for the brick and concrete businesses to reduce material costs, and to increase resource efficiency to close the loop on a circular economy.



Brickworks has made continuous improvements to its measurement records in recent years, which have enabled the Company to further quantify recycled content use. This has helped Brickworks to track progress towards its sustainability goals and to make informed decisions about how to increase the use of recycled materials in its products. We are continuing to further refine our recycled content reporting processes to improve accuracy, traceability and auditability.

Recycled Content – Australia

A total of 368,000 raw tonnes of recycled materials were used, which is equivalent to 21% of the total weight of our Australian building products produced. This has increased slightly from 20% recycled content in FY2023.

Virgin Excavated Natural Materials

During FY2023, 350,000 tonnes of raw waste clay material from construction projects also known as Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM) was recycled into bricks, a 2% increase from last year's usage. This is mainly due to improvements in measurement records that allowed further quantification of recycled content use.

Sawdust

Natural gas is substituted with sawdust at our Austral Bricks Longford Plant in Tasmania. The sawdust is a waste product sourced from multiple Tasmanian sawmills. This site uses sawdust as the main kiln fuel. In FY2024, 11,000 tonnes of sawdust was used at Longford providing 73% of the site's energy requirements. Some of our other sites, such as Rochedale are also using sawdust as an onboard fuel.

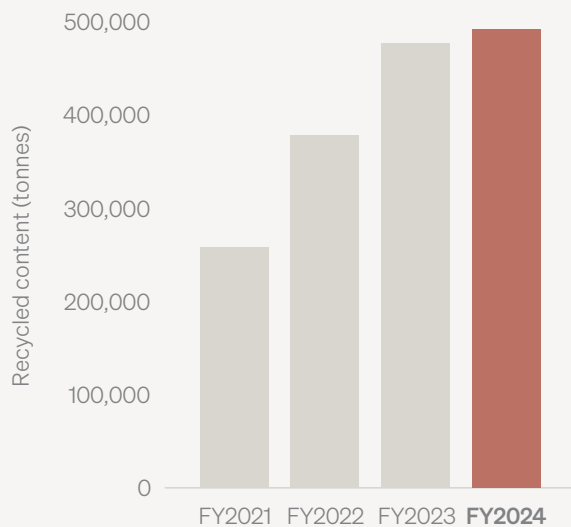
Fly Ash and Bottom Ash

Brickworks uses fly ash and bottom ash as cement substitutes at six of its concrete product facilities. In FY2024, the Company used 58,000 tonnes of ash products, a 20% reduction from the previous year due to reduced production.

Fly ash and bottom ash are byproducts of coal combustion. They can be used as cement substitutes in concrete. Concrete made with ash products has similar properties to standard concrete but uses less cement.

Brickworks Australia

Total recycled materials used in Building Products Australia



Grog

Grog is a term used in clay brickmaking to describe fired production waste. 100% of grog produced at our Australian brick factories is returned to the raw material mix and used as a substitute for quarried material. Grog reuse in Australia was 94,000 tonnes, a 27% increase from last year. This increase is due to the commissioning of Plant 2, Horsley Park, NSW.

Recycled content – North America

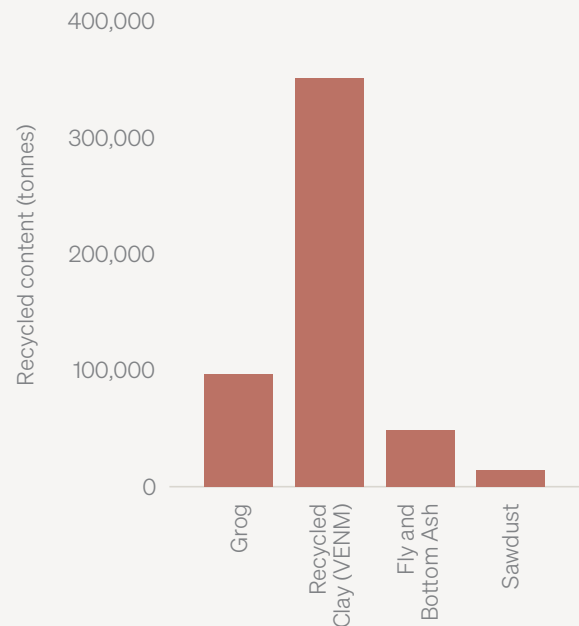
Brickworks North America provides a range of products with recycled content. Adel, Hanley, Iberia, Marseilles, Landmark and Sergeant Bluff plants all produce products with pre-consumer recycled content. Recycled content reduces the amount of material we have to extract from our quarries. Grog is also reused in some of our North American operations. 9,600 tonnes of grog was recycled back into the product mix in North America during FY2024. Further work is being completed to quantify total recycled content in North America.

Waste Management

Brickworks is committed to minimising the amount of waste sent to landfill from its manufacturing facilities. To achieve this, Brickworks reuses production waste whenever possible and provides recycling bins at its sites to enable source separation of recyclable materials.

Brickworks Australia

Recycled materials used in FY2024 Building Products Australia



Production waste that Brickworks reuses includes brick grog and unfired offcuts. These materials are recycled back into the manufacturing process. Brickworks also collects a variety of recyclable materials, including metals, cardboard, oil, concrete, batteries, ink cartridges, paper, and comingled waste streams.

Hazardous Waste

Brickworks is committed to the safe handling and disposal of hazardous waste. Our normal activities generate minimal hazardous waste, such as batteries, globes, hydrocarbons, used gas cylinders, and small quantities of spent chemicals. We provide our sites with the appropriate facilities and services to ensure that hazardous waste is disposed of in accordance with waste legislation.

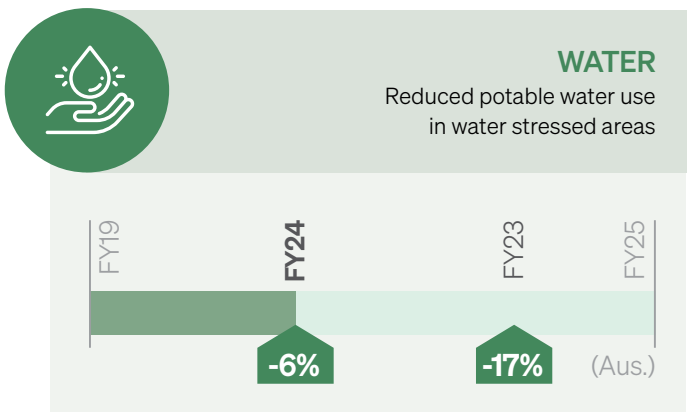
Hazardous waste management is captured within our Environmental Management System. Waste management requirements are included in the monthly environmental inspection checklist for each operational site.

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 is 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	31%	56%	12%	1%	0%

Our current water risk area analysis is based on the overall water risk layer presented in the World Resource Institute, Aqueduct tool. We are currently updating to the baseline water stress layer to align with SASB standards while undertaking a site based risk assessment to provide more detailed risk analysis.

Potable water use is monitored and reported to management monthly through the national operations reporting system. Brickworks prioritises the use of non-potable water at its quarrying and manufacturing facilities, with runoff and bore water the major alternative 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 or not of sufficient quality for batching slurry and glaze treatments.

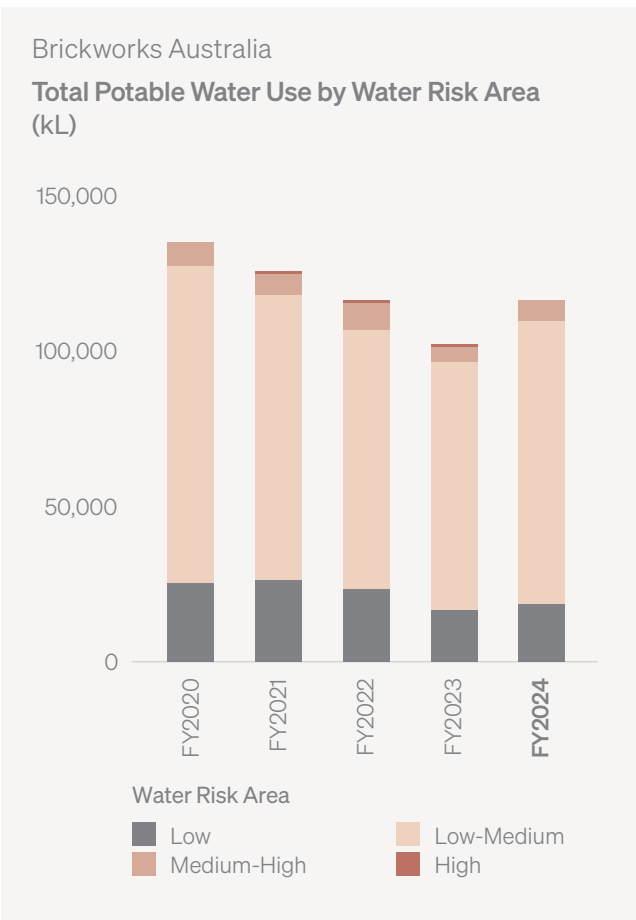
Potable water savings are driven through Brickworks' Environmental Water Program, which identifies and tracks key projects through site specific management plans. Water efficiency at this one hard rock quarry is a key focus for the water efficiency program.

Performance

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

Water reduction initiatives included rainwater tank installations, identification of recycled water sources and repair of water leaks through water meter monitoring.

During FY2024, Brickworks used a total of 173 ML of potable mains water globally, a 9% increase compared to FY2023. Of this, 118ML of potable mains water was used at sites in Australia, a 14% increase in potable mains water use compared to FY2023 and a 6% decrease since the release of our strategy in FY2020. The increase in FY2024 is attributed to the normalisation of water consumption post the higher than average rainfall during FY2023, which reduced water requirements to meet raw material moisture content. Our North American operations consumed 55ML of potable mains water in FY2024, which is no change from FY2023.

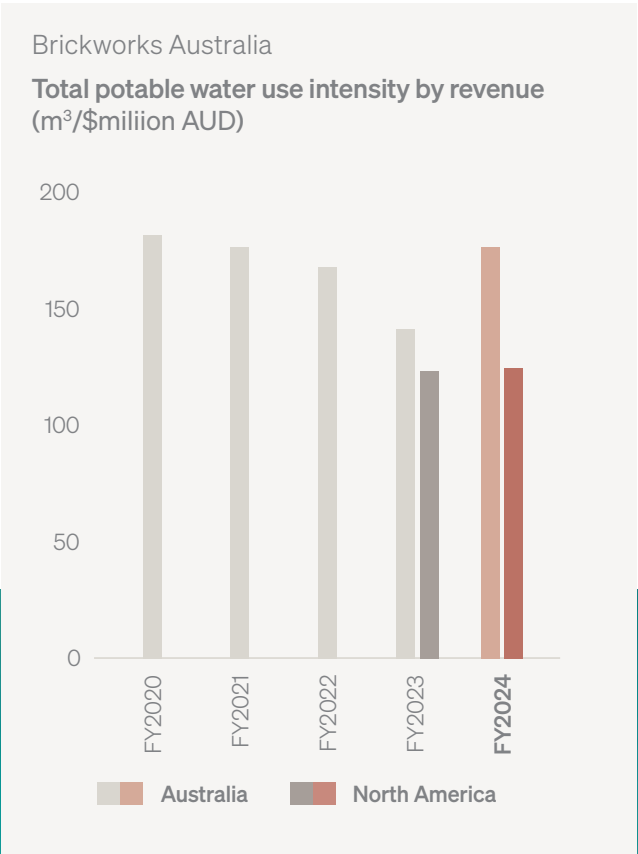


Austral Bricks Golden Grove plant, South Australia, is located within the WRI medium-high water risk area. Rainfall for this region in FY2024 was in the lowest decile based on long-term historical data, indicating very much below average levels. While the site identified excess quarry sump water as a non-potable water source and has purchased rainwater tanks last year, the potable water consumption at this site increased by 41% compared to FY2023 due to the significant decrease in rainfall. This is still a 6% decrease in potable water usage compared to FY2022. We will continue to explore water efficiency improvements.

Brickworks' has only one site located within a high-risk water area. It is located in the wheatbelt region of Western Australia. No potable water was used during FY2024 at this site due to no production during the year. An investigation into alternative water sources such as bores or sump water will be completed when production restarts.

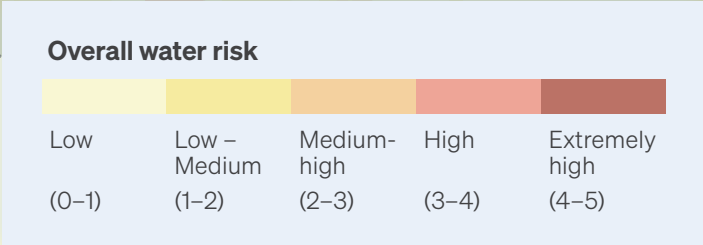
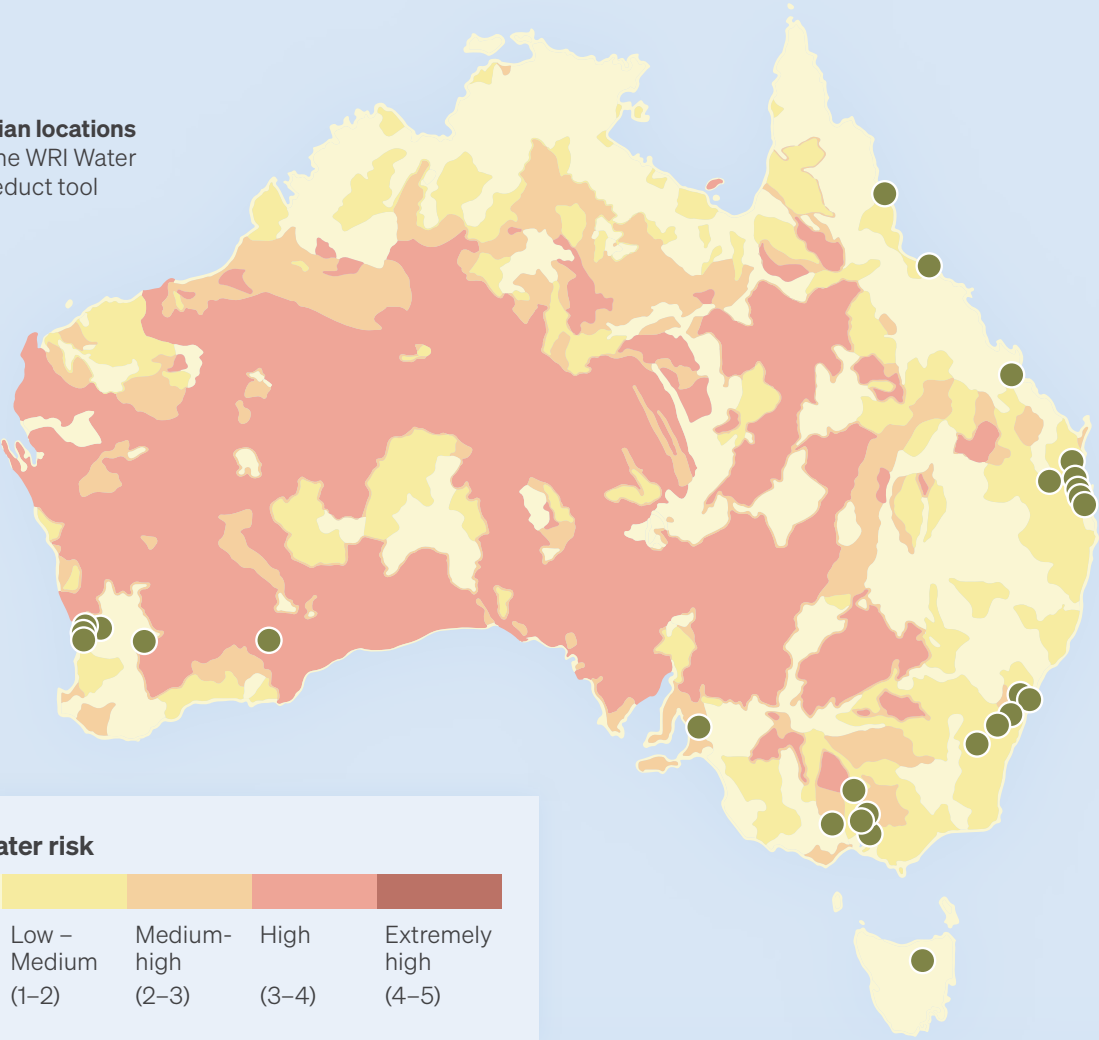
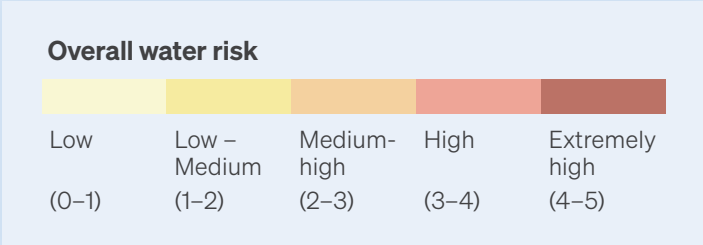
Total potable water intensity for Brickworks Building products globally was 158kL of potable mains water per million dollars of revenue (AUD), an 18% increase from FY2023. Potable water use intensity in Australia for FY2023 was 182kL of potable water per million dollars of revenue (AUD) which is an increase of 29% from last year and a similar result to FY2020. This is due to Horsley Park Plant 2 commissioning. Plant 2 has significant rainfall

collection systems and storage capacity; moving forward, we will review our processes and explore opportunities to enhance water efficiency. We remain committed to aligning our operations with sustainability goals and will continue to seek improvements in this area.

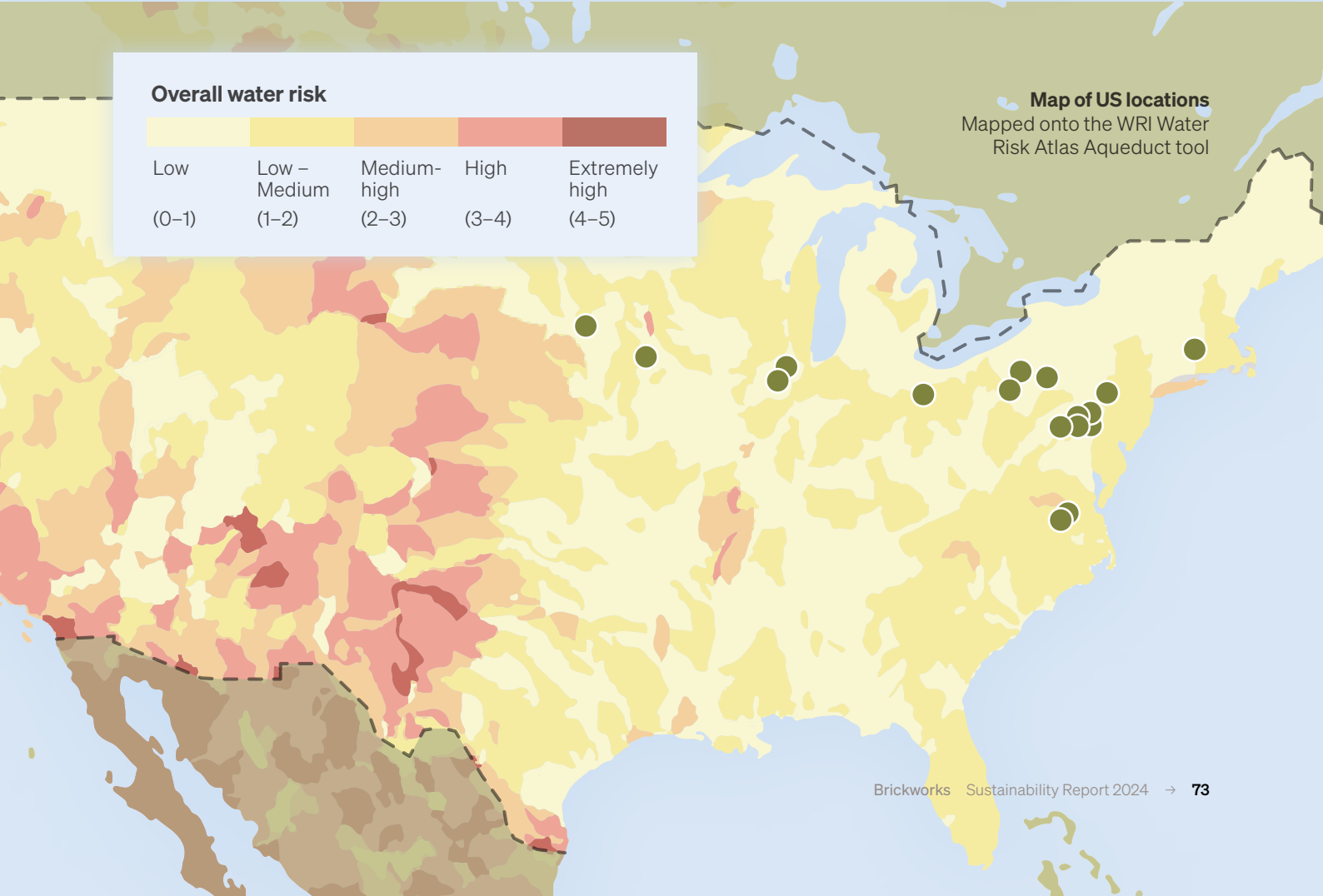


Austral Bricks
Land Rehabilitation Project
New Berrima, NSW

Map of Australian locations
 Mapped onto the WRI Water
 Risk Atlas Aqueduct tool



Map of US locations
 Mapped onto the WRI Water
 Risk Atlas Aqueduct tool



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.

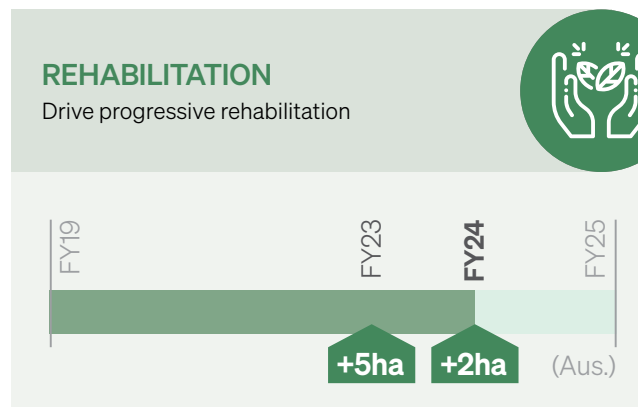
Biodiversity is included within Brickworks responsibility for environmental protection as outlined in our environment policy. This policy is located on the Brickworks website. Although biodiversity was previously not considered a material issue or risk, biodiversity impacts including vegetation damage has been identified as an emerging key critical risk. The main risk drivers are site acquisition and establishment, operational site upgrades and expansion, and mining and quarry site operations.

Through our Safety Health and Environment Management System (SHEMS) aligned to ISO14001:2004, 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 including pre-clearing checklists and undertake progressive rehabilitation to approved performance criteria.

Brickworks operational sites ensure protected habitat is identified and protected as required by legislation, in accordance with mining and/or environmental licence conditions, and (where applicable) as detailed in regulator-approved management plans.

The SHEMS Management System Procedure for land management has been upgraded and now requires sites with significant risks relating to biodiversity and vegetation management to have Standard Operating Procedures (SOPs) in place. The SOPs will contain site-specific instructions and information to supplement the Management System Procedures (MSPs) and any existing vegetation management plans, including risk assessment, inspections, development of root protection plans and reporting. An arborist will provide training course content, and procedures will be allocated for training to the appropriate personnel.

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 SHEMS also requires annual review of a Land Risk Register which includes details of rehabilitation requirements and any associated risks.

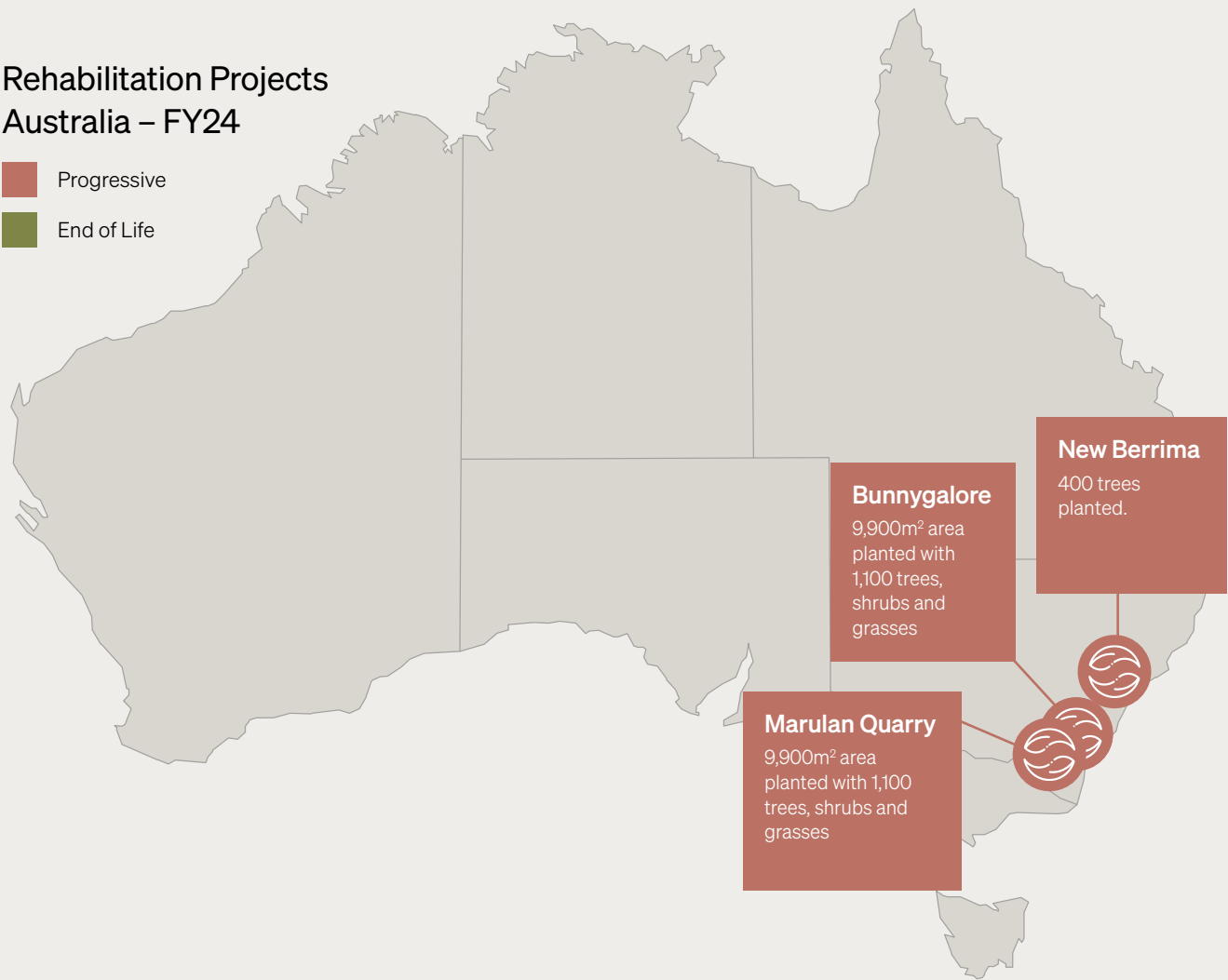


The area of progressive rehabilitation completed for FY2024 was 19,800 m² including 400 trees planted in Australia and 141,276 m² in North America. Progressive rehabilitation is driven across the business by adding available land reviews to annual rehabilitation planning.

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.

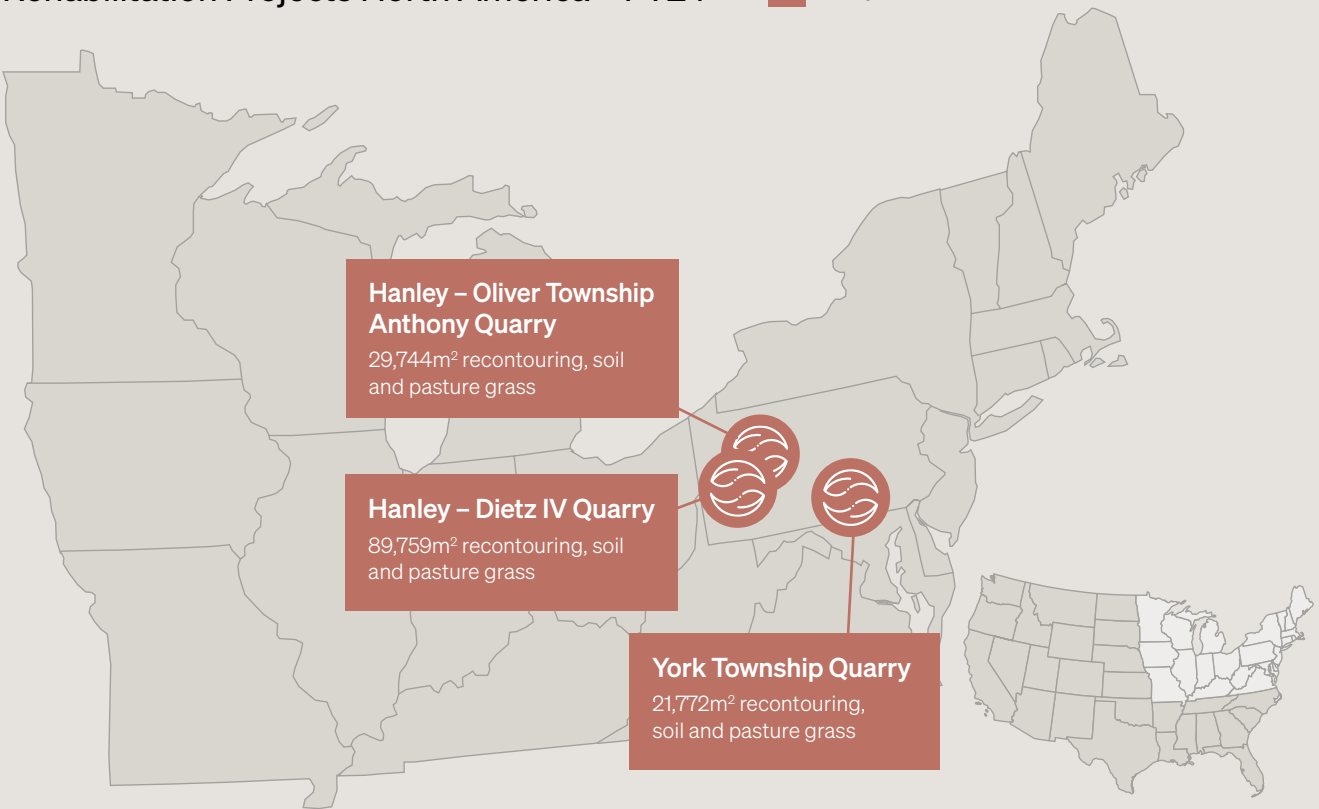
Rehabilitation Projects Australia – FY24

- Progressive
- End of Life



Rehabilitation Projects North America – FY24

- Progressive



Understanding emerging biodiversity frameworks

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



Annual Progressive Rehabilitation in North America

Rehabilitation of areas within our North American quarries occurs annually to minimise exposed area and significantly reduce the risk of dust generation, erosion and turbid surface water.





Markham Avenue

Markham Avenue is high quality housing that is universally accessible, equitable and socially sustainable. The residential community has been planned to balance biodiversity and development. The buildings in Markham Avenue feature natural brick and other durable materials designed to complement the landscape and stand the test of time.

CREDITS

Project: Markham Avenue

Architect: Architectus

Location: VIC

Photography: Peter Clarke

Product: Bowral Blue, Chillingham White, Brahman Granite and Bowral Brown

Our people and community

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



Our Global Workforce

Culture and Values

Our “We Are Brickworks” values and behaviours continue to be the foundation of our company. We remain committed to creating an environment where every individual feels valued and respected. This is promoted through various initiatives and events that recognise and appreciate the contributions of our people.

These initiatives include awards, team-building activities, events and training programs aimed at promoting professional growth. They offer opportunities to appreciate colleagues and collaborate.

As the year draws to a close, we look forward to our CEO Excellence Awards and Employee of the Year Awards where we recognise those who have gone above and beyond in their roles.

Employee Engagement

At Brickworks, maintaining a positive work environment and high employee engagement is essential for the well-being of our people and success of the Company.

Our Staff Update Nights provide key progress updates highlighting the camaraderie among staff. Strong turnout across locations shows the connection employees have with Brickworks and its achievements. The quarterly Culture Champion Awards highlight our recognition of our core values. Employees can nominate colleagues who embody our values. Participation and nominations continue to increase, highlighting the growing appreciation for our company culture. These events and activities have further strengthened the bond among our employees and have contributed to creating an inclusive and engaging workplace culture.

Despite organisational changes over the last 12 months, engagement and feedback remain strong. Results from the latest engagement survey helped improve onboarding, offboarding and overall employee experience. A manager’s toolkit was developed to enhance the employee experience

from the offer stage through the first 30, 60, and 90-days of employment. Surveying new employees provides feedback to monitor their assimilation. We also created a refreshed culture video to showcase our company during recruitment, onboarding and in promoting our company culture. Managers across the group worked with their teams to develop action plans to address areas for improvement and drive positive change. We have recently launched our Engagement Survey for 2024 to assess our effectiveness with the initiatives that were put in place on the basis of our earlier results.

Employee Retention

Our employees are our greatest asset, and we value the long tenure of many team members. We regularly recognise and reward staff through awards, company-wide communication, training, remuneration reviews, and opportunities for secondment and promotion.

In the latter part of 2023, Brickworks restructured its Austral Bricks and Masonry divisions across NSW, VIC, and QLD to enhance the customer experience. The consolidation created a more efficient framework offering both products under one umbrella for a seamless customer experience. It also allowed staff to cross-train across both product ranges, expanding their skills to better serve customers by providing a single point of contact.

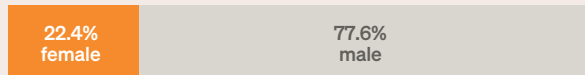
Whilst restructuring the business resulted in some redundancies and impacted involuntary turnover, voluntary turnover in Australia reduced by 2.7% in FY2024. We continue to review exit survey data to improve the employee experience.

In North America, overall turnover dropped by 8%, with voluntary turnover down by 7.5%. The closure of the Marseilles facility and a reduction in salaried positions affected overall turnover. However, improvements in voluntary turnover are due to remuneration reviews, training investments, and actions based on engagement and exit survey feedback.

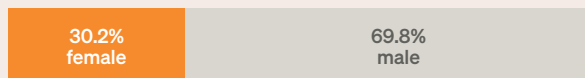
Our workplace

Australia and U.S.

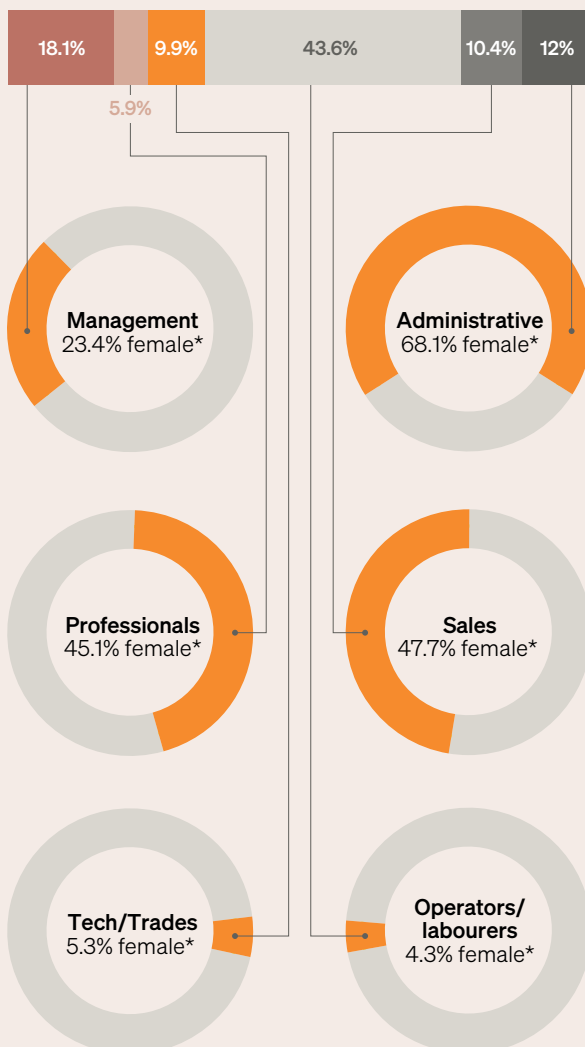
Brickworks workplace: gender diversity overall



Brickworks workplace: Senior Executive gender diversity



Brickworks workplace: employee categories*



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



1852

Total
workforce



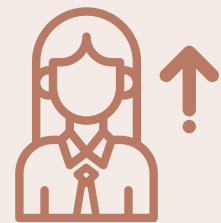
44.9

Average age
of employees



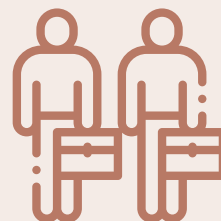
22.4%

Female
employees
(down from 22.8% in FY23)



30.2%

Female senior
executives
(up from 25% in FY23)



39%

Employees aged
50 and over



10

Average years
of service

Talent Pipelines

We provide several pathways for future talent, including work experience for students and structured Cadet and Graduate Programs. Our Industrial Training Program offers a 60-day work placement, helping students gain industry experience and feeds into our Cadet Program. In FY2024, three students joined the program.

We promote these opportunities by engaging with local schools and universities through field trips, open days, Career Expos, and Brickworks networking events.

Brickworks also offers apprenticeships in electrical work, fitting, and roof tiling. These are available to external applicants and current employees seeking a career change. In FY2024, we have 17 apprentices nationally.

Our biennial Brickworks Mentoring Program supports our employees professional and personal development. We have had great interest and success with this program in prior years and look forward to promoting the 2025 program in the latter part of 2024.

We also continue with the North American Emerging Professional Development Program, known as the “Brew Crew,” which helps newer employees (less than 5 years of experience) build professional skills and networks. The program includes monthly 1.5-hour online training on topics like Emotional Intelligence and Workload Management. The program has been expanded to include three levels: Brew Crew, Brew Masters, and Brew Alumni, providing increasing networking, mentoring, and learning opportunities. Currently, 16 participants are enrolled.

Our Technical Academy in North America, offering employees opportunities to further their skills through accredited trade schools and on-the-job training, also continues. Partnerships at each manufacturing plant offer instruction in Millwright, Electrical, and PLC Controllers. Classes for 10 of the 17 employees who expressed interest and completed the assessment began in September 2023. The remaining seven employees will receive entry-level training to develop their mechanical and electrical skills in preparation for the next cohort.

Learning and Development

Brickworks is committed to maintaining a safe and respectful environment by ensuring managers allocate time and support for compliance training and toolbox talks.

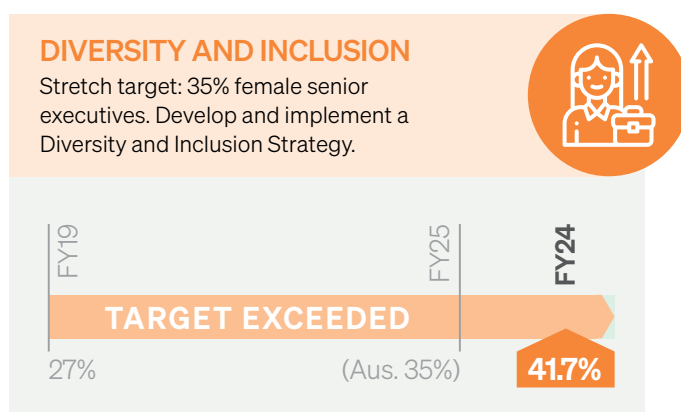
Our monthly ‘Lunch and Learn’ sessions, featuring topics from health and well-being to superannuation benefits and internal updates, have become a key training platform. These sessions are led by our EAP provider, Superannuation Industry Funds, and Brickworks employees.

We are developing a Transition to Retirement Program in North America to facilitate knowledge transfer from experienced employees and support their transition into retirement. This program aids succession planning and equips key employees with new skills for future roles. It also ensures retiring employees feel confident that their responsibilities will be managed effectively and provides them access to resources that may assist in this life change.

Our people managers regularly discuss ongoing education and training with their teams, supporting both external training courses and our internal e-Learning and instructor-led sessions.

Diversity, Equity and Inclusion

We are pleased to have exceeded all of our gender representation targets for 2025 in the workforce. Female director representation has increased to 33%, surpassing our target of 30%; our 35% target for female representation at the executive level has been achieved, currently at 41.7%; and women currently comprise 26%¹¹ of the Brickworks total workforce in Australia, exceeding our target of 25% for 2025.



Employee Turnover	Australia		North America		Global	
	FY2023	FY2024	FY2023	FY2024	FY2023	FY2024
Voluntary	19.8%	17.1%	26.0%	17.2%	22.6%	17.2%
Total	32.7%	31.5%	38.2%	28.0%	35.2%	29.9%

¹¹ Measured 31 March 2024 consistent with WGEA reporting.

This year, Brickworks has continued its efforts to foster an inclusive and respectful work environment. We have rolled out nationwide face-to-face Code of Conduct training, and installed posters and banners promoting respectful behaviour in our locations.

We remain dedicated to maintaining fair and equitable recruitment practices and regularly review our policies for compliance with legislation and International Labour Organisation (ILO) standards.

Quiet Rooms have been introduced at many sites to provide private spaces for lactation, prayer, meditation, or medication administration. Flexible working arrangements have also increased, supporting work-life balance.

In 2024, we participated in the Dress for Success campaign for International Women's Day, donating 352 items of professional attire to support approximately 80 women entering or re-entering the workforce. Several state-based sites also participated in Harmony Week, sharing heritage foods and learning about each other's culture.

Our culture reflects the diverse experiences of our employees. We established a Diversity and Inclusion Committee in 2023 to promote awareness and engagement. The committee fosters a culture of acceptance and belonging, leveraging diverse backgrounds to drive innovation. In 2024, the D&I Committee launched a Connec+ intranet page to communicate its mission and celebrate differences, providing monthly awareness topics for all employees.

Employee Wellness

Brickworks supports employee mental and physical well-being through various initiatives. We observe R U OK? Day and Men's Health Week to raise awareness. Onsite physiotherapy, annual massage days, and flu vaccinations contribute to physical health and stress relief. In addition, we provide manual handling training by a qualified physiotherapist and offer Mental Health First Aider training to help employees support each other's mental health.

Our Employee Assistance Program (EAP) offers resources on personal relationships, financial guidance, and wellness. We also co-host monthly 'Lunch and Learn' sessions on wellness topics. These events are a great way to continue to support our employees' mental health and wellbeing.

Our healthcare plan in North America includes preventive services. At-risk employees receive free, confidential in-home test kits from our health insurance partner. We continue to offer competitive healthcare benefits to attract and retain employees, emphasising preventive care and cancer screenings.

Workplace Relations

At Brickworks, we uphold our employees' right to Freedom of Association, as mandated by the Fair Work Act 2009 (Cth). Employees can choose whether to join industrial associations (such as unions) and decide on representation.

In Australia, we have 15 enterprise agreements covering 292 employees, or 30.6% of our workforce. These agreements typically span two to three years, aligning with current operations and the evolving industrial landscape.

Through good faith collective bargaining, we aim for mutually beneficial agreements that support both employees' well-being and the company's success. Our collaborative approach ensures fair and equitable employment conditions, supporting sustainable outcomes.

North America operates eight manufacturing plants – four union and four non-union. In 2024, we negotiated a collective bargaining agreement (CBA) at the Hanley plant in Pennsylvania and are continuing discussions for our Mid-Atlantic plant.

Brickworks Supply Centres in North America have six CBAs covering 9-yard locations with 38 truck drivers and yard workers.

Percentage of Employees Covered by Collective Bargaining Agreements

	Australia ¹	North America ²	Global
Collective Bargaining Agreement	75.8%	62.4%	68.5%
No Agreement	24.2%	37.6%	31.5%

Composition of Collective Bargaining Agreements

	Australia ¹	North America ²	Global
Union Based	60.6%	100%	80.2%
Non-Union Based	39.4%	0.0%	19.8%

1 Wages Employees Australia

2 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 FY2024.

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 reducing health and safety risks for its employees, contractors, and the public. Central to this commitment is safety leadership, which is essential for developing a resilient safety culture within the company and creating an effective framework for managing health and safety risk.

Brickworks' Workplace Health and Safety (WHS) Strategy 2023–2030 defines the Company's vision and framework for achieving WHS objectives, targets, and regulatory compliance. The Innovative use of technology and integrated systems to mitigate workplace hazards, reflects Brickworks' approach to managing evolving WHS challenges and emerging trends in workplace safety.

Brickworks Safety Health Environment Management System is the cornerstone of the Health and Safety Strategy, offering a comprehensive framework that integrates policies, procedures, and practices to identify and mitigate risk. This system aligns with ISO 45001 requirements with a strong emphasis on continuous improvement processes. The system promotes transparency, accountability, and collaboration among stakeholders, facilitating a universal approach to health and safety management across all levels of the business globally.

Brickworks' cloud-based health and safety management software serves as a comprehensive centralised repository for occupational health and safety data. A specialised reporting platform, Donesafe™ and PowerBI™ is integrated with this WHS database platform to enable efficient data retrieval, and analysis, empowering users to track trends, generate reports, and gain insights into health and safety performance. This software suite provides powerful data transformation tools and interactive visualisations accessible directly from their smartphones or tablets, enabling flexibility and informed, data-driven decision-making from any location.

At Brickworks, measuring safety performance is fundamental to our commitment to workplace health and safety. We track key metrics such as injury rates, injury severity, near-miss incidents, the number of functional checks on safety devices, and workplace inspections. Due to our low injury rates, we now drive safety performance using lead indicator activity measures by site. This approach helps us manage key critical risks, build the capacity to be safe and maintain operational continuity and resilience. By employing advanced data analytics, we monitor trends and assess the effectiveness of safety initiatives, enabling data-driven management decisions. Benchmarking against industry peers ensures that we remain competitive and continuously improve our safety practices.

Brickworks recognises the importance of managing psychosocial health and is committed to providing a supportive, productive, and healthy work environment for all employees. This commitment is clearly stated within the company's health and safety policy statement. The company has implemented mental health awareness programs and provided access to professional counselling services. Initiatives include an ongoing mental health first aid program, qualifying employees in mental health first aid, as well as eLearning courses and an onsite physiotherapy program to assist employee wellbeing which has positively impacted attendance and employee retention. Additionally, promoting work-life fit and encouraging open communication through various channels has supported harmonious and productive work environments.

Brickworks demonstrates its commitment to contractor safety through clear objectives, stringent pre-screening and induction procedures, meticulous permit-to-work processes, and integrated safety protocols. Regular evaluations and risk management strategies are employed to establish a secure working environment for contractors. The Company's strict

adherence to safety guidelines within contractual agreements further emphasises our dedication to maintaining the highest safety standards.

In FY2024, Brickworks prioritised several key initiatives aimed at enhancing our safety program. Conducting medical assessments for workers before they commence employment ensures that potential recruits are physically and mentally fit for the specific demands of their roles, reducing the risk of workplace injuries and enhancing overall safety. Brickworks conducts random fit-for-work assessments in Australia to promptly detect and address any instances of alcohol, drug, or substance use among employees and contractors, aiming to maintain a safe and secure working environment. Furthermore, Brickworks' occupational hygiene program plays a pivotal role in safeguarding the health and well-being of all workers, ensuring compliance with health and safety standards, promoting a productive and sustainable work environment.

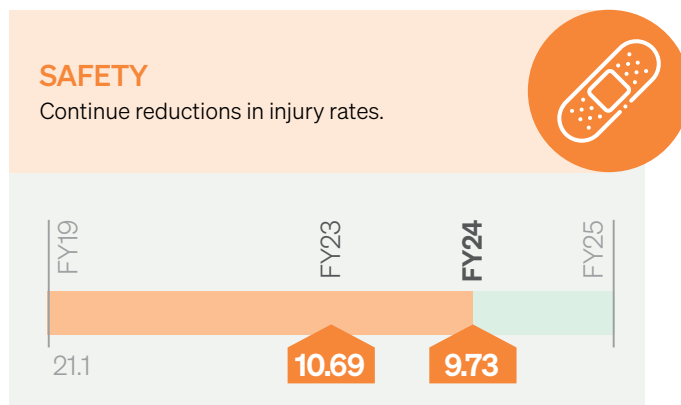
Brickworks e-learning training promotes employee health and safety knowledge and skills and ensures adherence to safety regulations. This learning platform provides a centralised repository for a diverse range of training materials, including interactive modules, videos, quizzes, and management system procedures. It also features integrated tracking and reporting capabilities, enabling efficient monitoring of training undertaken against employee training plans. This has been a very effective health and safety tool.

Comprehensive emergency preparedness procedures address a wide range of scenarios, from natural disasters to man-made crises, ensuring the safety of personnel, facilities, and communities. Frequent drills and training sessions empower the workforce to respond skilfully to emergencies, demonstrating a commitment to operational security and community welfare. In 2014, Brickworks adopted a cautious management approach by implementing Biological PPE kits across all operational facilities. This proactive measure allowed the company to respond swiftly to the emerging COVID hazards in its Australian operations in 2020.

Brickworks understands the critical importance of regular audits of our safety management systems and processes. To ensure the highest standards of safety and compliance, Brickworks conducts both internal and external audits. These audits are designed to validate the effective application of the management system procedures and processes, identifying any non-conformance areas. Internal audits allow us to self-assess and promptly address any issues, while external audits provide an objective evaluation from industry experts. This dual approach not only reinforces our commitment to health and safety but aligns Brickworks with regulatory requirements and industry standards, adopting a culture of continuous improvement and accountability within the company.

Our strategy for FY2024 focused on achieving continued reductions in injury rates for company employees, contractors, and others. Specific annual objectives and targets are set by

the executive leadership team and communicated across the organisation to ensure alignment and commitment to our long-term safety goals.



Performance (Group)

Since the acquisition of the North American operation in December 2018, Brickworks has continuously improved its consolidated total recordable injury frequency rate. Notably, in FY2024, this rate decreased marginally from 10.7¹² to 9.7, highlighting further progress in a challenging year.

This achievement is primarily attributed to the continued successful integration of health and safety technologies and practices developed in Australia into our North American operations. As this work progresses, we anticipate a continued reduction in injury rates for the group.

It's important to note that the currently reported frequency rate data does not include contractor injuries. However, contractor injuries are recorded and included in the company's safety performance reports at all levels of the business, facilitating comparative analysis and injury trends. Significant efforts are underway to accurately incorporate contractor injuries into the statistical frequency rate reporting. In FY2024, the Company reported a total of ten recordable contractor injuries, an increase from the seven injuries reported in FY2023. Regarding the severity of contractor injuries, there were four Class 2 severity recordable injuries, which were temporarily life-altering, and six Class 3 severity injuries, which were minor non-life-altering injuries.

Performance (Australia)

The total recordable injury frequency rate (TRIFR) was 7.9 marking an increase from the TRIFR of 7.3¹² recorded in the preceding year.

Due to the rationalisation of the Australian business, there were fewer hours worked. The total number of hours worked decreased by 13.3% in FY2024 compared to the previous year. The number of recordable injuries reported was in line with the previous year.

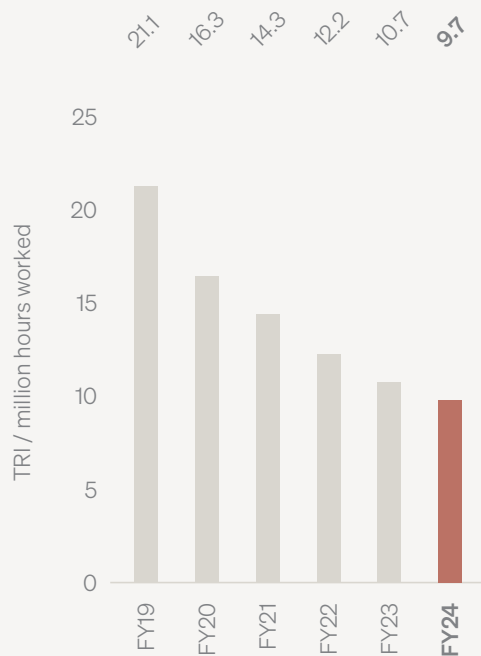
¹² FY2023 restated to include injuries that occurred in FY2023 but were reclassified during FY2024. Previously stated figures for FY2023 – Brickworks Consolidated – 8 LTI, 34 MTI, LTIFR (1.9), TRIFR (10.0).



Austral Bricks
Plant 2 Staff

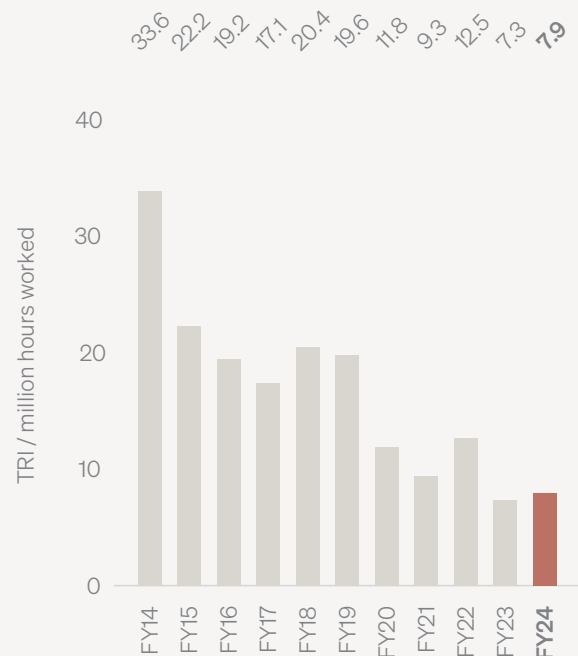
Brickworks

Total Recordable Injury Frequency Rate (TRIFR)¹²



Brickworks Australia

Total Recordable Injury Frequency Rate (Australia)¹³



¹³ FY2023 restated to include injuries that occurred in FY2023 but were reclassified during FY2024. Previously stated figures for FY2023 Australia – 1 LTI, 13 MTI, LTIFR (0.4), TRIFR (6.4).

Brickworks is committed to its 2023–30 safety strategy by effectively communicating annual health and safety objectives and targets to all levels of the business, ensuring alignment across the workforce. Key to this strategy is building employee safety knowledge and skills through ongoing training and proactive supervision. Achieving this strategy requires diligent management and accountability and a dedication to developing a generative safety culture across the business.

During FY2024, Brickworks achieved significant milestones, including the completion of over 24,928 eLearning safety courses by employees and contractors, and conducting 682 random tests for alcohol, drugs, and other substances. We maintained a roster of over 110 mental health first aiders and conducted 3,229 workplace inspections, all contributing to our comprehensive safety framework. Our rigorous approach to identifying and managing health and safety risks resulted in the control of over 1,777 hazards, along with 7,862 safety device checks to ensure that safety control equipment safeguarding personnel remains fully operational. Brickworks demonstrated a strong near-miss reporting culture, with a near-miss frequency rate (NMFR) of 16.4 in Australian operations for FY2024.

At Brickworks, recordable injury severity is classified into three categories: Class 1 (permanent life alteration), Class 2 (temporarily life-altering), and Class 3 (not life-altering). In FY2024, no Class 1 injuries were reported among Brickworks employees. Of the total recordable injuries, 40 percent were Class 2, while the remaining 60 percent were Class 3. For contractors, there were no Class 1 injuries. Of all the contractor recordable injuries, 33 percent were classified as Class 2 severity, while the remaining 66 percent were categorised as Class 3 severity, which did not result in life-altering outcomes.

Respirable Dust and Silica

At Brickworks, we have implemented stringent measures to mitigate the risks associated with respirable dust and respirable crystalline silica dust, extending our commitment to worker health beyond governmental regulations. Brickworks' comprehensive program, maintained across all sites, includes both static and personal exposure monitoring, as well as engineering controls to minimise risks. This nationwide air monitoring program utilises statistically valid exposure data and is closely managed by a qualified internal occupational hygienist. The program focuses on understanding respirable silica dust exposures in the workplace and implementing engineering controls to reduce dust emissions and transmission from various sources. Furthermore, Brickworks prioritises worker health by utilising specialised respirator fit testing equipment to ensure our workforce achieves effective respiratory protection. In FY2024, no silicosis claims were lodged related to workers compensation, with two non-life-threatening claims recorded historically over the past 15 years.

Key Highlights FY2024 – Australia

- ▶ No employee or company contractor¹⁴ fatalities have been recorded over the last 5 years.
- ▶ Alignment of Health and Safety Training and Legal Briefings for Executive and Middle Management.
- ▶ Systems Integration and Reporting of Health and Safety Management Data in Australian and North American Operations.
- ▶ Implemented psychosocial health management framework, backed by an internal team of more than 110 Mental Health First Aiders.
- ▶ The growth of the presence of safety programs, driving the capacity to be safe in Brickworks, through visible lead indicator safety activity measures, tracked daily by site.
- ▶ No employee silicosis claims lodged FY2024.

CEO Award for Health and Safety performance

The CEO Award for Safety at Brickworks recognises the operational site that reported no recordable injuries in FY2024 and demonstrated the strongest safety lead indicator performance, based on statistics from the Donesafe™ reporting platform.

This Award encourages Brickworks operational teams to focus on increasing the number of lead safety indicator activities, such as hazard identification and control, safety device checks, safety training, safety contacts, workplace inspections and random fit for work testing, which builds the capacity to be safe in Brickworks.

Performance (North America)

Brickworks North America continued to enhance its health and safety performance in FY2024. The total recordable injury frequency rate (TRIFR) decreased to 11.6, representing an 18.9 percent reduction from the FY2023 rate of 14.3.¹⁵

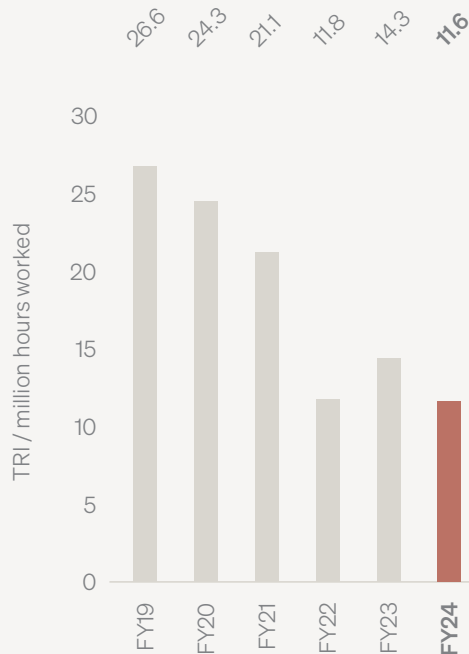
It is anticipated that the company's health and safety performance will continue to improve as the integration of Brickworks' systems and processes continues. By streamlining operations and implementing best practices across the North American business, we expect to improve our safety measures, reduce risks, and continue to develop a safer working environment.

¹⁴ Contractors working on a fee-for-service arrangement for Brickworks.

¹⁵ FY2023 restated to include injuries that occurred in FY2023 but were reclassified during FY2024. Previously stated figures for FY2023 North America – 7 LTI, 21 MTI, LTIFR (3.5), TRIFR (13.8).

Brickworks

Total Recordable Injury Frequency Rate (North America)¹⁵



Throughout the year, we achieved notable milestones in our safety efforts, including:

- completion of 31,613 eLearning safety training sessions by our employees.
- execution of 2,969 safety interactions led by our supervision and leadership teams.
- conducting 178 workplace inspections across our nine manufacturing facilities to ensure safety compliance.
- completion of 2,031 toolbox talks throughout all Brickworks North American locations.
- performing peer audits at eight manufacturing locations.
- commenced the implementation of the Presence of Safety lead indicator program to drive activities that build the capacity to be safe.

Remarkably, we identified 2,281 hazards and successfully controlled a total of 2,503 hazards across Brickworks North America locations. These accomplishments underscore our commitment to establish a safer and more secure environment for our employees and stakeholders.

The ongoing deployment of the Safety Health and Environment Management System (SHEMS) has led to several important initiatives. These include the introduction of a Safety Device Inspection program, the THINK FIRST program, and the Hazard Reporting and Risk Control program. Additionally, enhanced programs for Hot Work, Lockout Tagout, Hearing Conservation, Respiratory Protection, PPE, and Non-DOT Vehicle Safety have been implemented.

It is important to highlight that nearly all program documents in the Safety Management System are readily accessible in both English and Spanish, ensuring comprehensive support for our diverse workforce. Additionally, we have developed eLearning courses for all management system programs, which are assigned to employees through Brickworks eLearning platform. These courses are designed to enhance the safety skills and knowledge of the workforce, ensuring all employees are well-informed and equipped to contribute to a safer work environment.

THINK FIRST Program

The purpose of this program is to identify health, safety, and environmental hazards before starting work to prevent incidents workplace and near misses. Since the program's launch in December 2023, the THINK FIRST forms are used to identify and control potential hazards when:

- an employee is to conduct a non-routine task.
- there is no JSEA (Job Safety Environmental Analysis) or the JSEA is missing sections or steps.
- conditions change in the workplace.

Hazard Reporting and Risk Control

Brickworks North America has relaunched the Hazard Reporting and Risk Control Program to eliminate or minimise incidents by identifying health and safety hazards. Risk assessments are conducted to determine the likelihood and consequences of these hazards, and the resulting risk ratings are evaluated to develop a plan of action. Risks are either eliminated or reduced to As-Low-As-Reasonably-Practicable rating (ALARP).

Respirable Dust and Silica

Brickworks North America continues to employ a third-party contractor for respirable silica sampling to ensure accurate and reliable measurements. We have implemented several measures to minimise respirable silica exposure, including enhanced ventilation systems, personal protective equipment, and rigorous monitoring protocols. Additionally, we are actively exploring and evaluating new controls and technologies to further reduce respirable silica exposure. Our efforts are aligned with Brickworks' global standards and best practices to ensure the highest levels of safety and compliance in managing silica risks.

Key Highlights FY2024 – North America

- ▶ No employee or company contractor¹⁴ fatalities have been recorded over the last 5 years
- ▶ Improved near miss recording
- ▶ Further Systems Integration and Reporting of Health and Safety Management Data for North American Operations
- ▶ No employee silicosis claims lodged FY2024
- ▶ A reduction in the Recordable injury frequency rate for the North American business

Safe + Sound week

For the third consecutive year, all 40 Brickworks North America locations participated in Safe + Sound Week in August 2023. Safe + Sound week is a nationwide OSHA (Occupational Safety and Health Administration) sponsored event, held each August, that recognises the successes of workplace health and safety programs and offers information and ideas on how to keep America's workers safe.

A safety slogan contest was held with the first-place winner's logo printed on t-shirts provided to all Brickworks North America employees. Micro learnings on Flammable Cabinet Safety, Ladder and Tools Storage and Walkways, Stairs and Exits safety were provided and distributed throughout the week.

Certified Safety Professional® (CSP®)

Two members of the Corporate Safety Team met the gold standard of safety, health and environmental credentials and achieved the industry's most-recognised SHE certification.

A CSP candidate's professional practice is typically spent implementing safety management systems, making worksite assessments to determine risks, assessing potential hazards and controls, evaluating risks and hazard control measures, investigating incidents, maintaining, and evaluating incident and loss records, and preparing emergency response plans, among other possible duties.

The requirements to achieve the certification include the minimum of a bachelor's degree, a minimum of four years of safety experience, a Board of Certified Safety Professionals qualified credential, and successful completion of the CSP exam.

This accomplishment underscores our commitment to the professional development of our safety leaders.

Austral Bricks
Plant 2 Staff

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 is growing their community engagement plans at relevant sites, identifying the socio-political context, community concerns and expectations and when and how to engage. In FY2024, we completed 105 recorded community activities in Australia. 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.

Our North American Employee and Community Engagement Committee was established early in FY2023. The main function and goal of this committee is to support and enhance the community around us through charitable acts across the country. The Committee's objectives demonstrate the Brickworks Core Values and encourages the Brickworks employees to participate in activities within their local communities.

Within the last year, the committee has accomplished three different initiatives: a food drive, holiday gift donation, and wildflower seed packet distribution project for all employees in celebration of Earth and Arbor Day.

Supporting Australian Women in Construction

As part of their inaugural roadshow, Australian Women in Construction (AWIC) visited North Queensland educational institutions, offering site visits and factory tours to introduce students to the construction industry. Austral Masonry proudly hosted AWIC, showcasing masonry product manufacturing to inspire future generations of women in construction.



Protecting Cultural Heritage

We are dedicated to upholding cultural heritage requirements. In FY2024 some of our sites in Queensland are expanding into areas of our mining leases that have not been excavated before. Our process involves consulting with the Traditional Owners to develop and implement strategies that respect identified cultural heritage. We have consulted with the Jagera, Turrbal and Wakka Wakka people to ensure that any sensitive sites and artifacts discovered during excavation are managed and protected appropriately including the development of onsite inductions and monitoring procedures.

Brickworks North America Food Drive

In October and November, the Employee and Community Engagement Committee launched the first nation-wide Brickworks North America Food Drive, aimed at giving back to the communities around our site locations for the holiday season. Last year, three locations donated 283 pounds of food. This year 14 locations participated, donating approximately 1,258 pounds of food, \$900 in cash, sponsoring one family, and preparing 40 meals.

Supporting Fire and Rescue

Bowral Brickworks site have partnered with the Fire and Rescue to allow onsite annual training drills. The exercise held at Bowral site involving local Fire and Rescue and Local RFS. The drill included a search and rescue phase, firefighting phase, HAZCHEM phase and LFG venting phase.

Quarry Communication

The NSW Brickworks mining team actively engages with neighbours, council, and local residents to keep them informed about site activities. This includes quarterly Committee Consultation Meetings for Berrima Quarry, with minutes and reports shared with the local community. Recent meetings have focused on a joint effort to revegetate Stoney Creek, which flows from the Inghams chicken feed mill, through our property, to the Wingecarribee River.

At the proposed Bringelly quarry site, communications have begun with neighbours through newsletters outlining plans and activities. The local public school and businesses have also been consulted on transport volumes and potential impacts.

Project: High Street
Location: Queensland
Product: Bowral Bricks
St Pauls Cream

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 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 \$5.3 million dollars, comprising direct and indirect sources of revenue, including corporate and staff donations, state fundraising, sponsorships and supporting CCI events.

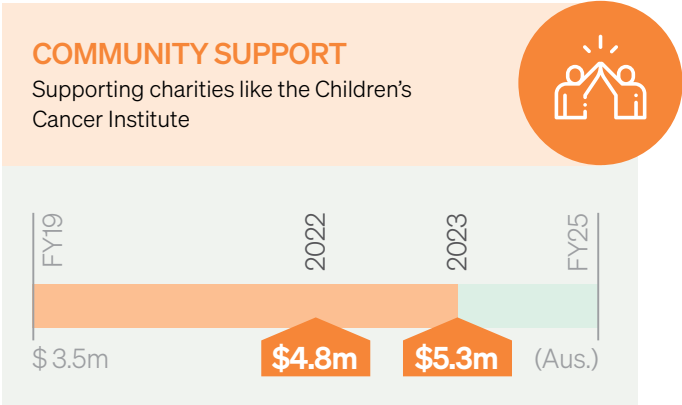
The reporting period for the CCI partnership for 2023 calendar year saw the team at Brickworks raise \$469,747, helping CCI move closer to achieving the vision of curing all children with cancer.

Some of our highlights included Brickworks extension of their Diamond Ball partnership from Diamond to Platinum partner and Brickworks also becoming presenting partner for 86 k for a cure. Brickworks have also been ongoing strong contributors with Friday mufti program, Corporate Donation/Matching, webinar incentive program and their state-based activities such as their Golf Day successes.

"Every week 20 children are diagnosed with cancer in Australia. At Children's Cancer Institute, our vision is to save the lives of these children and improve their long-term health through research."


"We don't just hope to cure all children of cancer. We will do it. This vision is only possible with commitment from longstanding partners such as Brickworks. Heartfelt thanks to the entire Brickworks' team for its generous support of our work."

Anne Johnston, Director Marketing and Fundraising





Project: Tarakan Street
Social Housing
Location: VIC
Product: Austral Bricks
Indulgence Series
in Praline (Climate
Offsett Program)



Bob Marshman Construction Training Centre

The clients behind this project by Deicke Richards wanted to create a living laboratory that explores passive thermal design and sustainability. The project team nominated Australian made, locally manufactured, robust, and easy to maintain materials with low embodied carbon. The project used bricks from the Austral Bricks Mineral Contours range, procured as part of the Brickworks Climate Active Program. Currently, it is the first project to receive Passivhaus certification in a subtropical climate, and the first training facility in Australia to achieve this benchmark.

CREDITS

Project: Bob Marshman Construction Training Centre

Architect: Deicke Richards, Hutchies

Location: QLD

Photography: Hutchinson Builders

Product: Austral Bricks Mineral Contours Gypsum Tan

Responsible business

We remain committed to strong governance practices, ensuring transparency and accountability in our operations.



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 appetite 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 and Safety, Customer Service, Financial, Reputation and Environment/Sustainability), 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.

Following the assessment of the risk, the rating is considered against Brickworks Risk Appetite statements to determine appropriate management response.

Risk identification and management process

Brickworks Board

Determines risk profile for the company

Audit and Risk Committee

Recommends risk profile to the Board

Risk Management Framework (Group Risk & Internal Audit)

(consistent with the Australian Risk Management Standard AS/NZS3100:2018)

Building Products | Group | Land and Development | Investments

Annual risk management framework review and update

Risk appetite categories

Customer Services | Environment/Sustainability
Health & Safety | Financial | Legal | Reputation

Brickworks Risk Matrix		CONSEQUENCE				
		Negligible (1)	Minor (2)	Moderate (3)	Significant (4)	Severe (5)
LIKELIHOOD	Almost certain (5)	Low	Moderate	High	Very High	Very High
	Likely (4)	Low	Moderate	High	Very High	Very High
	Possible (3)	Low	Moderate	Moderate	High	High
	Unlikely (2)	Low	Low	Moderate	Moderate	High
	Rare (1)	Low	Low	Low	Low	Moderate

Risk Appetite Statement

Legal/Compliance

Brickworks operates in a complex regulatory environment and must ensure it complies with all legislated requirements. Brickworks has a **low appetite** for any serious legal or compliance breach and no tolerance for any deliberate legal or compliance breach.

Health & Safety

Brickworks maintains very high safety standards and practices. Brickworks has a **low appetite** for any injuries to our staff and customers, and no tolerance for any serious, permanent or fatal illnesses or injuries.

Customer Service/Business Disruption

Brickworks acknowledges that providing a high level of customer service and limiting business disruption is vital for long term success. Brickworks has a **moderate appetite** for risk that has the potential to impact on business operations and customers from a disruptive event.

Financial

Brickworks is committed to acting in the best interests of shareholders. Brickworks has a **moderate appetite** for risk that may impact the financial performance and/or position of the business.

Reputation

Brickworks has long prided itself on its strong reputation within the market and wider community. Brickworks has a **moderate appetite** for any negative reputational impact.

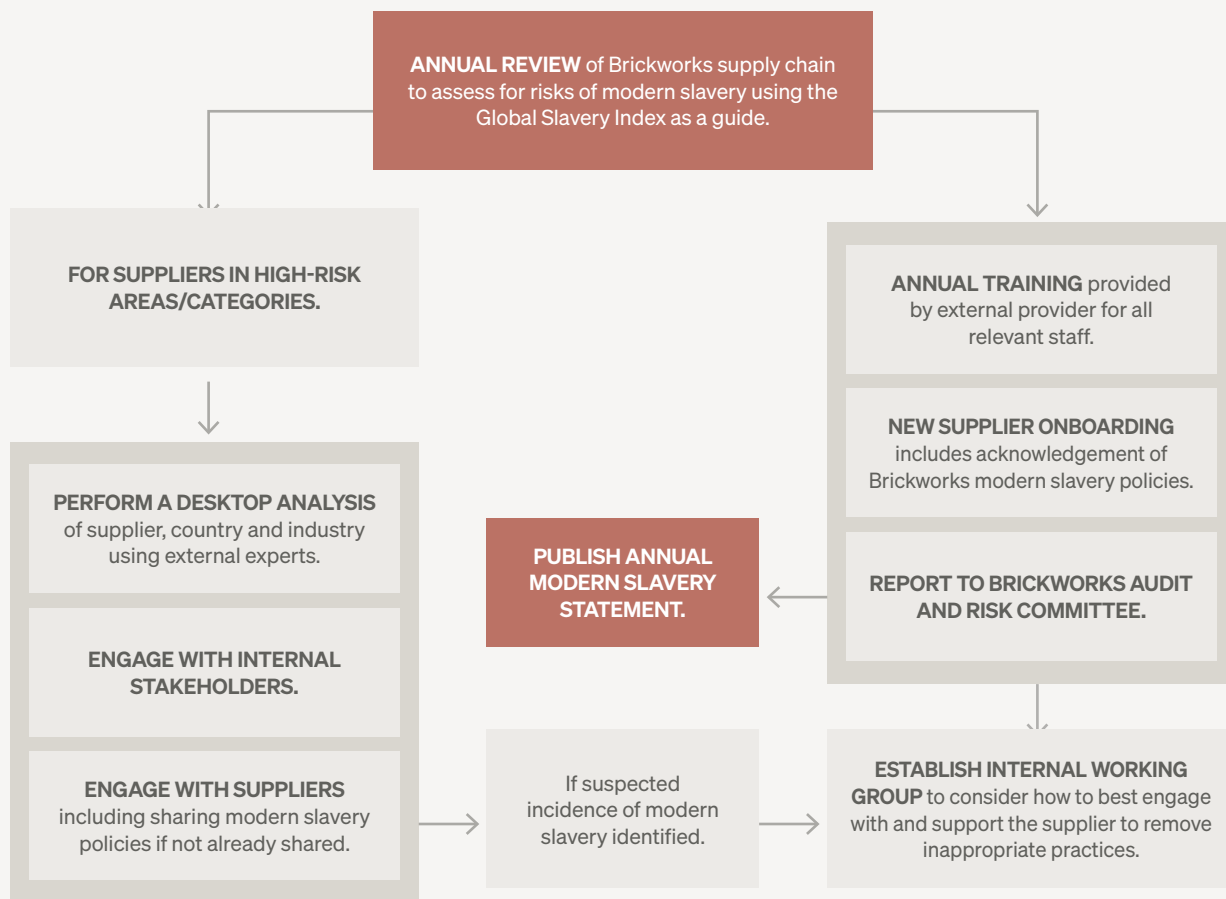
Environment/Sustainability

Brickworks maintains very high environmental standards and practices. Brickworks has a **moderate appetite** for any environment harm.

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 FY2024 Annual

Report and the Corporate Governance Statement which can be downloaded from www.brickworks.com.au/investors/group-overview#corporate-governance.

Modern Slavery Framework



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.

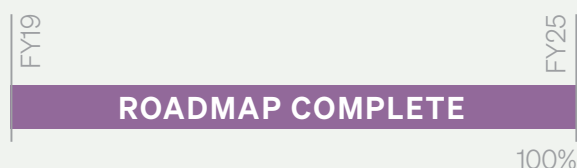
During FY2024, Brickworks engaged experts to assist with further development of its modern slavery management program. Targeted reviews were conducted on some Tier 1 suppliers operating in high-risk industries. Other suppliers were engaged by management who shared Brickworks' modern slavery policy, and the intention to work collaboratively with the supply chain to identify and eradicate any instances of modern slavery.

Cyber security risk

The Group has identified its primary cybersecurity threats as phishing attacks aimed at obtaining sensitive company or private information and malicious attacks that compromise the system. In response, investment in premium security platforms and technology has been increased, and risk controls have

SUPPLY CHAIN

Reduce supply chain risk



been implemented, including the uplift of identity management, privileged access and 24/7/365 security anomaly incident response monitoring across all company system environments.

Preventative measures include regular system penetration tests, comprehensive employee training and investment in incident response exercises. Additionally, new state-of-the-art endpoint protection software and robust firewall protection have been deployed.



Project: Seven Hills House
Location: Seven Hills, NSW
Product: Bowral Remastered
in Oxley Blend

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.

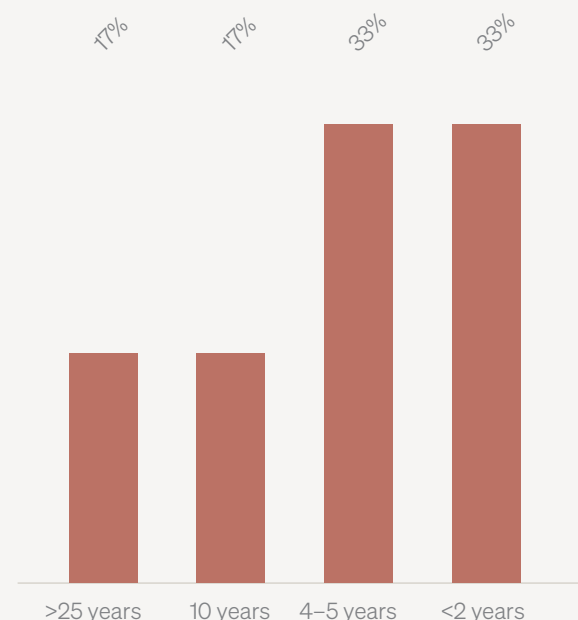
The company's long-term future is best served by ensuring that its employees have the highest levels of honesty and integrity. These employees are retained and developed through fair remuneration, appropriate long-term incentives and equity participation in the Company. It is also critical to the success 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. The statement has been prepared in line with the principles of the ASX Corporate Governance Council's "Corporate Governance Principles and Recommendations (4th Edition)".

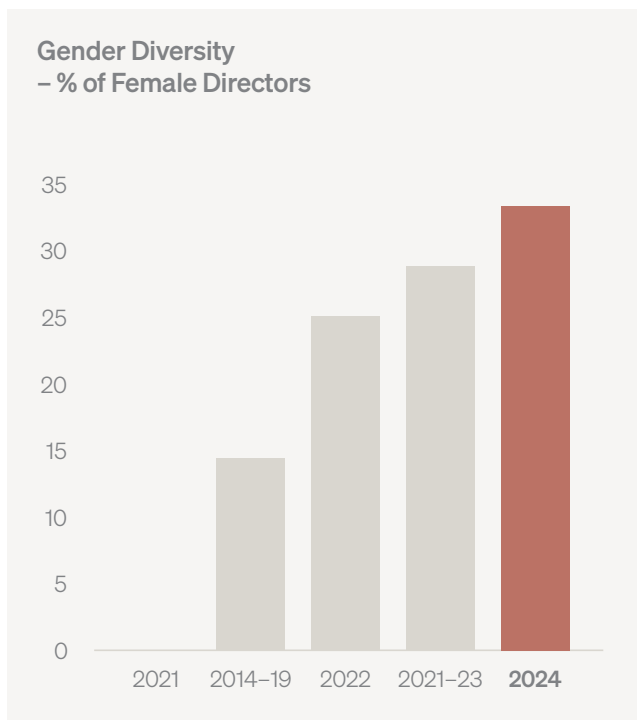
Brickworks has policies and procedures in place that ensure the highest standards of corporate governance, abiding by all Australian laws and the requirements of regulatory authorities in each state.

Board Succession Planning and Diversity

Brickworks recognises the importance of gender diversity in a board. The Board currently comprises six directors, including two female directors representing 33%, achieving Brickworks goal of having not less than 30% of its directors of each gender by 2025.

**Board Membership
– Tenure of Directors**





Board Independence

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

Brickworks has established an Independent Board Committee chaired by the Chair of the Audit and Risk Committee. This Committee considers and makes recommendations to the Board when circumstances exist, or proposals are received when the interests of WHSP may differ from the interests of Brickworks or other shareholders in Brickworks.

Code of Conduct

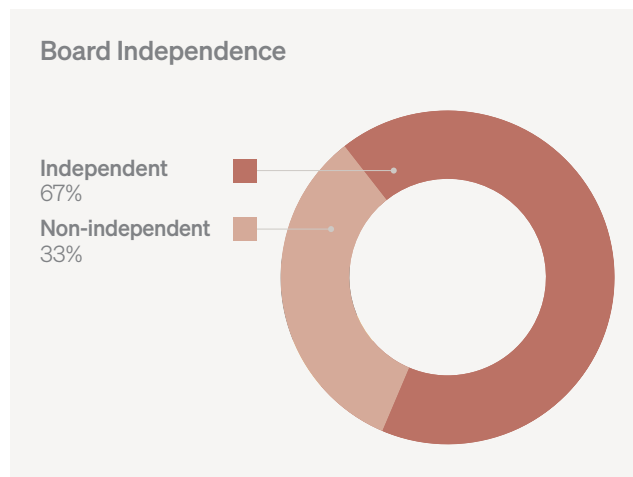
Brickworks staff are guided by the Brickworks Code of Conduct. The purpose of the code is to set standards of conduct expected of Brickworks employees. The Code applies to all directors, officers and employees of Brickworks Limited and its controlled entities.

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.



Brickworks aims to continually improve its performance in business ethics management to align with best practice.

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 FY2024.

Climate Governance

The Audit and Risk Committee of the Board maintains oversight of Brickwork’s response to climate-related risks and opportunities, including risk identification and management, strategy and external reporting.

Brickworks Audit and Risk Committee (ARC) is responsible for satisfying itself that a sound system of risk oversight and management exists and that internal controls are effective. It receives an annual report on our organisation-wide risks, which include climate-related risks and opportunities. Further details of the roles and responsibilities of the ARC are in the Corporate Governance Statement and the Annual Report.

Annually, key management personnel make presentations to the Board on safety, human resources, risk, environment and sustainability issues and targets. In FY20, sustainability was formally incorporated into the charter of the ARC.

Brickworks’ TCFD Working Group was formed in FY20, consisting of representatives from Brickworks Executive Management Team. The Working Group represents key areas including energy, operations, research and development, strategy, risk and governance, and sponsored by the Company Secretary. This working group has now transitioned to an ASRS working group. The purpose of the working group is to support the execution of Brickworks climate-related disclosure and its objectives are to:

- ensure a common understanding of key climate risk-related concepts, including the TCFD and ASRS recommendations, across the represented business functions;
- inform analysis and operationalise the TCFD / ASRS Strategy through cross-functional representation; and
- ensure that the climate risk-related analysis undertaken by Brickworks is understood at an appropriate level of detail to support decision-making by Brickworks’ senior management team and oversight by the Audit and Risk Committee and Brickworks’ Board of Directors.

Board and Executive Climate Risk Education and Skills

Our directors with current or former chief executive roles in carbon intensive manufacturing operations have experience in managing climate-related business threats, understanding the key implications of climate change and responding to climate-related disruptions.

Directors and executives attended climate change competency training programs in FY 2024 to enhance the Board's understanding of the key implications of climate change in the industries in which we operate. These training programs were undertaken by recognised climate consultants and included training on:

- key climate change concepts, expectations of financiers and emerging regulatory requirements;
- the role of carbon offsets; and
- decarbonising hard-to-abate sectors.

Low Carbon Transition Competencies

We have included climate change in our Board skills matrix and it is now included in our corporate governance statement. Below is an extract from the Corporate governance statement:

Skill / Experience/Expertise¹⁶

	Non-executive Director	Executive Director	Criteria Not Met
Climate Change:	2	1	4

Criteria

- Technology and innovation: specifically recent experience and expertise with the development, selection and implementation of business transforming technology and innovation, and responding to climate-related and digital disruption.
- "Climate competent" directors, i.e. have the expertise and experience of climate-related business threats and opportunities including climate science, low carbon transition across the value chain and public policy.

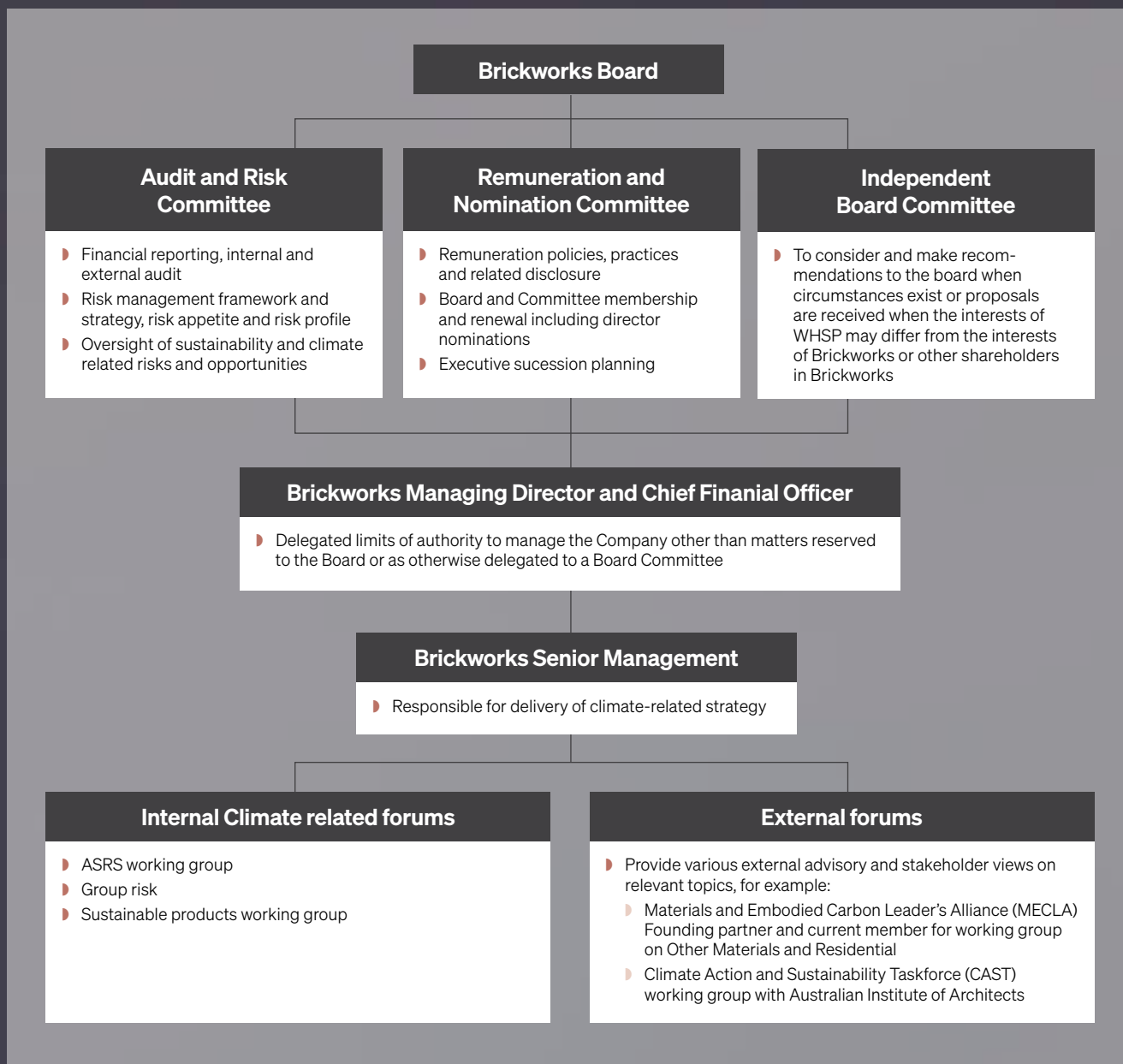
Relevance to the Group

- Relevance to group: Enables the Board to have skills required to manage climate-related business threats, understand the key implications of climate change and respond to climate-related disruptions.

Executive Key Performance Incentives

To emphasise the importance of sustainability, ESG measures account for 12.5% of the Managing Director, CEO and CFO's KPIs, including workplace health and safety, succession planning, and diversity and inclusion.

16 Includes Lindsay Partridge as a director for the full FY2024 financial year and Todd Barlow who commenced as a director on 14 June 2024.



Austral Masonry
Machine Laid 1200 Grey Block



Vikki's Place

Through materiality, Vikki's place is set apart from the typical residences of its area, and through considered functionality, the home delivers both in the present and into the future.

Some of the physical constraints of the site were its size, at a modest 230 square metres, and its low-lying elevation, just a metre above sea level. Located near the harbour in Newcastle NSW, the flood zone requires any liveable environments to be raised 1.6 metres above ground. GB Masonry blockwork was selected for its resilience and ability to withstand flooding events.

CREDITS

Project: Vikki's Place

Architect: Curious Practice

Location: NSW

Photography: Kat Lu

Product: GB Masonry GB Smooth in Porcelain



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 on 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 FY2023, Brickworks completed a materiality assessment update including reviewing of 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	
Employees	<ul style="list-style-type: none"> Management Employees 	<ul style="list-style-type: none"> Business performance HR 	<ul style="list-style-type: none"> Corporate governance WHS 	<ul style="list-style-type: none"> Employee Materiality Survey Newsletters Conferences 	<ul style="list-style-type: none"> Team meetings, Performance reviews Sustainability Strategy
Customers	<ul style="list-style-type: none"> BKW Business Development Managers (customer perspectives) Architects Developers Customers 	<ul style="list-style-type: none"> Price Quality Reliability Innovation Eco credentials Wellness Reputation 	<ul style="list-style-type: none"> Ethical practices Care Disclosure Building waste Affordable housing 	<ul style="list-style-type: none"> Customer satisfaction surveys Events (International speaker, Continuous Professional Development presentations), Newsletters Brochures 	<ul style="list-style-type: none"> Website Education Materiality survey (customer insights provided by Business Development Managers) Sustainability Strategy
Investors	<ul style="list-style-type: none"> Investors Analysts Shareholders Proxy Advisors 	<ul style="list-style-type: none"> Business performance Sustainability Environmental performance Climate-related issues 	<ul style="list-style-type: none"> Health and safety HR Regulatory compliance Risk management disclosure 	<ul style="list-style-type: none"> AGM Annual Report Meetings ASX Updates 	<ul style="list-style-type: none"> Sustainability Strategy
Government	<ul style="list-style-type: none"> Local government State government Federal government 	<ul style="list-style-type: none"> Compliance New and emerging legislation Carbon and energy Investing in new technology 	<ul style="list-style-type: none"> Environmental performance WHS performance HR / EEO / Employment performance Planning issues 	<ul style="list-style-type: none"> Meetings Training Audits and inspections Reporting 	<ul style="list-style-type: none"> Sustainability Strategy
Industry	<ul style="list-style-type: none"> Competitors Similar Industry/ companies 	<ul style="list-style-type: none"> Trends 		<ul style="list-style-type: none"> Analysis of documents Gap analysis 	<ul style="list-style-type: none"> Sustainability Strategy
Community Groups	<ul style="list-style-type: none"> Local community group organisations Neighbours 	<ul style="list-style-type: none"> Communications Local employment and economy 	<ul style="list-style-type: none"> Environmental performance Disclosure 	<ul style="list-style-type: none"> Group meetings Local events 	<ul style="list-style-type: none"> One on one discussions Complaints management Newsletters Site tours
Sustainability organisations	<ul style="list-style-type: none"> World Business Council for Sustainable Development Australian Sustainable Business Group Green Building Council and MECLA 	<ul style="list-style-type: none"> Climate risk Materials use Social licence to operate 		<ul style="list-style-type: none"> Survey Webinars Meetings Training 	<ul style="list-style-type: none"> Newsletters Subscriptions Sustainability Strategy

Materiality Assessment Process

The purpose of a materiality assessment is to determine the most material sustainability topics relevant to Brickworks, its business and its stakeholders. Materiality is determined by assessing the significance of Brickworks' actual and potential impacts and prioritising the most significant.

Brickworks' previous materiality assessment was conducted in 2019, with a re-fresh performed in 2021 to confirm the material topics remained relevant. The 2023 materiality assessment was the first assessment performed in alignment with the updates to the Global Reporting Initiative (GRI) Material Topics 2021 Standard, which focuses for the first time on positive and negative impacts.

The following four step assessment process was applied:





- ▮ Identify a long list of ESG material topics from:
 - ▮ desktop review of relevant documentation (e.g. standards, previous Brickworks material assessment, building sector sustainability developments, risk register)
 - ▮ peer benchmarking to understand topics addressed by peers.
- ▮ Stakeholder engagement with 16 senior internal stakeholders with extensive knowledge of our customers, investors and the industry (Australia and North America) using surveys and via interviews. This helped validate and prioritise the material topics to Brickworks and develop the short-list of most material topics.
- ▮ Completed assessment and determined the most material topics – there were five each for positive and negative impact (as plotted on the material matrixes).
- ▮ Communicated the results to the Executive Leadership Team.

A Materiality Matrix provides the visual overview of how significant issues were prioritised and ranked according to their positive and negative impacts. For positive impacts, significant issues were prioritised in accordance with the two dimensions recommended by the Global Reporting Initiative (GRI) Standards: likelihood (x-axis) and scale and scope (y-axis). For negative impacts, significant issues were prioritised in accordance with the two dimensions recommended by the Global Reporting Initiative (GRI) Standards; likelihood (x-axis) and severity (y-axis).

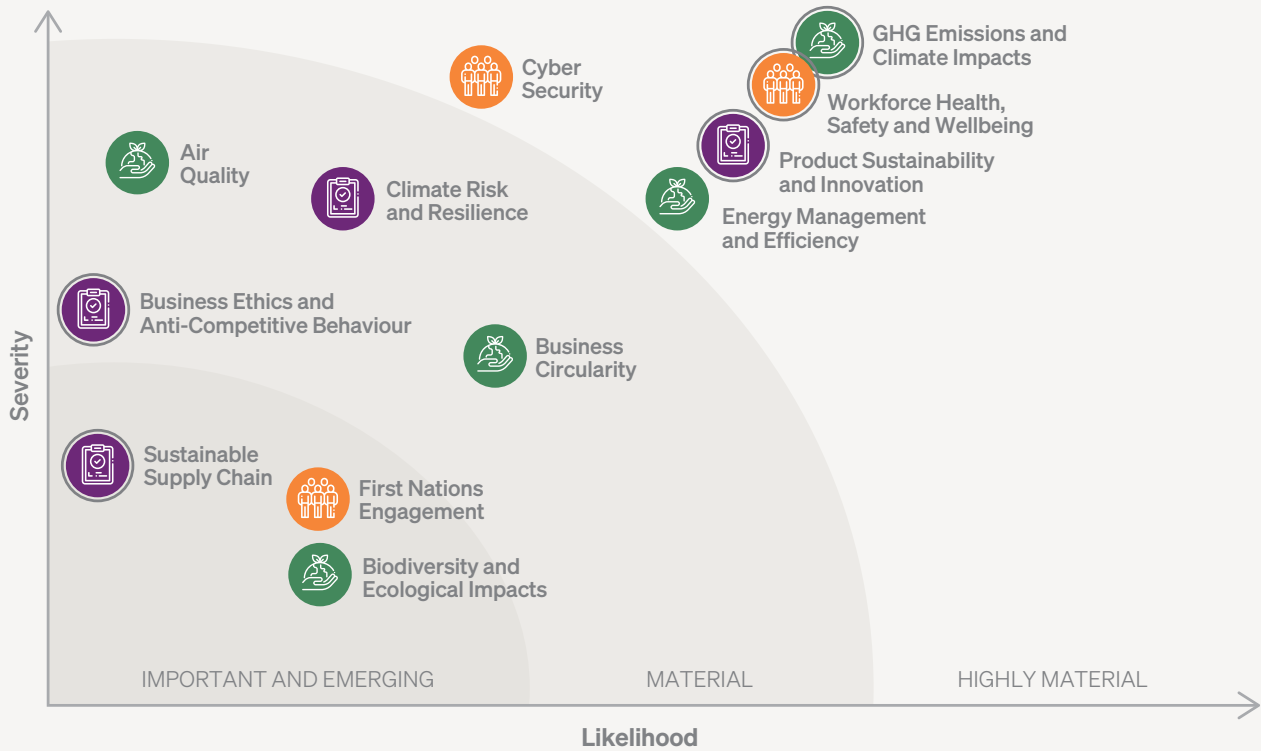
Brickworks consulted with selected internal and external stakeholders to validate the issues identified during stakeholder engagement. Brickworks' most material sustainability issues were validated as:

- ▮ GHG Emissions and Climate Impacts
- ▮ Energy Management and Efficiency
- ▮ Business Circularity
- ▮ Workforce Health, Safety and Wellbeing
- ▮ Cyber Security
- ▮ Product Sustainability and Innovation

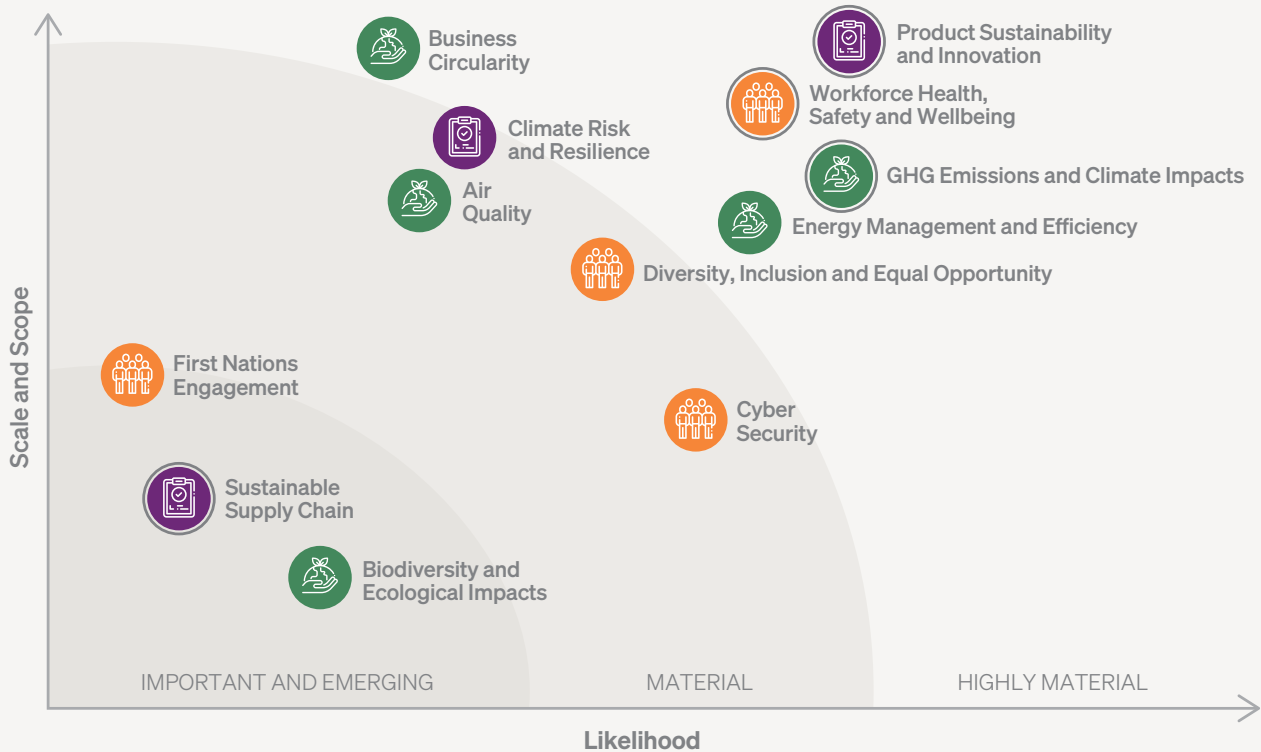
Key

-  Environment
-  Social
-  Governance
-  Topic included in 2019 Materiality Assessment

Significance of Negative Impacts



Significance of Positive Impacts



Naples Street

Naples Street by Edition Office is a new residence designed for intergenerational living, which has used Simmental Silver from Bowral Bricks, as part of Brickworks' opt-in Carbon Neutral Program. The opt-in program allows designers, architects, developers and builders to specify and procure clay bricks and pavers made in Brickworks' Australian facilities as a carbon neutral product.

CREDITS

Project: Naples Street

Architect: Edition Office

Location: VIC

Photography: Tasha Tylee

Product: Bowral Bricks Simmental Silver

Appendices

Appendix 1: Data Summary

Data summary of key metrics referenced against the Sustainability Accounting Standards Board (SASB): Extractives and Minerals Processing Sector, Construction Materials Standard 2023 where applicable.

■ Aligned to SASB 2023 ■ Partially aligned to SASB 2023 ■ The metrics covered by assurance for FY2024

Health and Safety

Metric	Report Section	SASB metric	Units	FY2022	FY2023	FY2024
Total recordable injury rate (TRIFR) for full time employees (per million hours)						
Consolidated	Health & Safety	■ EM-CM-320a.1	Rate	12.17	10.69 ¹⁷	■ 9.73
Australia	Health & Safety		Rate	12.48	7.33 ¹⁷	7.93
North America	Health & Safety		Rate	11.84	14.32 ¹⁷	11.61
Near miss frequency rate (NMFR) for full time employees (per million hours)						
Australia	Health & Safety	■ EM-CM-320a.1	Rate	20.05	14.66	16.38
North America	Health & Safety	■ EM-CM-320a.1	Rate			0
Number of reported cases of silicosis ¹⁸	Health & Safety	■ EM-CM-320a.2	Number	Management approach set out in H&S Section		

Our Global Workforce

Metric	Units	FY2023	FY2024
Key Employment Data			
Total Workforce	FTE	2,027	1,852
Total female breakdown ¹⁹	% female	22.8%	22.4%
Female Senior Executives ¹⁹	% female	25.0%	30.2%
Average age of employees	years	44.5	44.9
Employees aged 50 and over	%	38.2%	39.0%
Average length of service	years	9.9	10.0
Workplace profile ²⁰			
Management	% female	22.5%	23.4%
Professionals	% female	39.1%	45.1%
Tech/Trades	% female	4.7%	5.3%
Administration	% female	65.6%	68.1%
Sales	% female	41.0%	47.7%
Operators/ Labourers	% female	6.3%	4.3%
Employee Turnover			
Voluntary	%	22.6%	17.2%
Total	%	35.2%	29.9%
Coverage of Collective Bargaining Agreements			
Collective Bargaining Agreement	%	69.4%	68.5%
No Agreement	%	30.6%	31.5%
Composition of Collective Bargaining Agreements			
Union Based	%	69.4%	80.2%

¹⁷ Restated to include injuries that occurred in FY2023 but were reclassified during FY2024. Consolidated TRIFR from 9.98 to 10.69; Australia TRIFR from 6.41 to 7.33; North America TRIFR from 13.83 to 14.32.

¹⁸ No silicosis claims were lodged related to workers compensation, with two non-life-threatening claims recorded historically over the past 15 years.

¹⁹ Aligned with the WGEA reporting period 31st March 2024, 41.7% women in executive roles in Australia and 26% of total female workforce in Australia. Female directors make up 33%.

²⁰ Female % is a fraction of each profile type.

Greenhouse gas emissions

Metric	Report Section	SASB metric	Units	FY2022	FY2023	FY2024
Total Scope 1 and 2 Emissions						
Consolidated	Carbon		ktCO ₂ -e	398 ²¹	373 ²¹	■ 312
Australia	Carbon		ktCO ₂ -e	278	257	211
North America	Carbon		ktCO ₂ -e	■ 120 ²²	116 ²¹	101
Scope 1 Emissions						
Consolidated	Carbon	■ EM-CM110a.1	ktCO ₂ -e	302 ²¹	290 ²¹	■ 244
Australia	Carbon		ktCO ₂ -e	206	196	161
North America	Carbon		ktCO ₂ -e	96 ²¹	94 ²¹	82
Percentage Scope 1 covered under emissions-limiting regulations						
	Carbon	■ EM-CM110a.1	%	0	0	0
Scope 2 Emissions						
Consolidated	Carbon		ktCO ₂ -e	96	83	■ 69
Australia	Carbon		ktCO ₂ -e	72	61	50
North America	Carbon		ktCO ₂ -e	24	22	19
Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets	Climate strategy	■ EM-CM-110a.2	–	–	–	–
Performance against emission reduction target						
Percentage carbon emissions compared to FY2022	Carbon	■ EM-CM-110a.2	%	Baseline	-6% ²¹	-22%
Total Scope 3 Emissions Reported for Brickworks Building Products						
	Carbon		ktCO ₂ -e		■ 288 ²³	
Category 1: Purchased goods and services	Carbon		ktCO ₂ -e		151	
Category 3: Fuel and energy-related activities	Carbon		ktCO ₂ -e		53	
Category 4: Upstream transportation and distribution	Carbon		ktCO ₂ -e		5	
Category 9: Downstream transportation and distribution	Carbon		ktCO ₂ -e		78	

²¹ Restated to include updated calcination methodology for North America.

²² Restated to include updated calcination methodology for North America, basis of calculation for updated calcination methodology has limited assurance.

²³ Reporting period aligned to Brickworks financial reporting year (1 August to 31 July). Excludes Joint Ventures (unless included as a supplier), Brickworks Property and Brickworks Investments. Refer to Appendix 2 for more detail.

Energy consumption

Metric	Report Section	SASB metric	Units	FY2022	FY2023	FY2024
Total energy consumed						
Consolidated	Energy	■ EM-CM-130a.1	PJ	6.53	6.14	■ 5.14
Australia	Energy		PJ	4.45	4.12	3.37
North America	Energy		PJ	2.08	2.02	1.78
Percentage grid electricity, Consolidated						
	Energy	■ EM-CM-130a.1	%	8.6%	8.5%	8.9%
Percentage alternative ²⁴ Consolidated						
	Energy	■ EM-CM-130a.1	%	4.8%	4.5%	4.9%
Percentage renewable ²⁵ Consolidated						
	Energy	■ EM-CM-130a.1	%	3.4%	2.8%	2.8%
Percentage biofuels of total energy consumed						
Australia	Energy		%	12%	11%	■ 11%
Natural gas efficiency improvement						
AUS (baseline FY2018)	Energy		%	7.0%	6.7%	■ 8.6% ²⁶
US (baseline CY19)	Energy		%	10.4%	18.1%	■ 18.9% ²⁶
Total gas efficiency improvement						
AUS (baseline FY2018)	Energy		%	6.2%	6.5%	■ 8.5% ²⁶

Environmental compliance

Metric	Report Section	SASB metric	Units	FY2022	FY2023	FY2024
Number of Environmental fines and penalties						
Consolidated			Number	2	0	2
Australia	Environment		Number	1	0	0
North America	Environment		Number	1	0	2
Cost of environmental fines and penalties						
Consolidated	Environment		\$AU ²⁷	\$3,877	\$0	\$16,112
Australia	Environment		\$AU	\$1,094	\$0	0
North America	Environment		\$USD ²⁷	\$2,783	\$0	\$16,112

Water

Metric	Report Section	SASB metric	Units	FY2022	FY2023	FY2024
Total potable water withdrawn / consumed						
Consolidated	Resources – Water	■ EM-CM-140a.1 ²⁸	ML	–	158	173
Australia			ML	117	103	118
North America			ML	–	55	55
Percentage recycled	Gap	EM-CM-140a.1	%	–	–	–
Percentage consumed in regions with High or Extremely High Baseline Water Stress	Resources waste and water	■ EM-CM-140a.1	%	0.12%	0%	0%

24 Alternative energy includes biofuels excluding landfill gas which is classified as renewable energy.

25 Renewable energy includes landfill gas and renewable electricity.

26 Basis for calculating Total and Natural gas efficiency improvement has limited assurance.

27 USD converted to AUD based on exchange rate at the time.

28 Total potable mains water based on utility invoices.

Waste

Metric	Report Section	SASB metric	Units	FY2022	FY2023	FY2024
Amount of waste generated	Resources – Waste	EM-CM-150a.1	t		Management approach set out in Resources section	
Percentage hazardous	Resources – Waste	EM-CM-150a.1	%		Management approach set out in Resources section	
Percentage recycled	Resources – Waste	EM-CM-150a.1	%		Management approach set out in Resources section	

Biodiversity

Metric	Report Section	SASB metric	Units	FY2022	FY2023	FY2024
Description of environmental management plan(s) implemented at active sites	Biodiversity and Progressive Rehabilitation	■ EM-CM-160a.1	n/a		Biodiversity and Progressive Rehabilitation Section	
Terrestrial acreage disturbed	Gap	EM-CM-160a.2	acres	–	–	–
Impacted area restored						
Progressive rehabilitation						
Consolidated	Biodiversity and Progressive Rehabilitation	■ EM-CM-160a.2	m ²		218,375	161,076
Australia			m ²	270,173	47,400	19,800
North America			m ²	–	168,875	141,276

Products

Metric	Report Section	SASB metric	Units	FY2022	FY2023	FY2024
Percentage of products that qualify for credits in sustainable building design and construction certifications						
Consolidated	Product and innovation	■ EM-CM-410a.1	% by tonne of production	–	19%	21%
Australia			% by tonne of production	6%	25%	27%
North America			% by tonne of production	–	0%	0%
Percentage recycled content						
Australia			% by tonne of production	17%	20%	21%
Total addressable market and share of market for products that reduce energy, water, and/or material impacts during usage and/or production	Gap	EM-CM-410a.2	Reporting currency, Percentage (%)	–	–	–
Total amount of monetary losses as a result of legal proceedings associated with cartel activities, price fixing, and anti-trust activities		EM-CM-520a.1	Reporting currency	Nil	Nil	Nil
Production by major product line	Confidential	EM-CM-000.A	Metric tonnes (t)	–	–	–

Air quality

Accounting Metric	Unit	SASB Code	Reference
NOx (excluding N ₂ O)	Metric tonnes (t)	■ EM-CM-120a.1	Brickworks Website
SOx	Metric tonnes (t)	■ EM-CM-120a.1	Brickworks Website
Particulate matter (PM10)	Metric tonnes (t)	■ EM-CM-120a.1	Brickworks Website
Dioxins/furans	Metric tonnes (t)	■ EM-CM-120a.1	Brickworks Website
Volatile organic compounds (VOCs)	Metric tonnes (t)	■ EM-CM-120a.1	Brickworks Website
Polycyclic aromatic hydrocarbons (PAHs)	Metric tonnes (t)	■ EM-CM-120a.1	Brickworks Website
Heavy metals	Metric tonnes (t)	■ EM-CM-120a.1	Brickworks Website

Appendix 2: Basis of preparation definitions

The information and indicators prepared for this sustainability report are prepared on the following basis (unless specifically stated otherwise for the specific information reported):

- ▶ The boundary of the Sustainability Report covers sites where Brickworks Limited has operational control.
- ▶ The reporting period for most topics is 1 August 2023 to 31 July 2024, aligned with the Brickworks' financial year. An exception is energy and carbon data, where the reporting periods are as follows:
 - ▶ Scope 1 and 2 emissions and energy data (including North America) is 1 July 2023 to 30 June 2024, aligned with the National Greenhouse and Energy Reporting (NGER) Scheme in Australia.
 - ▶ Scope 3 reporting period is 1 August 2022 to 31 July 2023 (refer to Exclusion section for reporting boundary).
- ▶ Indicators have been prepared on the basis below (and within the reporting boundary and reporting period stated above).

Scope 1 greenhouse gas emissions

Australian Scope 1 emissions are prepared in accordance with the requirements of the National Greenhouse and Energy Reporting (NGER) Scheme, with the following key determinations:

- ▶ Fuel combustion emissions, including natural gas combustion, are measured based on invoices for fuel delivered to sites under our operational control during the period. Some sources of fuels are adjusted for inventory where stocktakes are completed. Emissions are estimated indirectly using Method 1 that applies standard energy content factors and emissions factors per unit of fuel type specified in the NGER Scheme.
- ▶ Emissions relating to calcination is estimated using Method 1A per section 4.22A of the NGER Measurement Determination. This is an indirect estimation method where the quantity of clay material used in the process at sites under our operational control is measured and standard state-based emissions factors per unit of clay material specified in the NGER Scheme are applied to estimate emissions.

North American Scope 1 emissions are prepared in accordance with the guidance of the Greenhouse Gas protocol, with the following key determinations:

- ▶ Estimations for all material emissions at sites under our operational control. Material emissions are sources with potential of exceeding 5% of our total emissions estimate. Minor sources not meeting this criteria not necessarily being measured and estimated.
- ▶ Fuel combustion emissions, including natural gas combustion, are measured based on invoices for fuel delivered to the sites under our operation control during the period, and emissions estimated indirectly using US EPA emissions factors per unit of each fuel type. Noting that minor estimation of amount of fuel combusted has been applied where invoices were unavailable, accounting for less than 1% of estimated Scope 1 emissions.

- ▶ Mobile fuel combustion emissions are estimated using estimates using distance travelled where fuel consumption data is not available. Brickworks utilises available mileage data for each vehicle and motor vehicle consumption factors as published by the US Energy Information Administration (EIA).
- ▶ The methodology for calculating the emissions relating to calcination at our North American operations was updated in FY2024. We have updated the methodology based on direct measurement of inorganic carbon content in our clay. As specified in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 3: Industrial Process and Product, it is assumed all inorganic carbon is emitted through the firing process. This is an indirect emissions estimation method, where mass of carbonate material calcined at operations under our operational control is measured and converted to carbon dioxide equivalents to estimate emissions. Previous reporting periods have been restated using this updated methodology.

Scope 2 greenhouse gas emissions

Australian Scope 2 emissions are prepared using location-based methodology. They are based on vendor invoices for grid-electricity delivered to sites under our operational control during the period and applying state-based grid-electricity emissions factors for the year ended 30 June 2024 specified in the NGER Scheme.

North American Scope 2 emissions are prepared using location-based methodology. They are based on vendor invoices for grid-electricity delivered to operations under our operational control during the year and applying the relevant US EPA grid-electricity emissions factor to estimate emissions.

Scope 3 greenhouse gas emissions

The Scope 3 emissions reporting is in the early stages, reflecting current limitations in sourcing comprehensive value chain data. This report covers Scope 3 emissions for our Brickworks Building Products businesses in Australia and North America for FY2023 (1 August 2022 – 31 July 2023). Joint ventures and investments are not included unless they are direct suppliers to Brickworks Building Products (e.g., Southern Cross Cement JV).

The Scope 3 emissions inventory for Brickworks Building Products was compiled with assistance from an external consultant, and has estimated its FY2023 inventory using the following guidelines:

- ▶ The GHG Protocol Corporate Accounting and Reporting Standard (WRI/WBCSD, 2004)
- ▶ The GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (WRI/WBCSD, 2011)

To calculate Brickworks Building Products Scope 3 emissions, the GHG Protocol's Scope 3 Calculation Guidance (WRI/WBCSD, 2013) for specific categories and boundaries was used.

In defining Brickworks Building Products Scope 3 boundary, a benchmarking exercise was undertaken to identify commonly recognised Scope 3 emissions within the industry.

Brickworks Building Products existing Climate Active certification was also considered in identifying relevant emission sources in the supply chain, with the Climate Active Carbon Neutral Standards utilised to further develop Brickworks Building Products inventory.

Based on our understanding of our emissions profile from completed life cycle assessments and benchmarking against industry peers, we have focused on the following Scope 3 categories:

- ▶ Category 1: Purchased goods and services
- ▶ Category 3: Fuel and energy-related activities (not included in Scope 1 and 2)
- ▶ Category 4: Upstream transportation and distribution
- ▶ Category 9: Downstream transportation and distribution

Exclusions

Brickworks Property, Brickworks Investments and Joint ventures are not included unless they are direct suppliers to Brickworks Building Products (e.g. Southern Cross Cement JV).

The following categories have been excluded from the Scope 3 inventory:

- ▶ Category 2: Capital goods – In FY2023, the majority of capital expenditure was focused on upgrades and commissioning, particularly for Plant 2, Horsley Park. When emissions from capital expenditure are spread over the capital project's lifespan, they become immaterial.
- ▶ Category 13: Downstream leased assets: These are managed by the Brickworks Property division, which falls outside the current inventory boundary. The current focus is on Scope 3 emissions for the Brickworks Building Products divisions. Reporting systems for other divisions are still under development.
- ▶ Category 15: Investments: The Brickworks Investment division is outside the current inventory boundary and excluded due to complex reporting requirements. Further advice and reporting systems are needed to address these.
- ▶ Categories 5–8, 10–12 and 14 have been determined to be immaterial and validated through industry peer benchmarking.

Carbon offsets purchased as part of Brickworks' Climate Active carbon-neutral product offerings were considered immaterial and therefore excluded from the emissions inventory.

Methodology

The emissions inventory was calculated using publicly available generic emission factors, including:

- ▶ The National Greenhouse Account Factors from the Australian Department of Climate Change, Energy, the Environment, and Water (DCCEEW)
- ▶ The USEPA's USEEIO supply chain GHG emission factors
- ▶ The USEPA's GHG Emission Factors Hub

Where available, activity data such as raw material usage (e.g., cement), fuel and energy consumption, transportation distances, and sales data were used. Where activity data was not available, spend data was used for purchased goods and services. Emission factors specific to Brickworks, derived from life cycle assessments conducted in 2019, were also used for categories such as mineral additives, packaging, waste to landfill, water use, and wastewater treatment.

Category 1: Purchased goods and service

Region	Data source
Australia	Activity data was used for <ul style="list-style-type: none"> ▶ Raw materials consumed in concrete products including cement, sand and aggregate ▶ Water consumption ▶ Imported products purchased Spend data was used for the remaining areas
North America	Activity data was used for <ul style="list-style-type: none"> ▶ Water consumption ▶ Imported products purchased Spend data was used for the remaining areas

Category 3: Upstream fuel and energy

Region	Data source
Australia	Activity data was based on fuel and energy data collected as part of Scope 1 and 2 emission inventories
North America	

Category 4: Upstream transportation and distribution

Region	Data source
Australia	Activity data was used for <ul style="list-style-type: none"> ▶ Transport of raw materials by contractors from our quarries to plants Transport of other raw materials is captured in the purchased goods and services as part of the choice of emission factors or uplift factors
North America	

Category 9: Downstream transportation and distribution

Region	Data source
Australia	Activity data was used for <ul style="list-style-type: none"> ▶ Warehouse transfers, distances from locations ▶ Sales to customers using a 50km radius
North America	Activity data was used for <ul style="list-style-type: none"> ▶ Sales to customers ▶ Distance to customers assumes largest market from site

Energy

Energy consumed

Energy consumed includes natural gas combustion, other fuel consumption and electricity consumption.

For Australia, energy consumed (including for natural gas and bio-fuels consumption) is prepared in accordance with the criteria for energy consumption specified in the NGER Scheme, including:

- ▶ Consumption of low or zero carbon energy under our operational control, such as biofuels, that do not result in significant greenhouse gas emissions.
- ▶ Consumption of own energy produced that is consumed on site under our operational control (and which may or may not result in greenhouse gas emissions) – such as for example our renewable energy production at Oakdale and Rockhampton, which is consumed on site.
- ▶ Fuel (including natural gas and biofuels) consumption, as well as grid electricity consumption are measured based on invoices for energy delivered to sites under our operational control during the year, and total energy (as well as total natural gas and total biofuels) consumed measured in gigajoule (GJ) is estimated based on standard energy content factors provided by the NGER Scheme.

For North America, energy consumption is prepared as part of preparing our greenhouse gas estimate and is measured based on fuel (including natural gas and diesel) consumption, as well as grid electricity consumption. Fuel and electricity are measured based on invoices for energy delivered to sites under our operational control during the year, and total energy (as well as total natural gas and total biofuels) consumed measured in gigajoule (GJ) is estimated based on standard energy content factors provided by the US EPA.

Natural gas consumed

Natural gas used at all sites (GJ) is measured based on invoices for energy delivered to sites under our operational control during the year.

Percent biofuels of total energy consumed (Australia only)

Biofuels are as defined in the NGER Scheme under the broad categories of primary solid biomass fuels, biogas captured for combustion and liquid biofuels. Biofuels used by Brickworks at sites under our operational control are landfill gas, sawdust, charcoal, sugars, vegetable-based oils, biodiesel and ethanol.

Percent biofuels is the amount of biofuels (as defined above) as a proportion of total energy consumed (GJ) in Australian operations.



Austral Masonry
Oakdale Paver Range

Total and Natural gas efficiency improvement

Improvement is expressed as a percentage improvement in gas efficiency at sites under our operational control compared to baseline year, with the following key determinations:

- ▶ Natural gas used at our brick manufacturing plants (GJ) divided by production as measured in thousand standard brick equivalents ('000 SBE).
- ▶ Total gas includes natural gas, landfill gas and sawdust (GJ) divided by production at our brick manufacturing plants as measured in thousand standard brick equivalents ('000 SBE). Sawdust is included as it is the main source of energy for our Longford plant replacing natural gas.
- ▶ Baseline total and natural gas efficiency for Australia is based on FY2018 as this is the target defined in the published strategy on our website.
- ▶ Baseline natural gas efficiency for North America is calendar year 2019 as this is the first full 12 months of data that has been collected.

Health and Safety

Total Recordable Injury Frequency Rate (TRIFR)

TRIFR is the number of Loss Time Injuries (LTIs) and Medical Treatment Injuries (MTIs) recorded during the year ended 31 July 2024 among workers at sites under our operational control multiplied by 1,000,000 and divided by the total number of hours worked by our employees during the year ended 31 July 2024 – expressing the total recordable injury frequency rate (TRIFR) per million hours worked. It excludes contractor injuries and hours.



A LTI is a work-related injury or illness which results in the worker losing time off work for a period of one complete shift or greater, the day (consecutive or not) after the injury or occupational illness.

A MTI is a work-related injury or illness which results in the worker seeking medical attention from a doctor and subsequent referral to a Physiotherapist, Dentist, etc. and not losing time off work for a period of one complete shift or greater. On site treatment of employees by a Physiotherapist as part of the Company's wellbeing program is not classed as a medical treatment injury. If a medical practitioner provides a level of treatment that is equivalent to that of a first aider, and does not administer more advanced medical care, then the case should not be categorised as medical treatment; instead, it should be classified as a first aid treatment case.

First aid treatments are not counted as a recordable injury but must be reported. The calculation of the Total Recordable Injury Frequency Rate (TRIFR) should not include first aid or injury without treatment injuries.

Near-Miss Frequency Rate (NMFR)

NMFR is the number of near miss incidents recorded during the year ended 31 July 2024 among workers at sites under our operational control multiplied by 1,000,000 and divided by the total number of hours worked by our employees during the year ended 31 July 2024 – expressing the near miss frequency rate (NMFR) per million hours worked. It excludes contractor injuries and hours.

A near miss is anything which could have resulted in an injury or illness to employees, contractors, or visitors and / or damage to property or the environment, but on this occasion, did not. These incidents are reported to a supervisor or manager and recorded in the site's Hazard Register.

Our Australian NMFR is based on recorded incidents only. It is acknowledged that whilst we encourage all near-miss incidents to be recorded, there may be unrecorded near-miss incidents.

Significant instances of non-compliance (Environment and mining)

Significant instances of non-compliance are determined by Brickworks to be incidents of medium or high severity that are reportable to regulators according to environment or mining legislation or licence conditions which result in either prosecution, penalty notice (fine) or directive notice.

Low severity incidents are deemed to be insignificant.

Directive notices

Directive notices include non-monetary sanctions, and directives to cease or remediate an unlawful activity.

Incident severity

High severity incidents are those that resulted in a permanent or prolonged impact.

Medium severity incidents are those that resulted in a temporary on or off-site impact.

Low severity incidents are those that occurred on site and had no environmental impact.

Appendix 3: Sustainable Development Goals

The United Nations Sustainable Development Goals (SDGs) are a call for action to promote prosperity while protecting the planet. We contribute to many of the 17 SDGs which have connection to our business, reflected in our “Build for Living: Towards 2025” strategy and enhanced targets. We have highlighted the sustainable development goals where we believe our actions have the greatest potential to make a real and lasting difference. The alignment of our business strategy and sustainability approach with these highlighted SDGs are outlined in the following table. Our industry is resource-intensive, and we are aware of the challenges we face to ensure we manage our potential adverse impacts and maximise our opportunities. We are committed to building and strengthening the wide range of partnerships needed to support these goals. We will further align our processes with the SDGs.

Sustainable Development Goals Our Commitments

 		Carbon – 15% reduction in Scope 1 and 2 greenhouse gas emissions by 2030 from a 2022 baseline, across our combined Australian and North American operations.
		Carbon Transition – Continued investment into developing feasible renewable biomethane opportunities and invest in the transition to the hydrogen fuel economy.
		Energy Efficiency – Stretch target: 10% increase in gas efficiency at Austral Bricks plant by 2030.
 		Life Cycle and Thermal Design and Education – We will support design tools, guidance, and information to incorporate thermal design and life cycle thinking into building design.
		Product Innovation – Year on year increase into R&D investment into the next generation of clay brick and concrete block wall systems.
		Sustainable Products – Increase the volume of verified sustainable products to 25%.
 		Air Quality, Emission Control – Over \$2 million investment in emission abatement.
		Water – Reduce potable water use in water stressed areas.
		Circular Economy – Year on year increase in recycled material use.
		Rehabilitation – Drive progressive rehabilitation.
		Supply Chain – Continuing to reduce supply chain risks.
		Life Cycle and Thermal Design and Education – We will support design tools, guidance, and information to incorporate thermal design and life cycle thinking into building design.

Appendix 4 – Climate Scenario Analysis and Physical Risk

Understanding Carbon Risks and Opportunities

We continue to monitor and report on management of climate risks. We are incrementally adopting the recommendations of the leading climate-related 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. Following the publication of our second TCFD Statement in May 2023, Brickworks’ third TCFD statement has been incorporated into the FY2024 Brickworks Sustainability Report.

The TCFD recommendations are focused on the financial impact of climate-related risks and opportunities and comprise four core elements of how organisations operate: governance, strategy, risk management, and metrics and targets. Climate-related risks encompass both physical risks and risks relating to the transition to a lower carbon economy. We have actively monitored and reported our emissions across our international operations since 2006 and in this report, we have outlined how we manage our climate risks, and the metrics and targets we use to monitor performance. We have incorporated key information previously included in our Sustainability Report responses over the following pages, with detailed carbon emissions and energy consumption data available at www.brickworks.com.au/sustainability.

To gain a better understanding of the potential climate-related transition risks and opportunities, Brickworks Building Products Australia has commenced scenario analysis and an internal review, focused on transition risks in building product production and imports. Three climate scenarios have been developed, and these are informing the development of appropriate response strategies to potential climate transition risks. This includes a less than two-degree scenario as recommended by the TCFD and consistent with the Paris Agreement’s core temperature target. Further information on the scenario analysis work is provided within this document.

Scenario Analysis

Scenario analysis includes the identification and assessment of a range of climate-related risks to the business, with deeper investigation into the most material risks. A high-level review identified the most material transition risks as natural gas and carbon prices driven by climate policy, consumer preferences, a need to develop new technologies to remain competitive and increased investor expectations for climate-related metrics and targets.

At an organisational level, scenario analysis is useful to test the resilience of an organisation’s business strategy and operations under different climate trajectories and is an important aspect of risk management. However, scenario outputs must be viewed with an appropriate level of caution given the large number of highly uncertain assumptions required to build and quantify them, and then assess industry, business and investment-level impacts. As hypothetical constructs, scenarios should not be viewed as predictions or forecasts.

In 2022, as a key part of our TCFD journey and first TCFD statement, we conducted a climate scenario analysis and identified three initial climate scenarios that were used to inform the development of appropriate business response strategies to potential climate transition risks. These climate scenarios were aligned to the IPCC’s Representative Concentration Pathways (RCPs): RCP 2.6, RCP4.5 and RCP 8.5 combined with the Shared Socioeconomic Pathways (SSPs): SSP1, SSP3 and SSP5, respectively.

In FY2024, we conducted a review of our climate scenarios and updated them to better align with current references. This has enabled us to identify and manage both physical and transitional climate change impacts as additional business mitigation initiatives.

The scenario refresh included the following key updates:

- More closely aligned the updated scenarios with those outlined in AR6. These use socio-economic backgrounds (SSPs) as a basis to determine future emissions (RCPs), to provide more consistency for climate scenario narratives. It uses an SSPx-y syntax, where ‘x’ refers to the SSP scenario and ‘y’ refers to the RCP scenario.
- Consideration of recent and upcoming regulatory changes from BASIX, NSW EPA and the Safeguard Mechanism.
- Consideration of the latest AEMO models.
- Inclusion of North American narratives into the scenarios.

Details of Scenarios Considered

	Scenario 1	Scenario 2	Scenario 3
Scenario name	Sustainable scenario	Regional rivalry, security first changed to Middle of the road	Fossil-fuelled growth
Existing Scenarios	SSP1-RCP2.6	SSP3-RCP4.5	SSP5-RCP8.5
Updated Scenarios	Aligned to SSP1-2.6	Aligned to SSP2-4.5	Aligned to: SSP4 – 7.0 (transitional) SSP5 – 8.5 (physical)

Updated Climate Scenarios

The updated scenarios reference both the RCPs and SSPs to provide a more holistic basis for corporate climate scenario narratives. Scenarios were developed for three potential warming outcomes:

- <2°C – aligned with SSP1-2.6
- 2 to 3°C – aligned with SSP2-4.5
- >4°C – aligned with SSP4-7.0 (for the transitional context) and SSP5-8.5 (for the physical context)

The third scenario combines two SSP/RCP pathways as recent studies indicate that SSP5-8.5 is a relatively unlikely future based on current trajectories; however, it is included to allow for worst-case physical risks. On the other hand, the more feasible SSP4-7.0 is referenced as a more plausible transitional context.

The revised scenarios align more closely with TCFD recommendations on climate scenario development as they:

- ▶ provide more robust scenarios as the combination of SSPs and RCPs are more aligned with each other, providing better narratives.
- ▶ convey relevant qualitative and quantitative developments at time horizons aligned with international climate policies (2030 and 2050) based on credible and relevant available literature.
- ▶ incorporate indicators that are highly relevant to Brickwork's operations and assets, providing context for insight into developments that will influence strategic and/or financial decisions facing the organisation.

Three time horizons were selected to review risk exposure over time. These were:

- ▶ short term, (present day)
- ▶ medium term (2030) and
- ▶ long term (2050) timeframes.

Detailed Scenarios

During FY2024, Brickworks collaborated with subject matter experts to review of the existing scenarios based on the latest publicly available resources to more closely align the scenarios with those outlined in AR6, the latest scientific advice from the IPCC scenario to enhance risk identification and management.

Table: **Climate-related Scenario Assumptions (Updated)**

Parameter		Scenario 1	Scenario 2	Scenario 3
Scenario name		Sustainable scenario	Middle of the road	Fossil-fuelled growth
Published scenario alignment		SSP1-2.6	SSP2-4.5	SSP4-7.0 (transitional) SSP5-8.5 (physical)
Physical Characteristics	Mean Temperature Increase by 2050	<2°C	<2.5°C	<3.0°C
Political Characteristics	Economy and Policy	Total economy emissions reduction of 43% based on 2005 levels by 2030 Total economy net zero by 2050 in AU and US	Lack of global coordination resulting in divergence of climate resilience Continuous shifting in policies and technologies	Significant decrease in economic activity
	Building Regulations	Revisions in building regulations to improve building energy efficiency	Shift in low carbon buildings occurs in developed countries only	Building construction will be mainly comfort driven rather than consideration of emissions reduction
	Regulation of waste / circular economy	Transition towards a circular economy-oriented production system	Focus on minimising wastes and increasing recycling rates	Failure to implement circular economy
Social characteristics	Population	Global population increase to more than 8 billion	Global population increase to more than 9 billion	Global population increase to more than 9 billion
	Society and Consumer Behaviour	Consumers prefer sustainable consumption of goods and services	Expanding social inequalities Consumers demand for transparency and begin to prefer sustainable sources	Only environmentally conscious consumers shift away from emissions intensive goods and services Focus on essential purchases only due to physical impacts in the economy

Parameter		Scenario 1	Scenario 2	Scenario 3
Scenario name		Sustainable scenario	Middle of the road	Fossil-fuelled growth
Published scenario alignment		SSP1-2.6	SSP2-4.5	SSP4-7.0 (transitional) SSP5-8.5 (physical)
Economic Characteristics	Carbon Prices	Expected increase of carbon prices to US\$130/t by 2030 and US\$250/t by 2050	Expected increase of carbon prices to \$13/t by 2030, which will fluctuate after and converge back to \$13/t by 2050	Late introduction of global carbon price, failing to provide meaningful change to the economy
	Investor Appetite for Perceived Carbon Risk	Increased expectations from lenders and investors on managing climate-related risks	Decreased investment in fossil-fuel related technologies	Investors react to the impacts of climate change by adjusting their risk appetites and financial strategies
Technical Characteristics	Energy Sector Trends	Rapid decarbonisation of the electricity, achieving 98% renewable share by 2050 Increase in electrification and more efficient use of resources and new technologies to abate emissions	Energy sector will remain fossil fuel-dominated	Energy sector will remain fossil fuel-dominated Electricity prices will increase
	Raw Materials	Increased focus on sustainable materials	Conventional materials will remain dominant in the industry with minimal use of green materials	Emissions intensity reduction of materials will be minimal
	Technology (decarbonisation of building materials in manufacturing industry)	Rapid technological development	Increased usage of Carbon Capture and Storage (CCS) systems in hard-to-abate industries	Less investment in mitigating technologies but more focused on adaptation

Climate-related Risks

Brickworks has identified key climate-related risks and opportunities for the Brickworks Building Products Australia and North America groups. This was based on the Climate-related Risks and Opportunities Strategic Review undertaken based on the detailed climate scenarios outlined above. This strategic review was undertaken as a series of workshops with management and identified transitional and physical climate-related risks. The identified risks were then rated in accordance with Brickwork's risk matrix adopting the TCFD framework and horizons of 2030 and 2050, with the table below setting out those risks identified as potentially material.

Table: **Potential material climate-related risks**

Climate-related Risk	Risk relevance 2030	Risk relevance 2050
Non-compliance with reporting requirements and failure to reduce GHG emissions	–	Relevant
Increasing concern regarding climate risk and negative perceptions of investors and lenders	–	Relevant
Failure to identify and implement relevant sustainability goals and actions will lead to financial cost	–	Relevant
Volatility in fossil fuel availability and prices (particularly due to the use of gas as the primary fuel source)	Relevant	Relevant
The transition to low-carbon future and increase in government regulations may result in a cost associated with Brickworks unabated emissions or cost associated with decarbonisation actions	–	Relevant
Increased physical climate impacts can result in damage to assets	–	Relevant

Summary of Focus Transition Risks, Opportunities and Strategic Responses

Of the climate-related risks and opportunities assessed, key market risks were then subject to further description of risk, opportunities and strategic response, as set out in the following table.

Table: **Climate-related Market Risks, Opportunities and Strategic Responses**

Transition Risks – Medium and Long-Term
Volatility in fossil fuel availability and prices (particularly due to the use of gas as the primary fuel source)
<p>Increased energy costs from changes in carbon or energy policy. The potential introduction of regulatory pricing mechanisms and/or trading systems in Australia would primarily impact our more energy-intensive brick business. The policy environment in which decarbonisation occurs remains unclear, creating uncertainty for business around types and magnitudes of climate-related transition risks and opportunities that it will face. Our strategy is to continue to:</p> <ul style="list-style-type: none">▶ achieve global leadership in leading manufacturing excellence and efficiency▶ harness circular economy opportunities by investing in technology, suppliers and partners▶ respond to any uncertainty in the gas and renewables market with leading expert analysis and planning▶ continue to enter into long term gas agreements to help provide certainty of cost and supply
The transition to low-carbon future and increase in government regulations may result in a cost associated with Brickworks unabated emissions or cost associated with decarbonisation actions
<p>Changes in construction industry standards on materials efficiency and regulation of existing products in buildings, large construction and infrastructure projects, as well as shifts in consumer preferences may result in demand shifts towards low carbon construction materials. Thermal mass materials may have higher embodied energy than some light-weight alternatives, however offer significant lifecycle thermal efficiency benefits. Our strategy is to continue to respond to an increase in consumer preferences for products with leading sustainability attributes and low carbon options</p>
<p>Need for innovation to develop new technologies to remain competitive. Rapid decarbonisation and technical development with strong economic growth will require investment in innovation to match the rates of technological adoption. Our strategy is to continue to:</p> <ul style="list-style-type: none">▶ achieve global leadership in leading manufacturing excellence and efficiency▶ harness circular economy opportunities by investing in technology, suppliers and partners▶ respond to any uncertainty in the gas and renewables market with leading expert analysis and planning
Transition Opportunities – Medium and Long-Term
Increasing demand for resilient building material products
<p>Strong economic growth for resilient products. Changes in construction industry standards to further recognise resilience and life cycle energy efficiency. Our bricks and concrete products are manufactured to provide resilience. They are durable, fire-proof, contain thermal mass for energy efficient design, have excellent acoustic properties and no indoor air emissions (VOCs) and our clay bricks hold a 100-year guarantee.</p> <p>These product attributes contribute Goal 11 of the United Nations' Sustainable Development "Make cities and human settlements inclusive, safe, resilient and sustainable".</p>
Increasing demand for low-carbon building materials
<p>Build reputation as leader in providing products with leading sustainable attributes. Brickworks is a leader in locally made and sourced products which contribute to the thermal efficiency of leading sustainably designed buildings. Our strategy is to continue to respond to an increase in consumer preferences for products with leading sustainability attributes and low carbon options.</p>

Physical Risk Insights

Physical Risks Scenarios

As part of its TCFD implementation plan, Brickworks has completed an initial qualitative physical risk assessment to better understand the exposure of our sites to projected climate related hazards.

We engaged a specialist consultancy to understand how climate-related physical risks affect our business under the three scenarios from the transition risks analysis; Sustainability (RCP2.6), Security first (RCP4.5) and Fossil-fuelled growth

(RCP8.5) for our Australian operations and applied this methodology to our North American operations.

The majority of our sites across our Australian and North American operations (112) were initially screened and assessed for exposure to climate-related hazards, including 42 factories and 68 quarries.

Scope

Our sites were assessed against five main physical risks:

- ▶ **Extreme high rainfall events** causing production delays, site erosion and sediment discharge and flooding of operations

- ▶ **Extreme high temperature events** causing production delays over summer, increased employee heat stress and effect on physical infrastructure
- ▶ **Water stress** causing reduced water availability for operations
- ▶ **Bushfires** causing production delays in bushfire season, equipment and operations failure and damage to facilities
- ▶ **Tropical cyclones** or hurricanes causing production delays and damage to facilities

Physical Risks Insights

The findings of this assessment indicated that for all scenarios the majority of our sites, physical risk exposure does not significantly increase until 2050.

In Australia, several sites show a substantial bushfire risk with the potential for unmitigable bushfires under all analysed scenarios, however the majority of these sites are quarries where they are less likely to impact operations severely.

Some plants within Western Australia are most likely to experience prolonged high temperature events under all scenarios by 2050. Queensland plants are also likely to experience these high temperatures under scenario RCP8.5 by 2050.

Our remote Western Australian quarries are likely to experience substantially elevated water stress and some remote Queensland and Victorian sites are also likely to experience elevated severity.

The review found that of Brickworks' sites, 7 of the 68 sites reviewed were exposed to increased flooding potential.

Worker impacts will be most significantly felt at our plants rather than our quarries due to minimal workers located at our quarries. Plants that are affected by acute physical risks may result in operational delays.

In North America, extreme heat events and average temperature increases and potential impacts are also projected to increase with sites in the US-South East and US-Mid-West projected to be most affected. On average, water stress risk for our sites moves from a low to medium level risk. All sites are currently in low flood risk zones (at a catchment scale). US-North East and US-South East are likely to experience increases in extreme rainfall events and there is minimal impact projected to US-Mid-West region. Wildfire risk is not projected to significantly increase in the vicinity of Brickworks facilities. Sites located along the coast in the US-North East may see more impacts of cyclones / hurricanes as these are projected to move further north.

Brickworks' response

The results of this analysis will be used by our operational teams to consider the vulnerability of specific assets to the identified exposures and adjust future capital works programs, if required.

Water stress

- ▶ Mapping of sites against the World Resources Institute (WRI) ranks water stress, drought risk and riverine flood risk in the Aqueduct Water Risk Atlas

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	31%	56%	12%	1%	0%

- ▶ 2025 Sustainability Strategy outlines a key target to reduce potable water use in high water stress areas in Australia
- ▶ Reporting and monitoring of water consumption and water intensity. Business KPIs to reduce potable water consumption, implementation of water efficiency programs and increased water recycling
- ▶ Company guidelines have been issued for sustainability considerations for new plants or major upgrades including solar PV installations and water collection requirements
- ▶ Site water treatment and management programs to ensure compliance with environmental requirements
- ▶ Our current water risk area analysis is based on the overall water risk layer presented in the World Resource Institute, Aqueduct tool. We are currently updating to the baseline water stress layer to align with SASB standards while undertaking a site based risk assessment to provide more detailed risk analysis

Bushfire

- ▶ Bushfire preparedness plans, risk assessments and training
- ▶ Fire break maintenance activities
- ▶ Employee fire drills and employee training and incident training

Extreme weather, flooding

- ▶ Erosion and sediment plans and upgrading of stormwater management systems
- ▶ Emergency preparedness plans for extreme weather events
- ▶ Weather monitoring systems at some sites
- ▶ Automating water treatment at some sites

High temperatures

- ▶ Risk assessments and procedures for working in high temperatures

Future actions

- ▶ Further review additional future proofing requirements for sites
- ▶ Identify potential controls that may be required to reduce projected impacts
- ▶ Monitor assets for potential climate-related impacts
- ▶ Further review the impacts to project supply chain security impacts
- ▶ Further review the impacts of heat stress on electricity supply, building infrastructure requirements, employee health and safety measures

Appendix 5: Auditor Assurance Statement

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Sydney, NSW 2000
Australia
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Independent limited assurance report to the Directors of Brickworks Limited

What we found: our Limited Assurance conclusion

GHD Pty Ltd (GHD or we) was engaged by Brickworks Limited (Brickworks) to undertake a limited assurance engagement in respect of the following selected matters presented in the Data Summary provided in Appendix 1 of Brickworks' Sustainability Report 2024:

Selected matters assured
<p>In respect of greenhouse gas (GHG) emissions and energy consumption data:</p> <ul style="list-style-type: none">– Consolidated Scope 1 Emissions for the year ended 30 June 2024– Consolidated Scope 2 Emissions for the year ended 30 June 2024– Consolidated Scope 1 and 2 Emissions for the year ended 30 June 2024– Total Scope 3 Emissions Reported for Brickworks Building Products for year ended 31 July 2023– Consolidated total energy consumed for the year ended 30 June 2024– The basis for calculating the restatement of the North American GHG emissions baseline for the year ended 30 June 2022 to include restated calcination emissions*– The basis for calculating natural gas efficiency improvement percent for Australia and North America, and total gas efficiency improvement for Australia, for the year ended 30 June 2024* <p>In respect of Health and Safety data, for the year ended 31 July 2024:</p> <ul style="list-style-type: none">– Consolidated total recordable injury frequency rate (TRIFR) for full time employees (per million hours).
<p>* The assurance of the basis for calculating gas efficiency improvement and the basis for calculating the restatement of North American GHG emissions baseline only focused on whether the calculation is appropriate and whether it is based on immediate supporting evidence without assuring the completeness and accuracy of supporting evidence.</p>

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the selected matters are not prepared, in all material respects, in accordance with the Basis of Preparation provided in Appendix 2 of Brickworks' Sustainability Report 2024.

Reporting Criteria and Emphasis of Matter

The Reporting Criteria used by Brickworks for preparing the selected matters are set out in the Basis of Preparation provided in Appendix 2 of Brickworks' Sustainability Report 2024. Without qualifying our limited assurance conclusion, we particularly draw attention to Brickworks' descriptions of the exclusions and limitations in the Total Scope 3 Emissions Reported for Brickworks Building Products for year ended 31 July 2023.

Brickworks' responsibility for the Sustainability Report 2024

Brickworks is responsible for the preparation of its Sustainability Report 2024, including the preparation of the selected matters in accordance with the Reporting Criteria. This responsibility includes selection of appropriate Reporting Criteria and the design, implementation, and maintenance of internal control relevant to the preparation of the Brickworks Sustainability Report 2024 that is free from material misstatement, whether due to fraud or error.

GHG quantification is subject to inherent uncertainty because of incomplete scientific knowledge used to determine emissions factors and the values needed to combine emissions of different gases.

The basis of our conclusion: standards-based limited assurance

We conducted our limited assurance engagement in accordance with Standards on Assurance Engagements ASAE 3000, *Assurance Engagements other than Audits or Reviews of Historical Financial Information* (ASAE 3000); and ASAE 3410, *Assurance Engagements on Greenhouse Gas Statements* (ASAE 3410), issued by the Auditing and Assurance Standards Board.

Our responsibility

Our responsibility is to express limited assurance conclusions on the selected matters based on the procedures we have performed and the evidence we have obtained. ASAE 3000 and ASAE 3410 require that we plan and perform this engagement to obtain limited assurance about whether the selected matters are free from material misstatement.

A limited assurance engagement undertaken in accordance with ASAE 3000 and ASAE 3410 involves assessing the suitability of Brickworks' use of the Reporting Criteria as the basis for the preparation of the selected matters, assessing the risks of material misstatement of the selected matters whether due to fraud or error, responding to the assessed risks as necessary in the circumstances, and evaluating the overall presentation of the selected matters. A limited assurance is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.

What we did: our assurance procedures

The procedures we performed were based on our professional judgement and included enquiries, observation of processes performed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records. Our procedures included:

- Through process owner enquiries and review of system documentation, obtaining an understanding of Brickworks' reporting processes relevant to the selected matters and evaluating whether they appear appropriate for preparing the selected matters in accordance with the Reporting Criteria.
- Obtaining an understanding of Brickworks' determination of its reporting boundary and testing to confirm it appears to have been appropriately implemented. In respect of scope 3 emissions, this included reviewing whether Brickworks' justification for inclusions and exclusions were reasonable and did not unreasonably exclude material scope 3 emissions categories.
- Undertaking site visits at two sites, being Horsley Park Plant 2 (NSW) and Sergeant Bluff (Iowa), to perform site personnel interviews, conduct a site walk-over, and review site-based documentation. This was done to test and assess whether the identification of reportable activities, data collection methods, activity (source) data recording, and relevant assumptions were appropriately applied to the sites. Sites sampled for testing were chosen by considering their GHG emissions relative to total GHG emissions, exposure to safety incidents, and sites selected for assurance engagements the last two years.
- Testing activity data for scope 3 emissions on a sample basis to recorded source data, but without further sample testing of this data to supporting source documentation such as invoices or bills of lading.
- Testing Brickworks' calculations of energy (e.g., natural gas) consumed, GHG emissions, safety frequency rates being based on the activity data, and applying appropriate conversion and emissions factors in accordance with the Reporting Criteria.
- Checking Brickworks' presentation of the selected matters in its Sustainability Report 2024, including its preparation in accordance with the findings from our limited assurance engagement.

Our independence and quality control

We have complied with the relevant ethical requirements relating to assurance engagements, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behaviour.

GHD applies Auditing Standard ASQM 1 *Quality Management for Firms that Perform Audits or Reviews of Financial Reports and Other Financial Information, or Other Assurance or Related Services Engagements* (ASQM1), and accordingly we maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

Inherent limitations

There are inherent limitations in performing assurance; for example, assurance engagements are based on selective testing of the information being examined and because of this, it is possible that fraud, error, or non-compliance may occur and not be detected. An assurance engagement is not designed to detect all misstatements, as an assurance engagement is not performed continuously throughout the period that is the subject of the engagement and the procedures are performed on a test basis.

The 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 we performed a reasonable assurance engagement. Accordingly, we do not express a reasonable assurance opinion about whether the selected matters have been prepared, in all material respects, in accordance with Brickworks' Basis of Preparation provided in Appendix 2 of the Sustainability Report 2024.

Our engagement did not include assurance of other information within Brickworks Sustainability Report 2024 other than the selected matters, including no assurance provided in respect of other sustainability disclosures nor for previous years' comparative numbers for the selected matters.

We understand that Brickworks may publish a copy of our assurance report on its website. We do not accept responsibility for the electronic presentation of our assurance report on Brickworks' website. The security and controls over information on Brickworks' web site is not evaluated or addressed by us as the independent assurance practitioner. The examination of the controls over the electronic presentation of this assurance report on the Brickworks web site is beyond the scope of our limited assurance engagement.

Restricted use of our limited assurance report: only Brickworks may rely upon it

This limited assurance report has been prepared for a specific purpose agreed with Brickworks, including assisting Brickworks' Directors in approving the Brickworks Sustainability Report 2024 prepared by Brickworks' management. Our limited assurance report is not suitable to rely on for anyone else for any purpose. Accordingly, we expressly disclaim and do not accept any responsibility or liability to any party other than Brickworks for any consequences of reliance on this limited assurance report for any purpose.



Leon H. Olsen
Registered Greenhouse and Energy Auditor Category 2 (Audit Team Leader)
GHD Pty Ltd
Level 15, 133 Castlereagh Street, Sydney, NSW, 2000
26 September 2024

Tarakan Street Social Housing

Tarakan Street Social Housing used carbon neutral bricks from the Austral Bricks Indulgence range, as part of Brickworks' Carbon Neutral Offsetting Program. This opt-in program allows designers, architects, developers and builders to specify and procure any clay brick or paver made in Brickworks' Australian facilities as a carbon neutral product. The project team for Tarakan Street placed strong emphasis on locally sourced carbon neutral materials, to reduce embodied carbon and support local manufacturing. The project provides more Victorians with a safe and secure place to call home and includes 67 social homes and 63 affordable homes.

CREDITS

Project: Tarakan Street Social and Affordable Housing

Architect: Bird de la Coeur architects, NH Architecture, Openwork and Tract

Location: VIC

Photography: Dianna Snape

Product: Austral Bricks Indulgence Series in Praline (Carbon Neutral)





BRICKWORKS

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questions relating to
the content of this Report

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