

WINTER 23/24 ISSUE 26

# mineral

products today



## The early bird

Diversity of flourishing wildlife in quarries



**Capturing carbon**  
Vital technology for net zero

**Concrete commitments**  
Sustainability strategy revamped

**Sea-sourced sand**  
UK is setting the standard

## WELCOME



**It is with great pleasure that I share with you my first column as the new Chair of the MPA, a position I will hold for the next two years. I am very proud to have been appointed as Chair; I feel indebted for everything that this industry has given me and I am therefore keen to support it through the MPA and its members to ensure its ongoing success.**

Unfortunately, after a positive start to 2023, the last few months have been tougher for our industry, with a slowdown in demand and concrete being in the news for all the

wrong reasons due to concerns about reinforced autoclaved aerated concrete, a matter on which MPA is providing expertise to the CLC's taskforce advising Government. However, there are also many opportunities to make our industry stronger and ensure that we are part of the solution to future, more sustainable construction in the UK.

Concrete remains the construction material of choice, supporting ongoing demand for cement and other mineral products, and we know we need to demonstrate that we can lower carbon emissions. This is more prevalent than ever with the introduction of the new British Standard for Concrete BS 8500, which will allow greater use of lower-carbon cements and enable us to work even harder to move the industry forward in pursuit of decarbonisation. With the MPA's Roadmap to Beyond Net Zero in place it is fantastic to see the progress that is being made; however we need Government to support with policies that ensure ongoing investment is possible and operators are able to meet their targets.

Finally, we must all recognise the importance of a multi-faceted approach to improving sustainability. When I talk to others in our sector I often find that they are focused more on either decarbonisation or on supporting the circular economy. However, both play an equally critical role in our road to net zero and we should be working to adapt both areas into our activity – while also not forgetting the need to continually enhance biodiversity at sites too! It's with real pride that I see our members regularly create amazing spaces for nature, as evidenced by the entries to our Quarries & Nature Photography Competition.

Certainly, despite the challenges of 2023 we have seen real progress made on the path to more sustainable construction, and I am excited to see where the next 12 months takes us!

**Lex Russell**  
MPA Chair

## Safe driving promoted in new Driver's Handbook

**The MPA has published a new version of its renowned Driver's Handbook, aimed at the thousands of HGV drivers who transport materials from where they are produced to where they are needed.**

Mineral products represent the largest flow of materials in the UK economy – collectively the sector moves more than one million tonnes per day. Whilst a lot of materials are transported by rail, river and sea, road haulage is still the main way products are moved around the country.

The mineral products industry therefore employs thousands of lorry drivers - either directly or indirectly - who together set the standards for responsible driving in our industry. The highest standards and good

practice guidance is brought together in the new edition of the MPA Driver's Handbook.

Driving a large goods vehicle can be one of the most hazardous jobs in the industry, with over half the reported 'lost time incidents' involving drivers and their vehicles. The handbook brings together every aspect of good practice in one place, as part of MPA's drive towards Vision Zero.

With over 100 pages of practical advice, it will help drivers make safer choices about the way they drive and behave around vehicles and outlines what is required of a driver in terms of their, vehicle, journey and driving behaviours. In addition, it deals with emergency situations and gives practical advice on what to do to help keep safe from avoidable harm.

Dave Hart, Chairman of the MPA Transport Group and Supply Chain Director for Cemex UK said: "I am delighted to share the updated MPA Driver Handbook which has been reviewed and refreshed.

"The Handbook is a guidance document to help understand and manage risks faced when driving and operating vehicles and to avoid preventable incidents and injuries to yourself and other people when driving for work."

The Driver's Handbook is available to download for free on the Safequarry website, the industry's go-to resource for all things health and safety.

**View now at [www.safequarry.com](http://www.safequarry.com)**



**For the latest news and views from MPA follow @mineral-products-association on LinkedIn.**

**Mineral Products Association**  
1st Floor, 297 Euston Road  
London NW1 3AQ  
Tel: 020 3978 3400  
Email: [info@mineralproducts.org](mailto:info@mineralproducts.org)  
Web: [www.mineralproducts.org](http://www.mineralproducts.org)  
Chairman: Lex Russell  
Chief Executive: Jon Prichard

**Mineral Products Today**  
Managing Editor: Elizabeth Clements  
Director – Communications  
Email: [elizabeth.clements@mineralproducts.org](mailto:elizabeth.clements@mineralproducts.org)  
Editor: Andi Hodgson  
Communications Consultant  
Tel: 07972 533728  
Email: [andi.hodgson@mineralproducts.org](mailto:andi.hodgson@mineralproducts.org)

Design and print: [www.themegroup.co.uk](http://www.themegroup.co.uk)

The views expressed in Mineral Products Today are not necessarily those of the Mineral Products Association.

Copyright: Mineral Products Association 2023

Printed on FSC paper

# Collective call to boost industry skills

**The MPA is one of six UK bodies to sign an open letter to UK university leaders, emphasizing the essential role of materials, minerals, and mining in modern society and in the transition to a low carbon and resource efficient future.**

The letter stresses the need for a well-educated, skilled workforce to meet the increasing global demand for resources while highlighting current skills gaps and declining education and training provisions.

The signatories have come together to support informed decision-making and to shine a light on the need for a high-quality education and training pipeline to maintain a skilled, responsible and sustainable workforce in the sector.

As global demand for resources continues to rise, the letter acknowledges that moving to a more circular economy will be crucial. But in the short- to medium-term, extraction of

resources will still need to play a role in meeting society's demands, and it is vital that it is done in a responsible way that considers environmental, carbon and social impacts.

MPA Chief Executive Jon Prichard said: "It is essential that UK universities continue to offer the educational programmes that equip graduates with the knowledge to support the net-zero journey for sectors such as the mineral products industry, which underpin the fabric of society. Mineral products literally provide the foundations for infrastructure and housing, while also being fundamental to the solutions that will deliver climate change adaptation."

Signing the letter alongside the MPA were the Mineral Products Qualification Council (MPQC), Institute of Materials, Minerals & Mining (IOM3), Institute of Quarrying (IQ), Mining Association of the UK (MAUK) and Critical Minerals Association (CMA).

## Plans for carbon border scheme welcomed

**UK cement producers have welcomed the Government's plans to level the carbon cost playing field between UK cement production and imports, by introducing a Carbon Border Adjustment Mechanism (CBAM) by 2027.**

MPA has been calling for a CBAM covering cement as a method of equalising carbon costs between domestic producers and imports. Maintaining fair competition for UK cement plants is essential to ensure a reliable source of domestically produced cement and avoid the challenges associated with international trading markets.

A well-designed, watertight CBAM can help maintain a level playing field with international competitors and reduce the risk of carbon leakage to countries with less onerous climate policies.

The urgency for a UK CBAM has increased following the establishment of the EU CBAM to be implemented in 2026. This creates a risk of significant volumes of imports, that currently go into the EU from non-EU producers without effective carbon pricing, being diverted to the UK unless a similar mechanism is put in place.

Dr Diana Casey, MPA's Executive Director for Energy and Climate Change said: "Levelling the carbon cost between domestic production and imports will help the UK attract the investment required to decarbonise and ensure our long-term security of supply. The Government's commitment to bring in the UK CBAM by 2027 is very welcome and ideally it should be introduced in 2026 to align with the EU scheme. This is the only way to prevent any detrimental impact of the EU CBAM on UK industry."

## Roads repair boost

The Asphalt Industry Alliance (AIA) has welcomed the Government's £8.3 billion funding pledge to improve local roads. The programme is intended to resurface more than 5,000 miles of road across England over the next 11 years.

AIA Chair Rick Green said: "This additional funding is good news for local authorities in England and is much needed to help them tackle the backlog of repairs. We have long been calling for surety of funding over the long term and this money should allow highways teams to implement more efficient works to improve local road conditions."

## RAAC response

REINFORCED autoclaved aerated concrete (RAAC) has hit the headlines in recent months due to maintenance issues in schools and other public buildings.

The problems experienced are unique to RAAC in a specific situation and the MPA has been providing briefings to a range of stakeholders to explain the significant differences between RAAC and aircrete blocks, ready-mixed and precast concrete.

The MPA and its concrete producing members have also been providing their expertise to support the construction sector in responding to the RAAC issue. For further details a Q&A fact sheet is available at [www.thisisukconcrete.co.uk/raac](http://www.thisisukconcrete.co.uk/raac).

## Wasted reforms

The MPA has welcomed a Public Accounts Committee report highlighting the poor implementation of Defra's waste reforms. The implementation of Extended Producer Responsibility (EPR) has been particularly poor, creating uncertainty for MPA members and making it impossible for them to prepare properly.

MPA Director of Public Affairs Robert McIlveen said: "The postponement in implementing EPR is essential but there remains a lot of work to do to deliver a policy that businesses can work with and that actually delivers environmental benefit. Defra has also missed the opportunity to look again at end-of-waste status. We agree that the issues identified by the committee around poor data are significant and need to be addressed."

# CEO VIEWPOINT



**It doesn't seem that long ago that the mineral products industry was pushed to capacity trying to meet the post-covid demand for essential materials. Now we're facing the opposite challenge; the economic forecast is grim and there are mixed views on when recovery will kick off, the short-term outlook is subdued to say the least.**

So what happens in an essential sector like ours when the market is shrinking? Producing construction materials and industrial minerals requires strategic thinking, calculated investment and long-term planning – something that's extremely difficult when there's pressure to cut cost fast.

So MPA members have to strike a fine balance – to drive down their expenditure without slashing costs to the degree that they risk shrinking their businesses in the long-term, and to 'sweat the assets', the production facilities they are able to keep running, to maximise efficiency and squeeze out every ounce of value.

Why do I tell you this? Because as a trade association, representing the interests of the industry in central and devolved Government as well as among local authorities and non-government organisations nationwide, the MPA itself can be considered one of the key assets to be 'sweated' during times like these (although the team here at MPA might not wholly agree!)

*"Now is the time to drive out inefficiencies such as the disconnect between planning and permitting"*

Within the MPA and across our membership there's an unrivalled breadth and depth of knowledge and understanding about what it takes to sustain the country's in excess of 1-million-tonne-a-day demand for mineral products, the challenges of meeting that need and the solutions to address those challenges.

As we head towards an election, there is never a more important time to challenge, the current Government and its likely/potential successor to set long-term policies that encourage investment and ensure the UK minerals sector remains competitive. As election manifestos are being drafted, now is the time to drive out the inefficiencies, such as the disconnect between the planning system and the environmental permitting system that burdens operators, planners and regulators alike. And there's never been a more opportune moment to align these systems to the supply chain that meets the demand for the UK's essential minerals – the whole reason we do what we do in the first place.

The thing is, improving efficiency and getting aligned shouldn't even be that hard. From an industry perspective, it's clear what needs to happen, and I suspect it's the same for others involved in policy-making, planning and permitting. But progress relies on all parties developing their basic understanding of how minerals flow in our economy, from source to end-

use in construction and manufacturing. And then applying that understanding, alongside that gained in other sectors such as paper, chemicals and glass, to create an industrial strategy for the nation that joins up policy and supports long-term decision making in the wider national interest.

In the post-covid digital age it's all too easy for people to lull themselves into the false belief that the need for minerals is somehow reducing. Nothing could be further from the truth. Because, although right now there's a short-term dip in demand for construction materials and industrial minerals, we know that long-term need will be stronger than ever, especially as the country seeks to build the infrastructure required for energy security, climate adaptation and the transition to net zero. And that is before we consider transport improvements, urban regeneration schemes and, of course, the need for more homes.

*"The long-term need for minerals will be stronger than ever - for energy security, climate adaptation and the transition to net zero"*

The UK mineral products industry has a critical role to play in all of this, sourcing and supplying essential raw materials, making efficient reuse of wastes from other industries, delivering innovative solutions such as low carbon concretes, and leaving a legacy of restored land that achieves social and biodiversity gain that other sectors can only dream of.

Meeting society's demand using domestically sourced raw materials from a responsible, forward-looking industry is a sure-fire recipe for UK competitiveness, growth and prosperity, and that is a message that we should all be proud to share with the wider community that we serve.

**Jon Prichard**  
Chief Executive

# Quarries & Nature

Quarrying's outstanding contribution to nature recovery and biodiversity gain in the UK has been beautifully captured by industry workers and conservation volunteers in a nationwide photographic competition.



This Kingfisher action shot was captured at Hereford Quarry, Herefordshire by Adrian Radnor of CEMEX who came second in the MPA member employees category.

# Diversity of flourishing wildlife in quarries

The MPA's biennial Quarries & Nature Photo Competition celebrates the thriving fauna and flora in and around active and restored quarries that produce essential minerals like sand, gravel, limestone and granite.

Leading conservationists, policymakers, MPA member companies and the winning photographers were among the guests attending an exclusive viewing on Tuesday 28th November at The Royal Society, London where RSPB Chief Executive Beccy Speight, presented the prizes to the winning photographers.

Commenting on the ability of mineral sites to leave a legacy at scale, Beccy Speight said: "We have long known how important the role of restored quarries can be in helping nature recover, and photography is a wonderful way of bringing this to light. The quality of the images in the competition is outstanding - congratulations to all taking part."

Mark Russell, MPA Executive Director for Planning & Mineral Resources said: "More new areas of nature conservation and biodiversity gain have been and continue to be created through quarry restoration than any other industrial activity. In partnership with conservation organisations, MPA members had created of over 8,300ha (83 sq km) of

new priority habitat by the end of 2021, with a further 11,000ha (110sq km) in the pipeline."

This year's contest attracted record entries and the standard was extremely high according to the MPA judging panel whose job was tougher than ever. Criteria for selecting the winners included composition, relevance, setting, and the difficulty of capturing the image.

There are two categories to the competition – one for MPA member company employees and contractors, with another open to the 1,000s of people who work voluntarily on restored quarry sites that have been transformed into popular nature reserves, country parks and sites of special scientific interest.

The photo competition, which has run since 2015, has given rise to some truly

exceptional wildlife photography (with many of the best examples included in the MPA book '[Quarries & Nature: A 50 year success story](#)').

Prizes of photographic equipment vouchers are awarded for first, second and third placed winners in the two categories. The winners and shortlisted entries in both categories are captioned within these pages.

*"We have long known how important the role of restored quarries can be in helping nature recover, and photography is a wonderful way of bringing this to light"*

*Beccy Speight, Chief Executive, RSPB*



Jill Bewley, a volunteer at Cotswold Lakes Trust won joint 3rd prize for this atmospheric shot of a swan and cygnets at Manorbrook Lakes, near Ashton Keynes in Wiltshire.



Stuart Lawrence of MPA member Tudor Griffiths took this shot of an oystercatcher at Wood Lane Quarry, Ellesmere, Shropshire to win joint 3rd prize.



Volunteer Paul Hilton gained joint 3rd prize for this remarkable image of common frogs spawning at Mullaghglass Quarry, Belfast, Northern Ireland.



Conservation volunteer George Walthew won 2nd prize for this rare shot of a bittern climbing reed stems at Kings Dyke Nature Reserve, Whittlesey, Cambridgeshire.

# Biodiversity gain changer?

**Biodiversity Net Gain rules come into force in England in January 2024. And while the idea of BNG is sound, the legislation has been developed with housing in mind, and the lack of proper consideration of, and specific guidance on, how it applies to mineral extraction'... could have some unintended consequences.**

Submitting a planning application for a new quarry, an extension, or any other type of development in England requires applicants to know all about 'biodiversity net gain' (BNG). The concept of delivering a net gain (rather than only a 'no net loss') has developed over the last decade or so, and is intended to help ensure development contributes to nature recovery and addresses historic losses – this is a great idea given the UK is one of the most nature-depleted nations in Europe.

The new BNG rules require the vast majority of new development to deliver a minimum 10% more biodiversity after the development than before. So the biodiversity value of land before and after development is measured in 'biodiversity

units', calculated using the Biodiversity Metric. Biodiversity units are based on the habitat area (or length of hedgerows and watercourses) and its quality (measured in terms of 'distinctiveness' and 'condition') and strategic significance.

The Metric also includes factors which take account of difficulty and delay in creating habitats to the condition required, as well as their proximity to the development and whether they are in an area of strategic importance - including areas identified in Local Nature Recovery Strategies that the Environment Act requires to be produced for the whole of England.

A 'biodiversity gain statement' is required to be submitted with planning

applications setting out how the net gain of at least 10% will be achieved. A 'biodiversity gain plan' is then required to be submitted and approved prior to commencement.

Biodiversity units can be delivered on-site (the Government's preference), off-site including through purchasing these from a third-party landowner or, as a last resort, buying credits from the Government that will be used to fund habitat creation elsewhere. The price of credits is high to disincentivise this option. The biodiversity value on or off-site will need to be maintained for 30 years.

*"Minerals extraction is different - the industry has a long and proven track record of delivering major benefits for wildlife"*

The approach to BNG, including the Metric, has been developed principally with housing in mind. Historically, housing has delivered little for nature, and with around 300,000 new homes needed in England each year, increasing pressure on remaining areas of wildlife are likely.

Mineral extraction is very different. It is a temporary use of land (although quarrying can last decades) and – in partnership with planning authorities and conservation groups – the industry has a long and proven track record of delivering major benefits for wildlife through site management and restoration as a matter of course.

MPA Senior Planning Advisor David Payne said: "We have been talking with Natural England and Defra throughout the evolution of BNG thinking, making the case for a different approach to mineral extraction in recognition of these

differences. The technical BNG process is unnecessarily complicated for mineral extraction and restoration, and some of the ways in which the Metric works are not correct when applied to quarry restoration. Given that the minerals planning and development process already delivers biodiversity, the technical BNG process is unnecessarily complicated and difficult to apply to mineral extraction and restoration.

*"The industry seeks a degree of flexibility and pragmatism, with a focus on outcomes rather than process"*

"The process may well disincentivise developers from doing more difficult things, like creating habitats that take a long time to develop such as woodlands, or which are given a high difficulty score in the Metric, such as heathland."

However, BNG and the requirement to use the Metric will apply to all development types in England, including mineral extraction, reflecting Defra's assertion that there must be a 'level playing field'.

"Despite assurances, the secondary legislation and guidance on implementation of BNG does not include specific guidance for mineral extraction and there are no provisions in the regulations for minerals applications," continued David. "There is reference to 'phased developments' but this does not appear to be adequate or cover many characteristics of mineral extraction.

"On the other hand, it does confirm that Reviews of Old Mineral Permissions (ROMPs) will not be required to deliver BNG, and nor will applications to vary conditions (s73 applications) where the original permission was obtained prior to BNG becoming mandatory, reflecting the MPA's calls for this to be clarified."

In the absence of official guidance, the MPA has prepared 'principles' that draw on experiences of members and provides a useful guide for Defra and DLUHC to inform their thinking.

"Overall, the industry seeks a greater degree of flexibility and pragmatism, with a focus on outcomes rather than process, so that the requirements for BNG don't

result in problems for the industry and worse outcomes for the environment. We will continue to press Government to produce specific guidance for mineral extraction, but in the meantime will be further developing our own advice to members and planning authorities.

"The industry is undoubtedly better placed than most to embrace BNG, having decades of experience of on-site delivery and a mineral planning system that generally has worked well. The number of planning applications for minerals extraction is relatively small compared to other types of development (which total around 250,000 applications each year) the vast majority of which are determined by district councils.

"Few local planning authorities have the in-house ecological expertise to deal with and monitor delivery of thousands of biodiversity gain plans that will be associated with planning applications. It is far from clear how these new requirements will be dealt with in practice, or what happens when some BNG schemes inevitably fail."

*"Some of the ways in which the BNG Metric works are not correct when applied to quarry restoration"*

In terms of delivery, evidence from MPA members' biodiversity projects indicates that well in excess of the 10% net gain is achievable on-site for sand and gravel sites, although this may be more difficult for rock quarries or where the existing land has habitats that are highly valued by the Metric (even where these may appear to be of low value).

"BNG has the potential to create both opportunities and challenges for mineral extraction, but in all cases it's likely to be complicated and probably expensive," concluded David. "The MPA will continue to engage with Government to make our case for some common sense to be applied. Through the minerals planning process the industry already and routinely delivers biodiversity gain, and we continue to gather evidence from MPA members of their experiences as BNG is rolled out."

## MPA principles for applying BNG to mineral extraction

- Early engagement to agree the target percentage of BNG for a site and agreement of desired outcomes.
- Up-front offsetting for initial losses in biodiversity should not be required where BNG in excess of the minimum 10% will be delivered over the lifetime of the development.
- Assessment using the Metric may be undertaken before and after the development, or at periods throughout the development to provide illustrative 'snapshots' of progressive loss and gain over time.
- Net Gain should not be required at every phase or illustrative 'snapshot'.
- 'Interim' and 'temporary' habitats created before and during extraction should be accounted for.
- Outputs from the Metric should be considered alongside professional judgement (ecologists and planners).
- Flexibility to reflect operational changes that may occur during the life of a quarry and revisions to a restoration scheme.
- For physical extensions to existing sites, only apply BNG to the area of new development where there will be changes to habitat cover.
- BNG should not be required for section 73 applications for changes to restoration schemes or extensions of time.

Aggregate Industries employee Mike Belson won joint 3rd prize for his photo of a grey heron at Leicestershire and Rutland Wildlife Trust's restored quarry land at Cossington Meadows, Leicestershire.

# Capturing carbon

Carbon capture is critical to the cement industry's decarbonisation plans, given that most emissions come from the chemical reactions in the process rather than burning fuel. Progress is being made but the scale of challenge is huge, and long-term commitment is needed from Government to give businesses the confidence to make it happen.

ONE MAJOR technological solution to removing carbon emissions from industrial processes is to capture the carbon before it enters the atmosphere, then move it to be permanently stored, such as in geological storage under the sea, or used commercially.

For cement decarbonisation, carbon capture, use and storage (CCUS) will be vital because it is the only way of reducing around 70% of emissions which arise from the chemical process when cement clinker is formed. Switching to low carbon or carbon neutral fuels such as hydrogen or

waste biomass, which is also part of the cement and concrete industry roadmap to beyond net zero, will only reduce the 30% of carbon emissions from combustion.

CCUS is therefore the only technology available to fully decarbonise these 'process emissions' and it could enable the sector to achieve net negative emissions when combined with other levers in the UK Concrete & Cement Industry Roadmap to Beyond Net Zero, including the use of waste biomass and recarbonation.

A wide range of carbon capture technologies already exists.

The MPA is working with the UK Government to address remaining challenges to deploying CCUS, including sustainable and adequate supplies of electricity and water, and enabling cement plants to access pipelines or other transportation to transfer the carbon dioxide to where it will be used or stored. There are also considerations such as planning permission and environmental permitting, stakeholder influence and public perception, setting up new supply chains and developing new skills. It is important that these challenges are addressed in a way that doesn't damage the competitiveness of UK produced cement.



*“Almost 50 projects involving cement plants are underway around the world.”*

“The deployment of carbon capture is vital for low carbon cement production but it adds considerable cost,” said Dr Diana Casey, the MPA’s Executive Director for Energy and Climate Change, Cement and Lime. “These costs would impact domestically produced cement prices, so the construction industry would source cheaper imports to meet their demand, negatively impacting the UK economy and jobs, as well as increasing carbon leakage – effectively exporting our carbon emissions overseas.

“It’s important to the UK economy that domestic cement production remains competitive as it transitions to net zero, and supporting CCUS projects is crucial from the outset. Development costs ahead of construction can be up to 15% of total project cost. This equates to tens of millions of pounds and a significant risk when there is no certainty of the viability of a project until permits, consents and funding have been granted.

“This is a serious barrier to global companies who are considering investment in UK projects when other regions like the EU provide partial funding (up to 50%) for project development, which does not have to be paid back if it is then found the project is not viable.

“And whilst the Government’s Industrial Carbon Capture (ICC) business model will provide ongoing support for operational costs, it currently covers just eight short-listed Track 1 Phase 2 projects – which at least includes Heidelberg Materials’ Padeswood cement CCS – with no information available on how it might evolve for future projects involving the other nine cement plants in the UK, many of which are outside current clusters.

*“We know the UK’s cement producers have the technical capability and commitment to reach net zero carbon through the deployment of CCUS.”*

“CCUS projects are lengthy and complex, typically up to 12 years from starting out to the point of commissioning, and so they require significant forward planning, necessitating clear and consistent policy frameworks to create the confidence to invest and enable assessment of the business case.

“Clarity about the Government’s long-term funding strategy is crucial because cement plants will be developing and commissioning projects at different times and only with visibility of support available will producers be able to plan their investment strategies.

What they need now is the confidence from the Government that investment will be supported by policy in the long-term.”

Dr Diana Casey was among the speakers at COP28 in December. She presented groundbreaking work led by MPA UK Concrete to produce a tier 2 recarbonation model to measure the amount of carbon dioxide that is absorbed from the atmosphere by #concrete. Supported by the UK Government’s Department for Energy Security and Net Zero the work has attracted keen interest from around the world.

## WORK IN PROGRESS

To rise to the challenges of CCUS industrial ‘clusters’ have formed, where some cement plants are in relatively close geographic proximity to other major industrial operators. Being part of a cluster allows them to work together, pool resources and pitch for the available Government funding, although only half the UK’s 10 cement plants are currently part of a cluster. Here are two examples.

### Padeswood Cement Works, North Wales



MPA member Heidelberg Materials is progressing plans to invest around £400 million to construct a carbon capture facility at Padeswood cement works in North Wales.

This is expected to become the first carbon capture enabled cement works in the UK, representing a ground-breaking project for the industry globally.

Part of the HyNet North West industrial cluster, the project is one of eight short-listed Track 1 Phase 2 projects to proceed to negotiations for support under the Government’s ICC model.

The intention is to capture 800,000 tonnes of CO<sub>2</sub> a year (the equivalent of taking 320,000 cars off the road) which will be transported via pipeline as a gas. The scheme is expected to create 54 new permanent jobs in a rural area, and up to 350 additional jobs during construction of the capture plant.

[www.padeswoodccs.co.uk](http://www.padeswoodccs.co.uk)

### Peak Cluster: Derbyshire, Staffordshire & Cheshire

The Peak Cluster is a collaboration to capture, transport and store CO<sub>2</sub> emissions from five cement and lime plants in Derbyshire and Staffordshire, as well as industries in neighbouring Cheshire.

MPA members Tarmac, Breedon, Lhoist and Aggregate Industries have come together with Lostock Sustainable Energy Plant (LSEP) and Progressive Energy on the project that will see carbon dioxide piped from their sites to a permanent location beneath the eastern Irish Sea.

From 2030, Peak Cluster aims to be removing over 3,000,000 of CO<sub>2</sub> emissions each year, and will help to support around 1,000 skilled jobs in the process.

[www.peakcluster.co.uk](http://www.peakcluster.co.uk)

# Sea, sand and... standards

**The British marine aggregates industry is seen as an exemplar for its approach to extraction, monitoring and the transparency of its operations. Following the launch of its new global data platform, the UN Environment Programme has renewed calls for similar high standards to be adopted worldwide.**

The first-ever global data platform on aggregate extraction in the marine environment was launched by the UN Environment Programme in September 2023. Known as Marine Sand Watch, the new platform uses position data transmitted by all ships (Automatic Identification System) to monitor shallow-sea dredging of sand, gravel and other minerals in the world's oceans.

The data shows that around six billion tonnes of marine sand and gravel are dredged worldwide every year for port development, land reclamation and

construction use. This represents about 12% of the total annual global demand for aggregates. Whilst that demonstrates the importance of aggregates to economic development, it also highlights the potential for significant impacts on marine life and coastal communities

The global scale of marine aggregates extraction – and the scale of the impacts – has prompted UNEP to call on governments and operators worldwide to implement a series of best practices, all of which are well-established in the UK marine aggregates sector.

That's because in the UK extraction is carefully regulated, licenced and managed, with vessels required to have 'black box' monitoring systems to record their activity (a system that's been in place for more than 30 years).

***“We are fortunate to have a mature regulatory system to ensure development takes place in the right place and in the right way”***

Mark Russell, MPA Executive Director for Planning, Mineral Resources and Marine Aggregates, said: “In the UK, we are fortunate to have a mature regulatory system to ensure development takes place in the right place and in the right way to minimise potential effects on the natural environment, communities and other activities.

“UK operators work in line with strict codes of conduct and have been at the forefront in developing best practices to minimise any adverse effects on marine life or other marine users. Sadly that's not the case everywhere, and where marine dredging is unmanaged and unregulated, it can lead to detrimental consequences for people and nature.

“Working with Government regulators and advisors, and in partnership with The Crown Estate who own the commercial rights to marine minerals, the British Marine Aggregates Producers Association (part of MPA) plays a key role in driving standards and practices.

In many ways the sector is viewed as a global leader both in terms of the transparency of the operations taking place, but also how these are being assessed, monitored and managed.”

The body that regulates England's seas and coasts, to ensure balance between increased economic development and the protection and enhancement of the marine environment, is the Marine Management Organisation (MMO).

Trudi Wakelin, Director of Marine Development at MMO said: “The UK marine aggregates sector is progressive, strategic, collaborative and highly responsible in the way it works as an industry collective, engaging with regulators and adopting an

evidence-based approach to both the impacts and mitigations of its activities.

“This way of working, building positive relationships with stakeholders along the way, is an enabler of sustainable development in our seas.”

***“The UK marine aggregates sector is progressive, strategic, collaborative and highly responsible”***

Nick Everington, Marine Minerals Portfolio Manager for The Crown Estate, said: “As manager of the seabed around England, Wales and Northern Ireland, we work in partnership with industry to help support the sustainable use of sand and gravel resources.

“Our annual 'Area Involved' report, for example, published in partnership with the British Marine Aggregate Producers Association, is an integral part of this, providing insight and data to improve our understanding and management of the marine environment over the long term.”

Mark continued: “UNEP's Marine Sand Watch initiative provides an insight into the scale of global extraction of aggregates from the sea. The work also highlights the important role that aggregates play in global economic development and climate change transition - with the material being described as the 'invisible hero of development'.

“What's important is that these essential, strategic resources are not taken for granted, and the availability and supply is not simply assumed. Instead, its contribution underpinning economic growth and development has to be recognised, and the activity must be properly planned, assessed, regulated and managed. Extraction from UK licence areas represents just 0.33% of the six billion total but it's clear we have lots of good practice and experience to share.

“We applaud the work by UNEP to provide greater transparency on global marine sand extraction. By highlighting the scale and importance of this activity, its an important step to encourage governments to put in place the right frameworks to enable these essential, strategic development minerals to be sourced from the sea sustainably.”

Dredging for marine aggregates is not related to the recently announced UK Government support for strong and enforceable environmental regulations, standards and guidelines on deep sea mining projects to extract precious metals, copper and cobalt.

**Find out more about UK marine aggregates: <https://bmapa.org/>**



# CONCRETE COMMITMENTS

**Back in 2008 the UK concrete industry launched its first sustainable construction strategy, with goals for the sector to play a dynamic role in delivering a sustainable, low-carbon built environment. Now, 15 years on, an upgrade to the strategy features a new vision and fresh targets for 2030, as Dr Noushin Khosravi, Sustainable Construction Manager for UK Concrete explains.**

By launching the Concrete Industry Sustainable Construction Strategy in 2008, the concrete industry showed its leadership, setting clear targets for the delivery of a sustainable, low-carbon-built environment in a socially, environmentally, and economically responsible manner.

The latest iteration of the strategy focuses on the sustainable development journey to 2030. It sets a new vision for the industry, aligned with new targets and priorities in five key areas, along with considerations that have emerged and evolved since the original strategy, including the publication

of the UK Concrete and Cement Industry Roadmap to Beyond Net Zero in 2020.

The new vision is based on a nested and system-based sustainability model, a holistic approach that takes into consideration the role of the concrete industry in the context of the built environment.

At the heart of the strategy is collaboration across the value chain to tackle climate change and biodiversity decline while creating a safe and regenerative built environment.

## VISION AND COMMITMENTS:

The UK concrete industry will demonstrate leadership by adopting five ambitious commitments to respond to the climate and biodiversity emergency. These will be delivered in collaboration with our value chain and built environment partners.

### CIRCULAR ECONOMY

Enabling greater circularity across the built environment using concrete and encouraging the retention of concrete's value throughout all stages of its life cycle.

### SOCIAL VALUE

Building positive outcomes to improve lives through our activities, and use concrete to create a safe, comfortable, and healthy built environment.

### CARBON

Progressing our UK Concrete and Cement Industry Roadmap to Beyond Net Zero, advancing carbon reduction plans and policies, and developing the prerequisites by 2030 to fully decarbonise by 2050.

### NATURAL ENVIRONMENT

Developing solutions for a regenerative built environment, incorporate natural capital in decision making, and deliver wider ecosystem benefits such as biodiversity net gain.

### METRICS & REPORTING

Continuous improvement of the annual Concrete Industry Sustainability Performance reporting with relevant Performance Indicators.

**CARBON:** The carbon pillar of the strategy is connected to the industry's net zero roadmap and focuses on establishing the foundations required by 2030 to fully decarbonise by 2050. Throughout the implementation of the strategy the industry will continue to report on the progress made on the seven roadmap levers and present its trajectory for concrete industry decarbonisation. It is hoped the carbon emissions reduction pathway can help clients and other organisations to set their own targets accordingly.

The UK concrete and cement sector has already decarbonised by 53% from 1990 to 2018 (absolute emissions). To continue demonstrating our progress, the industry is working on sector EPDs (environmental product declarations), benchmarking and communicating data as effectively as possible. There is also ongoing collaboration with standards committees, specifiers and innovative products to facilitate the adoption of lower carbon solutions.

**CIRCULAR ECONOMY:** The original edition of the Sustainable Construction Strategy established the measuring and reporting of concrete manufacturing and resource processes that support a more circular economy. These include the use of recycled materials, resource efficiency and reducing waste to landfill. The hierarchy, priorities and solutions for achieving more circularity within the built environment have matured in the past 15 years. While diverting waste from landfill remains a core metric, other measures are required to move beyond recycling and look at the entire life cycle of concrete, including its use, end of life and beyond. The focus is to identify current and evolving circular economy activities associated with concrete at all stages of its life cycle. The priority is to retain the highest utility and value of materials, products, components and assets by considering the impact on whole life carbon.

**NATURAL ENVIRONMENT:** For the natural environment the goal is a regenerative built environment. As understanding has progressed, it has become evident that only sustaining the current status is not sufficient. There is a need to move to a regenerative culture which is resilient, adaptable and can evolve to produce net positive impacts. There is continued work based on the MPA's Biodiversity Strategy which itself is advancing to protect and enhance biodiversity and deliver 'net gain' wherever possible, as well as exploring the role of concrete in a regenerative built environment, and providing guidance and best practice to design concrete to be in harmony with and integral to nature and society.

**SOCIAL VALUE:** The central aspiration of all concrete sector activities is to "Build positive outcomes to improve lives". Social outcomes is a new commitment in the Sustainable Construction Strategy. This has prompted the development of a social action framework that demonstrates the short- and long-term social outcomes of our activities and will guide the actions needed to raise the bar when it comes to social outcomes for the concrete industry and its supply chain.

It is worth reiterating that concrete remains essential for our economy, homes, buildings, infrastructure and quality of life. Its remarkable properties like inherent stability, robustness and resilience, make it an indispensable material for future generations. Concrete will be required for building the infrastructure necessary to transition to a net zero economy where its resilience to threats posed by climate change will be especially important.

**METRICS & REPORTING:** The first milestone of the 2008 strategy was the framework of performance indicators that have been reported annually ever since. These were informed by in-sector and external stakeholder collaboration to agree best practice in delivering sustainable outcomes. Current indicators are related to climate change and energy, natural resources and enhancing the environment, sustainable consumption and production, and creating sustainable communities.

The industry acknowledges that sustainability is a dynamic process, not a fixed state to reach. Therefore, it is important to keep reviewing the strategy, methodologies and targets, and keep measuring and reporting data to facilitate decision making in collaboration with the value chain.

## Changes to concrete standards will help to cut carbon

One of the biggest changes to the traditional 'recipe' for concrete since the 1980s has been introduced in the UK. It's a key step in helping architects and engineers continue to decarbonise the construction of buildings and infrastructure. The changes to mix standards BS8500 have been launched by BSI and could save upto 1 million tonnes of carbon dioxide

emissions each year – if this new standard is adopted across all UK construction sites. This new standard for concrete blends finely ground limestone from UK quarries with other materials such as fly ash, a by-product from power generation and ground granulated blast furnace slag (GGBS), a waste product from the steel industry. Clients, designers, engineers, consultants and contractors can all help make sure that when ready-mixed concrete gets poured on construction sites it has the lowest possible embodied carbon.



# Get your priorities right!

With a general election on the horizon, the MPA has set out the industry's priorities for the next Government with a series of common sense recommendations to support decarbonisation, economic growth and delivery of infrastructure.

Few industries play as fundamental a role in everyday life as the mineral products sector. And to meet the UK's need for homes, regeneration, infrastructure, energy security and decarbonisation over the next 12 years will require an estimated 4 billion tonnes of aggregates. But there are serious issues that create real difficulties for the industry, as Robert McIlveen, MPA Director of Public Affairs explains:

"The industry faces significant challenges resulting from current Government policy on things like industrial decarbonisation,

planning and resource availability, and delivery of major projects," said Robert.

"Our new 'Priorities for Government' document summarises these and sets out recommendations in each case. The next Government must address these for the industry to reach its full potential to support growth across the entire UK economy. Better still, most of our priorities do not require significant public expenditure and in that respect they are a no-brainer."

## 1. Decarbonised and competitive UK industry

The whole industry is committed to net zero. Achieving that will require businesses to prepare for alternative fuels, on-site equipment and transport and other measures for industrial processes such as making cement and concrete. But this will rely on zero carbon electricity, hydrogen or waste biomass being available in sufficient quantities and new infrastructure such as grid connections being affordable. It also needs Government to ensure a level playing field with international competitors to attract private investment to the UK.

### Recommendations:

- Tackle the high costs charged by Distribution Network Operators for new grid connections and upgrades to support all industries to decarbonise
- Deliver a Carbon Border Adjustment Mechanism on cement by 2026, to level the carbon cost of imports with domestic production
- Deliver carbon capture at pace, both in clusters and at dispersed industrial sites
- Tackle the domestic drivers of the UK having higher industrial energy costs than competitor economies, e.g. abolish the Carbon Price Support
- Prioritise hydrogen for uses that cannot be electrified such as firing lime kilns
- Reform or phase out the Green Gas Support Scheme which has incentivised waste biomass away from cement production to less efficient uses

## 2. A planning system that supports growth

Supply of mineral products cannot be taken for granted; it must be planned, managed, and monitored to ensure demand is met on a secure and sustainable basis. For every 100 tonnes of sand and gravel extracted and sold over the last decade, permission has been granted for only 62 tonnes of new reserves. This replenishment rate is unsustainable, and decisive action in the next Parliament is needed to streamline the mineral planning system.

Quarries make amazing sites for biodiversity when restored, but the Biodiversity Net Gain rules do not provide the right incentives and could even incentivise less ambitious schemes. Our members have already delivered 80 km<sup>2</sup> of priority habitat, with another 110 km<sup>2</sup> planned.

### Recommendations:

- Streamline the planning process for minerals sites and reduce regulatory duplication between planning and permitting
- Set industry-specific biodiversity net gain rules to get the most out of restored quarries
- Reduce planning and permitting barriers to onsite renewables
- Recognise the strategic importance of domestic mineral supply to the wider economy through a National Statement of Need
- Increase capacity of specialist mineral planners in planning authorities or by developing regional hubs

## 3. Better delivery of infrastructure projects

It can take up to fifteen years from identifying a new mineral resource to starting production, so MPA members need to plan well ahead to invest in people and skills, plant and sites to ensure that essential mineral products are available in the right place and at the right time.

Reliable plans for investing in infrastructure would enable the industry to do this planning with confidence, but all too often projects are delayed, descoped or cancelled. Even when projects do proceed, they have often not engaged the material supply chain early enough, leading to inefficient outcomes.

The delivery process for projects in the infrastructure pipeline needs to be much more transparent and reliable, with realistic goals set and then stuck to. This will allow the mineral products sector to supply these projects in the most cost-effective and sustainable way.

### Recommendations:

- Commit to using low carbon concrete and asphalt by default in public infrastructure
- Mandate Resource and Material Supply audits as an early part of planning for all major public projects
- Establish a consistent, trackable and digitised infrastructure pipeline to support planned investment

# NEWS

## MEMBER

A snapshot of recent news stories from MPA members

### 3D-printed concrete delivers carbon savings

**3D PRINTING** technology has been put to good use at a major waste water treatment plant in West Yorkshire.

Tarmac teamed up with tech company Hyperion Robotics and design-and-build firm Mott MacDonald Bentley to bring structural 3D-printed concrete to Yorkshire Water's largest sewage treatment works in Esholt, which serves 760,000 people in Leeds and Bradford.

Four bespoke designed concrete drawpits – traditionally heavy, box-shaped structures placed underground for the containment of electrical cabling – have been installed as part of a major refurb, linking a new motor control centre to newly-refurbished water filtration on-site.

The 3D-printed design resulted in a 40 per cent reduction in embodied carbon compared to a conventional, in-situ concrete drawpit. Key learnings from the project will be used to explore how 3D printing technology could be extended to other construction applications.



### More mammoth finds revealed

**A QUARRY** in Wiltshire that previously led to the discovery of an incredible 200,000-year-old mammoth graveyard has given rise to an exciting new phase of palaeontological activity.

Hills Quarry Products are working with Neo Jurassic and Archaeological Research Services, along with leading experts from universities and museums to uncover an array of finds at a quarry near Swindon.

They include the remains of steppe mammoth tusks, a pygmy mammoth tooth, several bison vertebrae, a rib and jawbone, wild horse ribs and a partially complete tooth from a bear. Quarrying is one of the few ways large areas of land can be exposed to reveal evidence of human and natural history.



### Creating a buzz

**LAND** surrounding Ketton cement works in Rutland is now home to 30,000 bees thanks to Heidelberg Materials' tanker driver and amateur beekeeper Bruce Stokes.



Bruce has been keeping bees since he was 15 and donated several hives to support biodiversity around the site. "As well as pollinating flowers and plants around the hives, bees have a range of around three miles, so they cover the farmers' fields around our site as well," he said.

The site team helped to create access to the hives by cutting back overgrowth and laying new paths. If the bees thrive at Ketton then more will be introduced at other Heidelberg sites. The honey will be sold locally with the proceeds donated to East Midlands Immediate Care Scheme.

### Europe's first electric front end loader

**AN EAST** London concrete plant has become the first to operate an electrically powered loading shovel.



Believed to be the only one of its kind anywhere in Europe, the Chinese-made LiuGong machine has been put into action at Aggregate Industries' readymix plant at Bow.

The 21-tonne vehicle has a lithium iron phosphate battery with a fast charging capability and can operate for more than 11 hours from full charge. Besides producing zero emissions at the point of operation the machine operates with low noise and vibration.

It joins London's first electric readymix concrete mixer truck fleet, launched earlier this year.

### Circularity is gathering dust

**DUST** collected during cement manufacture in Rugby is being put to good use as an agricultural fertilizer.

Cemex has partnered with waste management company Silverwoods to recover and use By-Pass Dust (BPD) from their cement kiln for agricultural purposes.

BPD is ideal for use on farmland due to its high potassium and lime content meaning it can provide a direct replacement for traditional fertilisers and lime. Additionally, by re-using BPD, the amount of process by-products going to landfill is now zero.

The initiative is backed by award-winning research by Lancaster University to explore the agronomic benefits of BPD and how much carbon can be captured and sequestered from the land application of BPD through enhanced rock weathering and improved crop performance.

## QUARRIES AND NATURE PHOTOGRAPHIC COMPETITION

Quarrying's outstanding contribution to nature recovery and biodiversity gain in the UK has been beautifully captured by industry workers and conservation volunteers in the MPA's nationwide Quarries and Nature Photographic Competition. **Full story page 5.**

**Front cover photo:** Roy McDonald, a volunteer with Berks, Bucks & Oxon Wildlife Trust, captured this winning shot of a Redwing catching a worm at College Lake Nature Reserve, Tring, Buckinghamshire.

**Back cover photo:** Michael Cardus, a contractor with Tarmac, won 1st prize for this shot of dark green fritillary butterflies feeding on a thistle at Arcow Quarry, Settle, North Yorkshire.

