

Supply chain

Integrated delivery solutions around road, rail, barge and ship, and a national network of production facilities.

Aggregate

Recycled blends available.

Asphalt



ERA – low energy asphalt, high wear – low depth top courses.

Concrete

EcoPlus Regen EcoPlus – low embodied carbon due to high Regen content. Mixes also available with recycled aggregate.

Cement

A range of reduced carbon cements through the use of alternative fuels and raw materials.



Regen – cement alternative, low embodied carbon, 100 per cent by-product source.



Cover image: The largest man-made reed bed in Europe is being created at Needingworth quarry in Cambridgeshire.

Cocoon 100 Offset FSC 100% recycled

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Hanson UK 2016 sustainability summary report

OUR BUSINESS: Hanson UK is one of the largest suppliers of heavy building materials to the construction industry.

We produce aggregates (crushed rock, sand and gravel), ready-mixed concrete, asphalt, cement and cement-related materials.

We are managed in five business lines – aggregates, asphalt and contracting, concrete, cement and supply chain. We also own the asphalt and quarrying business Midland Quarry Products and the walling contractor Irvine Whitlock. We are part of the HeidelbergCement Group, which has leading global positions in aggregates, cement, concrete and heavy building products.

Turnover for the UK business in 2015 was \pounds 1,083 million. Capital investment for the year totalled \pounds 28 million. Our principal markets are in England and Wales and the central belt of Scotland.

During the year we sold our brick, block and precast concrete operations and our Scunthorpe ground granulated blast furnace slag (Regen) plant, and we moved out of the industrial sands business after selling our quarry at Wrotham in Kent and closing the operation at Reigate in Surrey.

We also opened a number of mothballed production plants to cope with rising demand and in January 2016 we had 308 manufacturing sites and 3,481 employees.

This summary report covers the calendar year 2015. It covers our five business lines but excludes data from the building products division, which was sold in March 2015.

2015 highlights

Energy efficiency standard ISO 50001 achieved across all business lines

Energy use and CO₂ emissions per tonne of product fall

Waste to landfill down by 18 per cent and by 63 per cent since 2010

Use of recycled planings in asphalt increased by 64 per cent

All operational quarries now have biodiversity action plans

We recycled one million tonnes of waste, 100 times more than we sent to landfill

Areas for improvement

- Lost time injuries and our journey to zero harm.
- Energy use and CO₂ emissions reduction.
- Increased use of alternative materials in concrete.

Awards

- Mineral Products Association restoration and biodiversity awards 2015 – winner of the Cooper Heyman Cup for best restoration at Middleton Hall quarry in Staffordshire; winner of the landscape scale biodiversity award for work done at Batts Combe quarry in Somerset.
- Highways England Supplier Recognition Scheme – contracting division highly commended for collaboration with Kier Highways in Area Three.
- The Concrete Society highly commended for technical quality of concrete supplied to the redevelopment of Yorkshire Water's Bridlington Pump Station.
- British Marine Aggregates Association ship with the best attitude award for marine archaeology for the crews of the Arco Dart.



Foreword by Daniel Cooper, chief executive officer, Hanson UK

2015 was another year of progress for Hanson UK.

A growing economy and rising construction output lifted sales volumes, and the prospects for 2016 and beyond look promising.

It gives us a great platform from which to build a strategy for the next five years, focused on growing our business through investment in our plant and our people and striving for toplevel customer service – all critical elements in operating a sustainable business.

One of the first things I did when I moved to the UK from Hanson Australia in January 2016 was to sit down with the executive team to discuss and define a long-term vision for the company which summarised where we want to go and how we are going to get there. The vision is simple: we want to be the clear and sustainable market leader, focused on exceeding customer expectations through an engaged team that is responsible, reliable and safe.

That word 'sustainable' is important. It means we have to focus on the future if we are going to deliver some of the tough targets we have set ourselves. We have to be innovative in terms of product development and distribution efficiency. We have to react quickly to customer demands and deliver what they want, when they want it. And we need to embed an unwavering commitment to health, safety and the environment within the workforce.



Getting that right starts at the top and the executive team is fully committed to making the changes required to turn what is already a very good business into a great one. New systems are being introduced to make more efficient use of our trucks and we have invested in improved manufacturing facilities. We are making greater use of recycled, secondary and waste materials and providing sustainable product solutions for our customers.

There are some challenges ahead but we have a strong and dedicated team and a real determination to succeed, and with the economy and markets in our favour, I am confident we can continue to take the lead.

"The vision is simple: we want to be the clear and sustainable market leader, focused on exceeding customer expectations".

Sustainability in action



Staff stage safety stand down

The entire Hanson UK business came

for a co-ordinated health and safety

stand-down. The first hour comprised

sustainability department, which included

various tool box talks covering machinery

of a conference call hosted by the

auardina, working at height, lock off

and isolation and how to conduct a

'Take One' dynamic risk assessment.

workplace identifying and assessing

potential risks and completing a review

form. Letters were sent to our customers

and suppliers spelling out what we were

The second hour was spent in the

Head of sustainability Paul Lacey

said: "The stand-down sent out a

strong message to the business, our

contractors, drivers and customers

about our commitment to health

and safety and we plan to repeat

doing and why.

it every year".

to a stop for two hours on May 26 2015

Clinker cooler upgrade

A new integrated drive system at Ketton cement works in Rutland is saving around \$86,000 year in electricity costs, with a resultant reduction in CO₂ emissions of 771 tonnes.

The clinker cooler upgrade project, carried out by Siemens, used variable speed drive technology and Siemens' integrated drive systems to reduce both energy use and noise levels. Six G150 converters with enhanced energy-saving functions have been installed with insulated bearings fitted to the existing motors.

Electrical engineer Trevor Jibb is delighted with the upgrade: "The significant energy savings we've already made, coupled with the reduction in carbon footprint mean that Ketton continues to be a great example of best practice within the Group, and the industry. An additional benefit is a reduction in noise levels and vibration at the clinker cooler plant, improving conditions for the workforce.

Sustainability in action



• Open days pull in the crowds

Open days at Ketton cement works and Chipping Sodbury quarry pulled in the crowds and gave local people an insight into what goes on at the sites.

Almost 2,000 people attended the Ketton event which included steam train rides and plant tours. It was opened by Andrew Brown, High Sheriff of Rutland, who said: "The Ketton works has been a significant landmark on the Rutland landscape for more than 80 years. The site provides vital raw materials and makes a substantial contribution to the local economy. If you were curious about what goes on here, now's your chance to find out and ask lots of questions".

The Chipping Sodbury open day was run as part of the town's 2015 festival. Visitors were taken deep into the quarry in shifts in a 50-seater coach to watch machines at work and were also shown the development within the disused Barnhill quarry where a housing estate is being built.



> New team leads RAP drive

A specially-formed recycled asphalt planings (RAP) team is leading the drive to increase the amount of road waste used in new asphalt mixes.

The seven-strong team is led by asphalt operations director Ian Bredbury. "We have invested £2.5 million in our 36 asphalt plants to enable them to use increasing amounts of RAP which brings tangible sustainable and business benefits," said Ian.

The investment includes RAP hoppers, plant system changes and heat exchangers to handle the higher temperatures RAP mixes need. The team is also looking at new technology which will enable RAP to be added to new mixes at lower temperatures, conserving energy. The overall aim is to continue to increase the total percentage of RAP in asphalt mixes.



Restored quarry wins top industry award

Hanson won the coveted Cooper Heyman Cup for outstanding achievement in restoration at the Mineral Products Association's Quarries and Nature 2015 event at the Royal Society in London. The former Middleton Hall sand and gravel quarry on the Staffordshire/Warwickshire border beat off strong competition to win the industry's flagship restoration award. The 470-hectare site has been restored to a mix of after-use from sport and leisure to reed beds, woodland, pasture and fishing. The majority of the restored area is managed as a nature reserve by the RSPB while a smaller section has been developed into a training ground for Aston Villa football club.

In the biodiversity category, the landscape scale award was won by a joint entry from Hanson and Aggregate Industries for work done at the neighbouring Batts Combe and Callow Rock quarries in the Mendip Hills which has created a prime example of nature connectivity through a combination of restoration and land management.



Waste water is captured and reused

The Glasgow central ready-mixed concrete plant at Jessie Street, Polmadie, features a highly efficient water harvesting system which means that mains water is rarely – if ever – used in the production process. All the rain water which falls on the site buildings is collected and used. In addition, a water reclaimer allows returned materials and wash-out from trucks to be separated.

The solids – mainly sand and aggregate – go back into stock for re-use and the water is filtered and pumped into the supply tanks. Dirty water washed from the yard is also recycled after collection in a settlement tank.

At Bradford cement depot, mains water usage has dropped by 73 per cent after sustainability rep Chris Mason discovered and tracked down a long-standing leak and changed working practices to avoid the use of hose pipes for cleaning.



Enabling sustainable construction

OUR 2020 TARGETS: To become a recognised leader in engaging with customers, suppliers, NGOs and industry bodies and developing collaborative working projects to promote sustainable products and services.

Customer and industry engagement

We continued our programme of stakeholder engagement workshops involving customers, trade associations and NGOs and gained further valuable feedback.

Jane Thornback from the Construction Products Association said: "The content and style of workshops was well balanced and encouraged input from the wealth of knowledge and experience within the room".

We also supported an initiative by The Concrete Centre to promote the whole-life CO_2 performance of concrete buildings and to increase awareness of the benefits of concrete and masonry.

Sustainable construction

We are developing new products that can deliver a low carbon impact through reduced energy, greater use of recycled material, or reduced raw materials to produce the same performance.



Low energy asphalt (LEA) uses less energy and a higher percentage of recycled material than conventional asphalt but can be laid in the same way, and is ready for use sooner.



Regen (ground granulated blast furnace slag) reduces embodied CO₂ in concrete and provides a number of other benefits and we are developing concrete mixes with higher Regen content as well as communicating the benefits of these products to customers.

We have also been active in the development of the publicly available specification (PAS) 8820, which looks specifically at low carbon concrete, and the greater use of cement replacement in concrete mixes.



People and communities

OUR 2020 TARGETS: Zero harm; five community events a year at every quarry; meet the targets set in the Mineral Products Association's 'Safer by Competence' programme by 2017; reduce valid neighbour complaints year on year.

Health and safety

Our safety performance in 2015 was mixed, making it imperative that we maintain our objective of ensuring that health and safety remains our number one priority. The majority of our sites have exemplary safety records, but the total number of lost time injuries (LTIs) rose from 19 to 21, half being driver-related, and in August there was a fatality following an engine room fire aboard our marine dredger Arco Avon.

The employee LTI frequency rate of injuries per one million hours worked rose from 1.47 to 1.74. The employee LTI severity rate, derived from the total number of days lost, rose from 41.0 to 77.3 as a result of two specific incidents.

There was one prosecution during the year. Hanson Packed Products was fined £750,000 at Southwark Crown Court in December after pleading guilty to an offence under the Health and Safety at Work Act 1974 relating to a failure in the general duty to ensure the safety of employees. The prosecution related to the fatal accident involving employee William Ridge at the Dagenham aggregates bagging site in September 2013.

Employment and skills

The number of people employed at January 1, 2016 was 3,481. The age profile of our workforce has changed slightly over the year as younger people were recruited.

We continued to develop our talent pool and bring younger people into the business through our LEAD apprentice and craft apprentice programmes.

We continued with our talent management and succession planning programmes and introduced a leadership development programme for senior managers called Leading Edge. We also continued to invest in workplace training and competency focused on safety, health and environment.





People and communities

Public engagement

Before submitting planning applications for new developments we consult widely with both statutory bodies and local residents.

We held two public exhibitions during 2015 to present proposals for extensions to existing quarries. The exhibitions provide an opportunity for local residents to view and comment on the proposals prior to planning applications being submitted.

Local community

The percentage of sites with liaison activities rose and visitor numbers were also ahead of 2015, boosted by a very successful open day at our Ketton cement plant and the interest created by a rare pair of breeding bee-eaters at Low Gelt quarry in Cumbria.

We help charities and voluntary groups in communities close to our sites and offices through the Hanson in the Community scheme. Our employee charity matching scheme contributed over $\pounds40,000$ to 61 charities during 2015, including corporate donations of $\pounds7,377$ to Comic Relief and $\pounds8,000$ to Children in Need.

During the year we launched more community web pages for our bigger sites featuring news and information and we now have 17 sites with their own dedicated pages on our web site.

Environmental incidents and emissions

We use our Entropy software to record incidents, near hits and complaints and improve reporting. The number of complaints received increased from 175 to 191 with dust being the most common cause.

The particularly windy weather experienced in the summer and autumn was a factor. All complaints were acted on quickly and closed out to try and avoid recurrence.

Community relations								
	2010 (baseline)	2013	2014	2015				
Relevant sites	69	55	55	49				
Sites holding three liaison events	46 (67%)*	36 (65%)**	36 (65%)	34 (69%)				
Visitor numbers	8,843	26,224	25,752	29,856				

* One event in 2010 ** Two events in 2013





OUR 2020 TARGETS: Reduce carbon emissions by 10 per cent and energy use by five per cent per tonne of product based on 2010 baseline; 35 per cent use of biomass in cement by 2020; reduce transport emissions by five per cent per tonne based on 2010 baseline.

Energy efficiency

We became the first company in the construction materials sector to achieve the international energy efficiency standard ISO 50001 across all business lines achieving compliance with the government's Energy Savings Opportunity Scheme (ESOS) legislation by the required date.

There was a two per cent fall in energy use per tonne of product, although the 2020 target remains challenging. A move to wet batch concrete plants, which improves the quality of the material and reduces the cement content, has increased energy use, as has the increased use of recycled asphalt planings into asphalt mixes, which generally requires higher mixing temperatures.

We encourage employees to generate energy saving ideas for entry into our opportunities database or share best practice through the sustainability matters working groups.



We continue to invest in new facilities at our three cement works to enable greater use of alternative fuels derived from waste.

Use of waste as a fuel in our cement kilns remained static at 56 per cent while the use of biomass fell slightly due to difficulty in sourcing material of suitable quality.

CO₂ emissions from production

Emissions of CO₂ per tonne of product fell by 2.1 per cent in line with reduced energy use. The bulk of our CO₂ emissions arise from the manufacture of cement. By using best available techniques (BAT) and alternative fuels we were able to reduce fuel-derived emissions.

CO₂ emissions from transport

CO₂ emissions from transport on a per tonne basis fell slightly during the year as a result of better vehicle scheduling and fuel efficiency training for our drivers.



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Average recycled content in our asphalt increases to nearly

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Waste and raw materials

OUR 2020 TARGETS: Reduce non-process
waste to landfill by 85 per cent; increase use of secondary and recycled materials in products.

Waste minimisation

We reduced waste to landfill by a further 18 per cent during the year, again driven by a big fall in the asphalt business where we recycled a lot more filler dust into the product.

The majority of our sites are included within a single contract with Biffa a national waste management company which enables us to control the process more effectively and provides further data on the quantity and types of waste being produced.

During the year, we recycled almost one million tonnes of waste, over 100 times more than the amount sent to landfill.

Materials efficiency and recycling

The amount of recycled asphalt planings (RAP) used in new asphalt mixes has increased by 64 per cent since 2014. The average RAP content increased to nearly 10 per cent in 2015 and continues to rise. Mixing crushed road waste into asphalt makes sense for customers, the environment and the business. There was also an increase in by-products and waste used in cement production – typically pulverised fuel ash and gypsum – although the amount of recycled aggregate used in concrete fell slightly.

The cement replacement Regen (ground granulated blast furnace slag) reduces embodied CO_2 in concrete and provides a number of other benefits. Its use in ready-mixed concrete means we have one of the highest cement replacement rates in the UK market.



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Water and biodiversity

OUR 2020 TARGETS: Reduce mains water consumption by 25 per cent per tonne of product. All quarries to implement published biodiversity action plans.

Water

We use water as an essential raw material in many of our products, particularly concrete. It is also used to wash sand and gravel, to suppress dust, and to operate lorry wheel washes.

Our mains water bills are monitored by Waterscan, who run checks on actual consumption in relation to expected, allowing us to reduce consumption and identify leaks. Site managers also record monthly water consumption on our database, Entropy.

Wherever possible, we harvest and recycle water or pump ground water from boreholes, lakes or rivers for our manufacturing processes ahead of using mains water.

Overall water use per tonne of product fell by 20 per cent.

The majority of this was ground water in the aggregates business line, but there was also a slight fall in mains water use and we continue to raise awareness of the need to conserve mains water. Our target to reduce total water per tonne of concrete is proving challenging.

Biodiversity and site stewardship

We now have biodiversity and geodiversity action plans (BAPs and GAPs) in place for every auarry that has been active in the last three years and they are all published on our website.

In 2015 HeidelbergCement launched the third edition of its biennial biodiversity research competition The Quarry Life Award (quarrylifeaward.com). The competition focuses on biodiversity protection and management and raised very strong interest from students and researchers across the alobe.



Quality processes and systems

OUR 2020 TARGETS: Maintain and improve performance in all areas.



Systems

We continue to develop our integrated management system (IMS), which encompasses safety, health, environment and quality and provides a consistent set of corporate and operational procedures which are regularly reviewed and updated. Training has been given to more than 500 responsible managers and the system is in use at every operational site. We continue to review the IMS and have a dedicated audit team which further strengthens the link between systems and operations. We have maintained our five-star rating with Achilles, the BuildingConfidence accreditation.

The BES 6001 Responsible Sourcing of Materials (RSM) standard is in place at all our production sites, as is the ISO 9001 quality standard. We became the first company in the construction materials sector to achieve the international energy efficiency standard ISO 50001.

Product quality and performance

Product quality and customer service are critical to our business and we are devoting an increasing amount of resources to these areas to improve performance and to ensure products are made to the highest standards.

We have a national UKAS-accredited testing laboratory at Chipping Sodbury which delivers accurate and consistent analysis of concrete, aggregates and asphalt and is now providing a service for external customers.

We have introduced 'best agent' call identification in our customer service centres to direct calls to the most appropriate agent, and we have made improvements to our order and despatch systems to ensure customers receive the right products at the right time and are invoiced correctly.

We continue to invest in development of new products, either working with external partners or the HeidelbergCement Technology Centre in Germany.

Division	Business/ activity	Product/service	14001	50001 energy	9001 quality	18001 Health and safety	6001 Responsible sourcing
Hanson Cement	Bulk cement products	Grey, white, blended and Regen	1	1	1	~	<i>✓</i>
	Packed products	Cement, ready-to-use mortar, concrete, asphalt, aggregate and sand	~	~	~	~	1
Hanson Concrete	Ready-mixed concrete	Concrete, mortars, dry silo mortar, screed and EcoPlus	~	~	~	~	1
	Aggregates	Sand, gravel, crushed rock and recycled aggregate	1	1	1	1	<i>✓</i>
Hanson Aggregates	Marine aggregates	Sand and gravel	*	1	*	*	<i>✓</i>
	Natural stone products	Bath stone masonry and Portland stone	1	1	1	<i>✓</i>	~
Hanson Asphalt and Contracting	Asphalt	Hot rolled asphalt, stonemastic asphalt and asphalt macadams	~	~	~	~	<i>✓</i>
	Contracting	Highway maintenance, road surfacing and MoD works	~	~	1	~	N/A

Certificate available online

* = Conforms to ISM code/SMS



Energy and safety in the spotlight

by Paul Lacey, head of sustainability, Hanson UK

Considerable effort was channelled during the year into behavioural safety and energy and carbon reduction. These are the two areas where focus is needed if we are to hit our challenging 2020 targets.

On the energy side, gaining the global management standard ISO 50001 was a huge achievement and reflected the commitment of our site-based staff to energy reduction. We have created a carbon and energy steering group to oversee our strategy, chaired by an executive director and with representatives from all business lines and departments.

At a site level we continue to train our employees and encourage our sustainability representatives to champion the introduction and development of energy, water and waste reduction initiatives.

Turning to safety, 2015 was not a good year with a fatality aboard the marine dredger Arco Avon and an increased number of lost time injuries, over half of which involved drivers. However, 181 of our sites have been lost time injury-free for 10 years or more and 95 per cent had no incidents last year.

Communicating the lessons learned from accidents and continuing to embed behavioural safety are critical to improving performance.



Last May we stopped work for two hours for a co-ordinated health and safety stand-down, involving employees, drivers and contractors. We also organised another successful health and safety week which covered driver engagement and risk assessment.

Finally, and to support our aim to be a leading sustainable business, we have set up additional steering groups led by business line managing directors to create improvement plans in the specific areas defined in our strategy and covered in this report.

"Gaining the global management standard ISO 50001 was a huge achievement".

For a full version of this report, please go to hanson-sustainability.co.uk

Summary of KPI performance against 2020 targets

	KPI	2020 target	2015 position	Status
People and communities	Health and safety	Zero harm	One fatality; LTIs up from 19 (2014) to 21 (2015). Employee LTIs up, non-employee LTIs remained flat. LTIFR below industry average at 1.6	
	Stakeholder performance	Organise an annual stakeholder event for customers, suppliers, community leaders and NGOs	Events were held in April and September	
	Environmental incidents and emissions	10 per cent year on year reduction in complaints based on 2010 figures	Complaints rose in 2015 to 191 and are down by 33 per cent on 2010. Target number for 2015 is 169	
		Cement specific emissions (under environmental incidents and emissions):	NO_x down from 2014 and seven per cent down on 2010	
		Reduce NO $_x$ emissions by 20 per cent and dust by 10 per cent by 2020 based on 2010 data and maintain 2010 SO $_2$ level	Dust unchanged since 2014 and is the same as 2010 SO_2 is up on 2014 and 2010	
	Employment and skills	Meet the targets in the MPA 'Safer by Competence' programme	On target to meet the requirements by 2017	
	Local community	Hold at least five community events a year at every quarry	69 per cent of our sites held at least three community events during 2015, up by four per cent on 2014	
Carbon and energy	Energy efficiency	Reduce energy use by five per cent per tonne of product by 2020 based on 2010 baseline	Down by two per cent since 2014; remains 11 per cent up on 2010	
	Waste as fuel	Increase the use of biomass to 35 per cent by 2020	Down by one per cent in 2015 to 18 per cent; 2010 level was 23 per cent	
	CO ₂ emissions from production	10 per cent reduction in carbon emissions per tonne by 2020 based on 2010 baseline	Down by 2.1 per cent since 2014, but 15 per cent up on 2010	
	CO ₂ emissions from transport	Reduce transport CO_2 emissions by five per cent per tonne by 2020 based on 2010 baseline	Down by 3.8 per cent since 2014 and 1.8 per cent since 2010	
Waste and raw materials	Waste minimisation	Reduce waste to landfill by 85 per cent per tonne by the end of 2020 based on 2010 figures	Down by 18 per cent since 2014 and 63 per cent since 2010	
		Increase recycled materials in asphalt to 10 per cent by 2020 (excluding filler)	Up by 3.6 per cent since 2014 and 6.3 per cent since 2010 to 9.2 per cent (mostly RAP)	
	Materials efficiency and recycling	Increase the use of cement replacement materials in concrete to 45 per cent by 2020	Down slightly to 37.04 per cent since 2014 (industry average is 26.2 per cent ref. Concrete Industry Sustainable Performance Report)	
		Increase the number of concrete plants recycling surplus concrete to 95 per cent by 2020	97 per cent of our concrete plants recycle surplus concrete	
	Product quality and performance	Reduce production waste by getting it right first time	Customer complaints reduced	
Water and biodiversity	Water	Reduce mains water consumption by 25 per cent per tonne across the business by 2020 based on 2010	Down by 0.04 per cent since 2014 and 18.4 per cent since 2010	
		Reduce the sum of mains and abstracted water for concrete by 10 per cent per tonne by 2020 based on 2010	Up by one per cent since 2014 and three per cent since 2010	
	Biodiversity and site stewardship	All quarries to implement published biodiversity action plans	100 per cent of quarries have published biodiversity action plans	

On target or already achieved