



ONE FIFTY Collins, Melbourne.

Image credit: GPT Group.

Liberty: Delivering on its Sustainability Promise

Liberty is redefining steel as a sustainable building material and is helping companies everywhere improve their projects' sustainability credentials. Not only do Liberty's range of steel products comply with stringent Australian Standards, the company is leading the innovation charge through early project engagement and implementing best practice sustainable design using steel. Liberty's Environmental Product Declarations are proof of its commitment to the environment by maximising the efficiency of its products through the steel life-cycle.

According to Sally Eagleton (General Manager, Marketing, Liberty), "Australia is embarking on a significant program of nation building. This infrastructure is essential to unlocking our increasingly congested cities and releasing the economic and social potential that lies within."

"The delivery of this much-needed infrastructure using sustainable means is essential, which is why Liberty is on a mission to invigorate metals manufacturing and engineering by using sustainable solutions, local resources and big thinking."

"Steel—a core part of the Liberty business—is the most recycled building material in the world by weight, and it is infinitely recyclable. This is why it is critically important to choose steel as a building material in Australian infrastructure projects. Liberty's focus, underpinned by innovation and science, is around 'Reducing, Reusing and Recycling' as much as possible."

"Critical to this is early collaboration on any project to maximise construction efficiency."

"Early collaboration can result in alternate design opportunities, inclusion of alternate sections or products that can reduce waste or overall steel weight. In reducing overall steel weight through using lighter, stronger products, there are many other benefits including reduced truck movements and easier manual handling," said Eagleton.

"Services like off-site pre-fabrication offered by Liberty Reinforcing also reduce material waste, improve on-site safety and labour costs and dependency on weather conditions."

"Key to the circular economy of steel is recycling, which conserves raw materials and reduces landfill. The beauty of steel is that it can be recycled over and over again to create new steel products in a closed material loop."

"Liberty manufactures approximately 1.5Mt of steel products using recycled material per annum, most of which is for Australia's construction industry."

"There is a great opportunity ahead for us in this industry to achieve a circular economy. Doing so requires leadership and collaboration between stakeholders, and a shared commitment to change. Collaboration across industry partners is key to driving greater synergies and greater ideas throughout the sustainability space," said Eagleton.

Liberty's GREENSTEEL Strategy

Liberty takes a proactive approach to sustainability by striving for continuous improvements in sustainability. Liberty views sustainability as encompassing environmental, financial and social considerations.

In Australia and around the world, GFG Alliance, owner of Liberty, supports local communities by investing in local industry. GFG Alliance's vision is a non-cyclical industrial future as the foundation for a sustainable planet, robust economies, and thriving communities. GFG exists to inspire and drive a strong economy and a sustainable future, and our flame is the fire that burns strong and bright on the inside of our people and business.

Liberty's efforts are informed by its GREENSTEEL strategy, which focuses on increasing the use of renewable energy, promoting

greater use of recycled materials and operating facilities close to key markets. Liberty is on a mission to invigorate metals manufacturing and engineering around the world by using sustainable solutions, new technology, local resources and big thinking.

The results of that strategy can already be seen with Liberty Steel increasing the proportion of energy from renewable sources it uses in its manufacturing mix, and by investing significantly in renewable energy assets through its sister company SIMEC ZEN Energy.

In May of this year, SIMEC ZEN Energy signed a 15 year power purchase agreement to take most of the output from French renewable energy company NEOEN's Numurkah Solar Farm in northwest Victoria. The landmark deal will supply sufficient renewable energy to operate the Liberty Laverton steelworks in Victoria.

The Sustainability Credentials of Liberty's Products

With the release of Liberty's Environmental Product Declarations (EPDs), construction projects throughout Australia can enhance their sustainability rating tool points.

Liberty's EPDs are independently verified and registered documents that outline the environmental impact of a product throughout its lifecycle, providing transparency for better material selection. Their EPDs are recognised by both the Infrastructure Sustainability Council of Australia (ISCA) and the Green Building Council Australia (GBCA).

Recognising their customers' need and the increasing demand for standardisation and greater transparency around environmental performance, Liberty has published the sustainability credentials of their supply chain and products for five key lines:

- Hot Rolled Structural and Rail
- Reinforcing Rod, Bar and Wire
- Reinforcing Bar and Mesh (Liberty Reinforcing)
- Reinforcing Bar and Mesh (ARC)
- Hot Rolled Structural products (Liberty Metalcentre)

The ISCA's Infrastructure Sustainability (IS) Rating Scheme

ISCA is the peak body for advancing sustainability in national infrastructure projects. The Council developed, and now administers, the Infrastructure Sustainability (IS) rating scheme, which evaluates sustainability across infrastructure design, construction and operation. ISCA also looks at the environmental, social, economic and governance aspects of infrastructure projects and assets.

There are six points available in the material category of the IS rating scheme. Up to three of these points are awarded for reducing the lifecycle environmental impact of materials used, and a further three points are available to encourage the procurement of material with environmental product labels, such as an EPD.

ISCA recognises the value of Liberty's third party certified EPDs, which are also compliant with EN 15804.

The use of Liberty structural steel, or reinforcing products, with EPDs, on an infrastructure project, will entitle the project to be rewarded with at least one point in this category. The IS rating scheme awards up to three points if there are sufficient materials with recognised EPDs, such as those associated with the Liberty products.

Ainsley Simpson (CEO, ISCA) confirms that Liberty's Environmental Product Declarations make it easier for construction projects to gain additional points when using national building rating tools.

"At ISCA, our aim is to drive more sustainable outcomes through infrastructure. This means enhancing the productivity of our industry and delivering better outcomes for communities and the natural

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environment. These kinds of successes are only made possible through collaboration, innovation and commitment across the supply chain. Liberty actively finds ways to play their part as integral partners in infrastructure, through the provision of sustainable steel products – this is enabling the delivery of better outcomes for Australian communities," said Simpson.

The GBCA Green Star Tool

The GBCA drives the adoption of sustainable practices in the Australian property industry. The GBCA's four Green Star Rating tools include the 'Design & As Built' tool, which covers a building's design and construction. This tool assesses 'building materials', one of nine categories contributing to points.

The material category in the Green Star tool aims to address consumption of resources by lowering the impact of the materials used and reducing waste. The tool consists of four material sub categories.

Liberty's products and services can facilitate the rewarding of points through:

- Life cycle impacts
- Responsible building materials
- Sustainable products
- Construction and demolition waste

According to Romilly Madew (CEO, GBCA), "Environmental Product Declarations are important as we strive to create sustainable practices for people. By providing the market with EPDs, Liberty is leading the way in the building materials sector and providing great value to sustainability professionals through accurate and reliable data."

The Power of Steel in Sustainability

The use of sustainable materials in modern Australian building construction is no longer a negotiable. Structurally efficient buildings that maximise resources and make the most of usable space now have an essential role to play in creating green cities that citizens can use now and into the future.

Steel lends itself to clever and innovative design applications by virtue of its high strength-to-weight ratio, meaning lighter foundations and structures can be delivered. The inherent versatility of steel and steel connections means steel-framed buildings can be modified and extended to suit the demands of users. Steel also offers efficiencies long after a building has been completed, as it delivers exceptional advantages in terms of building maintenance and operation.

Proving that steel is the sustainable building material of choice for modern builders, each of the following Australian projects has been lauded for its use of sustainable materials and best-practice construction methods. Each has received at least a 5 Star Green Star Design or 'As Built' rating from the Green Building Council Australia (GBCA) and all have utilised structural steel as a credit towards that recognition.

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ONE FIFTY Collins, Melbourne

ONE FIFTY Collins blends elements of old and new Melbourne in a building with excellent sustainability credentials, and provides a flexible and inspiring working environment for its tenants. The building boasts a 6 Star Green Star Design rating and targeted 5 Star NABERS rating.

Located between Scots' Church and The Assembly Hall on Melbourne's most prestigious street, the 14 storey building is a composite structure with reinforced concrete framing from basement level three to ground level and a steel-framed structure from ground level to roof level. Approximately 1,300 tonnes of structural steel was used in the 20,000m² building, which preserves the heritage-listed façade of Melbourne's first multi-deck car park built in 1938. Westpac Banking Corporation is the building's anchor tenant and occupies levels five to 12.

Awarded Best Sustainable Building at the 2016 Victorian Master Builder Awards, ONE FIFTY Collins utilises underfloor air conditioning with complete tenant control. It also features a gas-fired cogeneration plant that generates its own power on-site using natural gas and water storage and re-use systems to maximise water savings. The team behind this project included Grocon, PeddleThorp Architects and GFC Industries.

Kathmandu Distribution, Melbourne

New Zealand travel goods supplier Kathmandu utilised a sustainability-focused design framework for its retail tenancies in recent years, so it makes sense that its national distribution centre should follow suit.

One of the first few 5 Star Green Star industrial buildings in Victoria, the new 25,000m² centre features high-efficiency picking and packing technology that allows Kathmandu to sort and send individual items at high volume directly to its 115 stores nationwide, as well as to domestic and international online customers.

But it's the building itself that impresses on every level. Approximately 95% of steel in the building structure was produced using energy-reducing processes, with fabricator Page Steel supplying a proportion of high-grade (400) welded sections to the project. In addition, 90% (by mass) of demolition or construction waste was reused or recycled.

It was also built to withstand extreme weather conditions, with floor levels raised to avoid severe flooding events and high-strength roofing installed that can withstand high winds. The large-span shed has large box guttering and wide piping to drain high volumes of rainwater, which can then be harvested for use in toilets and irrigation. Plus, the building features a 100kw solar panel array and intelligent LED lighting systems that switch on and off as needed.

According to asset manager Dexus, Kathmandu's new distribution centre is three times the size of the building previously on the site, but has an equivalent power bill.



Kathmandu Distribution Centre, Melbourne.

5 Martin Place, Sydney

When it was first constructed a century ago, the iconic Commonwealth Bank 'Money Box' building was among the first in the world to use an advanced structural steel frame. Faced with the need to preserve the building's heritage, architects Johnson Pilton Walker in association with Tanner Kibble Denton architects employed a number of clever design solutions, including a cantilever over the original building that supports the new tower above.



5 Martin Place, Sydney.

Engineers, Aurecon, devised a V-shaped brace on all four sides of the new 19 storey tower, with the result that the structure stands alone, without loads on the heritage building. The design reduced the number of steel members to be erected and allowed for a number of member types to be used. The major compression elements were changed to concrete-filled steel tubes, which meant concrete was used to resist approximately 80 per cent of the load, while retaining the erection advantages of steel.

The result is a masterpiece of revitalisation that has picked up a swag of awards, including the Australian Steel Institute Award for Steel Excellence in Buildings (Large Projects) and, most recently, the Rider Levett Bucknall Australian Development of the Year for 2017. Not only have original materials and elements such as the central atrium been beautifully recreated or re-imagined, the building succeeds in showing that a traditional building can be modernised with 21st century functionality and a 5 Star NABERS rating.