

VALUE CHAIN & PRODUCT INNOVATION



Chanudom Muangchim, Researcher at USG Boral's Research and Innovation Centre in Saraburi, Thailand

Boral is a critical part of the construction supply chain in the markets in which we operate. As we continue to find more effective ways to do business and respond to external changes and disruptions, we recognise the influential role we can and need to play in delivering sustainable solutions for our customers, suppliers and the broader community.



Boral TruExterior® Trim, featured on this dormer, boasts more than of 70% recycled fly ash content

We are working to deliver improved outcomes throughout the value chain today and for the future. Some of the ways we are doing this include:

- **Using external waste and by-products** or secondary resources in a range of products, including fly ash for the construction industry and our lightweight composite building products in the USA, as well as crushed demolition concrete in new concrete and asphalt in Australia.
- **Working with customers to deliver Green Star energy and sustainability goals**, including developing concrete washout innovations that require significantly less water usage on customers' sites, and less carbon intensive products such as ENVISIA® concrete.
- **Responding to changing demographics, working environments and needs of our customers.** We have identified key trends our customers are facing in their industries, as well as innovative approaches to business and technology opportunities Boral can employ to improve our customers' experiences. In our Australian concrete business we have built an understanding of our customers' end-to-end experience by interviewing small and large customers, riding with our drivers and listening to call centre calls, in an effort to improve the experience for our customers.
- **Helping to develop safer, improved construction methods in Asia** by broadening our product and systems offering to provide plasterboard partitioning in residential buildings. We are also doing this through our Habitat for Humanity partnership, where we are helping educate local construction workers in safe and improved construction techniques in Vietnam, Indonesia and Cambodia.
- **Working with the supply chain to design, build and use safer, more innovative equipment.** For example, we work closely with manufacturers of on- and off-road heavy vehicles, and we have supplied DECA, a leading and respected trainer in heavy vehicle safety, with a Boral-sponsored concrete agitator for their roll-over awareness safety training.
- **Working with social enterprises**, which are businesses that aim to improve communities, tackle social problems, provide people with access to employment or help the environment. Through our pilot program in Victoria we have identified opportunities where Boral, and potentially our suppliers, can work with social enterprises, including this year's initiative at Deer Park, Victoria, where we worked with inmates from the Dame Phyllis Frost Centre to plant saplings they had grown for screening bunds around our facility.

OUR SUPPLIERS & CUSTOMERS

Boral's suppliers and their workers must satisfy selection and pre-qualification criteria which covers mandatory criteria around safety management and ethical supply chains, including prohibiting the use of child labour.

In addition, we have a new Standard Operating Procedure for supply risk management, which requires our procurement team to consider risks related to human and labour rights infringements.

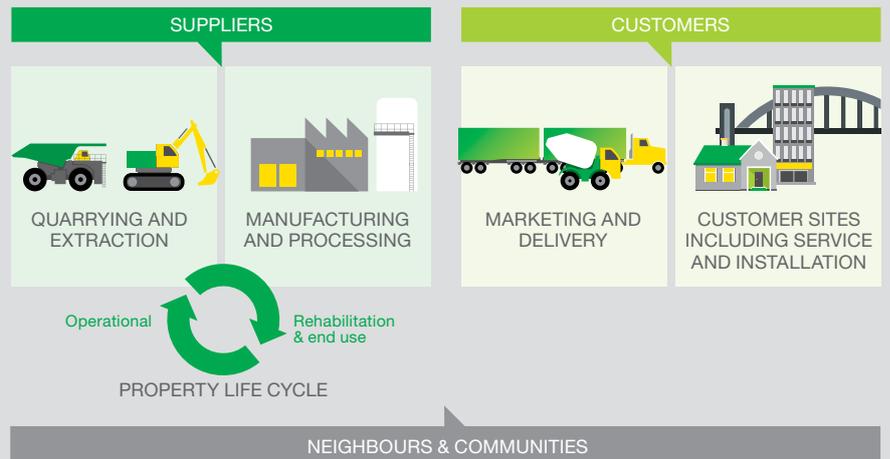
In Australia, our process is supported by a third party service to register and monitor compliance of suppliers to our pre-qualification requirements.

We expect our suppliers and contractors to work with us to meet our safety and other sustainability objectives, and we help them to meet their sustainability goals.

We also actively work with our customers to support their objectives, including maintaining high safety and environmental standards and delivering sustainable product solutions.

- **Helping to deliver more affordable housing solutions** by developing products that are lower cost and faster to install, such as light building products in the USA and lighter-weight plasterboard in Australia and Asia. We are also learning from our recently acquired Windows business in the USA which is a profitable business focused on lower-cost solutions.
- **Developing an integrated global supply chain, with local procurement, across USG Boral.** For sourcing materials like paper, gypsum and steel, this has delivered improved commercial outcomes while reducing supply risks, and sharing knowledge and information in areas such as energy, logistics, transportation and sustainability.
- **As a Corporate Member of Supply Nation in Australia, procuring goods and services from Aboriginal and Torres Strait Islander businesses.** This helps support Boral's spend on new contracts under governments' Indigenous Procurement Policies. We are also establishing Indigenous Procurement Criteria to better utilise and service Indigenous communities and Boral's businesses through our everyday procurement spending.

Our value chain



DEVELOPING INNOVATIVE, SUSTAINABLE BUILDING MATERIALS

Boral operates an international Innovation Factory, investing approximately \$13 million a year in research and development (R&D) facilities in the USA, Australia and Thailand. These innovation excellence centres are helping us set new standards and respond to customer needs and a changing world.

Focused on research and technology in cement, concrete and fly ash, Boral's Australian Innovation Factory in Maldon, NSW, has developed and patented lower carbon, high performance ENVISIA® concrete, which reduces carbon emissions associated with production using proprietary technology. Read about projects using ENVISIA® on page 13.

In San Antonio, Texas, where Boral's state-of-the-art Discovery Center opened in February 2016, scientists, engineers and technicians are driving Boral's North American R&D activities and disruptive innovations in building materials. The team is largely focused on fly ash-based polymer composite products that aim to deliver superior performance compared to conventional products. For recent developments see page 22.

In Thailand, at USG Boral's new R&D Centre in Saraburi the team is developing improved performance gypsum-based products and systems for interior and exterior building, including materials that have superior fire protection, energy efficiency and acoustics. For more detail see page 16.

PRODUCT STEWARDSHIP

Boral's Product Stewardship Standard is used to manage health, safety, environmental and quality (HSEQ) risks associated with new product development and modification to existing products. Minimum mandatory requirements must be implemented, including: a documented assessment of HSEQ risks before new or modified products are released to market; implementation of appropriate systems to support adherence to Boral's product specifications and maintenance of HSE legislative requirements; and proper training of Boral's people in handling, storage and use of our products. The Standard covers Safety Data Sheets, product labeling and Safe Work Method Statements.

SUSTAINABLE SOURCING OF TIMBER

Forestry Corporation of NSW, the manager of commercial native and plantation forests in NSW and supplier to Boral Timber, is certified to meet the Australian Forestry Standard (AFS); an independently audited forest management standard that provides assurance it is managing NSW forests in a sustainable manner. Boral Timber's hardwood products are also certified to AFS's Chain of Custody standard, further assuring customers that our products are sourced from certified, legal and sustainable resources by tracking products back to their source of supply.

Boral voluntarily responded to the 2017 CDP Forests Report exploring companies' deforestation management risks and company engagement across supply chains. Our response covered Boral Timber and paper used in manufacturing in USG Boral.