

# **Green Concrete Solutions**

for your next sustainable project





## 1. Sustainable land management

### 1.1 Quarry rehabilitation

We are continuing to restore local ecosystems and reduce our environmental impact through ongoing rehabilitation projects.

This represents a significant part of our quarrying business, as most of our quarry land is actually undisturbed.

Restored areas are covered with soil and overburden found on-site using techniques that reproduce the topography of the terrain and tailing ponds are capped with layers of binding materials.

Horticulturalists often work with our quarry managers, providing expert advice for the restoration of terminal faces and worked-out areas.

### 1.2 Water management

We measure, report and set sustainable water reduction targets for our business operations through a stringent Environmental Management System.

Our Bass Point quarry's Water Management Plan won the CCAA Extractive Industries Environmental Award, with a dedicated lab technician on-site to monitor water quality at each discharge point.

In all of our quarries, water discharge flows are carefully monitored to ensure there is no adverse impact on local waterways or ecosystems.

### 1.3 Biodiversity

Through our rehabilitation work, many restored quarries are now home to local wildlife including wallabies, wallaroos, echidnas and native bird species.

Our Clarence quarry won the CCAA's Quarry Environmental Performance Award after increasing the number of endangered Blue Mountains water skink living in its swampland by carefully monitoring groundwater quality with piezometers.

We are continuing to implement a strong biodiversity action plan under the guidelines of the HeidelbergCement Group-wide Biodiversity Policy.



## 2. Sustainable manufacturing

### 2.1 Energy saving

Hanson has implemented a national and comprehensive Energy Efficiency Opportunities Action Plan.

It includes ambitious energy-reduction targets and requires all new plants and equipment to meet high energy-efficiency standards.

Electricity consumption is carefully monitored with timers and smart meters, while we have also replaced some diesel pumps with header tanks to move water using electricity and gravity. At our Wolffdene quarry in Queensland, it's saving over 800,000 mega-joules of energy each year.

A network of Energy Efficiency Coordinators and site-based Energy Efficiency Teams are overseeing the Action Plan's ongoing implementation and tracking progress towards goals.

### 2.2 Water recycling

We have won several awards for our 'capture-and-recycle' water plan, including the CCAA Extractive Industries Award and the CCAA Best Practice for Water Management Onsite Award.

Water storage reservoirs at several of our quarries allows water to be reused for dust washing and suppression.

Rainwater is harvested from water tanks at many of our concrete plants and then redistributed for use in other parts of the plant.

### 2.3 Waste management

Proper waste handling and disposal methods are deployed at all of our operations.

Our waste-minimisation strategy focuses on reusing waste in the production of recycled construction materials.

Our Wallgrove quarry in New South Wales supplies 100% recycled quarry products with a waste management system that takes agitator and pit washout waste from concrete plants and then processes it through two crushers.

Similarly, our Smithfield concrete plant produces fifty-tonnes of recycled concrete each month with a recycling system that processes wet concrete returns and runs entirely on recycled water.



## 3. Sustainable transport

### 3.1 Transport redesign

Hanson is continually seeking sustainable solutions for transporting products across Australia.

Quarry redesigns have ensured drivers are travelling minimum distances between loading stages, improving our fuel efficiency.

This has also included installing top-up bins adjacent to the weighbridge at the Central Coast sand quarry in New South Wales and mounting conveyors on-site to reduce haulage.

### 3.2 Fuel reduction

Minimising fuel consumption is a major component of our Energy Efficiency Opportunities Action Plan.

A training video was rolled out to all 1700 Hanson truck drivers, educating them on how they can minimise their fuel consumption by assuming 'environmentally-conscious' driving techniques.

We have also decreased our fuel consumption by reducing 'dead-running,' or the number of trucks being transferred from one concrete plant to another.

### 3.3 Fleet improvement

Our company truck fleet is progressively being updated with new, more efficient electronic engines and lighter tare weights.

At the Clarence quarry, a thirty-tonne excavator using thirty litres of fuel per hour has been replaced with a forty-seven tonne excavator that uses twenty-six litres of fuel per hour.

All tipper trucks are fitted with tarp covers to minimise dust pollution.

Our fleet is certified through the National Heavy Vehicle Accreditation Scheme (NHVAS), which is recognised as industry best practice and pre-start checks are undertaken on a daily basis.



## 4. Sustainable community

### 4.1 Local relations

Each of our plants and quarries maintain ongoing and two-way relationships with local stakeholders.

Quarry rehabilitation plans are undertaken to ensure the after-use solution is driven by local needs and contributes to sustainable economic development.

In the past, Hanson has also supplied construction materials to help communities rebuild after natural disasters.

This included 160 tonnes of aggregate materials from the Wollert quarry for the Kinglake West Fire Brigade after severe bushfires in Victoria.

### 4.2 Education

We offer educational tours around our concrete plants and quarries for community groups, primary schools, high schools and universities.

In New South Wales, students from the University of Western Sydney and the University of New South Wales have visited concrete and quarry operations throughout the year in Prestons, Blackwattle Bay and Kulnura.

Since 1987, Hanson has also sponsored the University of Technology, Sydney's Engineering Award, received by the student with the highest aggregate mark in the subject, Construction Materials.

### 4.3 Investment

We assist a broad range of charities and community groups and provide ongoing support to sporting teams, surf life saving groups and schools.

In the past, this included over twelve years of support for Coastcare and its affiliate groups.

We have also assisted the child-abuse charity, Bravehearts, donating over 450m<sup>3</sup> to build their new office in Arundel, Queensland.



## Got a green project on your hands?

Build it using recycled concrete from Hanson.

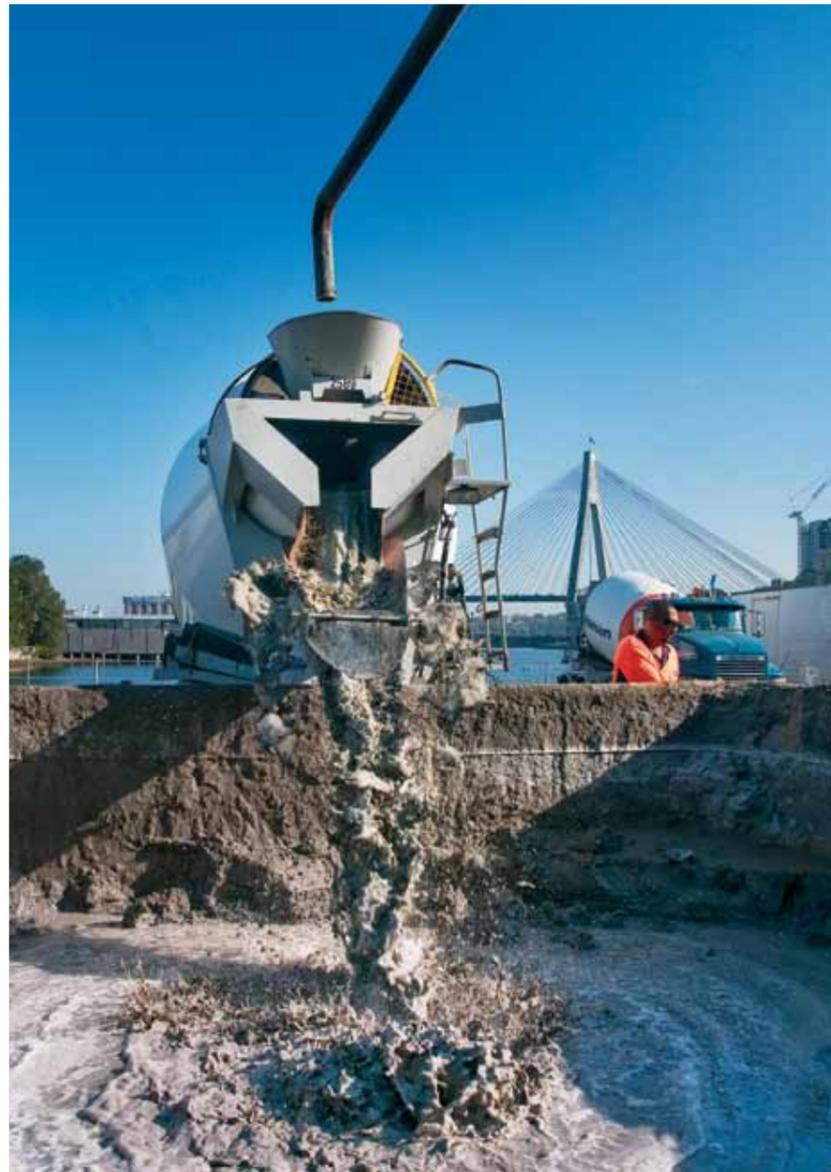
Our products can help satisfy many of Australia's leading environmental rating system requirements, including the National Australian Built Environment Rating System (NABERS) and the Green Building Council of Australia's (GBCA) Green Star program.

In fact, by using our materials, we can add between one and three Green Points to your project.

By staying at the forefront of recycling and waste management technologies, we have already supplied recycled concrete for some of Australia's largest sustainable projects.

It also means that when you work with Hanson, you get the peace of mind from knowing you'll be supported by a knowledgeable team with experience across a broad range of commercial, residential and multi-use developments.





## Our green concrete solutions

We offer customers a range of specially-formulated concrete mixes for sustainable projects.

They contain a reduced, specified percentage of cement which is then substituted with waste materials including slag.

**Quality is guaranteed:** All are certified to AS9001 quality standards and offer excellent durability, strength and performance features.

**Knowledgeable and experienced staff:** As part of our customer service guarantee, our staff can also offer advice on how to best use our products to maximise your projects success. This includes our team of Green Star Accredited Professionals.



### The Circuit, 1 Airport Drive, Brisbane

**Developer:** Ray White Invest Gateway Property Trust / Dimensions Property Group and Brisbane Airport Corporation  
**Architect:** Husband+Leith Architects  
**Construction:** Ray White Constructions

\$21 million development offering 4654m<sup>2</sup> of A-grade office accommodation as part of Brisbane's ambitious 1 Airport Drive project.

Four-Green Star – Office Design v2 rating.

Hanson contributed 2 Green Points by supplying 3000m<sup>3</sup> concrete containing 20% cement-replacing waste materials. This complemented other Ecologically Sustainable Development features including extensive passive and thermal solar systems.



### ANZ Tower (Central Tower 1), Adelaide

**Developer:** Caversham Property  
**Architect:** Woods Bagot  
**Construction:** Boulderstone Hornibrook

Accredited with a Five-Star NABERS Energy rating and was the first building in South Australia to receive a Five-Green Star Office as Built v2 rating, recognising 'Australian Excellence' in sustainable design and construction.

Also the largest Green Star certified project in Australia, with 21 storeys and a net lettable area of approximately 31,000m<sup>2</sup>.

Hanson provided 5000m<sup>3</sup> concrete containing 20% waste materials as a cement-replacement. This included 1,500m<sup>3</sup> in a single pour for the basement facility.



### 154 Melbourne Street, Brisbane

**Developer:** Pradella/ Michael Barakat and Ray George Group  
**Architect:** ML Design  
**Construction:** Pradstruct Pty Ltd

South Brisbane's first-ever Five-Green Star – Office Design v2 project.

Also received a Five-Green Star - Office As Built v2 rating and is targeting a 4.5-Star NABERS Energy rating.

Hanson contributed 1 Green Point to the project, supplying 7,500m<sup>3</sup> of concrete containing 20% waste materials as a cement-substitute.

## Our Portfolio Office



### The Village, Sydney

**Developer:** Stockland Corporation  
**Architect:** Allen Jack+Cottier  
**Construction:** Abigroup Limited

\$345 million project featuring 246 apartments, 60 speciality shops, native gardens, restaurants and cafes.

Winner of the HIA GreenSmart Development Design Concept Award.

Aiming for a Five-Green Star rating.

For 2 Green Points, Hanson supplied 45,000m<sup>3</sup> concrete containing 40% cement-substituting waste materials.

Environmental impacts were further reduced through the implementation of an extensive traffic control plan that minimised traffic delays.



### No.2 Railway Goods Shed, Melbourne

**Developer:** Equiset  
**Architect:** Elenberg Fraser Architects  
**Construction:** Delta Constructions

\$65 million refurbishment featuring mixed-use commercial, state-government, retail and hospitality tenancies.

Five-Green Star - Office As Built v2 rating.

180m<sup>3</sup> concrete containing 40% cement-substituting waste materials were supplied by Hanson as part of a sustainable design plan that is sensitive to the building's 1889-heritage.

"The refurbishment of the Goods Shed North will raise the bar in environmental design by creating an economically feasible state-of-the-art accommodation in a historic building." Planning Minister, Mr Justin Madden.



### 130 Stirling Street, Perth

**Developer:** Charter Hall  
**Architect:** Woods Bagot  
**Construction:** Broad Construction

Four-level property comprising 11,900m<sup>2</sup> of A-grade office space, with additional retail and commercial space.

Awarded a Four-Green Star - Office Design v2 rating and a 4.5-Star NABERS Energy rating.

Uses the latest in ecologically sustainable design, including active chilled beams for cooling, low water-use fixtures and VOC finishes and a high-efficiency lighting system that features a central atrium to maximise natural light.

Hanson contributed 1 Green Point by supplying 7000m<sup>3</sup> of concrete containing 30% cement-substituting waste materials.

## Our Portfolio Residential & Multiuse



Image copyright acknowledgements:  
 The Circuit, 1 Airport Drive, Brisbane: Husband+Leith Architects  
 ANZ Tower (Central Tower 1), Adelaide: Aspen Developments  
 154 Melbourne Street, Brisbane: ML Design  
 The Village, Sydney: Stockland Corporation  
 No.2 Railway Goods Shed, Melbourne: Elenberg Fraser Architects  
 130 Stirling Street, Perth: Charter Hall



## Creating sustainable spaces

To meet growing expectations for sustainable construction, buildings are increasingly being evaluated by a range of environmental rating systems:

**The Green Star rating system** – evaluates the design and construction of buildings under categories including materials, energy, water and transport to determine its overall Green Star rating.

**NABERS** – aims to reduce the eco-footprint of existing built structures by assessing their environmental output during operation.

International rating systems also include the BRE Environmental Assessment Method (BREEAM), the Land, Environment, Economics and Development (LEED) scheme and the Comprehensive Assessment System for Building Environmental Efficiency (CASBEE) program.

The benefits of green buildings are clear; substantial savings in operations, competitive differentiation in a crowded marketplace and the ability to contribute to sustainable communities.

**So, for your next sustainable project, let Hanson help make it happen with its high-quality range of recycled concrete materials.**



For more information on our recycled materials, please contact your local Hanson office to speak to one of our accredited professionals, or visit our website:

[www.hanson.com.au](http://www.hanson.com.au)

