BRITPAVE NEWS

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New whisper concrete trials

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The British Cementitious Paving Association

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CHAIRMAN'S WELCOME

Welcome to the Spring 2025 issue of Britpave News.

An important objective of Britpave is to provide a focal point for the cementitious and concrete infrastructure industry. The busy start to 2025 has demonstrated that it is an objective that the association is achieving.

The recent well-attended soil stabilisation seminar is a case in point. It brought together a major client, academia, contractors and material suppliers to forward updated industry specifications, demonstrate industry best practice, learn of new major research and find out about the potential to go beyond net zero to a cementitious solution that is carbon negative.

It is because that Britpave is recognised as being such a focal point that major clients such as National Highways and the Defence Industry Organisation turn to it for consultation and input. For example, DIO recently formed a concrete pavement innovation group with Britpave to review specifications and develop trials.

The association's technical output is also widely recognised. In its presentation at the soil stabilisation seminar, National Highways referenced Britpave soil stabilisation publications as providing informative industry guidance. Whilst its range of sector brochures highlight and forward the cementitious and concrete benefits for a range of infrastructure solutions from long-term performance to minimum maintenance, whole life cost and reduced carbon. This demonstrates that those solutions should be considered as offering the best option.

Above all, by providing a focal point, Britpave provides a focus for what can sometimes seem to be a disparate industry. It brings infrastructure clients, engineers, contractors and plant and materials suppliers together to forward an industry that is both challenging and, when done with best practice, rewarding.

Joe Quirke
Britpave Chairman and Head of Material Engineering , VolkerFitzpatrick

Britpave, the British Cementitious Paving Association, promotes the better and greater use of cementitious and concrete infrastructure solutions. Members include major contractors, specialist equipment and material suppliers, consulting engineers and interested trade associations. Together, Britpave provides a single industry voice for the in-situ cementitious and concrete infrastructure sector.

For further information visit: **www.britpave.org.uk**

PLANNING AND INFRASTRUCTURE BILL WELCOMED

The new Planning and Infrastructure Bill has been welcomed by a number of Britpave members as an opportunity to address the challenges of the UK's planning system and provide confidence to invest in the nation's infrastructure. The Bill is part of the wider reforms of the National Planning Policy Framework.

Key measures of the Bill include:

- Introduction of a national scheme delegation to determine which applications should be determined by planning officers and which by committee,
- Compulsory Purchase Reform process improved to ensure important developments delivering public benefits can better progress,
- Development Corporations will be strengthened to make it easier to deliver large-scale development,
- A system of 'strategic planning' will be introduced across England known as spatial development strategies, which will help to boost growth by looking across multiple local planning authorities the ensure clear join-up between development needs and infrastructure requirements,
- Nationally Significant Infrastructure Projects consultation requirements to be streamlined and the national policies against which infrastructure applications are assessed will be updated at least every five years.

Alex Vaughan, Costain Chief Executive, praised the government's plan to speed up infrastructure schemes and cut down on legal challenges saying: "We have got to stop the protracted nature of these schemes that holds up things for too long."

Richard Whitehead, Chief Executive at AECOM, said: "The government should be commended for its leadership in attempting to reform a broken system, but the new bill cannot be taken in isolation if it is to deliver the upgrade to infrastructure the country has long needed. With the reforms clearing the way for the government's 10-year infrastructure strategy to take root, it's our hope that the new National Infrastructure and Service Transformation Authority will be provided with the teeth to improve confidence in planning and catalyse private investment to ensure the strategy is realised."

Richard Risdon, Executive Board Director and Regional Managing Director for UK & Europe at Mott MacDonald, said: "The ambition of the bill to remove planning blockers to infrastructure delivery while also delivering for the environment is good news for our sector and the country. Overall, the bill appears to be a step forward that should open the doors to investment in new infrastructure and we stand ready to deliver."

Joe Quirke, Britpave Chairman, said: "The new Bill is an important step towards reforming and improving the planning system to remove the barriers to infrastructure investment and provision by making planning a more streamlined and efficient process."

GATWICK EXPANSION AT LAST?

Transport Secretary Heidi Alexander has said she is "minded to approve" Gatwick Airport's £2.2bn expansion plans subject to noise mitigation measures being developed.

Gatwick Airport has applied to bring its northern runway into full use by repositioning the centre line of the northern runway 12 metres north to allow dual runway operations, aligning with international safety standards. The runway is currently limited to acting as a taxiway or as back-up for when the main runway is out of use.

Gatwick submitted its development consent order application to the Planning Inspectorate in July 2023, which in turn submitted its report to the Secretary of State for transport on 27th November 2024, who then had until 27th February, to respond when Transport Secretary Heidi Alexander announced: "I have issued a 'minded to approve' letter for the Gatwick Airport northern runway development consent order (DCO) under the Planning Act 2008. Given the examining authority's report, for the first time, recommends an alternative DCO which includes a range of controls on the operation of the scheme and not all the provisions have been considered during the examination, I am issuing a minded to approve decision that provides some additional time to seek views from all parties on the provisions, prior to a final decision."

The deadline for the final decision is now extended to 27th October 2025.

HEATHROW EXPANSION NEEDS M25 TUNNEL REROUTE

The M25 may be rerouted due to the Heathrow Airport expansion. The ambitious scheme could now see a tunnel being built for the motorway to pass underground beneath the third runway.

The new route would potentially see the M25 being rerouted between Junction 14 and Junction 15, which connects the motorway to the M4. The airport has previously stated that the tunnel would be built west of the current motorway. Heathrow Airport Chief Executive Thomas Woldbye has ambitiously said that he wants planes to take off from its new third runway before the end of the next parliament, which could be ten years or fewer.

UK INFRASTRUCTURE NEEDS TO CONFRONT CLIMATE CHANGE IMPACTS

Delaying investment in the UK's transport network and water infrastructure could have safety and supply implications for the UK, according to the Institution of Civil Engineers in it's the State of the National Report: Infrastructure in 2025.

The report focuses on three key areas that need strategic investment and long-term planning: transport, energy, and water. It also identifies some important themes:

Firstly, the impact of climate change on the UK's aging infrastructure is accelerating and exacerbating issues. Delaying investment in the transport network and water infrastructure could have safety and supply implications,

Secondly, if anything is to improve, decision makers and industry must work together to end the cycle of short termism. Long-term plans must be agreed, committed to, and delivered,

Thirdly, the engineering community must acknowledge the public's frustration with challenges like the sewage overflow problem and improve communication, transparency, and trust.

Key considerations for each area include:

To improve the transport system, prioritise maintenance

Climate change, lack of maintenance, supply chain challenges, and the skills gap are creating a 'perfect storm' for UK's transport infrastructure, and the network is aging badly. Of particular concern the report states that "parts of the network are perhaps not as safe as the public thinks while some structures should have usage restrictions, but don't." Investment, sensible town planning to reduce the need for short car journeys, and intelligent data use must all be part of a strategic, long-term plan to address the challenges, with maintenance and renewal prioritised over expansion.

Unlock the power of tidal energy to diversify supply

The climate crisis and cost of energy have made energy security a leading concern for successive UK governments and the public. There has been significant progress to increase the use of renewable energy, and the UK is committed to cutting emissions from 1990 levels by 81% by 2035. To meet this ambitious goal, the country must diversify how it gets its energy.

Tidal energy is presented as a 'big idea' worth exploring and as one that excites civil and infrastructure engineers.

Recycle wastewater to help meet demand

The water sector is grappling with the complex and overlapping challenges of aging infrastructure, the need to decarbonise assets, and the impact of climate change.

While reducing sewage overflow and increasing the use of nature-based solutions and sustainable drainage systems must all continue to be priorities, the biggest long-term challenge the water sector faces is supply. Despite the UK's famously damp climate, the nation's daily demand for water is expected to exceed the current supply by more than a third within 25 years.

Reducing leakage and building new reservoirs are already part of long-term plans – increasing the use of treated wastewater must also be part of the solution.

Commenting on the report Professor Jim Hall, ICE President, said: "Now is the time to establish a clear vision of how infrastructure can contribute to a better future for the UK. We need real prioritisation and long-term strategic thinking, and we need to apply creative solutions to the challenges we face. All this needs to be supported by committed investment."

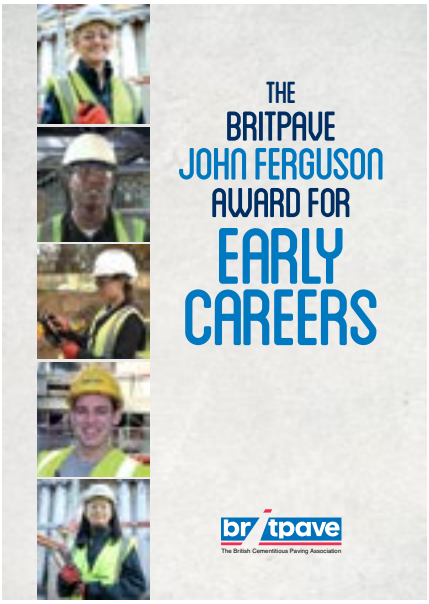
To download the report visit: **www.ice.org.uk/media/4robmpno/ice-state-of-the-nation-2025.pdf**

To learn about the climate change resilience of cementitious and concrete infrastructure download the Britpave report 'Concrete Resilience' from **www.britpave.org.uk/publications**

CELEBRATING THE NEXT GENERATION

Entries are now welcomed for the Britpave John Ferguson Awards for Early Careers. The Awards are designed to recognise and reward the next generation of civil engineers and are in recognition of the tremendous positive impact that John had upon the civil engineering industry and upon Britpave of which John was a founder and long-term member. Entries must be received by 30th July 2025.

The Awards cover both graduates and apprentices covering the annual period of July 1st 2024 to the June 30th 2025. They are designed to reward outstanding graduates and trainees who demonstrate top characteristics that will allow them to thrive in the construction industry. These include: curiosity; creativity; ability to problem-solve; being a team player; good interpersonal skills; attention to detail. All nominees must be working for a Britpave member. There will be one overall winner and two runners-up who will be expected to attend the Britpave annual conference in October to celebrate and receive their award. The judging will be undertaken by the Britpave Council members.



For further details on how to enter the awards, email **info@britpave.org.uk** for an Awards information brochure.

TO ENTER

Entries are welcomed from Britpave member employers. They are invited to nominate graduates or apprentices/trainees who demonstrate:

- **Contribution to industry innovation or best practice delivery**
- **Strong communication and interpersonal skills that build effective working relationships,**
- **In-depth curiosity and problem-solving abilities that allow challenges to be met and resolved,**
- **Capacity to be methodical and organised with attention to detail,**
- **Ability to manage several priorities at a time and to work under pressure,**
- **Ability to work both on own initiative and as a team member and build effective working relationships.**

Britpave members should forward their nominations as a written appraisal of no more than 700 words that covers the characteristics above and includes working and project examples. Any special mention with regards to central issues affecting the industry such as achieving net zero, digital working, the impact of AI, introduction and implementation of innovation and best practice should be included.

The appraisal should also include up to 500 words from the nominee graduate/apprentice on why they chose their specific role within the industry for their career. Entry nominations should be sent as a Word Doc and include the name, job title email and telephone contact details for both the Britpave employer and graduate/apprentice/trainee.

Nominations to be forwarded to Britpave at: **info@britpave.org.uk** by 30th July.

REDUCING FUEL CONSUMPTION: A CONCRETE OPTION

Reducing vehicle fuel consumption is important for reducing CO2 emissions. A good place to start would be reducing the emissions from heavy goods vehicles (HGVs) which account for only 6% of UK vehicle miles but emit 21% of vehicle carbon emissions. With HGV numbers predicted to increase a new report from Britpave proposes a solution to significantly reduce HGV carbon emissions.

The report, 'Reducing fuel consumption: a concrete option', highlights that in 2021 UK domestic transport was responsible for emitting 109 $MtCO_2e$ (millions tonnes of carbon dioxide equivalent). This represents a 10% increase from 2020 and accounted for 26% of the UK's total emissions. Heavy goods vehicles (HGVs) made up only 6% of vehicle but were responsible for an estimated 21% of carbon emissions.

Something needs to be done to decarbonise road freight transport especially as it predicted to grow. Nearly 80% of goods in the UK are transported by road and the market for new HGVs grew by 17.2% in the second quarter of 2023.

A large body of International research suggests that concrete roads offer considerable potential to reduce HGV fuel consumption by up to 11% compared with asphalt. Concrete roads have much greater stiffness compared to other road pavement design options. This reduces tyre rolling resistance between a vehicle's wheels and the road surface. The deflection in flexible asphalt road surfaces increases rolling resistance and, therefore, fuel consumption.

Collaborative research between the Massachusetts Institute of Technology (MIT) Concrete Sustainability Hub (CSHub) and the California Department of Transportation (CALTrans) found that road surface roughness and deflection Pavement-Vehicle Interaction (PVI), accounts for 4% of fuel consumption for 40 tonne HGVs. A further MIT study found that upgrading road surfaces to concrete in Texas would improve fuel consumption by 10%.

Research carried out by the Centre for Surface Transportation Technology (CSTT) and National Research Council of Canada(NRC) for the Cement Association of Canada concluded that fuel consumption of HGV's traveling on asphalt pavements increased by 11%, 8%, and 6% for speeds at 100, 75, and 60 km/h respectively. The Swedish National Road and Transport Research Institute (VTI) investigated the fuel consumption difference on similar asphalt and concrete sections of a motorway in Uppsala, Sweden. Comparative fuel measurements taken using a Scania R500 60 ton HGV showed a 6.7% reduction in fuel consumption when the HGV travelled on the concrete section of motorway.

Joe Quirke, Britpave chairman, said: "A complete retrofit of the UK strategic highway network is neither practical nor economic. However, as HGV use is predominantly on Lane 1 of a motorway or dual carriageway consideration should be given to changing these to rigid concrete lanes when the existing asphalt lanes reach the end of their useful lives or are subject to improvement works, particularly on steep sections".

Designed specifically to cope with the 48 tonne weight of HGVs and placed on the inside lanes of dual carriageways and motorways, these truck lanes offer a range of benefits. For in addition to providing a deflection-free surface that can assist with reducing HGV fuel consumption and emissions, concrete truck lanes would provide a road solution that offers long-life performance and minimum maintenance with impressive whole life cost and whole life CO_2.

Quirke concluded: "The reduction of carbon emissions is key if sustainability and environmental targets are to be met. When it comes to road transport, it may prove worthwhile to look beneath HGV's tyres for an immediate and readily available concrete solution".

Copies of ***'Reducing fuel consumption: a concrete option'*** may be downloaded at: **www.britpave.org.uk/publications**

NEW WHISPER CONCRETE TRIALS

Britpave member Tarmac has been trialling new formulations of noise-reducing concrete for National Highways in Cornwall.

Tests on five different patterns of concrete pavement surface undertaken on a 1.5kkm section of the eastbound A30 near Penzance, Cornwall, have shown that all the concrete patterns reduced traffic noise by up to seven decibels.

Britpave has long forwarded the maintenance benefits of hard-wearing concrete road surfaces but the noise made by contact with tyres means that both motorists and neighbours generally prefer asphalt running surfaces. Concrete roads need grooves for drainage purposes and skid-resistance, but it is the grooves can cause the thrum-thrum noise.

Trials of so-called 'whisper concrete' were conducted by the national roads agency in the 1990s, with some of the aggregate left exposed on the surface rather than brushed into the grooves, but the material was abandoned in 2001. The concept has been revived as part of National Highways' drive to renew existing concrete carriageways.

A team combining Tarmac, Wirtgen, Belgian paving contractor Topoff and Atmo Technology tested five surface profiles on the A30 with differing groove dimensions and arrangements.

In a single-pass process treatment, grooves were created into the existing concrete pavement while grinding was applied onto raised 'turrets' on the surface to add texture and improved skid resistance.

The trials involved the development of a new single-pass process that minimizes material removal and extends the lifespan of treated surfaces from five years to 10-15 years. This approach not only improves the road's durability but also reduces maintenance costs and environmental impacts over the pavement's lifecycle.

Tarmac Regional Contracting Director Nick Angelou said: "This significant trial has helped to develop a solution for concrete roads which can reduce noise for neighbouring communities as well as extend the lifecycle of the asset to deliver financial and environmental savings by eliminating the need for earlier intervention."

National Highways' Concrete Roads Chief Nick Knorr said: "This trial was part of our concrete roads programme, which will ultimately replace all of our existing legacy concrete roads. Achieving this goal will take time and significant investment, so it is essential that we find cost effective ways of extending the life of those still in use until they can be replaced."

He described Tarmac's 'next generation concrete solution' as "a promising technique" saying that: "We have seen positive results related to noise reduction and ride quality. Ongoing monitoring and future trials will confirm its full impact on asset life extension but the initial observations are encouraging."

NEW RESEACH ADDRESSES MISPLACED SOIL STABILISATION LEACHING CONCERNS

New research undertaken by Nottingham Trent University in collaboration with Britpave has addressed the misconceptions concerning the leaching potential of soil stabilisation.

The stabilisation of weak natural soils using binders such as lime or cement is a sustainable and proven method to enable the re-use of otherwise unsuitable fill material in civil engineering projects. Notwithstanding the benefits of soil stabilisation, concerns are sometimes raised over the leaching potential of certain chemistries from lime or cement stabilised soils. Although leaching pollution risks are low relative to the volume of soil stabilisation treatment undertaken there have been a small number of specific cases where high pH water has been discharged from sites where soil stabilisation was used.

This research investigated the leaching potential of UK soils stabilised by different dosages of lime and cement following standard leaching test methods in BS EN 15863:2015. Britpave member Balfour Beatty worked with Nottingham Trent University (NTU) to deliver this programme of work. Balfour Beatty obtained, characterised and prepared soil samples for NTU to test which were tested by NTU's Maudslay Civil Engineering Laboratory with chemical testing of the leachate undertaken by colleagues in the Chemistry Department at the Clifton Campus.

Following analysis of a thorough testing programme the research confirmed that leaching from lime and cement-stabilised soils is minimal, even under aggressive laboratory conditions. The low levels of leachate detected aligned well with industry experience and expectations from previous research. Importantly, there was no evidence of significant chromium leching. Chromium present within the stabilised soil eluates was well below WHO drinking water standards for total chromium. The very low rate of leaching by diffusion reduced significantly over time further mitigating this risk.

Longer curing times significantly reduced the availability of unreacted lime for leaching. The research examined field samples, which had cured for over three years. They showed negligible lime loss. This highlighted that the risk of leachate progressively reduces for typical applications where prolonged infiltration of water into and through treated is avoided. Even after prolonged water immersion in an unconfined condition, the stabilised soils retained their substantial strength whereas untreated soil disintegrated immediately. This underscored their durability and long-term performance in civil engineering applications.

Commenting on the research Dr Paul Beetham, Associate Professor in Geotechnical Engineering, Nottingham Trent University Civil Engineering department, said: This collaboration between NTU and Balfour Beatty has delivered a truly impressive scope of work across lab prepared and field recovered, undisturbed blocks to truly link lab to field. The work is resounding to demonstrate that leaching is via slow diffusion mechanisms, resulting in very small amounts from lab samples and negligible from field specimens, even those compacted slightly drier than optimum and with elevated air voids."

Stephen Phipps, Senior Materials Engineer at Balfour Beatty, added: "The full immersion testing programme represented extreme case scenarios as the tank immersed testing conditions were far more onerous than real-time field conditions. This provides confidence to the conclusions that the potential of leaching pollution are extremely low, especially if good industry soil stabilisation and drainage industry practices are followed.

Good working practices will provide the necessary low permeability that limits leachate. In particular the research underlined that the rare instances of high pH water discharge identified in past projects were linked to poor drainage design. Ensuring that water does not infiltrate into and or flow through stabilised material is key to preventing leachate issues. Properly designed and executed soil stabilisation presents negligible environmental risk".

To download a copy of the research *'Britpave Soil Stabilisation Task Group Research Project: The Leachability of Stabilised Soils'* visit: **www.britpave.org.uk/publications**

TAKING SOIL STABILISATION FORWARD: SEMINAR REPORT

The well attended and well-received Britpave seminar 'Taking Soil Stabilisation Forward' focused on key considerations on how the industry can achieve just that: improved industry specifications, examples of good practice, new research and carbon reduction.

Dr Yi Xu, Senior Pavement Advisor, National Highways and Dr Helena Lacalle Jimenez, Associate, AECOM, explained the thinking behind the updating of the Manual of Contract Documents for Highway Works (MCHW) with particular reference to soil stabilisation and pavement foundations. Soil stabilisation is an option for pavement foundation construction, offering potential economic and sustainable benefits. The relevant specification has been updated and integrated in CC/CP 201 Pavement Foundation Construction, while the corresponding design standard, CD 225 Design for New Pavement Foundations, has been updated to support the completion of work-specific requirements. Key technical changes include transferring capping materials from the earthworks document to CC/CP 201, incorporating end-performance compaction for bound capping, and aligning alternative binders with BS EN 16907-4. To encourage the uptake of low carbon solutions, cement substitutes or low carbon cements have been included for use in capping and subbases. Requirements and advice on the design of stabilised materials for bound capping have also been transferred from Series 600 and HA 74/07 (withdrawn) to CD 225, with references to Britpave industry guidance documents. These changes to the MCHW aim to support the National Highway overall drivers of road safety, improve customer experience, enhance delivery efficiency, and promote decarbonisation. Seminar delegates were impressed by the new documents also meeting drivers for functionality and ease-of use of new digitally-enabled suite of documents which were highlighted by the speakers who underlined the success of collaboration with the Britpave Soil Stabilisation Task Group. The updated MCHW and accompanying DMRB documents are scheduled to go live in 2025.

Keeping with road pavement projects, the next presentation from Stefan Stansfield, Managing Director, Combined Soil Stabilisation and Steve Dunn, Director, Combined Soil Stabilisation, discussed a range of highway projects where soil stabilisation has been successfully treated earthwork material with a high moisture content or used as an alternative to dig-and-dump and then importing new aggregates and soil. The projects discussed in sequence from embankment fill, up to capping and subbase for pavement foundations and included adopted roads on housing developments, major dual carriageways and motorway approach roads: M20 Junction 10a embankment, M11 Junction 7a embankment, A30 dry out of saturated sub base, stabilised capping at Muscalls Farm housing development, Kent, A46 and A421 provision of Class 3 foundations and an innovative standard departure on the A14. Each of these diverse highway projects had a common theme benefits: reduced project times, costs and environmental impacts. Each projects underlined that choosing a stabilised solution offers the right approach for achieving a robust engineering solution.

Despite have a long and proven track record, the specification of soil stabilisation can be stymied due to misconceptions of its use. New research undertaken by Nottingham Trent University in collaboration with Britpave aims to the address the misconceptions

Despite have a long and proven track record, the specification of soil stabilisation can be stymied due to misconceptions of its use.

concerning the leaching potential of soil stabilisation. Dr Paul Beetham, Associate Professor in Geotechnical Engineering at Nottingham Trent University describe how the research investigated the leaching potential of a range UK soils stabilised by different dosages of lime and cement following standard leaching test methods in BS EN 15863:2015. A full immersion testing programme confirmed that leaching from lime and cement-stabilised soils is minimal, even under aggressive laboratory conditions. Importantly, there was no evidence of significant chromium leching. Chromium present within the stabilised soil eluates was well below WHO drinking water standards for total chromium. The research emphasised the how following best industry practice particularly with regards to drainage design and well executed soil stabilisation ensured negligible leaching risk. A fuller report of the research findings may be found on Page 8 of this issue of Britpave News.

The final presentation of the seminar addressed the challenging issue of decarbonisation. Mike Haynes, Director at MPA Lime, explained how the UK lime sector is working hard to decarbonise by 2040 – ten years before the UK Government target of 2050. He admitted that making industrial mineral lime products from limestone directly releases carbon dioxide, both from the burning of hydrocarbon fuels, to reach the required process temperatures of above 900 degrees Celsius, and from the process chemistry itself. However, the sector has established a road map to not only reduce carbon emission but shows how to go beyond net zero to net negative.

Firstly, switching away from fossil fuels to low or zero carbon alternatives like hydrogen or waste biomass could achieve a 22% carbon reduction for quicklime and 37% for dolime. MPA Lime has led a successful hydrogen trial and in Europe there are plants operating on 100% biomass solid fuels. In addition, the are ongoing developments in more efficient kilns and new synthetic and liquid fuels. Secondly, carbon capture. This involves the capture and storage of process and combustion carbon emissions and account for over 50% emissions from lime production. Thirdly, supply chain improvements including clean transport and the use of green electricity. Then there is the potential of lime carbonation. International research confirms that around one third of the carbon dioxide from lime production is naturally reabsorbed from the atmosphere back into lime products. Haynes called for this significant feature of lime to be recognised in carbon accounting methodologies and explained that this plus combining the industry proposed developments with the enabling action by Government and the natural effects of carbonation, means that the production of British lime could become not just net zero but net negative by 2040.

Concluding and summarising the seminar, Alastair McDermid, Stabilisation Technical Director at IS Contracting and Chair of the Britpave Soil Stabilisation Task Group, said: 'Today's seminar has shown how the Britpave Soil Stabilisation Task Group by working with major clients, industry and academia, is forwarding the sector in terms of updated specifications, best industry practice, important research and achieving decarbonisation.

Switching away from fossil fuels to low or zero carbon alternatives like hydrogen or waste biomass could achieve a 22% carbon reduction for quicklime and 37% for dolime. MPA Lime has led a successful hydrogen trial and in Europe there are plants operating on 100% biomass solid fuels.

HEAVIER ELECTRIC CARS POSE MOTORWAY BARRIER SAFETY RISK

In 2023, growing safety concerns led the National Highways to commission TRL to undertake a £30,000 study to assess the impact heavier electric vehicles have on crash barriers amid growing safety concerns.

The increasing number of heavy electric cars means that the programme to replace steel motorway barriers with concrete should be accelerated in order to negate the potential of crossover accidents believes Britpave, the infrastructure industry association.

The average weight of a petrol or diesel car is 1.5 tonnes whereas electric vehicles usually weigh between 1.8 to 2.2 tonnes due to extra weight of banks of batteries. Existing steel barriers only have to comply with design standards which were tested using 1.5 ton cars. The safety standards for steel barriers are failing to taking into account of the increase weight of electric cars and this could potentially lead to crossover accidents where vehicles crash through central barriers into the path of oncoming traffic.

In 2023, growing safety concerns led the National Highways to commission TRL to undertake a £30,000 study to assess the impact heavier electric vehicles have on crash barriers amid growing safety concerns. The research findings have yet to be published.

In comparison to steel barriers, concrete barriers are able to contain errant 4x4 cars, light vans, buses, coaches and lorries of up to 13.5 tonnes. The high containment level of concrete barriers is key to minimising the risk of that most fatal of motorway accidents: the crossover. In addition, the 50 year design life and minimum need for maintenance removes the need for road workers to be present on dangerous, live motorways replacing damaged steel barriers. The long life also offers superior reductions in whole life costs and carbon.

Recognising the superior robustness, in 2005 the Department for Transport made concrete barriers the default option for motorways where the average annual daily traffic level is 25,000 vehicles per day and where steel barriers need replacing having reached the end of their 20-year life. In 2022, National Highways started a 3 year programme to replace 63 miles of steel barriers with concrete including sections of the M6, M62, M42, M1, M4 and M5. With the increased weight of electric vehicles there is an argument for dual carriageways to have the same crossover safety consideration as motorways.

Joe Quirke, Britpave Chairman said: “Concrete barriers offer unrivalled strength, safety and whole life performance benefits. These benefits are recognised by the Department for Transport and National Highways who have a programme to replace steel barriers with concrete. The increased weight of electric vehicles – for which steel barriers were never designed for – means that that programme should be accelerated and a similar safety programme be considered for dual carriageways.”

COSTAIN ACHIEVES LEADING STANDARD FOR CARBON MANAGEMENT

Congratulations to Britpave member Costain who have achieved verification to PAS 2080:2023 Carbon Management in Infrastructure and Built Environment with the British Standards Institution (BSI).

BSI's PAS 2080 is the standard for carbon management in infrastructure and applies to new projects or programs of work, as well as the management or retrofit of existing assets and networks. It is the world's first standard for managing infrastructure carbon.

Following a recent assessment that reviewed Costain's processes and projects, BSI has reverified Costain to the new 2023 standard, which has been revised to include additional conditions around procurement, collaboration and measurement. Costain was recognised for demonstrating a strong awareness of carbon management and having robust processes to reduce carbon, which are utilised across its infrastructure projects. The verification demonstrates Costain's commitment to the future of sustainable infrastructure, and to managing and reducing carbon emissions from its projects.

Costain supported the production of the updated PAS standard and was part of the Steering Group that developed the original PAS 2080 standard. A submitted case study demonstrated how the HS2 Skanska Costain STRABAG joint venture delivered cost and carbon savings by using an innovative zero trim pile solution, saving 840 tCO2e through a new technique which can be used across the industry.

Geraint Rowland, Group Environment Director at Costain, said: "Securing verification of PAS 2080 is testament to our delivery of low carbon sustainable infrastructure across all our sectors.

"We have developed tools and updated our processes to improve our understanding of carbon emissions and inform decision-making as we create a sustainable future. PAS2080 has provided us with a framework to drive carbon reduction across the organisation and help our customers, contractors and suppliers adopt low carbon best practice and achieve carbon reduction targets."

Last year, Costain built a carbon tracker platform that aims to standardise and improve emissions reporting across all of its projects. The platform makes it easier for Costain's supply chain partners to accurately record carbon emissions. It is expected that data shared by suppliers will be used to inform future project planning and provide vital insights to reduce Scope 3 emissions, which continue to be a key directive of the PAS 2080 standards.

In addition, Costain obtained the London Stock Exchange's Green Economy Mark, which highlights listed companies or funds that derive 50% or more of total annual revenues from products and services that contribute to the global green economy.

COSTAIN

Photo: Low carbon materials were used in the construction of the A30 Chiverton to Carland Cross.
Credit: Costain

AGGREGATE INDUSTRIES REBRANDS AS HOLCIM UK

Aggregate Industries, established in 1997 from the merger of Bardon Group and Camas and acquired by Swiss cement company Holcim in 2005, has rebranded as Holcim UK

Holcim UK chief executive Lee Sleight said: "Through taking on the global brand, we can leverage Holcim Group's global presence and the innovative solutions it has brought to a variety of different markets."

As part of this sustainability drive, Holcim UK, as it now is, seeking to increase its sales of secondary aggregates, from two million tonnes of construction demolition materials to more than five million tonnes by 2030.

MANCHESTER AIRPORTS GROUP NAMES PARTNERS FOR AIRFIELD INFRASTRUCTURE FRAMEWORK

Manchester Airports Group (MAG) has announced the selection of key partners for its new £550m Airfield Infrastructure Framework, which aims to enhance airfield development at its three airports: Manchester, London Stansted and East Midlands.

The appointed suppliers are Arup, Jacobs, VolkerFitzpatrick, Lagan Aviation & Infrastructure, Dyer & Butler, Allied Infrastructure and Amalgamated Construction. The framework will span a period of five to eight years and is part of MAG's ongoing commitment to investing in airport infrastructure.

The initiative will focus on various critical projects, including airfield improvements, runway resurfacing, development of aircraft stands and installation of airfield ground lighting systems.

Through this framework, MAG aims to foster long-term partnerships with leading design consultants and specialist contractors, improving the airport experience for passengers.

MAG procurement and contracts director Terry Fitzmaurice said: "This new Framework will foster a more collaborative relationship between MAG and its designers and contractors, which will help MAG meet its capital investment projects across all three airports. Working more closely with our newly appointed partners will also help MAG meet its sustainability targets - including net zero operations by 2038 - through more sustainable supply chain practices.

Britpave member Jacobs Executive Vice President Kate Kenny said: "We are delighted to continue our relationship with MAG and support the Group's capital development priorities to enhance passenger experience, drive sustainability progress and advance connectivity in the UK. With infrastructure resiliency becoming ever more critical, our focus is on delivering projects that not only address today's demands but are also adaptable to the evolving future needs of aviation."

Kevin Berry, Aviation Divisional Director at VolkerFitzpatrick, said: "We are thrilled to be appointed to MAG's Airfield Infrastructure Framework and to contribute to these essential development programmes. With our expertise and commitment to innovation and sustainability within the aviation sector, we look forward to delivering high-quality projects that enhance the infrastructure and operations of these vital airports."

NEW BEDFORD MILTON KEYNES CANAL

The Bedford & Milton Keynes Waterway Trust has appointed Britpave member Aecom to assess the feasibility of constructing what could be the UK's largest new canal developed in the last century.

The long-proposed Bedford & Milton Keynes Waterway Park would be a 26km waterway connecting the Grand Union Canal in Milton Keynes to the River Great Ouse in Bedford, benefitting both new and existing communities along the Oxford-Cambridge Growth Corridor. The initiative, which has been championed by the Trust for nearly three decades, seeks to develop essential blue-green infrastructure that would enhance surface water management, bolster flood resilience and create opportunities for water transfer in the region.

Aecom's first task involves examining existing data to identify potential challenges associated with the construction of the initial 2km section, which stretches through the eastern part of the route near Bedford. Following this preliminary assessment, Aecom will develop concept designs for the first section of the canal. This initial stretch will include an underpass that crosses the A421, constructed in anticipation of the canal's development, and will feature multiple locks. Additionally, the design aims to integrate the canal with existing sustainable drainage systems at Bedford Commercial Park, enhancing the area's flood resilience capabilities.

Aecom Water, UK & Ireland Technical Excellence Director, Peter Robinson said: "The proposed route of the Bedford & Milton Keynes Waterway Park was part of historic plans for Britain's original canal network, though it was never constructed. The introduction of the new waterway presents a unique opportunity to establish a large-scale blue-green infrastructure asset, delivering substantial environmental, economic and social benefits to support the area's ambitious growth plans."

CEMEX OPENS NEW QUARRY

Britpave member Cemex has secured the ongoing supply of aggregates to the London market by opening a new sand and gravel quarry in Shepperton, North Surrey..

It is anticipated that around 1.2million tonnes will be excavated from this site over up to five years, with a further year to complete restoration of the land back to agricultural use. The

aggregates from the Shepperton Quarry will supply key infrastructure projects in the West London area, alongside nearby readymix plants and other local requirements.

Wayne Streven, Aggregates Operations Manager for Cemex UK, commented: "The opening of this new quarry is crucial to ensure we can continue to supply the important London market. Sand and gravel reserves in this area are becoming harder and harder to secure.

"For this reason, we are extremely excited to open our new Shepperton Quarry following a significant investment into a new on-site processing plant. Shepperton will play a vital role in the future of our capital's infrastructure development, ensuring that we can meet the growing demands of the city with a reliable supply of high-quality aggregates."

MEMBERS' NEWS

NEW COSTAIN RAIL SECTOR DIRECTOR

Alistair Geddes has joined Costain from Balfour Beatty, where he was operations director of its rail system business. At Balfour Beatty, Geddes looked after a number of manufacturing facilities, frameworks and projects for clients including Network Rail, Transport for Wales, Transport for London and others in the private sector. He joins Costain on the back of a period of growth for its transportation division, having recently won a £400m contract to deliver tunnel and lineside mechanical and electrical (M&E) systems for HS2 as well as a separate award to deliver high voltage power supply systems across the entire line, worth in the region of £300m to its joint venture with Siemens Mobility.

NEW BRITPAVE MEMBER

Britpave welcomes new member ISC Ltd, a specialist earthworks and civil engineering company that delivers a wide range of groundworks and infrastructure services across the UK. A core area of ISC Ltd's operations is soil stabilisation. Additionally, ISC Ltd provides comprehensive drainage works, essential for managing surface and sub-surface water on construction sites. From installing pipes and manholes to creating sustainable drainage systems (SuDS), the company ensures effective water management that protects both the environment and the integrity of the construction project. With a commitment to safety, innovation, and client satisfaction, ISC Ltd continues to be a trusted partner in the civil engineering sector, supporting infrastructure development across a wide range of industries.

Al McDermid, Stabilisation Technical Director, commented: "Joining Britpave marks an important step forward for ISC Ltd. It's not only a strategic business move, but also a statement of intent—one that confirms the company's ambition to grow, lead, and help drive the industry toward more efficient and sustainable solutions. By joining Britpave, ISC gains access to a wide network of professionals and businesses involved in similar fields. This opens the door to valuable partnerships, shared knowledge, and potential new opportunities. It allows the company to connect with others working on cutting-edge infrastructure projects, from highways and airfields to specialist paving solutions and soil stabilisation work – areas in which IS Contracting already has strong experience."

BRITPAVE MEMBERS

As the focal point for in situ concrete and cementitious infrastructure solutions, Britpave offers its members a recognised industry voice, market sector development and beneficial industry networking opportunities. Britpave members include clients, consultants and engineers, contractors, material and plant suppliers and academia.

AECOM Ltd - www.aecom.com

Atkins Ltd - www.atkinsglobal.com

Balfour Beatty Ltd - www.balfourbeatty.com

Blue Phoenix Ltd - www.bluephoenixgroup.com

Buxton Lime – www.buxtonlime.com

MPA Lime - www.mpalime.org

Cemblend Ltd – www.cemblend.co.uk

CEMEX UK - www.cemex.co.uk

Combined Soil Stabilisation Ltd - www.combinedssl.co.uk

Costain Ltd - www.costain.com

Gomaco International Ltd - www.gomaco.com

Heidelberg Materials UK Ltd - www.heidelberg.co.uk

Holchim – www.holchim.com

Integrated Solutions Contracting Ltd – www.iscontracting.co.uk

Jacobs - www.jacobs.com

Lagan Aviation and Infrastructure - www.laganaviation.com

Mick George – www.mickgeorge.co.uk

Morgan Sindall Construction and Infrastructure Ltd - www.morgansindall.com

Mott MacDonald – www.mottmac.com

Norder Design Associates Ltd - www.norder.co.uk

PJ Davidson (UK) Ltd - www.pjd.uk.net

Power Better Soil Solutions – www.powerbetter.biz

RJT Excavations Ltd - www.rjtexcavations.co.uk

Roadgrip Ltd - www.roadgrip.co.uk

SGE - www.sgeworks.co.uk

Smith Construction (Heckington) Ltd - www.smithsportscivils.co.uk

Tarmac Ltd - www.tarmac.com

Tata Steel Shapfell - www.tatasteeleurope.com

Techjoint Ltd www.techjoint.co.uk

TKL Earthworks - www.thetklgroup.co.uk

VolkerFitzpatrick Ltd - www.volkerfitzpatrick.co.uk

Wedgewood Groundworks - www.wedgewoodgroundworks.co.uk