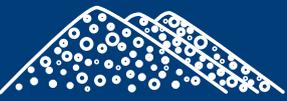


mineral

products today

MINERAL PRODUCTS



360 mtpa
78,000 direct employees
£20bn turnover

CONSTRUCTION INDUSTRY



£144bn pa
£700bn+ output over 5 years

INFRASTRUCTURE

600 projects
£426bn



POPULATION GB

2014: **64.6m**
2027: **69m**
2039: **74.3m**



RAIL



£92bn total projects
£54bn high speed rail
Crossrail **10%** London boost

£15bn five-year national plan
100 new roads
£12bn maintenance backlog

ROADS



ENERGY



£256bn investment
£138bn electricity generation
£23bn transmission

£2.3bn programme
Protecting
300,000 homes

FLOODS



WATER & SEWAGE



£20bn investment
Fixing leaks to save
370m litres/day

240,000+ new homes needed pa
£23bn schools investment

HOMES & SCHOOLS



Building Britain



Climate control
weather protection

Natural capital
balancing act

National treasure
water park from quarrying

WELCOME

AFTER an encouraging period of growth during which confidence rose, we now find ourselves in a period of lower growth than we had hoped for.

The uncertainty of the EU referendum, coupled with global worries, has seen sales flattening over the first quarter of the year. Whilst the underlying outlook and fundamentals remain positive, investment and recruitment decisions are currently harder to make and some are on hold. With the Government firmly committed to major infrastructure improvements, we have to hope that once the referendum is out of the way the second half of the year is more positive and we make up lost ground.

There is, nonetheless, much in this issue to demonstrate the positivity that typifies our members' approach. Not least, we see evidence that our SMEs have been making

bold and imaginative moves to build their businesses and support their customers.

We can also be proud of the contribution our industry is making to ensuring that the UK is better able to cope with the significant challenges posed by climate change. From flooding and coastal erosion through to heatwaves, mineral products have a vital role to play in keeping us secure and strengthening our resilience.

We are also proud of our contribution to protecting and enhancing the environment. We recognise the need for a balanced and responsible approach in those areas from which we draw our materials to where they are delivered. It is good to see and celebrate the regionally and arguably nationally significant Cotswold Water Park, created primarily by MPA members by aggregate



extraction, winning recognition as an asset to tourists and wildlife alike. We also look at the emerging issue of natural capital, a fascinating approach to evaluating the natural assets we use and, equally significantly, those we create.

*Simon Vivian
Chairman, MPA*

Embedded in the Welsh economy

THE mineral products industry is vital to the Welsh economy according to a new report prepared by the Welsh Economy Research Unit at Cardiff Business School.

The research, which was funded by MPA Wales, the British Marine Aggregate Producers Association and The Crown Estate, found that the mineral products sector generates £650m in sales/turnover and directly employs around 3,800 people in 190 sites. A further 2,000 people are indirectly employed, generating further turnover of £232m through purchasing linkages. Collectively, the sector is estimated to contribute £324m in GVA.



The research highlights the fact that the sector is a key supplier of resources and products to downstream industry users, particularly the construction sector (£3 billion GVA), which represents 6% of the Welsh economy and provides 88,000 jobs.

The report's lead author, Professor Max Munday told guests at the MPA Wales annual conference: "The industry is so embedded in the Welsh economy that its significance extends far beyond its sectoral boundary. It would appear to have the characteristics to be separately identified as a 'key sector'."

MPA chief executive Nigel Jackson added: "With recent announcements concerning the difficulties in the steel industry, the contribution made by our sector takes on even greater significance. The quality of peoples' lives is directly influenced by the housing, schools, hospitals, access to road and rail connections and other buildings and infrastructure that are built and maintained with mineral products produced in Wales."

The industry plays a vital role in supporting local businesses, with an average quarry contributing more than £2m a year to the local economy and providing much needed full-time rural jobs. Some of the aggregate levy paid to the Treasury is returned to Wales via the Aggregates Levy Fund. Since 2002, it has distributed over £16m to benefit local communities, biodiversity or heritage projects in quarrying areas.

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Reserves shortage highlighted

THE creation of “centres of mineral planning excellence” using shared officer talent between planning authorities has been suggested by MPA to tackle a logjam of key work.

The idea is one of several to come from MPA’s fourth Annual Mineral Planning Survey which highlights continuing concerns over

declining reserves. With it comes the warning that unless action is taken on updating and extending the coverage of mineral plans and speeding up the planning process, the construction industry will face increasing supply challenges.

Says MPA chief executive Nigel Jackson: “We also believe that urgent attention needs to

be given to improving the interface between planning and the key permitting functions of the Environment Agency and Natural England, which should be far more integrated. In addition, the primacy of planning over permitting must be re-established if we are to tackle the replenishment issue by giving operators the confidence they need to submit more applications.”

Drawing on confidential member data from 2014, the new survey shows that demand for aggregates continues to recover with total MPA sales of land-won sand and gravel and crushed rock in Britain increasing by 6.1% and 13.5% respectively. However, sand and gravel is being severely under-replenished as reserves are used twice as fast as new capacity is being permitted. Crushed rock is superficially being replenished but the figures are skewed by a few large permissions which mask general under-replenishment elsewhere.

The survey is available in full from www.mineralproducts.org.



Driving up standards

MPA’s relentless push to ensure that the industry’s driver skills are the best on the road has moved on a further stage with the publication of a comprehensive drivers’ handbook.

The 116-page handbook is packed with advice on every aspect of safety – from exiting the cab through to making allowances for vulnerable road users such as cyclists. There are reminders on correct personal protective equipment, advice on daily vehicle checks, safe unloading and much more.

With the industry operating the largest combined fleet on UK roads, the aim is to achieve consistently high standards across a team of drivers who are acknowledged as having very challenging roles. Already, some 30,000 have been awarded *Driver Skills Cards* in recognition of achieving high levels of safety awareness training.

“Driving and operating

LGVs is one of the most potentially dangerous occupations in the industry,” says MPA health and safety manager, Kevin Stevens. “Over half of the lost time incidents reported to us involve drivers, sadly including an unacceptable number of fatal incidents. All are preventable.”

“The purpose of the handbook is to make LGV drivers and operators fully aware of the risks that they may face or create while driving and operating vehicles, and understand how to manage the risks. It deals with emergency situations and gives practical advice on keeping safe from avoidable harm.”

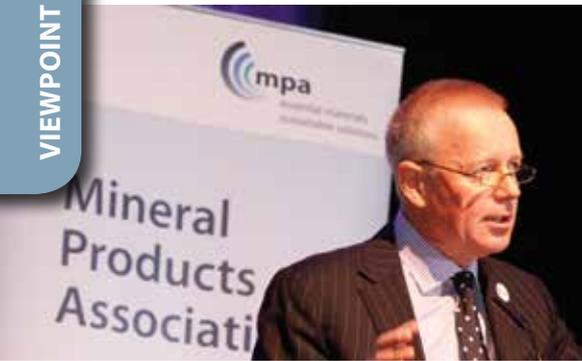


Save our sites

MPA has called on the new London Mayor, Sadiq Khan, to revisit the plan for east London with a view to safeguarding vital minerals infrastructure that delivers over a third of the aggregates used in the capital.

The move comes amidst growing concern in the south east over marine aggregate wharves coming under increasing pressure from housing and commercial development. Given that wharves of necessity generate 24-hour-a-day noise, they are rarely compatible with residential needs and are being forced to relocate to sites with inadequate water depth, reduced space and poor transport links.

MPA’s executive director of planning, mineral resources, Mark Russell, said: “While the need for new homes is clear, this has to be planned properly so that essential mineral infrastructure needed to underpin long-term growth and development aspirations is also protected. We need to properly safeguard minerals infrastructure along the Thames and protect the sustainable, steady and adequate supply of aggregate.”



Project Fear or Project Fantasy?

With all eyes on the EU referendum, MPA chief executive Nigel Jackson assesses the damage already done and the priorities once the verdict is reached.

IN what seems like an interminable run up to the forthcoming EU referendum, certain themes emerge.

Firstly, for many people, no amount of information and argument is likely to change their thinking one way or the other. For those this is visceral, deeply rooted stuff; minds are already made up. For others who want to consider the evidence and hear the arguments, the challenge is far greater. What to believe and who to believe? Every report, every statement is met with an immediately negative response whether considered, justified or not. Polarisation into Project Fear, a proxy for the 'remain' camp, or Project Fantasy for the 'leave' camp is not helpful either, as each could equally apply to the other. We need less assertion and more positive and credible advocacy.

Arguments that might appeal in one part of the UK may not be as compelling elsewhere. Arguments that appeal to the young may not appeal to older voters. Those with international experience may have very different outlooks and risks to consider to those with a more local focus.

And all this is before you get to the personality politics, political career planning and rampant media manipulation. Suffice to say that it is fairly likely that by the eve of polling it will be too close to call.

Tragically, by then the positive outlook for 2016 will have weakened, as investor uncertainty converts into inertia and a flat first quarter writes off the second quarter, leaving the second half of the year with too much to do to recover the first half.

Whatever the outcome, we will have paid an enormous price in terms of muted growth and political instability. Whether we stay or leave, that cost could become even greater. Like so many 'battles', so much attention is given to the campaigns that too little effort is given to the 'peace' – if peace it is.

If we remain, we must leverage our strength as the third largest EU contributor with equivalent representation in the Parliament. We must also get on the front foot and use the goodwill and respect that exists for UK skill and leadership and continue to reform the Brussels operating model. Cut out the 'flummery', the self-worthiness, the arrogance, and focus far more on creating growing markets, international competitiveness, levelling playing fields and genuine cross-border issues.

And if we leave, we must work quickly to deliver the 'freedoms' that are being offered to seal trade agreements, both with and beyond the EU, whilst ensuring we do not lose access to vital skills that we are not producing ourselves. A sense of urgency and international responsibility must prevail and the avoidance of a siege culture, which could isolate us. For those advocating 'leave' the stakes are high, as failure to deliver could result in a backlash that future generations will never forget.

MPA is neither surveying its members, nor seeking to adopt a policy stance one way or the other. That does not mean that our industry does not have strong views. It does, and that is the problem; healthy debate and soundings confirm that the sector does not have one view. Hardly surprising given the nature of our constituents, who are spread across every nation in the UK, with both international ownership and a majority of privately-owned companies.

What we are agreed on is that, from June 24, Government must act with determination to ensure that the UK retains its influence and high reputation internationally, to ensure that our economy remains in the top five in the world. The loss of momentum in 2016 can and must be recouped. With so much vital work still to do in increasing our housing stock, improving and replacing our transport and energy infrastructure and day-to-day repair and maintenance, rebuilding confidence to create sufficient certainty to invest has to be the top priority.

“We will have paid an enormous price in terms of muted growth and political instability”





Essential for growth

The Government's new National Infrastructure Delivery Plan sets out details of more than 600 UK projects that will be chased through to successful conclusions in the period to 2020-21 and beyond. We look at the most high profile and at the role the mineral products industry will play.

CHANCELLOR George Osborne insists that he is "determined to shake Britain out of its inertia in building vital infrastructure". It is, he says, time to "get Britain building" and he has set out plans for £426bn worth of investment over the course of the current parliament.

The mineral products industry stands ready to play its considerable role in an unprecedented phase of growth that is set to remedy years of under investment in roads, railways, airports, power stations and homes. From aggregates through to concrete, asphalt and a host of manufactured downline products, the raw materials that will make it all possible will flow when the start buttons

are pressed.

The big question for some major schemes is when that will be, especially for projects that underpin the Northern Powerhouse. While welcoming news of the Government's commitment to build the HS3 high-speed rail link between Manchester and Leeds, Ed Cox of the IPPR North think tank said that plans were "no substitute for spades in the ground".

Those who are more cautious about the current momentum also point out that the seemingly big increases in spending look more substantial than they really are because they follow deep cuts in 2010-11.

AN INDUSTRY IN WAITING

- **360mt** of aggregates and manufactured mineral products
- **£20bn** annual turnover
- **£6.4bn** worth of total gross value added (GVA)
- **£495bn** turnover of industries supplied
- **£144bn** value of construction as the main customer
- **78,000** people directly employed
- **3.4m** jobs supported through the supply chain



Image: HS2

Housing

The Government sees a well-functioning housing market as inextricably linked to the wider health of the economy and laments the fact that, for decades, supply has not kept pace with demand. It has committed to doubling its housing budget from 2018-19, so mounting the biggest affordable housing programme since the 1970s and delivering 400,000 affordable homes by 2020-21.

Taken together, the capital programme, along with loan schemes, *Help to Buy* and other measures amounts to a £20bn+ investment in housing. In January, the government also announced the direct commissioning of at least 30,000 new starter homes on publicly-owned land.

The reinvigoration of the *Right to Buy* scheme, which allows council tenants to buy their homes at a discount, has significantly boosted sales since 2012 and should have prompted increased local authority building to meet the one-for-one commitment to replace. Concerns have, however, been raised that new builds fall way behind sales.

Northern Powerhouse

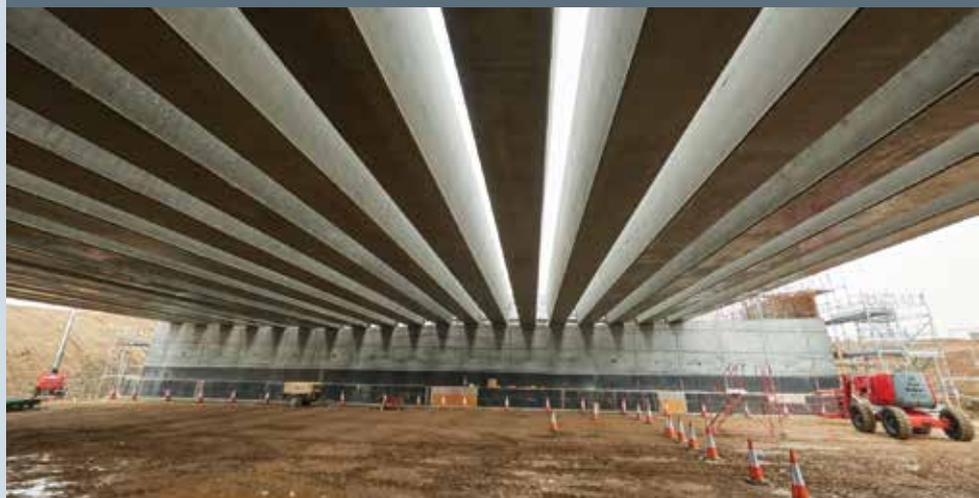
One of the biggest challenges for the National Infrastructure Commission is to improve radically the connectivity between the cities of the north, notably through high speed rail lines. While HS2 will mean faster journey times from London and the Midlands to Leeds, Sheffield and Manchester, the challenge is to take that forward so that it is possible to commute more rapidly within the northern region.

The Government has committed £60m for the development of an improved east-west rail link between Manchester and Leeds

which aims to reduce journey times from 50 to 30 minutes. It has also promised £75m to develop plans for an 18-mile road tunnel under the Peak District to further speed up journey times between Manchester and London. There is, however, no commitment to either project before 2020 – just to the planning.

George Osborne also announced £20m a year for what he calls the “northern powerhouse schools strategy” to tackle the “unacceptable divides that have seen educational attainment and progress in some parts of the north lag behind the rest of the country”.

Bridge beams go into place on one of Scotland's big projects of the moment – the Aberdeen western peripheral route





Tidal energy requires mineral products. Image: Tidal Lagoon Power

Wind turbines require concrete bases. Photo: Shutterstock

Transport

The Government has recognised that transport is at the heart of the economy and admits that, for decades, investment has not kept pace with demand such that parts of the network are now 'full'. The antidote is a 50% increase in investment by 2020.

Highways England is charged with delivering £15bn of investment in the road network across 127 schemes as set out in the Government's road investment strategy. The aim is to provide greater certainty and so facilitate delivery on projects like the A19 and A303 expressways, building over 1,300 additional lane miles. It also wants to generally improve the condition of roads and resurface 80% of the strategic road network. Up to 25 million tonnes of asphalt will be required over the next five years.

On the rail front, all eyes are on the £50bn HS2 high-speed railway that will link London, Birmingham, the East Midlands, Leeds, Sheffield and Manchester. The line will be built in a "Y" configuration in two phases, with construction work on the first set to begin next year, reaching Birmingham by 2026, Crewe by 2027 and completed by 2033.

Meanwhile, with Crossrail 1 (now known as the Elizabeth Line) due to open in 2018, the National Infrastructure Commission has given the go ahead to Crossrail 2 which will link Hertfordshire and Surrey via Tottenham Hale, Euston-St Pancras, Tottenham Court Road, Victoria and Clapham Junction. It could be running by 2033.

Energy

Big challenges lie ahead for an energy sector that is changing fundamentally, with two-thirds of existing power stations expected

to close by 2030 as coal, nuclear and oldest gas fired stations reach the ends of their lives. The system has to be modernised and decarbonised to meet the UK's legally binding climate change goal to cut CO₂ emissions by 80% by 2050.

In October, the announcement of an agreement between EDF and China's main nuclear operator boosted confidence that work on the long-awaited £16 billion Hinkley Point C new nuclear plant in Somerset would soon get underway. More recently, however, work appears to have been further delayed by financial difficulties and disagreements within EDF. At least three million tonnes of concrete will be needed to build a plant capable of producing 7% of the UK's electricity.

Concrete and aggregates will similarly contribute in large measure to wind energy which provided some 11% of the UK's electricity in 2015 – enough to meet the annual needs of eight million homes. The industry's trade body, Renewable UK has welcomed Government commitment in the March budget to funding for further rounds of competitive auctions for offshore wind farms and insists that offshore wind will be cheaper than new nuclear, and competing with gas, by 2025. A typical land turbine requires around 350m³ of concrete.

To support offshore wind turbines, concrete gravity bases are widely accepted as an ideal solution that can drive down costs. The bases are constructed onshore at ports well placed for local wind farms and are deployed by tugs to site.

They are installed by the controlled influx of water followed by aggregate ballasting.

On the tidal energy front, Swansea's £1 billion planned lagoon will, if it goes ahead, demand huge volumes of ready-mixed concrete. It is one of six that could have a key role to play in Britain's next generation of energy infrastructure.

Meanwhile, gas fired power stations have moved to centre stage and will fill the short-term gap left by the closure of coal-fired stations.

MPA's executive director of economics and public affairs, Jerry McLaughlin, is cautiously optimistic. "As with all major investment projects, delays and funding issues are difficult to predict, especially with volatile international markets and the need for public finances consolidation," he says.

"While projects are rarely 100% guaranteed, there are areas in which prospects of these happening have improved in recent months as a result of continuing government support, although the continuing EDF deliberations over Hinkley illustrate the vulnerability of private sector investment. The minerals and construction industries are nonetheless set to remain at the centre of growth in the UK."

£15bn is being invested in major roads. Photo: Shutterstock



Climate control

'Normal' weather is now a thing of the past. According to climate change scientists, we have moved into an age when winters will typically be wet but warm, and summers will be increasingly hot. To cope with these extremes we need to build resilience into our buildings and infrastructure.



Photo: Shutterstock

EVERY year, the misery of flooding seems to devastate a different part of the UK. Over recent months, the biggest impact has been on the north and north west where homes and businesses are still counting the cost of a series of devastating deluges through December. Some properties in Cumbria were flooded three times in as many weeks. Yet just months earlier, roads were said to be

in danger of melting as temperatures soared beyond 30°C in the hottest July day for nine years. While the experts disagree on the extent of the change we can expect, there is now a general consensus that we have to be prepared for extreme weather events that will cause major disruption ... and potentially claim lives. The challenge is a critical one in which concrete, aggregates and other mineral products are very much engaged.

The challenge is a critical one in which concrete, aggregates and other mineral products are very much engaged.



The award winning sea wall at Lyme Regis. Photo: Barrie Hedges



Sustainable drainage at St George's School, Kidderminster. Photo: Howl Associates

The role played by simple sand bags in holding back floodwater has been huge in recent years. On a rather larger scale, rock armour weighing up to nine tonnes a time is typically used to defend coastlines by taking the sting out of incoming waves. Marine aggregates are similarly pumped ashore from dredgers to replenish beaches and cushion waves. On the east coast in Lincolnshire, a recently completed £31m scheme used sand to prevent erosion at the base of hard flood defences and maintain protection against a one-in-200-year chance of flooding.

A range of specialist concretes has been supplied by Hanson to help repair historic bridges and key tourist routes in Cumbria and the Lake District following the devastation, some of it coming from a plant in Carlisle which was itself flooded for three weeks.

Few towns are more threatened by the sea than the Dorset seaside resort of Lyme Regis which is built on one of the most unstable and rapidly eroding zones in Europe. Not just 500 homes, but the whole economy of the town is at risk.

The latest stage in protecting it has come with a new £19.5m sea wall and promenade. The 450-metre long, eight-metre high curved wall was designed to follow the contours of the coastline. Hundreds of sea defence wall components were cast with 65% cement replacement using ground granulated

Armour stone protects the coastline



blastfurnace slag and 100% secondary aggregates.

Giant rocks known as 'armour stone' also have a key role to play in protecting coastal communities from flooding. On the Fylde coast north of Blackpool, Balfour Beatty is handling an £86m project to protect 12,000 homes by creating a series of rock groynes backed by concrete. Main contributors include Hope Construction Materials' Dowlow Quarry in Derbyshire, which supplied 18,000 tonnes of limestone in 2015 with more to follow during this year.

With many more homes built over recent years in flood risk areas, good planning dictates better in-built drainage. Sustainable urban drainage systems (SUDS) use permeable paving to collect and clean runoff water before releasing it slowly. In doing so, it eases the passage of surface water into rivers, while sewers don't back-up and add to the problems.

The local plan for the Cambridge Fringe, where 4,500 new homes are being built, stipulates SUDS to help preserve the natural hydrology. The concrete block paving sits amid a number of other features including green roofs, rainwater harvesting on a district scale, attenuation tanks, ponds and wetlands.

SUDS can be applied not just to large developments but to individual properties. The design of St George's Primary School at Kidderminster stores surface water near the main building but the system starts with water attenuation via a green roof, which provides a 40% reduction in run-off. Other features such as concrete block permeable paving, permeable asphalt, planted swales and a pond store the remaining volumes of runoff from the site whilst slowly releasing it to the storm drainage system.

While staying dry is one fundamental for the years ahead, not getting too hot is another in which mineral products will have a key role. Too much heat is uncomfortable but it also costs lives. In one week in July 2014, hundreds of people (many of them elderly) died across Britain when temperatures soared to 36.7°C. While overheating currently occurs in London on average 21 days a year, the forecast is for up to 50 days by the 2020s and as many as 90 days by the 2050s.

Once again, mineral products have an answer. Employing concrete rather than lightweight alternatives for the fabric of a building means that its inherent thermal mass can absorb heat during the day and release it at night. The use of thermal mass and ventilation to avoid overheating has already found particular favour in offices and schools, with exposed concrete soffits an increasingly common feature.

At New Earswick in Yorkshire, specialist architects PRP are working with the Joseph Rowntree Housing Trust to replace a care home and sheltered housing scheme known as Red Lodge with 140 new apartments and care beds. The facilities are being designed to take account of climate change with a particular focus on overheating.

PRP uses a technique known as 'overheating risk mapping' to highlight parts of a building most at risk. Its designs include external shutters for shading, additional natural ventilation and exposed ceilings and other concrete features. Some measures are planned from the outset while others can be retrofitted as climate changes.

MORE INFO:

Resilience – www.concretecentre.com

SUDS – Interpave www.paving.org.uk

Concrete's inherent thermal mass can absorb heat during the day and release it at night



Dunhouse Quarry – a successful niche business



Mansfield Sand – reacting quickly



Bathgate Silica Sand – family orientated

Size doesn't matter

From multinationals that operate globally to family firms working very locally, MPA's membership is truly diverse. The smaller and medium-sized enterprises (SMEs) may have fewer resources at their disposal but they more than make up for it in their sheer resilience and capacity for innovation.

JUST a few years ago the big challenge facing SMEs in the mineral products industry was simply survival. Today, the tide has turned and ambition is burning strong as they tackle new opportunities with a fleet-of-foot capability.

"Our SME members have had to adapt to periods of low demand, and they have now geared up for high demand," says MPA chief executive Nigel Jackson. "Through it all, they have maintained universally high standards – their resourcefulness is quite incredible as is their spirit of innovation."

With approaching 500 members, MPA is nowadays a very broad church but is one in which large and small work very effectively together in the common interest. "There are common issues that have to be faced quite irrespective of size and that is where MPA plays its part. Our job is to enable and influence the operating environment so that members of all sizes can invest with confidence, fully understanding the risks, uncertainties and opportunities."

At ground level, SMEs like Dartford-based **FM Conway** (winner of MPA's top health

and safety award for SMEs in 2015) not just participate but lead the way. The company is also an acknowledged leader in recycling and sustainability, with big recent investments in plants that, via low-energy technology and movement of aggregates by river, deliver low-carbon asphalt.

A similar spirit of leadership in sustainability characterises the plans of another London operator, **S Walsh**, in securing a long-term agreement with Imerys Minerals to transport millions of tonnes of china clay waste from Cornwall to the capital for processing as a secondary aggregate. The company is building a new London terminal to use over 800,000 tonnes of the "stent" each year for the manufacture of sufficient ready-mixed concrete and concrete blocks to build thousands of homes every year.

The plans have been drawn up as part of the company's long term strategy for both rail and sea terminals to meet the increasing demand for sustainable mineral products for construction.

Meanwhile in Kent, family-owned **Gallagher Aggregates** has invested over £9m in plant



S Walsh is working with Deutsche Bahn on rail movements from Cornwall



Gallagher – rebirth of a stone tradition

and equipment over the past two years to secure the future of Hermitage Quarry, near Maidstone and the 100 jobs it provides following a hard fought planning permission in 2013. Success has also triggered investment in a string of new products including the rebirth of 2,000-year-old Kentish ragstone as a building stone.

“It really was an all or nothing decision for us,” says managing director Sean Connor. “The new mineral reserve sat in a site designated as ancient woodland and our application had to prove the case of need and address the many public, environmental and ecological sensitivities.” The case went all the way to the High Court.

Adds Sean: “We are a ‘big, small’ company – full of characters, with everyone taking great pride in what we do. A special characteristic is our ability to move quickly in investing in new business opportunities, reinvesting much of yesterday’s profit into tomorrow’s opportunities.”

Dunhouse Quarry is a family-owned group whose specialism in dimension stone involves nine quarries in the north of England and Scotland. Its team includes a large squad of

masons who not only hand-finish but site-fix their stone. Projects range from column segments for Covent Garden to intricate carving for the Scottish National Portrait Gallery in Edinburgh.

Managing director Paul Allison says that “still being here after the crash of 2008-09” is the company’s biggest recent achievement. “We only survived because we are a niche business with a bespoke specialist product.”

Red tape is, he says, a big problem and blames a Review of Old Mineral Permissions (ROMP) for the closure of one quarry. “Planning is now a greater lottery than before,” he says. “No-one can tell you how long or how much it will cost, or whether the permission you (hopefully) get in the end will be workable. If you went to the bank to borrow money with that model they’d laugh you out the door.”

Nottinghamshire-based specialist sand producer **Mansfield Sand** is well known as a supplier of fibre-reinforced turf to some of the nation’s favourite sporting venues. Its biggest recent challenge has involved environmental issues surrounding a much needed new quarry. A requirement for two stages of reports on mitigation relating to bats, nightjars

and woodlarks set the project back two years while reserves came close to exhaustion.

Says managing director Jon Boulton: “In a playing field of international producers, our ability to survive has relied on our ability to react quickly to market demands, product development and customer requirements. Our chain of command is much shorter than the majority of our competitors.”

If resilience is one common attribute of MPA’s SME members, then a sense of history is certainly another, as is community support. Cheshire-based **Bathgate Silica Sand** celebrated its centenary in February and looks back on origins that lie in coal supply before turning to quarrying in the 1940s. A long-time supplier of high grade sand for foundry uses, it also today specialises in equestrian sands. Its greatest recent achievement has been the installation of two state-of-the-art robotic bagging lines.

“As a family-orientated company we pride ourselves on treating our customers as part of the Bathgate family and pay particular attention to quality and service,” says general manager David Robinson. Similar commitment marks its approach to its local community, with support for everything from bee keeping (there are hives in its quarry) to a talking book service and from sponsoring rugby to providing sand to make sand castles at a local festival.

“... they have maintained universally high standards – their resourcefulness is quite incredible as is their spirit of innovation.”

A CAPITAL ASSET

Today's view of Mancetter's substantially restored quarry. Photo: Barrie Hedges



Early stages of restoration ten years ago

MANCETTER is a quarry operation of two distinct parts. On one side of the road that weaves through the Warwickshire site is a bustling working environment that employs 50 people and produces 300,000 tonnes of high grade stone each year for road building. Opposite that is the peaceful environment provided by a worked-out quarry area that is now under restoration with an emerging patchwork of valuable wildlife habitats.

It is by no means unusual for the industry – but what is interesting here is the way in which a team of experts has used it to assess the site as part of a Government-inspired pilot project. The challenge has been to produce a balance sheet to quantify how operator Tarmac utilises, manages and enhances the site's natural assets through mineral working and restoration.

The process is known as 'corporate natural capital accounting' – a concept that is still fairly new but rapidly gaining currency, not least through the work of the independent Natural Capital Committee. Its job has been to identify assets that are being used unsustainably; to advise Government on action to improve natural capital; and to advise on appropriate areas of research.

In simple terms, natural capital is the world's stock of natural assets like soil, air, water, geology and all living things. It provides the food we eat, the water we drink and

the materials we use for fuel, building materials and even medicine. By recognising nature as an asset that delivers services and putting a real monetary value on them, the aim is to help us to better manage them and reverse the decline in biodiversity.

The restoration of Mancetter's Purley Quarry is still a work in progress that began some ten years ago with a massive earth moving process using fill material from the current working area. Habitats already delivered include woodland, ponds, heather and acid grassland.

The accounting process involves assessing the natural capital of a site at the outset of a development and then revaluing it at key subsequent stages. Each asset is given a value at the relevant stages as shown in the table above. In the case of Mancetter, it includes the mineral resources being used, the habitats being created, the biodiversity value, the recreational value, and the carbon sequestration from newly-planted trees.

For Tarmac, the pilot project was an opportunity to reaffirm its sustainability strategy commitment to make a net positive contribution to biodiversity and to understand how natural capital accounting could track progress and assist engagement with its communities.

Mancetter's natural capital

	2014	2032
Minerals	£14,000,000	£0
Water	£40,000	£40,000
Carbon sequestration	£30,000	£180,000
Biodiversity	£40,000	£130,000
Recreation	£0	£4,040,000
Creating/maintaining habitats	–£3,000,000	–£830,000
Total	£11,110,000	£3,560,000

The debate over the values that should be shown in the balance sheet continues. Based on experience, Tarmac's view is that the valuation methodology of the mineral asset is too narrow and should recognise the value the essential construction materials continue to play in supporting everyday life and the economy. The company also says the current methodology can under-value biodiversity and not take account of its importance in underpinning other ecosystem services. Nevertheless, the results of the pilot are helping to shape the way the concept is used in the future.

The big change in values from the baseline 2014 to 2032 (when the site is due to be restored) lies in the recreational value of the site from the sheer number of people enjoying it. Tarmac believes it highlights the importance of engaging local communities as early as possible in site design, and the opportunity that natural capital assessments can play in facilitating it.

SUSTAINABILITY

Progress and momentum

THE latest MPA Summary Sustainable Development Report, based on 2014 figures, shows considerable progress in the key areas of health and safety, emissions and sustainability and a significant increase in deliveries as demand for mineral products rose in line with increased construction activity.

MPA chief executive, Nigel Jackson, believes the industry is moving in the right direction. "Our future national needs for housing and infrastructure suggest that demand for mineral products will continue into the long term, subject of course to unpredictable economic cycles," he said. "So we are a long term industry and as such we take a long term view of our activities and our legacy."

Aggregates sales increased 11% in 2014, asphalt by 9%, cement by 8% and ready-mixed concrete by 4% as GB construction output rose by 8%. Meanwhile, members' Lost Time Incident Frequency Rate (LTIFR) dropped from 5.13 to 3.25, indicating a general improvement in operational health and safety. Further progress on quarry restoration and biodiversity was reported with nearly 12,000 hectares of land restored to priority habitat or planned for future priority habitat creation.

In its own sectoral report, **MPA Cement** reports consolidation of growth in the UK construction industry with cement manufacturers playing a major role, supplying locally, responsibly-sourced building materials and providing much-needed jobs.

The industry continues in its efforts to secure compensation against unfair carbon costs, imposed by the UK Government and the EU, seeking a level playing field with other producers to maximise its competitiveness. Cement operators achieved a further 2% reduction in CO₂ emissions, down to 679kg per tonne of cement manufactured, contributing to a 26.4% reduction since 1998.

The **British Marine Aggregate Producers Association (BMAPA)** reports that UK market conditions during 2014 were generally more positive, although demand on the Continent remained depressed. Marine-dredged aggregate was a key source of supply in 2014, with nearly 12 million tonnes supplied for construction and 2.4 million tonnes for beach replenishment – all dredged from 86 square

kilometres of UK seabed, less than 0.01% of the total.

BMAPA has co-ordinated a series of regional monitoring surveys, collecting some 3,500 seabed samples – one of the largest sampling exercises ever undertaken on the UK Continental Shelf.

The latest **British Lime Association SD** report shows the industry continuing to invest heavily through challenging economic conditions to make UK lime production both efficient and sustainable.

Chairman, Richard Stansfield expresses pride in the progress made so far, but warns of testing times ahead: "The coming years will be a fragile stage in the industry's recovery, particularly with the perilous state of the steel industry, the largest single sector that uses lime."

Annual UK high calcium lime and dolomite sales together totalled approximately 1.25 million tonnes in 2014, which is still some 20% below pre-recession levels. The industry is finding new, innovative ways to reduce its environmental impacts through significant changes to the manufacturing process. Examples include the introduction of systems that use waste heat to power production plants and the construction of anaerobic digesters on site.

With notable differences in the production processes for high calcium lime and dolomite, significant emissions reductions were achieved in some areas but not in others. The industry as a whole achieved a 49% reduction in total waste.

The **Concrete Industry Sustainability Performance Report** highlights the important contribution of the industry to a circular economy with its proven track record of waste minimisation and material efficiency. Progress was reported in the reduction of CO₂ emissions from concrete production, down 13% since 2008 while energy efficiency was up 11% over the same period.

Resource efficiency indicators showed that 28% of aggregates used in production were recycled or secondary, far above levels elsewhere in Europe. The concrete industry's net waste ratio surpassed 100 as it consumed 107 times more recovered and waste

materials than the waste it sent to landfill.

The commitment to high standards shines throughout the report: 89% of the concrete tonnage produced in 2014 was certified to the BES6001 responsible sourcing standard, 91% of production sites were covered by a certified ISO 9001 Quality Management System and 89% certified to ISO 14001.



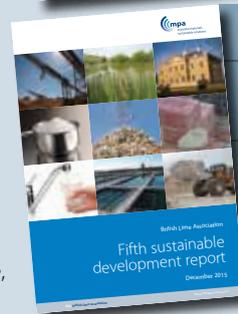
MPA

Health & safety improved: LTIFR down to 3.25
Industry volumes increased
CO₂ emissions generally lower
Further progress on restoration & biodiversity



CEMENT

1.6mt of waste and industrial by-products used
No process waste to landfill
Further reduction in emissions



LIME

1.25mt annual sales – 20% below pre-recession levels
49% reduction in total waste to landfill since 2011
Innovation to reduce environmental impacts



MARINE AGGREGATES

17.25mt dredged – up 7.6%
Actual area of seabed dredged reduced
New NVQ qualifications introduced



CONCRETE

Net consumer of waste
89% concrete tonnage BES6001 certified
Recycled & secondary aggregates 29% of market

FUND

Levy campaign

MPA WALES mounted a campaign during the Welsh Government's recent elections to save the Aggregate Levy Fund.

Each of the political parties was urged to support the retention of the fund and commit to increasing the current budget to a minimum of £1m per annum. It comes amidst fears for the future of an initiative that has no budget commitment for 2017.

Since its formation in 2002, the fund has donated more than £16m to community, nature conservation and industrial heritage projects in areas impacted by aggregate extraction. The Welsh Government has reduced the budget from £1.7m in 2002 to only £400,000 in 2016. This was against a background of Wales producing some 16

million tonnes of aggregate, which represents in excess of £30 million being paid in levy to the UK Treasury.

MPA Wales secretary David Harding said: "In many cases the fund is the first to commit funds and we believe that this has helped lever in more than £30m of additional funding."

Awards were presented at the MPA Wales annual lunch to successful recent projects funded by the scheme. The top award



went to the Halkyn Mountain Heritage Project (pictured) which received a grant of £175,000 in 2015 to restore old lime kilns at Waen y Broddlas and development of a web-based 'virtual quarry' tour. A top Community Award went to the Coed y Bont woodland project which received a grant of £82,000 to open up 24 hectares of largely inaccessible wet woodland in Ceredigion.

STONE

Protecting Portland

STONE counterfeiting and misuse of the Portland name are just two of the threats faced by the world-famous stone, quarried and mined only on the Isle of Portland. But help may be on its way if measures outlined in an EU green paper are implemented, giving the stone protected geographical status.

Famed for its large blocks, distinctive colour and strength, Portland stone has a reputation for quality and has been used for centuries to construct a host of impressive

landmarks including St. Paul's Cathedral and the Bank of England. Recently the Stone Federation has seen an increasing number of incidents where imported products are being passed off as Portland stone, misleading clients and potentially damaging the reputation of the genuine article.

Geographical protection is currently only applied to products like food and drink, but the proposed changes would see it extended to non-agricultural products.



Photo: Albion Stone

HERITAGE

A rare sight

FOR only the second time in a generation, a passenger train has been seen negotiating the single-track branch line into Hanson's Whatley quarry in Somerset. The 13-coach special was packed with rail enthusiasts and industry employees past and present, all celebrating 30 years of the Class 59 diesel locomotive.

Designed and built in the USA in the 1980s, Class 59 locomotives were first brought to the UK by John Yeoman, who purchased five for Torr quarry in Merehead, then owned by Foster Yeoman. Hanson forerunner ARC swiftly followed suit with four more.

When Mendip Rail was formed in 1993 as a joint venture between Hanson and Foster Yeoman, the nine locomotives were loaned to the new company.



INVESTMENT

Asphalt investment

BREDON Aggregates has opened a new, state-of-the-art asphalt plant at its Daviot quarry near Inverness, providing the capacity to service a number of major infrastructure projects planned in the area over the coming years.

The new £2.2m plant is capable of producing 180 tonnes of asphalt per hour, substantially more than its predecessor on the site, and it also has a significantly larger hot storage facility. Importantly, the plant is able to process asphalt planings – the waste material created when roads are resurfaced, increasing the proportion of recycled material used in production at Daviot.

The new plant was opened by Fergus Ewing MSP, Scotland's Minister for Business, Energy and Tourism who commented that it would provide a boost to the economy in and around the Inverness area. "It will also enable the company to compete for work on key national projects, including the dualling of the A9 between Inverness and Perth and further essential work to the A96," he said.

Alan Mackenzie, chief executive at Breedon Scotland said: "This is one of the biggest capital investments we've made in Scotland and it reflects our long-term commitment to the Inverness market."



SAFETY

Campaign on drownings

A 50% reduction in accidental drowning fatalities in the UK by 2026 – that is the aim of the new Drowning Prevention Strategy published by the National Water Safety Forum (NWSF) and actively supported by MPA.

On average 400 people drown in the UK each year and a further 200 people take their own lives in water, which is a higher number than fire deaths in the home or cycling deaths on the road. Search and rescue and emergency services respond to around 35,000 water-related rescue events annually, 62% of which occur in inland waters such as canals, rivers, lakes, quarries

and reservoirs.

While the number of fatalities has steadily reduced in recent years, the NWSF believes a 'step-change' in approach is needed to achieve its target reduction in drowning incidents, with organisations working together on a range of interventions. These include the creation of safer environments, the provision of swimming lessons and water safety education to all primary school children.

MPA chief executive Nigel Jackson said: "Through our 2016 *Stay Safe* campaign, MPA and its members will continue

to work collaboratively with other stakeholders such as the Chief Fire Officers Association, Royal Life Saving Society and RoSPA. Continuing to raise awareness and understanding of the risks associated with swimming in quarry lakes and other similar open water is crucial."



Photo: Shutterstock

ROADS

Road to ruin

UNDERFUNDING, severe weather and increased traffic are relentlessly undermining the resilience of the local road network in England and Wales according to the Annual Local Authority Road Maintenance (ALARM) survey, published by the Asphalt Industry Alliance (AIA).

Further decline is anticipated as local authorities find themselves increasingly short of funds to keep their roads in reasonable order, despite the Government's pledge of an extra £6 billion for local road maintenance between 2015 and 2021.

Alan Mackenzie, chairman of the Asphalt Industry Alliance said: "The network is ageing and the cumulative effect of decades of underfunding is continuing to take its toll. Add in the impacts of flooding

and increased traffic and you start to appreciate the scale of the problem."

The amount local authorities need to bring their roads up to scratch has remained fairly static at almost £12 billion, indicating that highways teams are doing more with less as a result of better processes and a more focused preventative approach.



Photo: Shutterstock



National treasure

IT is one of the most intensively quarried landscapes in the UK. Yet the Cotswold Water Park is also a national treasure. You can walk, fish, sail or water ski here; you can marvel at a vast array of wildlife; you can take your holidays here and you can even sunbathe on and swim from a beach.

The tradition of quarrying is set to continue well into the future and will add new attractions to the park's 40 square miles. Extracting sand and gravel is the medium that has made the site on the Wiltshire/Gloucestershire border both a tourist magnet and a haven for nature.

No one company has dug more of it than the locally based Hills Group, which started work here in 1919 long before anyone decided it could become a water park. Over the years since, it has worked 15 sites and extracted nearly 20 million tonnes of aggregate to help feed the region's need for building materials.

The group's dedication to the cause was recognised with a special award at MPA's *Quarries & Nature* event in October. There were awards too for the Cullimore Group, Aggregate Industries, Hanson, and Tarmac, each of whom have played their own roles.

Within the park and across Wiltshire as a

whole, the Hills Group has also delivered millions of pounds worth of landfill tax and other funding to wildlife and community causes. It additionally gives both practical support and enthusiasm.

"We are a local family company and we care passionately about the area from which we make our living," says company director Peter Andrew. "Our sustained financial support for the Cotswold Water Park Trust and the Wiltshire Wildlife Trust will ensure that we create wildlife habitats not just for the present generation but for future generations."

As Wiltshire Wildlife Trust's chief executive officer, Gary Mantle, puts it: "It has been a great encouragement to us to work with a company that is so passionate about putting

"The park has come a tremendous distance and is now a wildlife site of international significance. All of this has been brought about by gravel extraction."



stuff back into the environment."

The Cotswold Water Park Trust was also rewarded by MPA for its pioneering work. Says managing director Matthew Millett: "The park has come a tremendous distance and is now a wildlife site of international significance. All of this has been brought about by gravel extraction."