



MPA Cement

Sustainable Development Report 2013

building a sustainable UK cement industry

Front cover: Cement and concrete have a big role to play in coastal protection

Back cover: Decorative concrete creates the setting for the National Cycling Centre in Manchester



Foreword

For the cement industry, 2013 was a year characterised by policy uncertainty undermining competitiveness. As the economy tried to bounce back and infrastructure and new housing development took centre stage in underpinning the Government's growth strategy, the cement industry was pitched into direct conflict with European competitors and domestic producers of competing building materials because of carbon-related taxes, and compensation against the cost of those taxes, that have not been applied evenly across all sectors.

The UK cement industry's track record on carbon reduction is second to none. It has been my pleasure to report year-on-year that MPA Cement member companies have not only met their carbon reduction targets but had beaten them in many cases. Yet a UK-only Carbon Price Support tax that took effect in April 2013 will be applied fully to cement, whereas some competing construction materials will receive compensation from the Government for most of the extra costs that they will incur. This is at a time when compensation is also being paid to those same industries for the indirect costs associated with the EU Emissions Trading System. This imbalance just adds to the cumulative cost burden that the cement industry has to bear and distorts fair competition. We recognise that the UK Government would like to give the cement industry some compensation, but European State

Aid rules prevent it. MPA Cement is fighting hard to have this injustice corrected, but one has to ask the question why any Government would introduce a tax that it then had to pay compensation for so that its energy-intensive industries can remain competitive.

Sustainability means a number of things to different people, but fundamentally we look at it in terms of economic, social and environmental responsibilities and it is essential that the UK has a fully sustainable cement industry in all interpretations. It will be concrete products made from our essential ingredient, cement, that will build the roads, railways, bridges, new low-carbon energy generation infrastructure, flood defences and much more that this country needs, and has planned for, right through to 2020. The economic, social and environmental benefits this development programme will bring cannot be overestimated. Our transport system is creaking; our energy generation capacity is at breaking point and our flood defences are being swamped - literally. Our products, sustainably produced, creating jobs, putting money back into the local communities and maintaining wildlife and biodiversity in our quarries – both active and disused, are a key component of the wider sustainable development programme for this country. This report illustrates how a sustainable domestic cement industry is contributing to a sustainable United Kingdom.



The cement industry, along with every other sector and every citizen in our country, faces a time of change and uncertainty as the political landscape between now and 2020 shifts. We have a new European Parliament, a new EU Commission, the repercussions from the Scottish vote on independence, the prospect of new devolved powers in England, Wales and Northern Ireland, a General Election in May 2015 and a possible referendum on continued UK membership of the European Union. Some of these issues will pose huge challenges for the industry. MPA Cement members stand ready to face them, but the Government must not risk the future of the industry and its own infrastructure plans and the economic activity it will generate by denying the sector a level playing field with its overseas competitors and other competing construction materials. It is not too late to get this right.

I want to pay tribute to MPA Cement members who remain true to their absolute commitment to the sustainable production of cement for a sustainable society and I pledge the support of the Mineral Products Association to their cause.

Pal Chana
Executive Director

Economic sustainability

Cement is part of the £9 billion mineral products industry that employs 70,000 people

OUR CONTRIBUTION TO THE NATIONAL ECONOMY

The UK cement industry is worth approximately £1 billion a year to the UK economy. It employs over 2,500 people directly and 15,000 indirectly. As a mainly rural-based manufacturing industry, the economic activity that we generate locally is, in many cases, the lifeblood of community life.

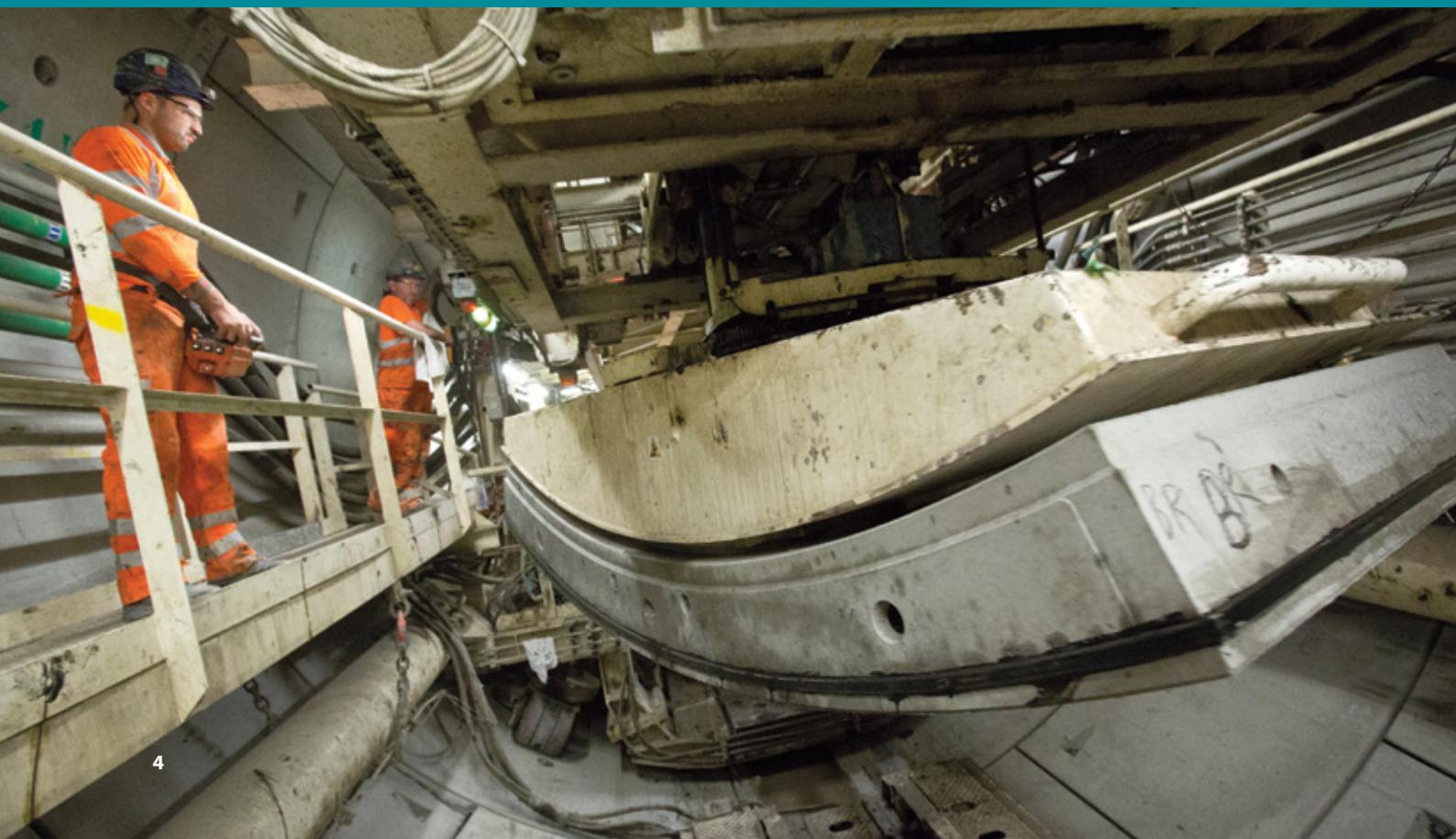
But that is only the start of it. Cement is part of the £9 billion mineral products industry that employs 70,000 people. The turnover of the industries the mineral products sector supplies is £400 billion. Our largest customer – the construction industry – is worth around £120 billion and the number of jobs supported through our supply chain is over 2.5 million.

And again, we are only scratching the surface. Every business that is located in a building; every road mile that millions of tonnes of freight travel each year; every

person that is employed in a school, hospital, airport, railway station, and corner shop; every home that is consuming electricity or gas from power stations and transmission plants; and even those highly sophisticated dealing rooms in the City of London that generate £ billions in financial transactions are all, almost certainly, only able to do so because of the cement and concrete that has gone into the structures we take for granted. In fact, almost our entire economy is built on cement and concrete. Can you imagine our world without it?

We don't see it, we take it for granted, but we cannot live without it. Even those iconic steel and glass skyscrapers that are now so familiar to us still depend on cement and concrete for strength, stability, acoustic protection and fire resilience. Translate all of that into economic activity and you can see why cement is essential to a sustainable economy and is, literally, the foundation of our built environment.

The £15 billion Crossrail project in London will deliver £42 billion worth of benefits to the UK economy



Economic sustainability

Maintaining the UK cement industry's competitiveness in the coming years is a top priority for MPA Cement and should be for the UK Government

AN ECONOMICALLY SUSTAINABLE CEMENT INDUSTRY UNDER THREAT

But we can only do this if the businesses that our members run are allowed to compete on a level playing field with overseas manufacturers and other construction materials. If it is cheaper to import cement, or cheaper to build in steel or timber, then demand for domestically-produced cement will suffer. Why is this important? Because it costs in the region of £250 million to build a modern day cement plant and once capacity is reduced due to falling demand it is unlikely to come back. That puts the security of supply of an essential building material in the hands of the volatile and unpredictable international trading markets. It also risks essential investment into the UK. The majority of the country's cement manufacturers are parts of global companies who can choose to invest elsewhere if they can achieve better returns.

The multi-£billion national infrastructure programme and the much needed new

housing programme that underpins the current Government's economic growth plans, and commands cross political party support, all depend on a secure and regular supply of concrete – the most consumed man-made substance on the planet. Yet between 2014 and 2020, the UK cement industry faces £353 million of costs associated with carbon reduction passed on in electricity prices that many of its competitors will not; costs imposed by UK and EU policy makers. This puts domestically-produced cement at an immediate disadvantage and threatens the future of a vital product that has its modern-day origins in Britain.

The UK needs an economically sustainable domestic cement industry in order to have a sustainable domestic economy and one that can compete globally.

Maintaining the UK cement industry's competitiveness in the coming years is a top priority for MPA Cement and should be for the UK Government. Sustainable local production of cement is not just for the benefit of our members, but for the whole country.



Social sustainability

Children who are educated in new well designed and constructed schools perform better than those in old, run-down buildings

SOCIAL SUSTAINABILITY IN WIDER SOCIETY

The UK cement industry exists symbiotically with the society we all live and work in. The 2,500 people who are employed directly in our industry live in homes that contain our products; their children are educated in schools that contain our products; the shops their parents use contain our products. In fact, the physical fabric of our society is largely made up of our products.

But who associates the well-being of our society with a physical product such as cement? The truth is, research shows that children who are educated in new well-designed and constructed schools perform better than those in old, run-down buildings; patients in modern hospitals have a faster recovery rate than those in old buildings; people who live in well-designed homes in communities they know and relate to tend to be happier. Cement is not the cure for all problems but where it can help, we are happy to play our part.

SOCIAL SUSTAINABILITY IN THE CEMENT INDUSTRY

Without question, it is jobs that lie at the heart of our social commitment. The families that depend on those jobs; the communities and local businesses that rely on those jobs; the next generation that want to learn and develop their skills so that they can take the jobs of the future. All of this underpins our contribution to social sustainability.

So what are we doing to actually make a difference?

EXISTING JOBS

From managing directors to plant managers, plant operators and drivers, the UK cement industry employs 2,500 of them directly. Some 15,000 more are employed indirectly to keep the country supplied with an essential building material. And our first priority for all of these key people is health and safety.



Social sustainability

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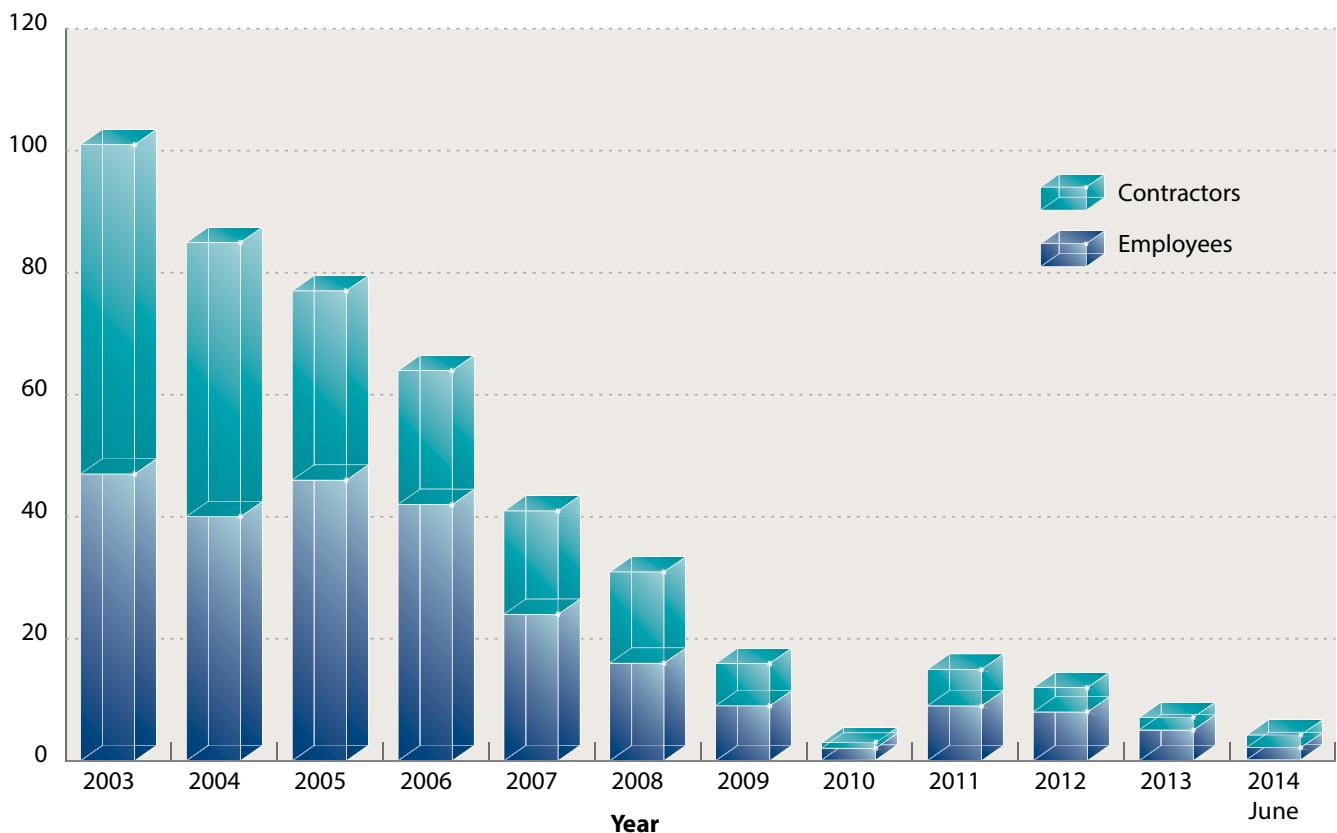
HEALTH AND SAFETY

"Zero Harm" is the overriding health and safety priority for MPA Cement. Its safety targets are to:

- Reduce the 2013 rate of lost-time injuries by 65% by the end of 2018 for employees and;
- Halve the 2009 number of lost-time injuries by the end of 2014 for contractors.

Actual performance has been as follows:

MPA CEMENT LOST TIME INJURIES



COMMUNICATION AND SHARING

MPA Cement members meet regularly to share information on their health and safety initiatives and to share details of any incidents that have occurred. Additionally, resources have been pooled to work on guidance to prevent hot cement raw meal burns and improve the management of the annual kiln shutdowns.

The industry is fully committed to all of MPA's health and safety initiatives (demonstrating competence, purchasing well-designed mobile plant, sharing lessons with others, working with contractors, improving safety for cyclists and quarry trespass prevention). Details of specific safety programmes have been shared with other sectors of the minerals industry, for example MPA Cement

spoke about transport and delivery safety at the MPA Safer by Sharing seminars. It is by sharing that we learn, and we will continue to share all relevant facts and information across our own and other sectors to prevent possible future incidents.

Social sustainability

BEHAVIOURAL SAFETY

Behavioural safety programmes are a key element in achieving our zero harm objective and all MPA Cement members operate Visible Felt Leadership initiatives; where senior managers visit sites and hold safety conversations in the workplace. Some of the initiatives being taken by our members include:

CEMEX UK

- Regional safety days: A series of regional safety days were held in 2013 with Ken Woodward and Juice with the intent of challenging people's behaviour. Ken Woodward is a well-known motivational speaker who lost his eyesight, taste and sense of smell in a workplace accident. Juice, are actors who provide the background to the accident and challenge/ask the audience at various stages as to what they might have done differently.
- Please look after me: This initiative aimed to reinforce the importance of everyone looking out for each other and encourage a person to intervene if

they see something that is unsafe. The personal story behind a serious incident was used to launch the initiative and employees were issued with helmet stickers to encourage such interventions.

LAFARGE TARMAC

- Switch programme: In response to studies that have shown drivers can become distracted whilst using devices such as mobile phones, employees (and hauliers) on Lafarge Tarmac sites have not used mobile phones in hands-free mode whilst driving since 1st January 2014. Prior to the launch of the Switch programme, new ways of working were developed to manage the operational challenges involved and to ensure that the transition was as smooth as possible.
- STOP assessment: The STOP form links closely into the risk assessment process; asking the employee if they have seen the safe working procedure for the task they are about to undertake, and urging them to check if it is up to date and whether the conditions on the day are different in a way that might lead to unidentified risks.



HANSON UK

- Visible felt leadership (safety conversations): Accidents can only be eliminated by including and involving the workforce. By the use of 'safety conversations' – a process which encourages all directors and managers to visit sites and talk to employees about the tasks they are undertaking, Hanson is driving employee participation and learning in how to make processes and activities safer.
- Employee participation: As part of the drive towards greater employee participation, Hanson has set up sustainability representatives and coordinated their involvement and feedback through Safety Matters working groups, to ensure effective message flow up and down the organisation. They contribute tremendously to overall health and safety standards.

HOPE CONSTRUCTION MATERIALS

- Visible felt leadership: The chief executive officer personally delivered a series of one-day visible felt leadership workshops to all directors and senior managers. Over 50 members of the senior management team accepted an invitation to spend time-out each month visiting sites and supporting the safety effort of colleagues and service partners across the business. Between April and December 2013, over 1,163 hours of safety visits were logged. In addition, every site received at least one visit from either a director or member of the senior executive team.
- Welcome intervention: During 2013, Hope Construction Materials colleagues were actively encouraged to get involved in health and safety improvement initiatives and a group of colleagues working together developed a Welcome Intervention initiative and strategy for 2014. A short film was produced, which has been uploaded to YouTube, <http://www.youtube.com/watch?v=9V0YOJ1bC2w>

Social sustainability

APPRENTICESHIPS AND TRAINING

If a sustainable economic future for the industry can be secured, then it will be for the next generation of young people to seize the challenge. Our member companies are doing all they can to help them.

At Hope Construction Materials, three young people have taken their first steps towards a career in engineering in the construction industry after becoming the latest apprentices on their Apprenticeship Academy programme.

Matthew Richardson, Henry Wilde and Daniel Repton have been recruited by Hope as part of their Apprenticeship Academy initiative. Matthew and Henry start on the 'electrical' scheme, with Daniel on the 'mechanical' scheme.

Industry experts are predicting a more buoyant time for the construction materials market and this is demonstrated through Hope's significant investment in its new Academy.

The youngsters, will undertake a four-year apprenticeship with the company. The first year will be spent full-time at Chesterfield College working towards an NVQ Level 2 in Performing Engineering Operation (PEO) four-days-a-week, with the final day spent working towards a BTEC ONC in their discipline. They will then be allocated to one of Hope's major operations, spending the following three years on-site four-days-a-week, working towards an NVQ Level 3 Advanced Modern Apprenticeship, with one-day-a-week spent at college continuing with BTEC ONC and BTEC HNC.

Over at Lafarge Tarmac Cement & Lime, apprentice, Abigail Finney has scooped the prestigious Apprentice of the Year award, finishing ahead of over 4,000 other candidates across the East Midlands.

Abigail, a first year mechanical apprentice in Lafarge Tarmac's Tunstead Plant, received the award for her outstanding effort and application in what was described by the awarding body as a male dominated industry; a real first for the industry and a reflection



Abigail Finney receives her *Apprentice of the Year* award

of Lafarge Tarmac's diverse approach to recruitment and selection. Across the business, Lafarge Tarmac welcomed four graduates and 42 apprentices throughout the UK.

The new recruits, who have been drawn from all across the country, will be taking on a variety of roles ranging from general duties to supply chain management, and from environmental advisor to graduate construction specialist. They have been recruited across Lafarge Tarmac's Aggregates and Asphalt, Cement and Lime, Contracting, RMX and Building Products business, as well as within central functions. Lafarge Tarmac has a long-term commitment to skills, innovation and ongoing investment in R&D, so is well placed to deliver an exciting recruitment programme which provides youngsters with the expert support and guidance they need to nurture their skills and kick-start successful careers.

CEMEX UK has launched a new driver apprentice scheme, offering youngsters a great career based at Wickwar Quarry, north east of Bristol. The launch of the scheme reflects the upturn in the demand for building materials, such as aggregates, in the construction industry. The majority

of aggregates are transported by road from local quarries primarily to be made into concrete.

Currently, CEMEX has over 400 aggregate and cement vehicles covering over 15 million miles a year. The new apprentices, aged 18 -23, will be joining the Aggregate Logistics team and after a year could be on the path to a career as a highly skilled large goods vehicle driver. The programme offers a professional framework to achieve a driving goods apprenticeship level 2 and category C licence.

Two sixth form students from Alun School in Mold, Flintshire, have been getting an insight into cement production after being awarded scholarships by Hanson Cement. Ben Robertson and Will Jeffcott have spent one day a fortnight working in the laboratories at Padeswood cement works as part of the Government's STEM programme, which is aimed at producing a strong supply of scientists, technologists, engineers and mathematicians for the future.

As part of their scholarship, the pair were offered financial incentives to achieve the highest grades in their A-level exams and they are now £400 richer. Ben achieved As in maths, chemistry and physics and a BTEC distinction in music technology. Will achieved As in maths, further maths, chemistry and physics.

Hanson also operates an industry-leading apprentice scheme for enthusiastic school leavers with a minimum of two A-levels. The Leadership, Education and Development (LEAD) programme, which was launched in 2012, is designed to train and educate school leavers who are keen to learn and develop supervisory and management skills in a hands-on working environment. Six trainees were hired in the first phase of the programme two years ago, and four of them are now working in the cement business. The first two years are spent gaining experience and relevant qualifications in operational aspects of the business alongside studying for a Higher National Diploma at the University of Derby. The trainees are supported throughout the programme by both a manager and mentor.

Social sustainability

COMMUNITY RELATIONS

Communities are the beating heart of our industry. The vast majority of our employees live within a few miles of our plants and most are rural. How we interact on a day-to-day basis with our neighbours determines whether we have a 'licence to operate' or not. The industry's employees and their families would soon tell us if we were not being a good neighbour.

All MPA Cement member companies maintain regular contact with their local communities through newsletters, open days, special events and direct dialogue. Some of the highlights of 2013 were:

Two new classrooms to use – one indoors and one outdoors – in the Peak District National Park thanks to support from Hope Construction Materials.

The company has developed two versatile areas at its Hope Cement Works: a fully kitted out indoor classroom which is in the company's social club adjacent to the works; and an outdoor learning space in the wooded area near the social club. Working with the Peak District National Park Authority's Learning and Development Team, Hope Construction Materials has developed these classrooms to offer much needed outreach educational facilities. In addition to giving students easy access to the surrounding Peak Park, the location of the

classrooms also offers them a chance to see an important industrial operation up close.

The indoor classroom can accommodate a typical class of pupils and offers audio-visual and IT facilities. The outdoor space has a wooden seated area and enables students to take a closer look at local biodiversity.

A visionary playground has been created by Lafarge Tarmac for Cramond Primary School in Scotland. Lafarge Tarmac's Sapphire business donated 1,000 tyres from its Edinburgh branch to a local primary school. The project was led by Farmer Autocare, who had been approached to help support the Our Place project at Cramond Primary School in the city. The contours of the playground were such that the head teacher had a vision of adapting the area to allow the children to enjoy their playtimes more. The used tyres were part of that vision. The project was part funded by SportScotland and is an excellent example of team working between the company and its local community to make a genuine impact.

Dean Wilson and Katherine McLeod, two students at Cramond Primary, were delighted with the finished project. They say: "We use our imagination lots more now. It used to be just tarmac and a football pitch, so all people did was run about. In Our Place we build dens, jump off climbing walls, play in the sand pit, climb the rocks and up the wooden

trails, and use tyres to make things. We have an amazing slide, climbing net and Roman boat. It is amazing!"

Employees from CEMEX House in Rugby piled in to do their bit for local charity Hope4, which provides support for the homeless and those sleeping rough in the area. Over a period of a week, teams totalling 20 employees went along to the Hope Centre to prepare and serve meals and clean. They also organised a collection through the office block which produced nearly £700 in cash plus toiletries to help the Hope4 cause which includes winter shelters at churches across the town. They backed that up with a "pay day £1" collection which produced £250 in the first month. With support also from the Rugby Group Benevolent Fund, plus raffles, and a cake day, the total produced for Hope4 was £1,500. The team was led by Readymix Central team leader, Tamsin Rodriguez who was delighted by the response from her colleagues. "It really opened our eyes in terms of understanding why people are sleeping rough on the streets," she says. "Everyone got behind it and the response was tremendous."

Hanson Cement has a rolling plan of open days at each cement plant with events planned for 2014 at Padeswood and Ribblesdale. Each cement plant operates a liaison committee which is attended by a range of local interest groups, councillors and representatives from the environmental regulator. Discussions this year have included the use of alternative fuels and raw materials, planning developments and general information on works business and environmental performance.

In addition, Hanson sponsored the local first responders team in Ketton by providing new polo shirts. First responders respond to medical emergencies in the surrounding villages and often arrive before the ambulance services. They also provided sponsorship to the Evergreen Care Trust who assist the elderly in the local community to remain in their homes for as long as possible, and paid for transportation for Ketton Primary School to visit Warning Zone in Leicester, an interactive centre for safety training for schools. These are two examples of a number of initiatives supported by Hanson.

A visionary playground for Cramond Primary School in Edinburgh



Environmental sustainability

OUR CONTRIBUTION TO AN ENVIRONMENTALLY SUSTAINABLE SOCIETY

How we generate and use energy is crucial to the future of our planet and generations of people to come. That is why a managed transition to a low-carbon economy is so important. And nowhere is this more-true than in our future power generation capacity.

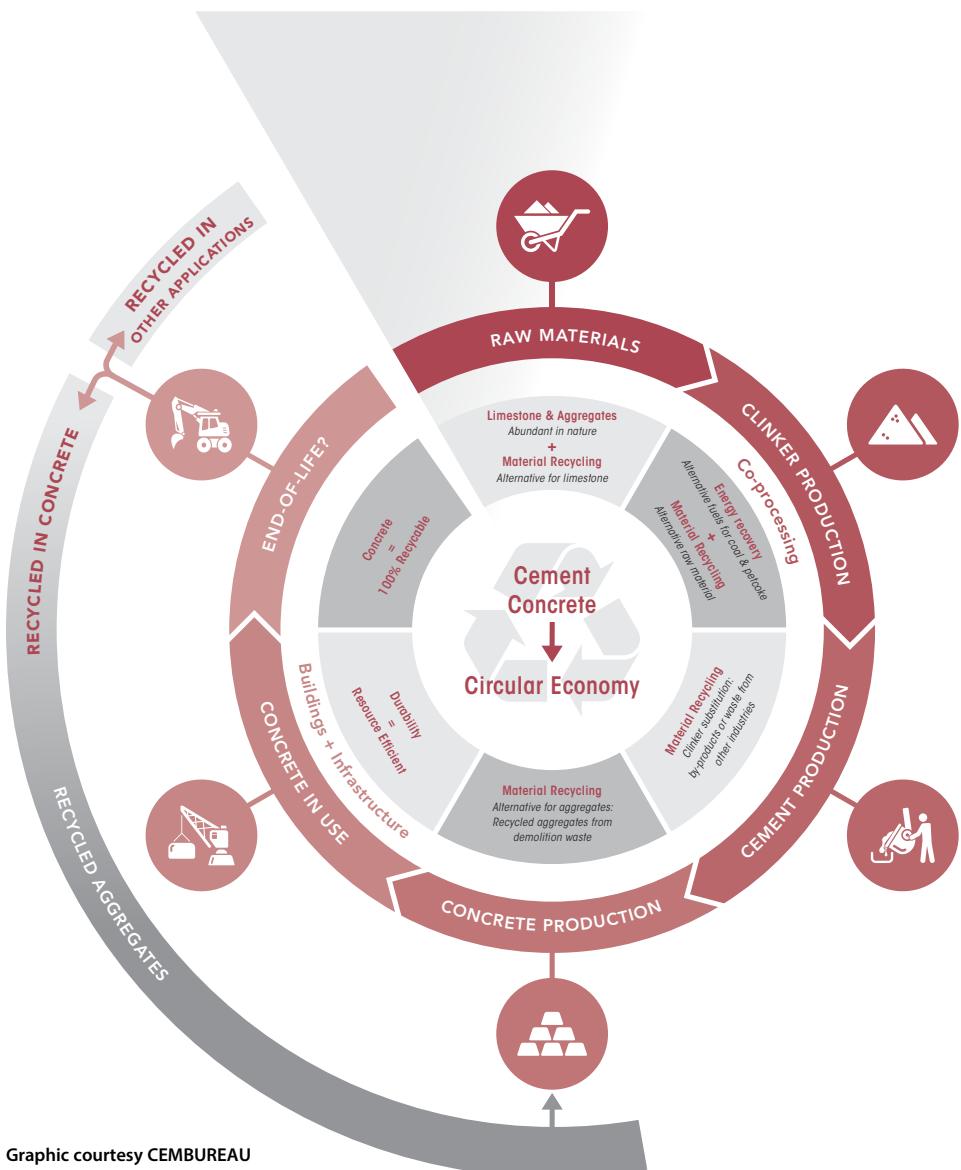
Cement and concrete has a vital role to play in building the robust infrastructure of new conventional power plants, with or without carbon capture and storage, and new nuclear stations. It will be through de-carbonising the electricity grid that significant breakthroughs will be achieved in tackling climate change. At the same time, the contribution of renewable sources of energy will be important. Britain already has more off-shore wind energy capacity and planned capacity than the whole of the rest of the world put together. But we need more. Concrete gravity bases to anchor the turbine towers, are more environmentally friendly than driving piles into the sea bed. Barrages to harvest the power of waves will also have an important role to play, and cement and concrete can help here too.

How we generate energy is just the flip side of the same coin of how we consume energy. The most efficient way to make the power we generate go further is to use less of it. That is why cement and concrete have such an import part to play in how we heat and cool our homes. Just 10% of the energy a building will consume over its expected life is attributable to the energy it takes to make the materials from which it is constructed – the embodied carbon, or capital carbon. The remaining 90% is ‘in-use energy’ consumed over the lifetime of the building. With innovative design and the intelligent use of materials, we can drastically cut ‘in-use energy’. The natural thermal mass properties of concrete allow the material to absorb heat during the hottest times of the day and to release it back in the cool of the night to give a much more even temperature without the need for artificial heating and cooling, which simply consumes more electricity. There are houses built from concrete operating now that are giving their occupants a positive

financial return because they generate more power than they use which can be sold back into the national grid.

Cement, as a key ingredient in concrete, will play a major part in the renewal of this country’s national infrastructure and housing programmes. Whether it is low-carbon new nuclear power generation or strategic flood defences or a new garden city that will bring not only new homes, but new jobs, transport links, schools and shops, cement will be the foundation on which it is built. And in the cement industry’s case, one entire garden city is scheduled to be built on land previously used for cement manufacturing. The circular economy in action.

In fact, the cement industry has been way ahead of its time when it comes to the circular economy. Some 44% of the fuels we use are derived from waste or by-products, whilst we produce virtually no waste at all. We are a significant net consumer of other people’s waste. Our land is recycled for wildlife habitats and other natural uses as well as being redeveloped for shopping centres, housing and other commercial operations. Nothing is wasted. The following illustration shows the place of cement and concrete in the circular economy.



Environmental sustainability



Reed bed creation at Cauldon in Staffordshire



Hadfields Quarry in Derbyshire has been a valued local nature reserve



LAND STEWARDSHIP AND BIODIVERSITY

The CEMEX team at Dove Holes quarry, Derbyshire is helping to save the Twite, similar to sparrows but smaller, by creating a flower-rich meadow which provides seeds such as sorrel. Twite is one of only two British birds that feed their young entirely on seed, so an abundant supply close to their nests is vital. Working in partnership with the RSPB, the five-hectare field right next to the Twites' breeding area has been planted with a special seed mix to encourage a flower-rich meadow. Next spring it will provide those vital seeds needed by the chicks.

The Twite has the most restricted distribution of any English breeding bird, close to extinction and holding on to survival by the skin of its beak. The majority of the population is centred on the South Pennine moorlands near Huddersfield but there is a tiny population that nests in Dove Holes quarry.

These small birds nest in fissures, long narrow cracks, in the quarry face. They declined rapidly in the 20th century as traditional late-cut hay meadows were replaced by rye grass silage fields which provided no food for the Twite. Today, it is thought that there are fewer than 100 breeding pairs in England.

At Lafarge Tarmac's Cauldon Plant in Staffordshire, a reed bed system is vital for maintaining the quality of the water discharged into the River Hamps. The reed beds were constructed in 1992 and are a natural biological water filter comprising three individual beds, a pond and an aeration

form. The reed beds filter ammonia and keep any potential contamination from the plant at well below the limit for flow into a water course or river. The beds are one-metre deep and made up of five or six successive layers of stone, reducing in size as they are built up. The top 150mm deep layer is fine graded sand or soil, which is immediately above a layer of coarse grit. Natural bacteria live within the stone layers and on the roots of the reeds, which digest the ammonia nitrifying it. The reeds then live off the resultant food source.

In 2013, the reed beds were re-engineered. The water intake reed bed has been fully modernised and now operates as a surface flow bed topped with soil to provide an area for the naturally occurring ochre (iron rich orange coloured silt) present in the water (naturally occurring in the shale fields through which the water is running) to settle. This ensures the reeds flourish. The other two reed beds continue to function as vertical flow reed beds with improved pipe layout and topped with fine graded sand. All reed beds now have level control chambers to facilitate optimum water control in the reed beds while also facilitating weed control.

Hadfields Quarry Nature Reserve, located next to Hope Works in Derbyshire, comprises a wide-ranging habitat of wet quarry floor, calcareous grassland, bare rock faces, ash woodland and planted broadleaved woodland in and around a disused limestone quarry. The quarry was used in the 1920s to provide raw materials for Hope Cement Works which has been in operation since 1929. The area left by the original quarry

workings was also used for the temporary storage of clinker during the 70s and early 80s.

Hadfields Quarry is owned by Hope Construction Materials and managed by Derbyshire Wildlife Trust on the company's behalf. Visitors to the site can see a vast range of wildlife from palmate newts and dingy skipper butterflies to flower species such as mossy saxifrage, ploughmans spikenard, wall whitlow grass and marsh orchid. There are several bird and bat boxes installed within Hadfields Quarry nature reserve and the majority of the bird boxes are used each year. Nest boxes are an especial favourite with both blue tits and great tits.

Lanehead quarry, which supplies limestone to the neighbouring Ribblesdale cement works in Lancashire, has put Hanson Cement on the geological map. The quarry is an important part of the new Clitheroe geotrail guide, and Hanson has provided funding to print a leaflet and create a viewing point. The key benefit of the viewing platform is that the public can access it directly from the Ribble Way and look at the quarry safely without having to make an appointment or be supervised by staff.

Two display panels have been installed at the viewpoint. One explains the site and local geology and biodiversity, while the other describes the cement-making process and its end-uses. The Clitheroe trail is the fifth of ten guides being produced by GeoLancashire and the Lancashire Group of the Geologists' Association (LGGA) at different locations along the River Ribble.

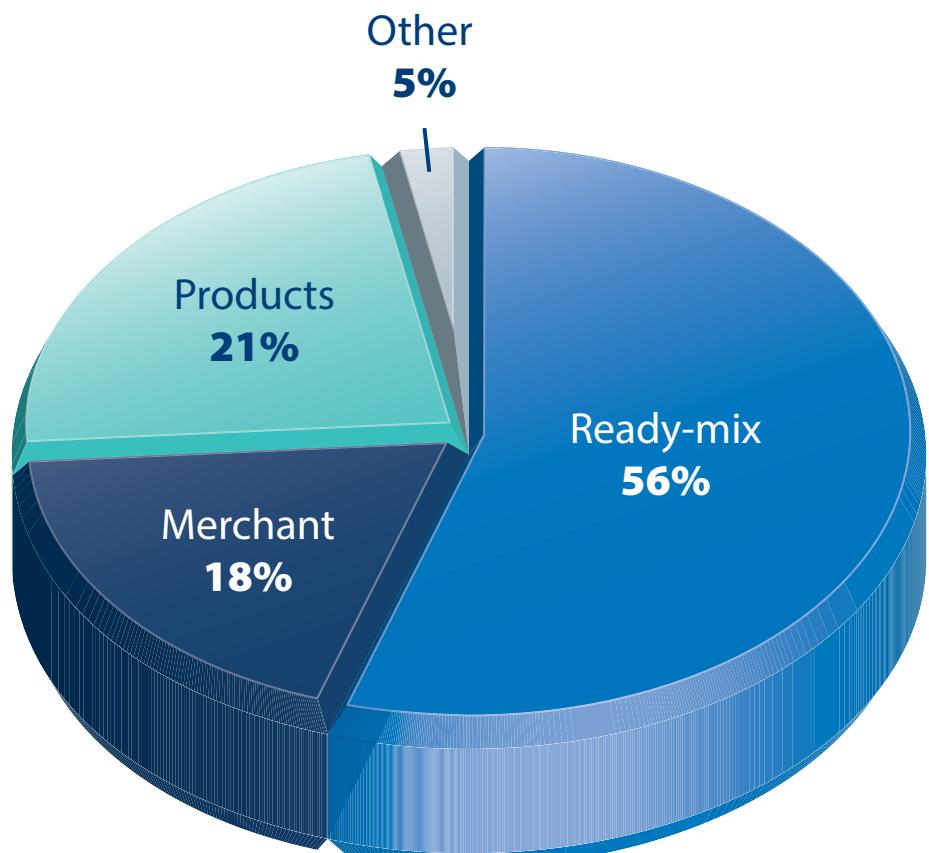
Environmental sustainability

OUR ENVIRONMENTAL PERFORMANCE

Industry performance and sustainability reports were originally designed to reply to the joint target setting between the industry and the Environment Agency. At that time, the Environment Agency regulated the industry kiln sites in England and Wales - the sites with higher potential for environmental impact. These kiln sites manufacture the most resource-intensive cement intermediary, clinker. Reporting from the kiln sites allowed direct measurement of industry performance against targets set for these sites in the Environment Agency Sector Plan that was produced jointly by MPA and the Environment Agency. In 2010, MPA reported against the final targets of the sector plan. Cement manufacturing sites that do not produce clinker are becoming more important in the supply chain, so MPA believe now is a good time to report on the performance from all cement manufacturing sites. This has required re-baselining of previously published data to reflect the new broader scope.

Total UK production in 2013 was 8,203,000 tonnes of which 56% went to ready-mix concrete; 21% to bulk concrete products; 18% to the bag cement market and 5% to other outlets.

2013 CEMENT CHANNEL OF SALE



Environmental sustainability

Making this much cement in the most environmentally benign way possible is no easy achievement. That is why the industry has for many years been measuring its environmental impact in great detail, and in partnership with the Environment Agency in England and Wales, the Scottish Environmental Protection Agency and the Northern Ireland Environment Agency.

Significant progress has been made to date and for 2013 we can report the following:

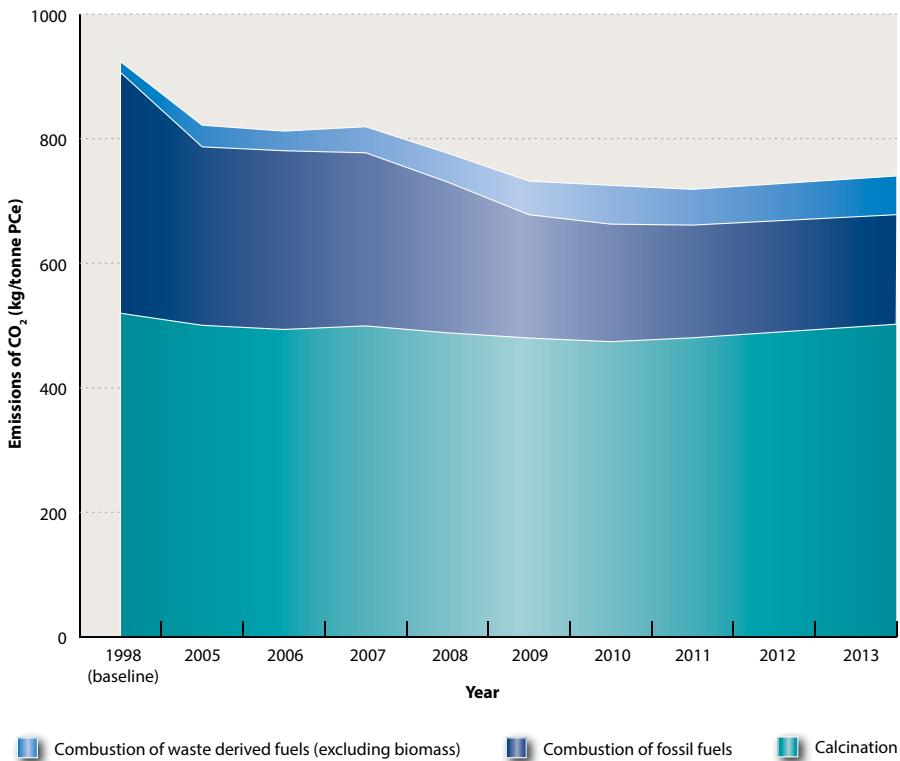
Against a 1998 baseline, and on a per-tonne basis, the industry's recorded emissions in 2013 were:

- Emissions of CO₂ directly from cement plants per tonne of Portland Cement equivalent (PCE): 24.9% reduction on 1998
- Dust emissions: 83.3% reduction on 1998
- Oxides of nitrogen emissions: 62.6% reduction on 1998
- Sulfur dioxide emissions: 81.4% reduction on 1998

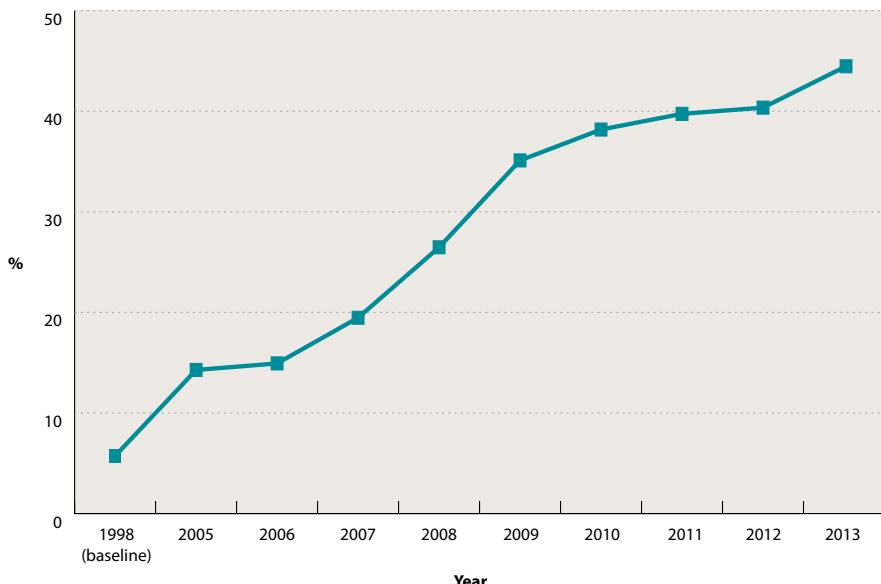
All of these results are in-line with expectations and are either slightly better or, in one case, marginally below our performance in 2012 and we will look carefully at why this was the case.

In 2013, the cement industry used 1.5 million tonnes of wastes and by-products as fuel and raw materials. The proportion of fuel comprising waste material was 44% - slightly up on the 40% used in 2012. Waste-derived raw materials slipped slightly to 7% from 8%, but at the same time, and for the first time, no cement clinker dust (CKD) was disposed of at all. Once again, the UK cement industry continues to be a significant net consumer of wastes and by-products.

UK PORTLAND CEMENT INDUSTRY EMISSIONS OF CARBON DIOXIDE PER TONNE OF PORTLAND CEMENT EQUIVALENT 1998-2013



UK CEMENT KILN SITES: PROPORTION OF FUEL COMPRISING WASTE MATERIAL



Environmental sustainability

ENVIRONMENTAL PRODUCT DECLARATIONS

The UK cement industry took the decision to build on its long established sustainability credentials by producing its first Environmental Product Declaration (EPD). The EPD declares the UK cement industry's life cycle environmental impact and covers 100% of domestically produced Portland cement.

MPA cement members recognise the importance of cement in the concrete supply chain and the need for cement EPDs. EPDs are used to compare the role of building functional units in the performance over the whole life of the building, and not for comparisons at the individual construction component level.

Institut Bauen und Umwelt – the Institute for Construction and Environment, Europe's leading EPD programme operator, has independently verified and approved the UK average Portland cement EPD, which is

available on the MPA Cement website (http://cement.mineralproducts.org/documents/UK_Average_Portland_Cement_EPD.pdf).

RESPONSIBLE SOURCING

MPA Cement members take responsible sourcing very seriously and strive to ensure that 100% of cement production is certified under the responsible sourcing standard, BES 6001 (framework standard for the responsible sourcing of construction products). In 2013, this effort continued and 100% of cement produced by MPA cement members was certified under BES 6001 to 'very good' level – a locally produced product, supporting local jobs and used in UK projects; it's what sustainability is all about.

USE OF WATER

As reported previously, cement manufacture is not a large water consumer, and much of

that abstracted from the local environment is returned. However, there are increasing pressures on water use in the UK and the cement industry recognises that water must be used responsibly. In order to more accurately measure water use, MPA members started collecting detailed water data in 2013. This covers all water inputs, including abstracted groundwater, abstracted surface water, municipal water, estimated rainfall etc, water consumption, including water evaporated for cooling purposes, water used directly in products and onsite etc, water recycled and all water outputs including to surface water, subsurface wells, to sea or to sewer. This detailed data collection is still in its infancy and further annual data is required for MPA to establish the impact of the cement sector on the water cycle. We commit to reporting further on this in the future.





mpa cement members

CEMEX UK
Hanson Cement
Hope Construction Materials
Lafarge Tarmac



The Mineral Products Association is the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and silica sand industries.

MPA Cement
Gillingham House
38-44 Gillingham Street
London SW1V 1HU

Tel +44 (0)20 7963 8000
Fax +44 (0)20 7963 8001
mpacement@mineralproducts.org
www.cementindustry.co.uk