TOOWOOMBA PROJECT TAKES TOP HONOURS

HOW SUSTAINABILITY SCHEMES ARE CUTTING COSTS

A DAY IN THE LIFE OF USG BORAL IN NEW ZEALAND

CELEBRATING 70 YEARS
The Boral story

LONG-SERVING EMPLOYEES SHARE THEIR INSIGHTS
A rich history and an exciting future

It’s a privilege to be leading Boral as we celebrate 70 years since the incorporation of Bitumen and Oil Refineries Australia Limited (BORAL).

Boral has a rich and fascinating history, which can be traced back to our humble beginnings in Matraville in Sydney. In seven decades of growth and change, many stories about Boral in Australia, America, Asia and Europe have emerged.

There are success stories and war stories. There are stories about striving to be the best at what we do and about responding to changing conditions. There are stories about our people taking risks and backing their decisions in an effort to see our future even brighter than the past. All of us who work at Boral have helped to create the stories that define the company’s history and will shape its future.

Just over three years ago I articulated my vision to transform Boral, and the Fix, Execute, Transform framework was established to help provide structure for the journey.

With significant progress now made to fix the things that were holding us back and to improve the way we do things, it’s now time to look more deeply at the long-term strategy for Boral to ensure it can truly transform for performance excellence and sustainable growth. We’ve made progress on this, with work that includes delivering transformational technology to our USG Boral joint venture and our investments in product innovation. But there is still more to do.

To have input into the long-term vision for Boral, we assembled a team of 21 young leaders from across the company. The team is intended to represent Boral’s leaders of 2030, with a diversity of experience, gender, ethnicity, culture and geography. It is hoped that the strength and diversity of the team will provide greater insights into the Boral of the future than would otherwise be achieved by relying on today’s leaders alone.

I hope you enjoy reading highlights of our colourful history in this edition of Boral News.

Mike Kane
CEO & Managing Director
**TAKE NOTE**

Five interesting projects across Boral

- **University of Western Sydney**'s new Kingswood campus library façade combines four types of red-toned PGH Bricks
- **Boral Roofing’s Saxony Slate** 500 concrete tiles in Mission Red feature on a new 172-room village-style hotel in Banff, Canada
- **Asphalt, spray seal, concrete and crushed rock road base** supplied to Gateway WA, Western Australia
- **USG Boral supplied products**, including multi-residential development in Indonesia
- **More than 6,660m² of Boral concrete used in “The James” multi-residential development in Teneriffe, Queensland**

**On the move!**

Staff based at Greystanes House, which leases the office space comes in Prospect, New South Wales, will be on the move in 2017 as the lease on the office space comes to an end.

“While this is a good move for the business, it’s a big change,” said Joe Goss, Divisional Managing Director of the Construction Materials & Cement division. “We’re giving our people plenty of time to prepare for the move and to make the transition as easy as possible.”


**Boral secures NorthConnex project**

The Concrete NSW team has successfully secured the supply contract for 500,000 cubic metres of concrete to the NorthConnex motorway in western Sydney. The $3 billion project comprises nine kilometres of tunnels and will ease Sydney’s traffic congestion, bypassing 21 sets of traffic lights. It is expected to be completed in mid-2019.

**Somerton cement supply chain hits the road**

Boral has historically distributed cement from the Waurn Ponds manufacturing plant to the Somerton depot by rail using Pacific National, one of Australia’s largest rail freight companies. But in December 2015, the final wagon of cement powder was loaded at Waurn Ponds, headed for Somerton for the last time.

With improvements in technology, in combination with Boral Cement’s increased powder fleet capacity – which utilises specialised tankers on a 24-hour, 7-day-a-week schedule – delivering cement to the Somerton depot is now more efficient by road than rail.

The last train wagons being loaded at Waurn Ponds cement plant, Victoria.

**New Bevel Siding in the USA**

The Bevel profile is the newest addition to the Boral TruExterior® Siding product line – the first man-made siding profiles to genuinely replicate the natural look of smooth architectural wood siding while resisting the moisture-related issues that commonly plague wood.

Launched in November 2015, the Bevel profile of Boral TruExterior® Siding recreates the look and character of traditional clapboard or bevel lap siding associated with cedar and redwood. It has true lap and shadow line characteristics that are not typically found in fibre cement or wood composite siding products.

**Introducing: Boral® Thin Brick**

Boral® Bricks in the USA has introduced Boral® Thin Brick Natural Clay Veneer for interior and exterior cladding applications. Launched in January 2016, Boral® Thin Brick offers a lightweight and easy-to-install solution that has the authentic look of full-dimensional clay brick.

Available in 10 colours and several popular textures, each lightweight and comes manufactured using natural clay. The new product line is being launched across the USA in a collaborative effort by both the Boral Bricks and Cultured Stone® by Boral® sales teams.

**USG Boral launches new, unified product packaging**

From February 2016 USG Boral has been launching new packaging designs across Australia, China and Korea, with other countries due to follow later in the year and in 2017.

The new packaging will incorporate common design elements to provide a cohesive look across USG Boral’s extensive network, which includes 14 product categories, 23 product types and thousands of stock keeping units (SKU) across 12 geographic markets.

“Often we think of packaging as only there to protect products as they travel from our plants to our customer sites,” said USG Boral Marketing Director, Jeremy Verstraete. “But with clear and cohesive design, it can help unify and reinforce our brands throughout our supply chain, in trade stores and, ultimately, on job sites in the daily view of our customers, builders and contractors.”

“...with clear and cohesive design, it can help unify and reinforce our brands throughout our supply chain”

Jeremy Verstraete, Marketing Director, USG Boral

**DID YOU KNOW?**

The year the acronym BORAL was officially adopted as the company name is 1963

The year Boral's green and gold logo was adopted is 1976
Transforming Boral

Twenty-one young leaders from across Boral’s and USB Boral’s global operations were invited to form Boral’s Transformation Strategy Task Group (TSTG) to help set the company’s long-term strategy.

In Sydney over two days in January, the group considered best practice in developing business strategy and heard from inspirational speakers, including a futurist from CSIRO who provided thought-provoking ideas. By the end of the sessions, the group had agreed on key issues they will consider over the coming months in order to define what Boral could look like in the decade 2020-2030. The recommendations of the TSTG will be presented to Boral’s Executive Committee and Board towards the end of 2016.

My Learning Space live at 20 sites

Boral’s learning management system, My Learning Space, has gone live at 20 operational sites across Asphalt NSW/ACT and Quarries WA/NT, and the rollout is continuing across the company. The system allows Australian operations to check employees training records and qualifications, improving Boral’s regulatory and safety compliance efforts in another step towards Zero Harm.

“IT’s a great tool to ensure our people are trained and competent to perform their roles safely,” said Phila Harris, General Manager for Boral Quarries WA, which now has 1,650 training records for 52 employees, including contractors, on the system.

“I’ve been an advocate of My Learning Space. I know from our feedback that it’s definitely a benefit to the company.”

Karen Moses joins the Board

On 1 March 2016 Karen Moses joined the Board of Boral as a Non-executive Director, following the announcement of her appointment in November 2015. In 2016 Karen will be retiring as Executive Director, Finance & Strategy at Origin Energy. She has more than 30 years’ experience in the energy industry in Australia and overseas across a number of senior executive roles. Karen started at Origin Energy in 1994 when it was Boral Energy, before the demerger of Boral’s building and construction materials business and its energy business in 2000. Prior to that, she held roles at Exxon and BP.

Karen is a Director of SAS Trustees Corporation, Sydney Dance Company and Sydney Symphony Orchestra. She is a member of Boral’s Audit & Risk Committee and Health, Safety & Environment Committee.

Managing your superannuation

Superannuation is one of the biggest investments most of us will ever own, so it makes sense to take an interest in it. For Boral’s employees in Australia, who are members of Plum Super, there is now an easier way to stay informed about your superannuation and explore how your savings are tracking. Call 1300 55 7586 or go to plum.com.au.

Rob McGuire honoured for asphalt industry leadership

Boral Asphalt Queensland’s General Manager, Rob McGuire was awarded for Outstanding Industry Leadership at the Australian Asphalt Pavement Association National Industry Awards in September 2015.

“This is an outstanding result for our Boral team,” Rob said. “We’re all very proud of this formal recognition of our industry leadership and commitment to adding superior value to our major project customers.”

Boral Asphalt’s work on the $68 million Toowoomba Range remediation project required technical expertise, quick thinking and effective solutions.

Rob says the site alone proved the potential for runway equipment and left little margin for error.

“The team implemented safety and precautionary measures through extended exclusion zones, detailed toolbox discussions, a siren evacuation policy, clear on-site communication and a Parked Vehicle Procedure, in which stationary vehicles had their wheels turned towards the embankment.

“The majority of asphalt work was undertaken during the night, helping to cater for the 23,000 vehicles that traverse the Warrego Highway daily, 21 per cent of which are heavy vehicles.

“It was also particularly challenging because of the fog, temperatures, visibility during the night works and made adjustments to the Vehicle Procedure, in which stationary vehicles had their wheels turned towards the embankment.

Due to the elevation of the project in the Toowoomba Ranges, mist and fog were recurring elements. The terrain restricted the number of locations suitable for installing light towers and, in consultation with the Seymor Whyte project management team, track-mounted mining lights were equipped on machinery to aid the Boral team.

Greater consideration was necessary during the lay. Consequently, the team introduced a fourth steel drum roller for the night works and made adjustments to the paving speed to compensate for the difficult surface.

Looking back on the project, Rob reflects that it was a very technical undertaking. He says to receive the AAPA National Award for Outstanding Project was great recognition for the regional Boral team, particularly as it was such a large project in which to play a part.
The story of Boral is as much about survival and success as it is about persistence – from the very beginning.

In 1939, with the winds of war blowing in from Europe, a 52-year-old entrepreneur by the name of David Craig led a consortium of business people seeking approval to manufacture bitumen from imported crude oil in Sydney. The application was rejected in 1940 by Australia’s Advisory Committee on Capital Issues.

This did not deter Craig or his backers, who persisted for seven years to gain approval. Persistence paid off.

In February 1946, the official prospectus was released to the public and a few weeks later, on 4 March, ‘Bitumen and Oil Refineries (Australia) Limited’ was incorporated.

It wasn’t until 1963 that the acronym ‘Boral’ was officially adopted as the company name.

By 1954 Boral had entered the gas market, building a plant to convert the by-product of bitumen manufacturing into LPG. The company grew and diversified, making significant acquisitions in energy, building products and construction materials, some of which were seen at the time as being daring.

A decade later Boral made a more decisive move into the quarries business with the acquisition of the two largest Melbourne-based quarry operators: Albion and Reid Quarries.

In the late 1960s the discovery of crude oil in Australia dramatically changed the oil refining competitive landscape. Boral exited the oil industry and started to expand through acquisitions, entering the building products industry in 1969 through the acquisition of 60 per cent of Warringah Brick and Pipe Works in Sydney and Brittain Bricks and Pipes in Queensland.

In 1976, Boral acquired the Cyclone Company of Australia, which saw it move into fencing products, rural buildings, hardware, scaffolding and windows.

Further acquisitions in bricks and roof tile companies are made in Australia and the US; acquires Merry Companies Inc., Augusta, Georgia.

The company expanded further; acquires Gas Supply Company in 1963.

Sells a half stake in its refinery interests and a year later acquires 60% of Warringah Brick and Pipe Works in Sydney and Brittain Bricks and Pipes in Queensland.

Boral acquires Cyclone Company of Australia to diversify away from Australian housing.

Boral acquires 55% interest in California Tile Inc. A year later it buys the company outright.

BORAL TIMELINE

1946
Bitumen and Oil Refineries (Australia Limited) incorporated

1947
Matraville oil refinery opens

1949
Boral enters gas market, building a plant to convert the by-product of bitumen manufacture into LPG.

1954
Boral acquires two Melbourne-based quarry operators

1965
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1968
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1980s
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The green and gold
It was at that time that the now-familiar green-and-gold logo was adopted. As the annual report for that year explained:

The Boral Group is made up of many companies operating in a number of diversified extractive, manufacturing and service activities. During July and August 1978 we have changed the names of many of our companies, generally by adding the prefix Boral to existing names... we have also adopted a new corporate symbol and colour scheme... which will be used on signs, vehicles, stationery and uniforms... and through the symbol all Boral companies will present a single unified face.

As well as creating a strong sense of belonging among our employees, we believe that this move will have the most significant effect on Boral marketing in the future.

The next significant takeover after Cyclone was in 1978 when Boral acquired Australian Gypsum Industries, an insulation and plasterboard company.

US moves
A year later in 1979, Boral entered the US market, acquiring a 55 per cent interest in a loss-making concrete roof tile manufacturer California Tile Inc. Within a year, the business had been turned around and the plant was operating at a profit. Boral would go on to buy the company outright in 1980, in a move that would herald significant expansion in the US.

Further tile-making plants were acquired in Texas and California, and Boral entered the US brick market in 1980 with the acquisition of Merry Companies in Augusta, Georgia.

A force in construction materials
By far the largest acquisition during this period, however, was Boral's purchase in 1980 of Blue Metal Industries (BMI), a company of similar size and value as Boral, resulting in the newly expanded group becoming the leading construction materials business in Australia.

Five years later, Boral acquired Blue Circle Southern Cement, the owner of the Berirla Cement works.

European expansion
Meanwhile by the early 1980s Boral had also acquired a few small UK businesses, in concrete blocks, machinery and flyash. But it wasn't until Bruce Kean took over as Boral's third Managing Director in 1987, following 27 years under Sir Elliot Griffith and then 14 years under Sir Eric Neal, that a push was made to grow Boral's European presence.

The company moved into clay tile and roof tiles as well as quantities, with operations in the Netherlands, Germany and Poland, but ultimately these businesses did not meet expectations and Tony Berg, the fourth chief executive, decided to quit Europe in the mid-1990s. By 1999 Boral had sold all its European businesses.

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Growth in Asia
Tony identified Asia as an attractive growth market, with plasterboard earmarked as an industry in which Boral could have a competitive advantage and build leading market positions. Growth was then pursued in Malaysia and China with capacity also expanded in Indonesia, where Boral already owned a plasterboard plant.

The financial crisis that hit the Asian region in 1997/98 had a serious negative impact on the business there. However, lower demand combined with the excess capacity of European competitors resulted in substantial losses for Boral's Asian plasterboard business.

This was the impetus for Boral joining forces with French company Lafarge in June 2000 to create the Lafarge Boral Gypsum Asia (LBGA) joint venture, the largest producer of plasterboard in Asia outside Japan. Boral's initial 25 per cent investment increased to 50 per cent by 2003 as the company funded expansion efforts in Thailand, Korea and China.

Creation of a new Boral and Origin Energy
Just before the joint venture with Lafarge was finalised, in February 2000, Boral demerged its construction and building materials and its energy business, which became Origin Energy. The energy division had been growing significantly through organic growth and acquisition, including the major acquisition of Sagarco in 1993, and was well-positioned to stand alone and be valued accordingly. Rod Pearse took over as Managing Director of the new building products and construction materials company, steering Boral over the next 10 years. His experience leading Boral's cyclical business proved critically important. His tenure started with a severe but short-lived downturn in Australia post the Sydney Olympics, before several years of strong demand in key markets, and ended with the impacts of the worst downturn the US had seen since the Great Depression.

Following Rod's retirement, when Mark Selway came on board as Managing Director, Boral bought out Lafarge's half interest in LBGA in 2011 for $598 million and renamed the business Boral Gypsum Asia. By this time the business was operating 20 plants across eight countries. This set the foundation for Boral to complete its joint-venture deal with USG in early 2014, under Mike Kane's leadership, forming USG Boral Building Products, the leading plasterboard manufacturer across Australia, Asia and the Middle East with access to some of the most advanced technology, in plasterboard and associated products.

Over the past 70 years Boral has moved in and out of markets and businesses in a continual drive to deliver strong returns for shareholders, at the same time delivering solutions for our customers, and making a positive contribution to our communities and people.

Apart from the transformational moves in the gypsum business, much of the past 15 years has been about refocusing the business and consolidating the portfolio.

2011 Boral completes acquisition of Lafarge’s 50% interest in Lafarge Gypsum Asia joint venture
2014 Boral and USG Corporation form a plasterboard and collages joint venture, USG Boral Building Products, combining operations in Australia, Asia and the Middle East
2015 Boral and CSR form the Boral CSR Bricks joint venture combining their Australian east coast brick operations
Bob Bornstein has seen much change in his 46 years at Boral. His career spans plant construction, technical management, sales and marketing as well as concrete operations and general management. Today he is Technical and general management. as concrete operations, sales and marketing as well as technical management, spans plant construction, 46 years at Boral. His career has seen much change in his working life. Bob Bornstein has seen much change in his working life. In the early 1970s there were industrial accidents and employees working in hazardous conditions. The diversity of our workforce is another thing that has changed. In the early days, there was a culture of being a part of the USG Boral Technical Committee. What's the best advice you've been given, and your advice to younger colleagues?

Boral News caught up with Bob for a chat.

BN: What are your memories of the interesting times in Boral’s history?
BB: Boral historically had grown by acquisition. It’s hard to imagine that a company that started in the 1890s and oil and a whole bunch of construction materials. We had Boral Resources, Boral Inc, Boral Gas, Boral Steel, Cyteline Fencing, and when Boral took over BMI in 1982 we inherited a range of businesses in concrete placing, timber, lifts, window, tyres and chi bits, to name a few. All that changed in around 2000 when we centralised a lot of the administration functions in the era of CEO Tony Berg and later Rod Pearse. I think Boral had just become too big to be managed in the way it had been before, and it was hard to keep growing by acquisition. These were really interesting times. It was a big change as the management teams went from essentially running their own businesses to managing bits of it. I think the values of Boral today under Mike Kane’s leadership are stronger. Culturally the company has grown a lot.

BN: What about customer requirements – have these changed?
BB: Our customers are looking for higher technical requirements in concrete, particularly in construction of high-rise buildings and infrastructure. More than ever they’re looking for increased durability for infrastructure projects designed for a life of 100 years plus, which needs sophisticated testing on a whole range of attributes, which we do at our laboratory.

The other need relates to sustainability and lower carbon products. We’ve seen this move in more commercial buildings but it’s moving into infrastructure too. We’ve developed products to meet this need over time, including more recently ENVISAAB. It’s truly unique globally and one of the few significant advances in concrete technology for decades, and it’s all ours! ENVASAAB has the potential to be a breakthrough product for us.

BN: What’s the best advice you’ve been given, and your advice to younger colleagues?
BB: Early in my career, one of my managers said “Never assume” – it’s critical, double-check things and don’t take things at face value. This has held me in good stead. I also think it’s important to be enjoying what you’re doing, have a balanced view about things, take the good with the bad but have fun.

Boral News caught up with Bob for a chat.
Boral today

Over 70 years Boral has grown from an oil refinery in Sydney into an international building and construction materials company with operations in 13 countries across Australasia, Asia, the Middle East and North America.

Despite changes in our operations and portfolio over this time, Boral today is an iconic brand with a long and proud history and a strong safety culture among its 12,000 employees and over 7,000 contractors serving thousands of customers globally. Here’s a snapshot of who we are today.

Boral’s resource positions are the core of our Australian operations and give us our competitive advantage. The aggregates and other materials we extract from our quarries are an essential input for our downstream concrete and asphalt operations. It is these assets, together with our cement and limestone assets, that make us the largest and only fully integrated construction materials company in Australia.

With over 90 quarries and around one billion tonnes of reserves, our strength lies in the strategic locations of these facilities close to urban areas, the high quality of our reserves, and our ability to minimise impacts on the environment and our neighbours.

“We’re continually investing to optimise quarry yields and to secure our supply of high-quality aggregates to key markets across Australia for generations to come,” says Divisional Managing Director of Construction Materials & Cement, Joe Goss.

Consider Peppertree, Boral’s newest quarry, David Bolton, Quarries General Manager for New South Wales, said that it represents a generational investment which secures our supply of high-quality aggregates into the important Sydney market for more than 100 years.

“The Peppertree quarry and Marulan sand plant, together with our existing Dunmore quarries to the south and Peats Ridge to the north, supply our aggregate requirements into Sydney now that the Penrith Lakes quarry is depleted,” said David. “Our $200 million investment in the Peppertree quarry, limestone manufactured sand plant at Marulan, new rail terminal at Maldon, significant rail infrastructure construction and a new services agreement for three new trains helps achieve efficient supply of materials into the Sydney market.”

At Peppertree, we are using the latest technology and rail transport to achieve cost efficiency. This includes the largest in-pit mobile crusher in the southern hemisphere and over 10 kilometres of conveyor belts automating the transport of material throughout the site. Automatic loading of up to 4,000 tonnes of material per hour allows trains to efficiently deliver daily supplies into our network via the new terminal at Maldon, upgraded rail terminal at St Peters and existing rail terminal at Enfield.

In addition to the hard rock, sand and aggregates which we extract from our quarries across Australia (and in Denver, Colorado, where Boral has a construction materials business), we have strong resource positions in limestone, gypsum and clay which support our cement, plasterboard, brick and roof tile manufacturing operations across three continents.

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Quick Facts

- 94 Quarries across Australia
- 50 Clay pits and open-cut gypsum and limestone mines

Over 70 years Boral has grown from an oil refinery in Sydney into an international building and construction materials company with operations in 13 countries across Australasia, Asia, the Middle East and North America.
Boral has a long history as a manufacturer and supplier of a variety of materials, dating back to the 1940s when we first began to produce bitumen for roadmaking.

Our involvement in the production of building products can be traced back to our acquisition of Warringah Brick and Pipe Works in 1969. Today across Australia in the construction materials sector, we produce around 7 million cubic metres of pre-mix concrete, over 30 million tonnes of quarry products and around 2.5 million tonnes of cement a year.

Through our operations in the USA and Australia, we have the capacity to produce around 2.2 billion bricks annually and 660 million roof tiles. In Australia alone, this includes about 880 million standard brick equivalent units including the Boral CSR JV and 67 million roof tiles.

Across Australia, New Zealand, Asia and the Middle East, Boral is the leading manufacturer and distributor of plasterboard and associated products for the building industry through our USG Boral joint venture. We have the capacity to produce up to around 640 million square metres of plasterboard and ceiling tiles a year.

We are also helping make the buildings and roads of the future with our De Martin & Gasparini team placing concrete for commercial and multi-residential construction, primarily in Sydney, and our asphalt crews constructing, paving and maintaining roads.

In many places we also have employees and contractors on the ground at customers’ sites installing and delivering finished products, including contracted plasterers setting plasterboard, and roof tilers installing clay and concrete roof tiles. Meanwhile Boral also produces pavestones and masonry products, and softwood and hardwood timber products for the building sector in Australia, and Cultured Stone® and composite trim and siding products in the USA.

But it’s Boral’s world-leading safety culture that really differentiates our manufacturing operations from those of other organisations, according to Rachael Elliott, General Manager Operations – East for Boral Stone Products in the USA. “No matter where in the Boral world you’re located, there are certain things that unify us, like our commitment to Zero Harm and the principles of LEAN manufacturing which guide us and underpin how we run our business,” she said.

In all our transport operations, as well, safety sets us apart. General Manager of Supply Chain Logistics in New South Wales, Victoria Sherwood, says safety management and leadership among drivers are vitally important functions. “Heavy vehicle road transport comes with risks, but we’re very good at dealing with them through operational, engineering and compliance management, and by working closely with employees, dedicated lorry owner drivers and contractors around behavioural aspects of safety management,” she said. “Our shared goal of Zero Harm is just as applicable when we’re on the road or on our customers’ sites as it is when we’re working at a Boral site.”

“Heavy vehicle road transport comes with risks, but we’re very good at dealing with them through operational, engineering and compliance management”

Our truck fleet is one of the largest in Australia, with around 3,000 company-owned and contracted heavy transport vehicles. Every year our tipper trucks and tankers travel more than 100 million kilometres. And that doesn’t include the many short-haul deliveries by our 1,500 concrete agitators.

Our network extends to overseas shipping, intermodal and rail with around 20 shiploads a year of clinker and gypsum material imports for cement and plasterboard manufacturing, as well as about 75 trains per week carrying limestone, aggregates and cement.

In the USA and in Asia we primarily rely on third-party contracted transport operators to deliver our products.

“With a significant number of our people involved in moving materials, Boral is a major transport and logistics manager, moving products via road, rail and shipping to our fixed plant network, customer construction sites and major infrastructure projects across the country.”
Increasingly, our customers look to partner with us on large-scale projects that are complex, technically challenging and require tailored solutions.

This involves the application of specialist skill sets including technical, contract management and delivery expertise, and – it goes without saying – the same best-in-class approach to health and safety.

Wayne Manners, Executive General Manager of Construction Materials in WA/NT, heads up a specialist team in Boral’s Project Management Office (PMO) where our major projects expertise has developed in recent years.

“Whether it’s a high-intensity project located in the CBD requiring innovative product and delivery solutions, or a highly technical project in a remote location with complex supply chain issues to overcome, we’ve demonstrated a strong ability to deliver safely and reliably,” said Wayne.

When overseeing such projects, the PMO can offer strong project and contract management oversight, comprehensive training, access to appropriately skilled resources and project audits. In addition, the team can use its expertise to help Boral secure further work and also help provide innovative solutions to address customers’ needs.

“We’ve used to developing new ways to do things and overcoming our customers’ challenges,” added Wayne.

He points to our relationship with Lend Lease at the Barangaroo precinct development in Sydney, where we reduced traffic congestion and improved safety on the project with the use of a mobile, on-site concrete plant utilising a central pumping system. For Bechtel, we supplied concrete to LNG resource projects in the remote locations of Wheatstone in Western Australia and Curtis Island in Queensland, establishing completely new supply chains by doing so.

With this in mind it’s not surprising that so many customers choose Boral and that we’re well positioned to help build new road and infrastructure projects in Australia, said General Manager, PMO, Andrew Legge.

“Being the only fully integrated construction materials provider in the major projects space, we’re well positioned to assist in the delivery of an expected $6-$8 billion per year of road infrastructure over the next several years,” said Andrew.

“We’ve already secured delivery of materials to a road project in Sydney, NorthConnex, which will require 500,000 cubic metres of concrete, and we expect to secure more such projects. This will be an important area of growth for us in coming years.”

QUICK FACTS

Major projects

- Road infrastructure works planned across Australia over the next 5 years
- $41bn
- Works that Boral is currently tendering on
- $25bn

Value of work is not the same as materials demand.
For the half year ended December 2015, Boral delivered a 29 percent year-on-year reduction in our lost time injury frequency rate for employees and contractors to 1.2 per million hours worked. Our recordable injury frequency rate, which includes medical treatment and lost time injuries, has also reduced substantially, down 26 per cent year-on-year to 8.6 per million hours worked.

### Recordable Injury Frequency Rate

<table>
<thead>
<tr>
<th></th>
<th>FY11</th>
<th>FY13</th>
<th>FY15</th>
<th>FY12</th>
<th>FY14</th>
<th>1H FY16</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.0</td>
<td>1.9</td>
<td>1.8</td>
<td>1.9</td>
<td>1.9</td>
<td>1.2</td>
</tr>
<tr>
<td>% Change</td>
<td>-26%</td>
<td>-5%</td>
<td>-10%</td>
<td>-5%</td>
<td>-10%</td>
<td>-33%</td>
</tr>
</tbody>
</table>

### Lost Time Injury Frequency Rate

<table>
<thead>
<tr>
<th></th>
<th>FY11</th>
<th>FY13</th>
<th>FY15</th>
<th>FY12</th>
<th>FY14</th>
<th>1H FY16</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>15.8</td>
<td>12.1</td>
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<tr>
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<td>-3%</td>
<td>-8%</td>
<td>-10%</td>
<td>-17%</td>
<td>-18%</td>
<td>-16%</td>
</tr>
</tbody>
</table>

### Re-induction programs in Boral Construction Materials

In Construction Materials in NSW, employees and contractors working in our Quarries, Concrete (including Concith), Logistics and Asphalt businesses have been re-induced into the business. An important theme of the re-induction program this year is Zero Harm Today with top performing Zero Harm sites recognised and celebrated.

### CCTV is raising awareness in USG Boral

Across USG Boral, a program is underway to review closed circuit television (CCTV) footage to identify positive, safe behaviours as well as those that are more risky. For some time, CCTV monitoring has been used to help investigate and review processes after an event when something has gone wrong. But now teams of USG Boral employees are proactively using CCTV from known, high-risk areas to engage in safety discussions and to identify precursors to potentially harmful events. Through the review and consultation processes, better controls are being put in place (or behaviours and conditions changed) before a harmful event occurs. This process embraces a ‘shift in blame’ approach if negative behaviours are observed, and with a clear understanding that the primary goal is the team effort to identify and implement improvements.

### Recognising success in the USA

As facilities reach milestones in True Zero Harm Today journey, safety celebrations are taking place in Boral in the USA. In December, Boral Roofing employees in Phoenix, Arizona, celebrated 10 years of Zero Harm – that’s zero medical injuries and zero lost time injuries for all plant workers, shipping personnel, the sales team and support team members.

When asked how they did it, plant manager Tony Lopez said, “It’s about having an emphasis on quality training. Not just knocking it out to get back to work. You need to spend time, ask questions, get input from the guys on any concerns, and truly lead by example – the whole management team.”

“While in Boral USA our people are still getting hurt at work, which is unacceptable, we’ve experienced many days and months as a collective business achieving Zero Harm. Our team is more aware of risk avoidance than ever before and the initiatives in place are driving positive change.”

Rich Stevna, Director of Occupational Safety and Health, Boral USA.

### Reducing our injury rate

“Stopping all operations to take time out to focus on our safety and wellbeing sends a strong message that we’re very serious about Zero Harm Today for all of our people. We didn’t spend the time introducing new processes or procedures. It was simply about stopping and thinking about safety – ensuring that it’s front of mind for everyone.”

Wayne Manners, EGM WA/NT, Boral Construction Materials

### A clear Vision for Zero Harm in Roofing & Masonry

In mid-2015, 24 leaders from Boral’s Roofing & Masonry businesses developed their new Zero Harm Safety Vision with the assistance of an organisational psychologist and with input from the entire workforce.

Following the roll-out of the vision at the end of October 2015, the Roofing & Masonry leadership team hosted a one-day Zero Harm workshop in December, where an additional 23 leaders and supervisors came together to consider how to achieve Zero Harm Today.

“After creating a shared vision, we’ve been building on the momentum of the Zero Harm Leadership Summit. In recent weeks we’ve finalised our Zero Harm strategy which we’ve designed to reach all employees and which we’ll extend to contractors and customers.”

Charlie Condo, General Manager, Boral Roofing & Masonry

### Curtis Island LNG concrete mobile plants demobilisation

In November 2015, the demobilisation of six mobile concrete plants from Curtis Island was six months in the planning and took a total of 19,100 hours to complete. Most importantly, those 19,100 hours were accident and injury free.

Josiah Strong, Graduate Engineer, Boral Concrete Queensland

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“The CCTV review program has helped employees realise the risks they were taking without even noticing. One picture is worth a thousand words, and it can easily be shared across all manufacturing sites regardless of language and culture.”

Regis Humbert, Manufacturing Director – Thailand/Malaysia/India/Vietnam, USG Boral

### “Our Macksville, Wavehill and Currumbubula quarries in northern New South Wales have now achieved over one year of Zero Harm. It was great to recognise that success in our latest annual re-induction video for employees and contractors.”

David Bolton, General Manager, Quarries NSW/ACT
Investments in how we use our by-products are reducing Boral’s impact on the environment as well as boosting the bottom line. Boral News caught up with initiatives at the Bacchus Marsh quarry in Victoria and our NSW Timber operations to find out more.

Quarry by-product upgrade reduces emissions

A project which is expected to reduce carbon emissions by over 3,000 tonnes over its life will soon be completed at the Bacchus Marsh sand quarry, an hour north-west of Melbourne.

The process of extracting raw sand material at the quarry creates a by-product called tailings, which are in a liquid form. As part of the project, new equipment will process tailings so that they emerge as a dry material, eliminating the need to transport the tailings to dams.

The project will deliver ongoing operational savings of around $1 million a year by cutting transport and materials handling costs, and will see significant improvements in on-site water recovery and recycling.

Boral’s Group Environmental Advisor Dr Richard Strauch says it’s a win-win. “Liquid tailings often present costly challenges in the production process of quarried or mined materials. So to install new equipment to extract the water from the tailings at the point of production is an elegant solution,” he said.

The project is partially funded through the Voluntary Waste Industry Protocol, which was established to ensure that carbon charges collected by landfill operators (prior to the abolition of the carbon tax) are used to reinvest in the region and to reduce environmental impacts. Boral is a voluntary participant in the program because of our role as the former owner and operator of the Western Landfill, now owned by Transpacific Industries.

SUSTAINABILITY INITIATIVES – GOOD FOR THE ENVIRONMENT, GOOD FOR BUSINESS

Boral Timber turns by-products into value-added biofutures

Boral Timber currently sources its products from 100 per cent sustainably managed forests certified by a third-party independent audit, with hardwood resources harvested under some of the most stringent environmental regulations in the world.

However, because of the nature of the hardwood timber business, where long rectangular boards are milled from round, and often not perfectly straight logs, a large proportion of timber logged can end up as some form of by-product. This, the company recognises, represents a unique opportunity to create a renewable, low-carbon energy source as well as a range of innovative value-added products.

To that end Boral Timber already uses a significant proportion of its residue by-products as biofuel. All three of our North Coast NSW finishing plants produce their own process heat on site, and at the Murwillumbah timber mill, chipped residue is used as boiler fuel for the cogeneration plant, providing electrical power to operate the plant.

Boral’s timber residues are also sold to external electricity generators and large industrial users for the generation of process heat.

But we can do more, and Boral’s timber operations are poised to take advantage of advances in technology to help turn more by-product materials into renewable, sustainable products.

This is known as “biofutures,” which are created via a wide range of processes that have a biological source, including bioenergy, biofuels and biochemicals. The idea behind biofuels is to transform a low-valued biological by-product into value-added assets while benefiting the environment at the same time.

Keith Davidson, General Manager of Fibre Resources for Boral Timber, is a member of the team evaluating biofutures opportunities which could potentially create new revenue streams and reduce costs.

“It’s exciting that technologies are developing and governments are talking about stimulating industrial biotechnology,” he said.

“We want to be part of the emerging biofuels industry, so we’re exploring a range of opportunities to increase the use of residues. For example, we’re looking at new, highly scalable electricity generating plants and working with our colleagues in the Construction Materials business to look at new additives in the formulation of asphalt for roads to improve the properties of bitumen. This is only the start of a continuing process to add value to our by-products,” said Keith.
A DAY IN THE LIFE OF...

USG BORAL’S METAL PRODUCTS PLANT IN AUCKLAND, NEW ZEALAND

Boral News spent a day at the metal products plant and office in Mangere, Auckland, where USG Boral manufactures metal products for wall and ceiling systems and imports mineral fibre ceiling tiles, compounds and plasterboard from the USA, Asia and Australia. The business opened its USG Boral joint venture in March 2014 but has been manufacturing in New Zealand since 1969.

07:30
Staff gather on the plant floor for the daily safety huddle, which includes discussion about safety, training, operating best practices and production plans. Today, four out of five production lines will be operating.

07:40
Packer Lai leads the team in doing pre-shift stretches: shoulder and back stretches, squats and lunges. The exercise helps prevent injuries by warming up the muscles involved in operating the plant’s machinery. The business recently celebrated 20 years free of lost time injuries.

07:45
Workshop foreman Tony and toolmakers Peter and Hai conduct pre-start checks on all the machinery, checking switches, safety guards and lubricating parts where required.

07:55
The production lines start humming: Line 1 is making the same main tests it did yesterday while Line 2 makes cross tees. On all lines, operators and engineers carry out first-off checks, ensuring that the first products that come off the line meet specification and quality requirements. After the first-off check, Operator Vena stops Line 2 to realign one of the metal rollers making cross tees.

08:00
The length of formed metal is cut precisely to specification by flying shears, then are pressed to create holes or riveted with clips, depending on the product. The products then roll off the line directly to packers who conduct a final quality check, before grouping and packaging them.

08:15
Architectural Specifications and Business Development Manager Brian hits the road to meet with current and potential customers. First up, he’s showing an architect a 40-terrain development under construction by G.J. Gardner Homes in Hobsonville Point which uses the USG Boral Donn® Brand DX Exposed Grid System.

08:30
In the office that overlooks the plant, engineer David is discussing with colleagues the seismic capacity of USG Boral products for a multi-residential development. The building architect is looking to specify metal stud and track and a range of plasterboard for a 160-apartment building due to be built in 2017.

08:45
Customer Service Officer Faith is busy dealing with customer orders and delivery logistics. Today, trucks are delivering products to major distributors: USG Boral SHEETROCK®, Cove and compounds are going to New Zealand Ceilings & Drywall Supplies, while various USG Boral Donn® Brand metal grid products are heading out to Poter Interior Systems.

09:00
At the warehouse loading dock, after unloading USG Boral SHEETROCK® plasterboard sent from the Pinkenba plant in Queensland, Store Supervisor Afele starts back-loading a shipping container with metal grid products to be sent to Adelaide. Containers are shipped to and from Australia on a regular basis.

09:15
Brian heads to the Auckland CBD to visit a multi-residential site where he’s been advising on metal stud and plasterboard installation. The 50-apartment, 14-storey building is using USG Boral SHEETROCK®, Firestop® and Wetstop® plasterboards, the USG Boral Steel Stud & Track Partition Wall System and USG Boral ScrewFix® Plasterboard Suspension System.

09:30
Back at the plant, it’s time for a lunch break. In the four-and-a-half hours since starting production, thousands of metres of a variety of metal products have been made and packaged, ready for distribution and sale.

09:30-10:15
In the office, Brian is following up his visit by advising the client on the installation of metal stud and plasterboard, as well as preparing quotations for the next site.

10:00
Back at the plant, it’s time for a lunch break. In the four-and-a-half hours since starting production, thousands of metres of a variety of metal products have been made and packaged, ready for distribution and sale.

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10:20
Marketing & Technical Support Manager John heads to Ponsonby where a large retail and commercial development is under construction. Sub-contractor Apex Interiors is installing a 2,000-square-metre suspended ceiling for a supermarket using the USG Boral Donn® Brand DX Exposed Grid System.

10:30
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11:00
Back at the plant, operators and packers finish the last shift of the day and switch off all the machinery. They clear up the scrap metal piles, sweep up their work areas and complete production and safety documentation, ready to do it all again tomorrow.

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BUILDING HOPE WITH HABITAT FOR HUMANITY
Boral staff volunteered for Habitat for Humanity’s Building Hope 2016 campaign, raising awareness in Sydney’s CBD of Habitat’s work in Australia and Asia. Also in December, USG Boral’s Tom Spencer had the honour of handing over a home built by Habitat to a partner family. USG Boral donated SHEETROCK® plasterboard and other products to help build three homes in Yea, Victoria.

COMMUNITY LEADERSHIP FOR NSW YOUTH
As part of this year’s Boral Youth Leadership Project with Outward Bound, 26 Year 9 students from the Southern Highlands and Tablelands region embarked on a seven-day personal development camp in Tharwa, ACT. The program focuses on developing sustainable community leadership and other skills for young people.

MIKE KANE JOINS PANEL OF BUSINESS LEADERS
CEO and Managing Director Mike Kane spoke on the subject of ‘Risk Takers, Growth Makers’ at the Australian Financial Review’s Business Summit 2016 in Melbourne. Speaking alongside other Australian and international business leaders, Mike discussed challenges facing Australian companies and the need for leadership to shape the future of Australia’s business economy.

LIVVI’S PLACE BALLARAT OPENS TO THE PUBLIC
Touched by Olivia opened its latest, state-of-the-art inclusive playground in Victoria Park, Ballarat. Boral is proud to have contributed to Livvi’s Place Ballarat with concrete and cash donations. The play space features multiple play zones, including a water play precinct and accessible play equipment for children of all abilities.

STAFF RAISE $45,600 IN RIDE TO CURE DIABETES
About 250 cyclists, including Boral staff, rode the tough hills of the Barossa Valley in South Australia for the Juvenile Diabetes Research Foundation’s 2016 Ride to Cure Diabetes. Our riders contributed more than $45,600 to the fundraising total of $850,000 supporting research into Type 1 diabetes. Every year 2,000 people in Australia are diagnosed with the disease.

TAKE ME OUT TO THE BALL GAME
Boral staff and their families enjoyed baseball games in Sydney, Melbourne, Brisbane and Perth during the Australian Baseball League’s 2015/16 season. The ABL Championship Series Presented by Boral was won by the Brisbane Bandits. Boral is proud to sponsor two seasons of the ABL Championship Series and the ABL All-Star Games in 2015 and 2016.

HOMEAID ATLANTA’S TRADE PARTNER OF THE YEAR
Boral USA was honoured as the 2015 Trade Partner of the Year in HomeAid Atlanta’s 10th annual awards, which recognise commitment to the non-profit provider of housing for the homeless. In 2015 Boral USA contributed US$16,550 of bricks, sand and mortar to HomeAid’s major build projects, in addition to our corporate sponsorship (Boral USA President and CEO Al Borm, pictured right).

KILOS FOR VERY GOOD CAUSES
Ooppie Cross asphalt plant operator Brad Round spearheaded a month-long weight loss and nutrition campaign for 33 staff from across the SA business. As part of his ‘Kilos for a Cause’ campaign, for every kilogram of weight lost by the team, Boral donated $20 to the Juvenile Diabetes Research Foundation. Well done, Brad and team – and keep up the healthy eating!

BORAL GOLF CLASSIC RETURNS FOR REDKITE
Boral Construction Materials WA hosted its third annual charity golf day supporting Redkite. Customers, partners, suppliers and employees teed off at Joondalup golf course to raise funds for Redkite’s financial support services, which help families of children with cancer. Team members will also take part in the SCODY 5 Dams Challenge to support Redkite.

HELPING HANDS FOR BUSH REGENERATION
A team of volunteers from the North Sydney office will spend the day at Bradleys Head near Taringa Zoo, helping the zoo’s horticultural staff to regenerate native bushland on the Sydney Harbour foreshore. This year Taringa Zoo celebrates its centenary with an exciting calendar of events, including its 100th birthday party on 7 October 2016 – see taringa.org.au for more details.

OUR LAND PEOPLE STORIES NATIONAL TOUR
Bangarang’s 2016 national production OUR land people stories, is touring Sydney, Perth, Canberra, Brisbane and Melbourne from mid-June. This triple bill performance will showcase Bangarang’s choreographic talents and celebrate the stories of Australia’s cultural heritage. Boral staff can access discounted tickets to performances across the country – contact Corporate Affairs for details.

HARDWARE STORES GIVE SHEETROCK® THE THUMBS UP
USG Boral SHEETROCK® won the Innovation of the Year award at the Home Timber & Hardware (HTH) Group national conference on the Gold Coast, Queensland. Independent HTH hardware store owners chose SHEETROCK® from among nine product displays at the conference. USG Boral’s Christine Standfield, Luke Holman and Bruce Wray were there to claim the trophy!

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TAKE A JOURNEY THROUGH BORAL’S 70 YEARS WITH THE VIEWA APP

STEP 1
Simply download the free viewa app from the App Store or Google Play.

STEP 2
Scan the front cover to watch and celebrate 70 years of Boral.