BRITPAVE NEWS

ISSUE 52 - WINTER 2026



BRITPAVE CONFERENCE REPORT

JOHN FERGUSON AWARD WINNERS

HOLCIM AND BLUE PHOENIX SHOW BENEFITS OF EARLY ENGAGEMENT

REDUCING BINDER PRODUCTION CO_2

HEILDELBERG SETS UP FIRST BATCHING PLANT AT SIZEWELL C

EL NINO TESTS INFRASTRUCTURE RESILIENCE

CONCRETE PAVEMENTS COOL CITY HEAT

ON GRADE EXPLAINS HOW TO MAKE THE GROUND WORK FOR YOU

Slipformed progress on the A428

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CHAIRMAN'S WELCOME



This has been my first year as Chairman of Britpave. It has been one of continuity but also one in which we have begun to sharpen our focus on where Britpave can add the greatest value in terms of industry best practice, technical information, credible industry representation and networking.

Britpave may be a relatively small association, but we have a meaningful influence that comes from the wide-ranging knowledge and practical experience of our members. In addition to this, one of our greatest strengths remains the bringing together of clients, designers, contractors, suppliers, specialists and academics. This is demonstrated by the well-attended Britpave industry conference and seminar events.

We continue a strong technical programme focused on long-term performance, whole-life value and low carbon. This includes progressing a concrete pavement whole-life cost tool and new pavement training course, working with Defence Infrastructure Organisation on the revision and updating of Specification 033 and 50 and forwarding the benefits of roller compacted concrete for ports.

Looking forward there is new momentum with the establishment of specific Britpave industry forums that are addressing specific issues and challenges with cross-membership input and information exchange.

These Forums promise to help Britpave further deliver on its objective to forward cementitious and concrete solutions and to help raise the profile of those delivering those solutions.

I trust that you enjoy this issue of Britpave News which highlights what is being achieved by Britpave and its members.

Al McDermid
Britpave Chair

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**

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Front cover image: PJ Davidson slipformed success on the A428

CPS SETS OUT PLAN TO BOOST BRITAIN'S INFRASTRUCTURE

The Centre for Policy Studies think tank has published a report detailing a "comprehensive breakdown" of eight key factors driving up Britain's infrastructure costs, alongside 40 recommendations of how to drive them back down.

Among the factors cited as increasing the costs of infrastructure, the report details excessive environmental impact assessments and a longer planning process.

The report, 'Lowering Infrastructure Costs', has identified eight interconnected factors which raise Britain's infrastructure costs unreasonably high:

- A planning process that has grown longer and more expensive, with average decision timings rising from 2.6 years in 2012 to 4.2 years in 2021,
- Environmental impact assessments have grown from under 400 pages for the Jubilee Line Extension in the 1990s to nearly 18,000 pages for a 3.3 mile railway line to Portishead,
- Judicial review is encouraged because of an international treaty, the Aarhus Convention, and is increasing, with legal challenges rising from around one per year between 2008 and 2018 to four per year between 2019 and 2024, with National Highways estimating that a single challenge can add more than £120m to project costs,
- Responsibility for funding projects sits with the Treasury – carrying significant political risk – but with limited ability to control costs once money is committed,
- Procurement focuses excessively on lowest cost and social value rather than value for money,
- Regulations are set by quangos and arms-length bodies with no stake in cost outcomes,
- A civil service without sufficient in-house technical expertise to effectively manage projects. The report highlights findings which show the Department for Transport – where many major infrastructure projects sit – has the second highest staff turnover of any Whitehall department,
- The centralisation of decision-making, meaning mayors and local authorities lack the power and incentive to deliver the infrastructure their communities need.

The report sets out a comprehensive programme of reform, including amendments to streamline the planning process and make Development Consent Orders a genuine one-stop shop; rebalancing environmental regulations to focus on positive outcomes rather than defensive paperwork; raising cost caps for unsuccessful judicial review claimants; devolving funding and approval powers to metro mayors; reforming procurement to reward value for money and past performance; challenging unnecessary standards; rebuilding in-house engineering capacity within the civil service and devolving Transport and Works Act Order approvals to elected regional mayors.

CPS head of housing and infrastructure and report author Ben Hopkinson said: "Without reform, Britain will continue to spend vast sums on infrastructure while receiving comparatively little in return, and only that after significant delay.

"Our neighbours do not experience the same problems, there are ways to deliver the infrastructure a country needs quickly and efficiently, without enormous cost to the taxpayer. The recommendations I've outlined would help speed up the process of delivering new infrastructure significantly, for less than we currently spend, and allow the economy to unlock the wider benefits of better public transport, greater airport capacity, and more roads."

To download the report, visit: **https://bit.ly/4i1Jmx4**

DfT framework for rail's 30-year plan

The Department for Transport (DfT) has published a briefing paper outlining the proposed structure of a long-term rail strategy (LTRS) that will guide rail investment and development across the UK over the next three decades.

Prepared for the House of Lords, the document sets out five objectives for the strategy:

- Supporting long-term economic growth
- Ensuring financial sustainability and value for money
- Reducing regional and national inequalities
- Meeting future passenger and freight demand
- Supporting environmental sustainability

The LTRS will provide the "overarching direction" for the railways set by the Transport Secretary and delivered by Great British Railways (GBR). Described by government as a "once in a generation overhaul", GBR will bring track and train together, delivering reliable services for passengers and catalysing growth across the country.

The final strategy will be developed through further analysis and stakeholder engagement ahead of expected publication in autumn 2027.

The DfT stressed that the LTRS will serve as a strategic framework rather than a details plan or pipeline of projects. Individual schemes and funding packages which will "remain a matter for GBR to develop" in response to the strategy. The LTRS to provide a long-term view setting out future challenges the railway will face, such as climate change, and the outcomes it will be expected to achieve, such as supporting economic growth in the long-term.

While the LTRS will apply across the UK, the paper acknowledges the devolved responsibilities of Scotland and Wales and highlights the need for close collaboration between GBR, devolved administrations and Mayoral Strategic Authorities (MSAs).

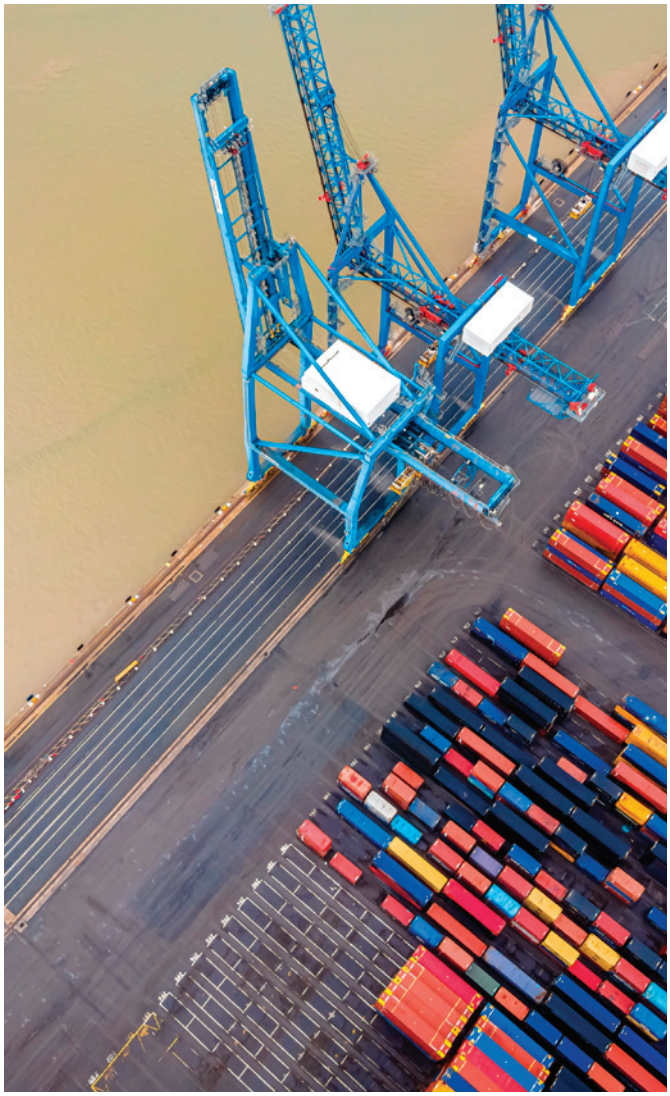
According to the DfT, long-term pressure on public finances will require "hard choices" adding that there needed to be "clearer choices, stronger prioritisation and a sharper focus on outcomes, value for money and affordability".

To read the full Long-Term Rail Strategy House of Lords Briefing Paper, visit: **https://bit.ly/47Lm8qf**

National Policy Statement for Ports

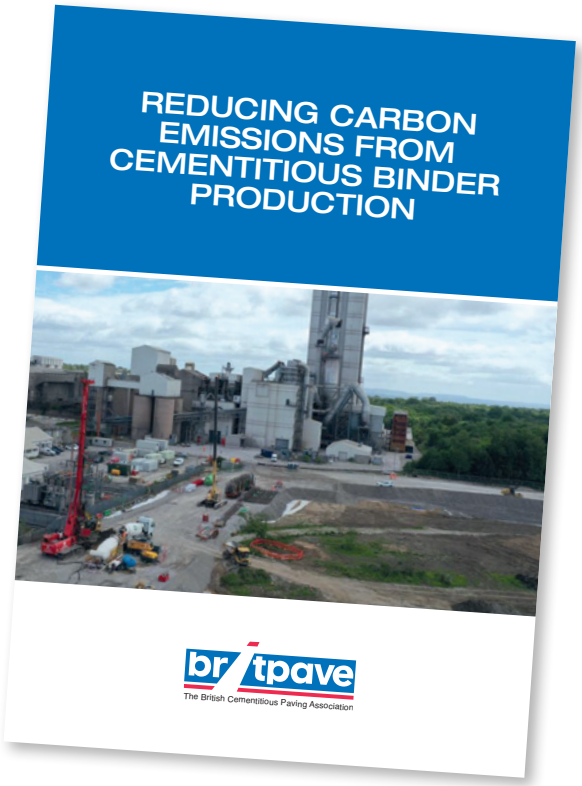
The Government has published its policy on the need for new port infrastructure, considering the current place of ports in the national economy, the available evidence on future demand and the options for meeting future needs. It explains to planning decision-makers, applicants and others the approach they should take to proposals, including the main issues which, in the Government's view, will need to be addressed to ensure that future development is fully sustainable and resilient, as well as the weight to be given to the need for new port infrastructure and to the positive and negative impacts it may bring. It stresses that ports are critical to the Government's economic growth mission due the UK's reliance on imports but also have an important role in transitioning to a green economy, and making Britain a green energy superpower.

To read the National Policy Statement, visit: **https://bit.ly/4jlivZl**



REDUCING CARBON EMISSIONS FROM CEMENTITIOUS SOIL STABILISATION BINDER PRODUCTION

Britpave has published a new report highlighting how its members are at the forefront of addressing how to reduce carbon emissions resulting from lime production.



Britpave member association MPA Lime has implemented a Lime Net Negative 2040 Roadmap with the objective for the UK lime sector to be fully decarbonised by 2040. In addition, the Mineral Products Association's 'Concrete and Cement Industry Roadmap to Beyond Net Zero' explains initiatives that go beyond net zero towards becoming net negative by removing more CO_2 from the atmosphere than is emitted.

The industry roadmaps are complemented by individual Britpave member companies' carbon reduction initiatives. These include Heidelberg Materials UK establishing a landmark carbon capture project at Padeswood cement works, in Flintshire. Believed to be the world's first fully decarbonised cement plant, the Padeswood Carbon Capture Storage (CCS) facility will capture around 800,000 tonnes of CO_2 each year – almost all the emissions from the site's existing cement kiln.

Whilst in Skelmersdale, Lancashire, Combined Soil Stabilisation Ltd (CSSL) has completed three large-sized earthworks and stabilisation warehouse projects with combined total area of approximately 200,000m2 using reduced carbon hydraulic binders. The total hardstanding surface area of 140,000m2 plots was stabilised to achieve 30% CBR and to be non-frost susceptible. Lime was required with the first pass of the mixer to condition the soils in readiness for the hydraulic binder. CSSL used Terracem (a blended cement-based product specifically manufactured for the soil stabilisation process) which provides a 30% reduction in carbon. Once completed, this layer was topped with 100mm of Type 1 to complete the projects.

Meanwhile, series of successful joint projects with CemBlend and Stabilised Pavements Ltd have forwarded the use of the H-EVA binder, an Alkali Activated Cementitious Material (AACM) that contains activated calcined clay and zero cement. It has a verified EPD rating of 272kg CO_2e. In 2025, CemBlend supplied 80 tonnes of H-EVA for SPL's road recycling project at Long Drove, Southery, as the hydraulic binder for the road recycling works. The project delivered a reduced embodied CO_2 figure of 272 kg per tonne. A further SPL recycling project for Cambridgshre County Council and contractor M Group saw the use H-EVA in the UK save an estimated 324 tonnes of carbon was saved compared to alternative methods.

Alongside the increasing use of lower-clinker CEM II cements, Reclinker has developed LEAF, a low-carbon cementitious binder made by recycling concrete demolition waste. A recent UK road infrastructure project on St Anne's Road for Blackpool Council demonstrated the use of LEAF in Hydraulically Bound Granular Material (HBGM) blend for recycled road-base and sub-base construction. Compared with a conventional CBGM binder, the LEAF blend achieved a 50% reduction in embodied CO_2 emissions.

These initiatives further enhance the environmental and sustainability benefits of using soil stabilisation. These are based around the three R's: re-use, recycle and reduce. Soil stabilisation re-uses brownfield land to relieve the pressure to build on green field sites. It recycles the existing soils on-site. It reduces waste sent to landfill, minimises lorry movements and the reduces the use of virgin aggregates. All combine to offer a better cost effective and environmentally friendly alternative to traditional dig-and-dump.

To download 'Reducing carbon emissions from cementitious binder production' visit:
www.britpave.org.uk/publications

MAKING THE GROUND WORK FOR YOU

Early engagement, smarter materials management and sustainable approaches to challenging ground conditions. Steve Gravenell, Director & Co-Founder of On Grade Earthworks and Stabilisation Ltd, explains how to make the ground work for you.

Every successful development starts with the ground beneath it. Understanding its characteristics and potential from the outset can unlock opportunities to improve efficiency, reduce costs and deliver more sustainable construction solutions. Time and time again, experience shows that when it comes to ground work some of the most valuable decisions happen way in advance of the first excavator arriving on site.

GETTING INVOLVED BEFORE THE MUD STARTS FLYING

Traditionally, earthworks contractors become involved after designs, quantities and disposal strategies are established. By then, opportunities for improvement may have passed.

Early engagement allows On Grade to collaborate with developers, engineers and environmental consultants, reviewing ground investigations, cut-and-fill models and remediation requirements.

Combined with ground modelling and GPS machine-control technology and in-house investigation and design, we help identify opportunities for material reuse, treatment and efficient construction sequencing. The question is simple: could we make better use of what's already there?

NOT EVERYTHING NEEDS TO GO IN A LORRY

Excavating material, sending it to landfill and importing replacement aggregates carries significant financial and environmental costs.

Amongst others, On Grade uses Materials Management Plans (MMPs) under the CL Definition of Waste Code of Practice (CL:AIRE DoWCoP) to support lawful reuse of suitable excavated materials.

Materials must be assessed, tested, tracked and demonstrated suitable for their intended use.

Alongside this, On Grade's Environment Agency Standard Rules (SR) mobile treatment permits provide additional options for managing eligible waste materials. Subject to permit conditions and deployment requirements, materials can be processed, screened or treated for potential recovery and beneficial use. Both approaches aim to reduce costly unnecessary disposal, imported aggregates and associated vehicle movements.



SOIL STABILISATION: MAKING BETTER USE OF EXISTING GROUND

Soil stabilisation offers a practical alternative to conventional excavation and replacement, particularly where site-won materials require improvement to meet engineering specifications.

By incorporating carefully selected binders, suitable soils can be modified to improve workability, moisture condition, strength and bearing capacity.

These improvements can support working platforms, piling mats, crane platforms, temporary and permanent haul roads, engineered fill, structural embankments, reinforced earth walls, building foundations, floor slab formations, road and highway construction, car parks, industrial yards, logistics and distribution centres, airport pavements, hardstandings and heavy-duty working areas while reducing reliance on imported aggregates.

Successful stabilisation requires appropriate laboratory testing, treatment design and quality control, ensuring materials achieve the required performance standards.

VISTRY: PUTTING THE PRINCIPLES INTO PRACTICE

On Grade's work with Vistry at the former Tovil Quarry in Maidstone demonstrates these principles. The project involved processing, screening, testing and stabilising approximately 68,000 m³ of Class 2C quarry material under an Environment Agency waste recovery permit. Working within the relevant site authorisations enabled soils to be recovered and engineered for use within the development.

The works included reinforced earth retaining structures and approximately 30,000 m³ of unsuitable material was in situ modified on site and diverted from landfill with no subsequent requirement for import of substitute aggregate. The project demonstrates how appropriate regulatory routes, engineering expertise and collaboration can support responsible materials management.

A LITTLE MORE THINKING, A LOT LESS DIGGING

Every site presents different challenges. The key is identifying practical, sustainable solutions suited to its ground conditions. Considering alternatives early supports better decisions, fewer material movements and more efficient programmes. Ultimately making the ground work for you starts with understanding its potential before deciding what to do with it.

LABORATORY ONE-STOP SHOP

AECOM are tackling carbon emissions thanks to a unique in-house, one-stop laboratory.

The AECOM office in Nottingham is not typical for an engineering consultancy. With its origins stemming from Scott Wilson Pavement Engineering and Nottingham University, the present-day setup of a global engineering company with its own in-house research facility is a largely unique offering. Whilst the core capabilities have historically centred around asphalt, recent expansion into the world of concrete has started to bear fruit.

Combining the Pavement Engineering and Construction Material Team, now part of Ground Engineering and Pavements, with ASSIST, AECOM's in-house surveying and testing unit, brings together engineers and technicians to deliver cutting edge research into the real world. As presented by James Ferrari, AECOM's Associate Materials Engineer, at the recent Britpave Industry Conference, a recent example is the work delivered for National Highways through recycling concrete arisings from the concrete roads programme. This centred around the reuse of planings from a concrete pavement into the best monetary and sustainable opportunity. Through processing the material into Crushed Concrete Aggregates (CCA) and then trialling mixes with varying percentages of CCA in the laboratory, it was proven that it was possible to form network-ready precast drainage units, thus delivering a circular economy.

Beyond the reuse of arisings, AECOM are also delivering lower carbon cementitious materials for the industry. For National Highways, operating under an ARUP-AECOM JV and in collaboration with Britpave, the laboratory is developing lower carbon cements to be included in UK (and European) standards. This project builds the evidence base needed to enable wider use of lower-carbon cements in concrete across England's Strategic Road Network (SRN) and the wider construction industry. It explores alternative binary and ternary cement blends that incorporate lower carbon supplementary cementitious materials (SCMs), such as calcined clays and limestone, at higher replacement levels and in combinations not currently permitted under the UK concrete standard (BS 8500). This work will generate the evidence needed to support updates to BS 8500, MCHW and DMRB, enabling the safe adoption of new lower carbon cements in concretes across the SRN. It will provide comparative insight on carbon reduction and structural resilience, helping National Highways transition to more sustainable and reliable concrete materials.

In a complex world of artificial intelligence and environmental pressures, AECOM's Pavement Engineering and Construction Materials team and laboratory strive to offer a 'one-stop shop' for transferring the research and development of concrete materials into real-world applications. With globally leading experts, combining over 150 years of industry experience, AECOM's Pavement Engineering and Construction Materials team provide technical expertise on design standards, specifications extending across all transportation modes, including roads, airport, ports, hardstandings and industrial pavements.





RAF WADDINGTON WORK STARTS

Work has started on a £53m refurbishment of the airfield infrastructure at RAF Waddington in Lincolnshire, home of the RAF aerobatic team, the Red Arrows. The project is due to be completed in summer 2028.

The Defence Infrastructure Organisation (DIO) is delivering the scheme on behalf of Air Infrastructure for the RAF. Lagan Aviation & Infrastructure has been appointed to carry out the works, with Ramboll UK providing technical services.

The project will refurbish several aircraft bays and taxiways, install new drainage systems and upgrade approach lighting. The works are being planned and sequenced with RAF units and station staff so that flying operations can continue during construction.

RAF Waddington is also the hub of the UK's Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) Force.

Lagan Aviation & Infrastructure project director Robert Weston said the works had been planned collaboratively with the station to avoid impacts on operations.

The project is expected to be completed in summer 2028.

OVERHAUL UNDERWAY AT RAF BRIZE NORTON

A multi-million-pound project to overhaul critical airfield infrastructure refurbishment at one at one of the UK's busiest military air bases, RAF Brize Norton, is underway.

The RAF project, delivered in conjunction with the Defence Infrastructure Organisation (DIO), will see the existing runway surface replaced alongside significant refurbishment of the wider airfield infrastructure. The project forms part of the Defence Investment Plan, which commits investment into the refurbishment of major runways and the renewal of critical infrastructure across the Defence estate.

Within the RAF's Aircraft Operating Surface Programmatic Approach, VolkerFitzpatrick has been awarded the £180 million contract, with AECOM as Technical Services Provider, to carry out the works. These include a full replacement of the 3km runway, refurbishment of taxiways and associated infrastructure, upgrades to airfield lighting systems and improvements to drainage and supporting infrastructure.

The programme represents a significant investment in the long-term operational capability, safety and resilience of the airfield. The project will use approximately 350,000 tonnes of material during construction – the same weight as 29,000 double decker buses.

This investment is highlighted in the Defence Investment Plan under Project Trenchard, the RAF's £10 billion, 10-year programme to modernise bases and reverse decades of underfunding.

Bob Noyes, DIO Principal Project Manager, said: This is a landmark investment in one of the RAF's most critical assets. Renewing the airfield at Brize Norton is essential to maintaining the capability of the UK's busiest military air base."

Jeff Carter, Project Director VolkerFitzpatrick, said: VolkerFitzpatrick is proud to support the AOS programme at RAF Brize Norton, where strong collaboration has driven safety, communication, and performance across a complex scheme. Early planning has positioned the team for successful delivery through to 2027.

BRITPAVE INDUSTRY FORUMS MAKING PLANS

Britpave has established a number of industry forums to forward cementitious and concrete infrastructure solutions.

The new forums include the Carbon Forum, CBM Forum and Innovation Forum. They complement the work of the Soil Stabilisation Group which has been renamed the Soil Stabilisation Forum. All of the Forums share common objectives that include forwarding cementitious and concrete solutions, the sharing of industry knowledge, encouraging dialogue with universities and the next generation, input to reviewing and updating standards and the development of industry best practice.

Since their establishment earlier this year, the Forums have met to determine programmes of industry initiatives. These include:

CARBON FORUM

- Development of low carbon calculation tool for pavements
- Forward use of ultra-high performance concrete for bridge maintenance
- Study into the research carried out into carbon sequestration of concrete infrastructure
- Study into developments of low carbon plant machinery

CBM FORUM

- Report outlining the range of CBM types
- Report examining alternatives to nuclear density gauge testing
- Review and updating the Britpave Guide to Roller Compacted Concrete
- Report forwarding the use of RCC for ports

INNOVATION FORUM

- Development tracker for innovation highlighting market readiness
- Publication of UK map showing availability of Britpave member low carbon cements
- Study into examples of low carbon concrete mass transit solutions
- Innovative solutions for ports and airports

SOIL STABILISATION FORUM

- Study into carbon sequestration potential of soil stabilised soils
- Study into the differences between cement stabilised ground and importing aggregates
- March 2027 industry seminar examining soil stabilisation improving climate resilience

Any crossover of aims and initiatives between the Forums is to be welcomed as it encourages the exchange of information.

In addition to the Forums, Britpave has specific working groups. These include: the Britpave/DIO Working Group which is currently focused on the review and updating of the 033 Specification and the Concrete Barrier Group which is focused on forwarding the long-term performance, whole life cost and sustainability benefits of rigid concrete barriers.

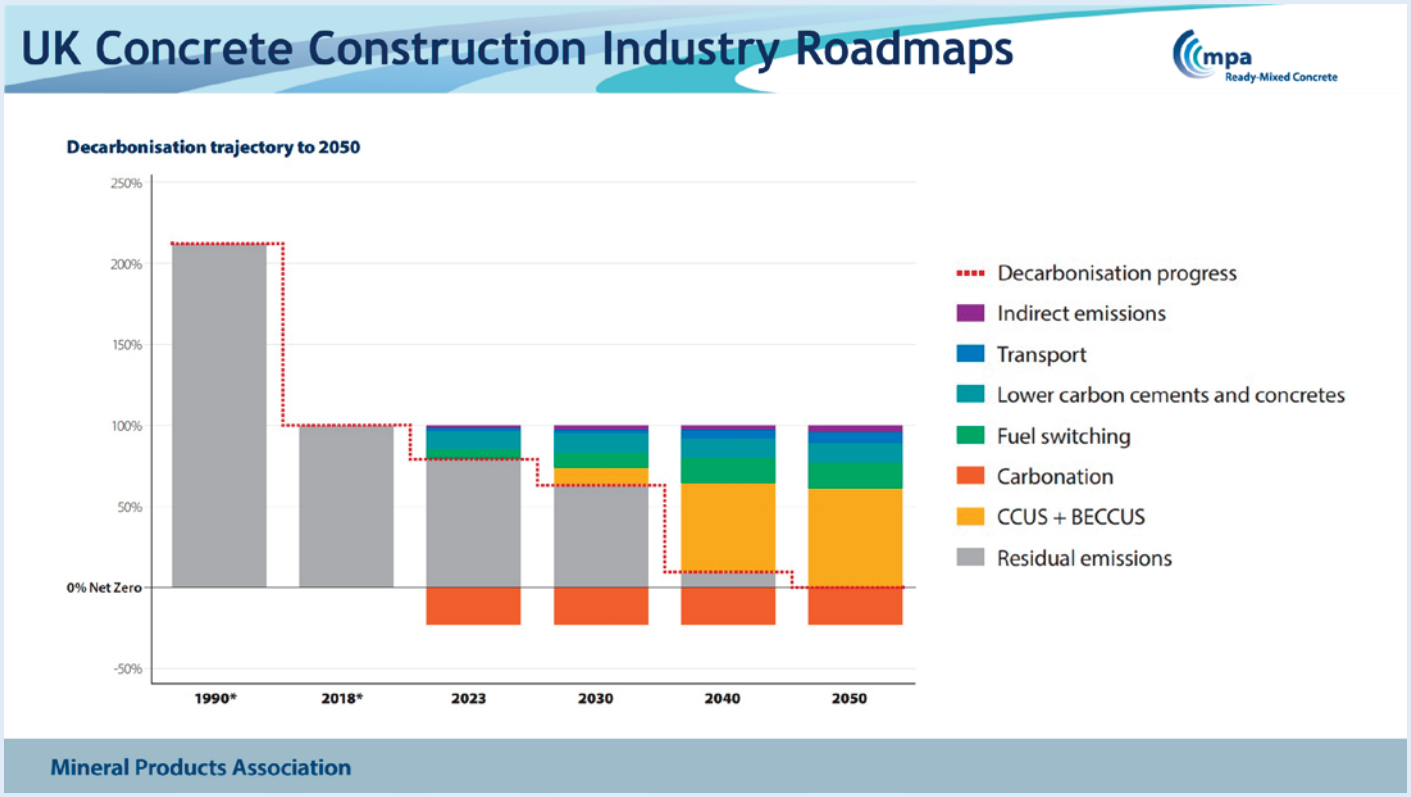
Contact the Britpave offices should you wish to join any, or all, of the Forums and Working Groups, email: **info@britpave.org.uk**



BRITPAVE CONFERENCE REPORT
DELIVERING LOW CARBON INFRASTRUCTURE

The conference was opened by Al McDermid, Britpave Chairman, who explained that the theme of delivering low carbon infrastructure could not be more relevant. A particular issue is how to cut carbon whilst still delivering value, quality and long-term durability. He highlighted how the conference programme of presentations on advances in cement and binders, carbon capture, soil treatments and the re-use of concrete followed by a case study providing concrete proof underlined how cementitious and concrete solutions have a major role to play in the delivery of low carbon infrastructure.

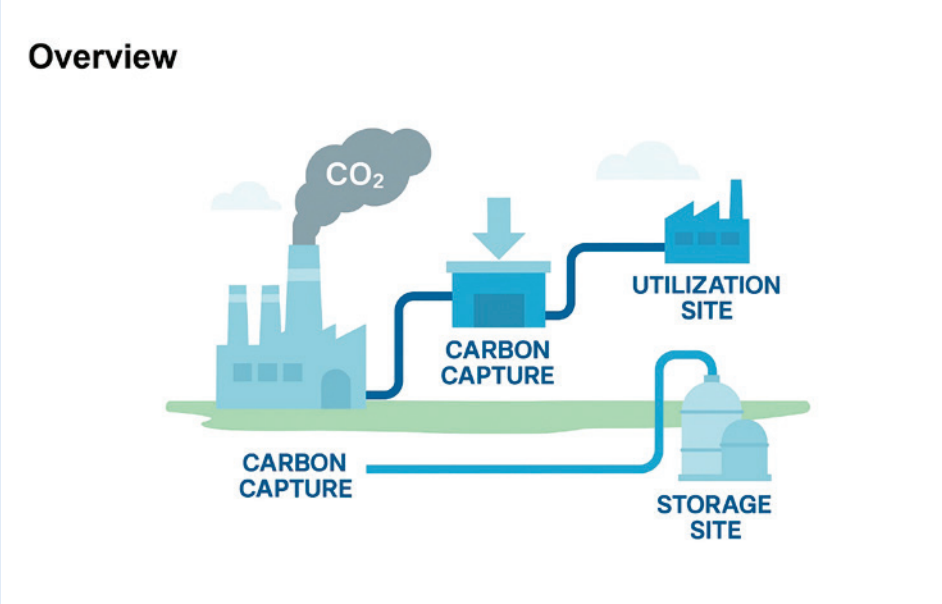
Dr. Aneeta Mary Joseph, Construction Materials Specialist, Mott MacDonald, set the scene. She explained how the concrete industry is facing increasing pressure to reduce embodied carbon while maintaining the performance, durability and constructability required for major infrastructure projects. An overview of emerging lower carbon concrete technologies and the practical approaches being developed to support their widespread adoption was provided together with an examination of innovations such as calcined clays, recycled concrete fines, reclaimed fly ashes, steel slag based cements, high filler content binders, biochar and graphene-enhanced concretes, and carbon capture systems that have the potential to significantly reduce the carbon footprint of concrete. Alongside these technological developments, the role of carbon benchmarking in enabling informed material selection and identifying achievable decarbonisation pathways was explored. The presentation proved that the challenges of delivering low carbon infrastructure are being addressed by the concrete industry.



Gareth Wake, Director at the Mineral Products Association, examined how newer cement and combination types can be used to help decarbonise concrete and how this aligns with both the MPA's Roadmap and the Low Carbon Concrete Group's Routemap to net-zero. It discussed the concept of "additions" and "combinations" and their relationship to cements, how these are implemented in standards, and highlighted the new combinations that were introduced in the 2023 revision of BS 8500, and what is expected to be included in the next revision. He concluded that a thorough understanding of binary and ternary cements and combinations is essential if the potential for decarbonised concrete is to be realised.

The potential of carbon captured cement was examined by Nina Cadrinal, Technical Strategy Director, Heidelberg Materials, who explained that while the use of alternative fuels in clinker production and the use of supplementary cementitious materials contribute to the reduction of embodied CO_2 in cement and concrete, carbon capture and storage (CCS) is needed to achieve net zero goals.

Heidelberg Materials has commissioned the world's first commercially operating carbon capture plant associated with cement production at its cement works in Brevik with the near-zero evoZero cement now being available in the UK. Nina explained to delegates how carbon capture works, how the CO_2 is transported and permanently and safely stored in subsea reservoirs, and how the carbon capture process reduces the embodied carbon associated with cement. She finished with an overview of the first commercial carbon capture and storage project in the UK at Heidelberg Materials' Padeswood cement works



which is currently under construction and due to be commissioned in 2029.

Nouffou Tapsoba, R&D Project Manager, Holcim Innovation Centre, forwarded as infrastructure projects face increasingly complex ground conditions and stricter environmental requirements, innovative binders are becoming essential to deliver resilient and low-carbon solutions. He highlighted Holcim's latest advances in custom-engineered, performance-based hydraulic binders that are being developed to transform challenging and contaminated soils into reliable and durable engineering assets.

The presentation focused on three key application areas. Firstly, it examined advanced solutions for soil stabilization, including tailored binders for expansive clays, non-cohesive sandy soils and Full Depth Reclamation (FDR) applications. These technologies improve soil performance, mitigate reflective cracking and extend pavement service life.

Secondly, geotechnical engineering solutions for Deep Soil Mixing (DSM) and waterproofing, featuring patented, low-

carbon binders designed to overcome complex ground challenges were examined. DSM solutions achieve high mechanical strength in difficult soils while reducing binder consumption. Innovative 2-in-1 waterproofing solutions combine enhanced mechanical performance and water resistance, reducing construction time, simplifying site operations and lowering overall project costs.

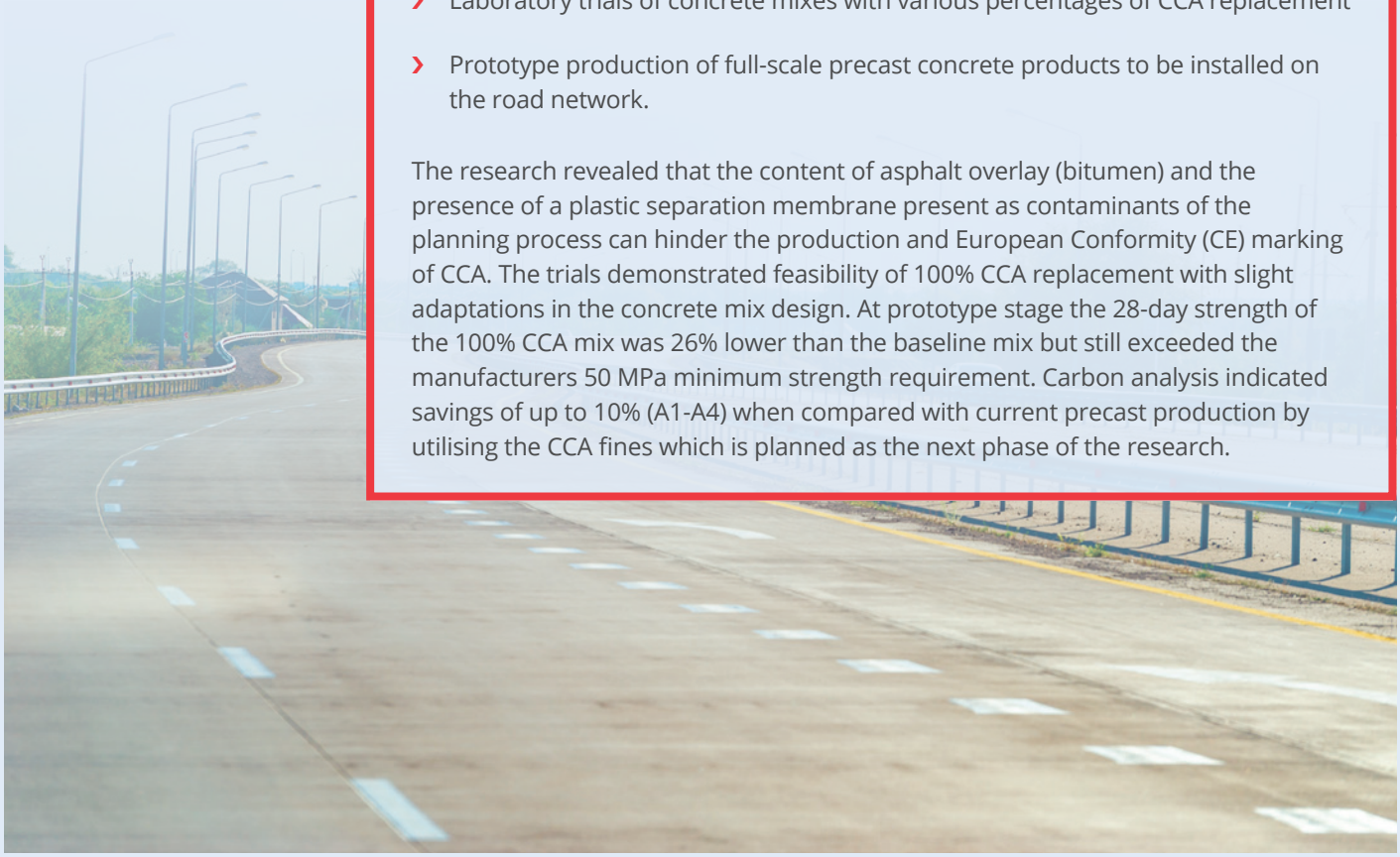
Finally, environmental remediation technologies based on patented solutions for the treatment of contaminated soils were forwarded. These solutions effectively immobilize heavy metals, sulfates, hydrocarbons, and PFAS, enabling safe material reuse and supporting circular economy approaches.

James Ferrari, Principal Materials Engineer, AECOM, examined a further low carbon concrete solution: the recycling of concrete arisings as being used in the National Highways Concrete Roads Programme.

The Concrete Roads Programme is part of a multi-billion renewal and maintenance strategy for concrete roads across England to be delivered over the next 25 years. "Legacy" Concrete roads comprise approximately 4% of National Highways' Strategic Road Network (SRN). AECOM was commissioned by National Highways to research the recycling of concrete arisings from the Concrete Roads Programme into precast concrete products that can be utilised back into the road network. The research programme comprised the following:

- Rigorous test methodology to evaluate the suitability of recycling the arisings from various sites for use as crushed concrete aggregates (CCA)
- Carbon assessment of various recycling scenarios
- Processing trials at a full-scale recycling facility to produce CCA from the road network
- Laboratory trials of concrete mixes with various percentages of CCA replacement
- Prototype production of full-scale precast concrete products to be installed on the road network.

The research revealed that the content of asphalt overlay (bitumen) and the presence of a plastic separation membrane present as contaminants of the planning process can hinder the production and European Conformity (CE) marking of CCA. The trials demonstrated feasibility of 100% CCA replacement with slight adaptations in the concrete mix design. At prototype stage the 28-day strength of the 100% CCA mix was 26% lower than the baseline mix but still exceeded the manufacturers 50 MPa minimum strength requirement. Carbon analysis indicated savings of up to 10% (A1-A4) when compared with current precast production by utilising the CCA fines which is planned as the next phase of the research.



The final presentation provided concrete proof of the potential for low carbon solutions with Peter McCarthy, Principal Civil Engineer at London Garwick, presented a case study of the next generation of airfield pavements at London Garwick Airport.

London Gatwick's airfield is one of the busiest in Europe, making resilience and carbon reduction inseparable priorities. The Pavement Quality Concrete (PQC) used on the airfield typically has an elevated cement content to meet flexural strength and durability demands, resulting in substantially higher embodied carbon than other concretes.

This project focused on optimising rigid pavement design inputs and updating Gatwick's Airside Engineering Standard. In parallel, a suite of mixes incorporating supplementary cementitious materials (SCMs) such as Ground Granulated Blast furnace Slag (GGBS), calcined clay, and natural pozzolana was identified, each offering meaningful embodied carbon reductions relative to the current PQC mix.

Initial laying trials were undertaken on live taxiways in 2025 and 2026 to understand performance and durability under aircraft traffic loading. Three trial mixes were laid, comparing the effect of removing air entrainment and replacing up to 50% of the cement with GGBS. Ongoing laboratory testing continues to refine the remaining candidate mixes, reflecting the need to tailor durability and performance assessments to these newer materials and thus provide further assurance for use in live airfield trials.

The project has identified significant carbon reduction opportunities, strengthened Gatwick's design standards and established the start of a clear technical pathway for lower carbon pavement construction.



Concluding the conference, Al McDermid set out the challenges facing the construction industry. In addition to the need to reduce carbon, these include the impacts of both global and domestic events. However, the conference proved that innovation and collaboration can deliver practical steps to address those challenges.

THE BRITPAVE JOHN FERGUSON CIVIL ENGINEERING GRADUATE AND APPRENTICE AWARDS 2026

The high calibre of entries to the 2026 Britpave John Ferguson Civil Engineering Graduate Apprentice Awards made judging very difficult. After much deliberation, the 3 runners-up and overall winner was announced at the recent Britpave industry conference.



Left to right: Josh Horner; Sophie Glazzard; Will Brentall; Reece Merenda

The Awards are designed to recognise and reward the next generation of civil engineers but also recognise the legacy of John Ferguson, a founder member of Britpave. John was passionate about forwarding and mentoring civil engineering graduates and apprentices.

In particular, the Awards seek to reward outstanding graduates and apprentices who demonstrate those top characteristics that will allow them to thrive. These include curiosity; creativity; ability to problem-solve; being a team player; good interpersonal skills; attention to detail.

The runners-up:

Reece Merenda, Construction Management Trainee, ISC Contracting

Since joining ISC in 2024, Reece has embraced every opportunity to learn and develop. He has grown to become someone that the team can rely on to take ownership, solve problems and support the operational and commercial delivery of ISC projects. In addition to his full-time role at ISC, Reece is studying Quantity Surveying at London South Bank University. According to his employers, Reece has demonstrated levels of commitment, initiative, professionalism and passion that deserve to be recognised.

Sophie Glazzard, Graduate Materials Engineer, Balfour Beatty

Working on the complex Sizewell C Project, Sophie has demonstrated technical ability, a remarkable capacity to learn and levels of commitment and professionalism well beyond that typically expected of someone so early in their career. At the HS2 Cappers Lane Laboratory in Lichfield, despite having no previous laboratory experience, she quickly learned the stabilised soil testing methods and played an important role in coordinating the trial programme and compiling the highly technical reports necessary for the Sizewell C projects.

Josh Horner, Trainee Carpenter, PJ Davidson

Josh has successfully completed his Level 2 Carpentry Apprenticeship and is now progressing towards Level 3. His active curiosity enables him to learn new skills quickly and he has the ability to apply these confidently, demonstrating initiative, professionalism and a readiness to take ownership. All this with an excellent eye for detail. The extent of Josh's professional development was demonstrated during a tunnel drainage project where he took responsibility for coordinating the team and managing the organisation of materials and deliveries.

The overall winner:

Will Brentall, Graduate Materials Engineer, Balfour Beatty

Will joined Balfour Beatty's materials engineering team in September 2024 on BBV HS2 Area North. There, he worked as part of the technical team responsible for quality control of concrete supplied from 12 dedicated batching plants and quickly learnt the necessary range of test methods. His role developed to include managing an extensive programme of cement mix calibrations. With his experience and expertise continuing to develop Will managed an extensive research and development programme to explore the use of concrete maturity methods to replace compliance age cubes for compressive strength testing. Based on the research, Will produced a highly technical report which he presented to the HS2 Concrete and Durability Technical Lead and then at the 2026 UK Concrete Show.

Will has moved to a new role on the Lower Thames Crossing Roads North project where he is implementing the digital concrete control solutions developed on HS2 Area North.

Will's development and technical outputs are impressive. Above all, he demonstrates a remarkable determination to develop and succeed. Will is a very worthy winner of the 2026 Britpave John Fergusion Early Careers Awards.

Announcing the award runners-up and winner, Al McDermid, Britpave Chairman, said: *"Congratulations to all the award entrants. They represent the best of the Next Generation. Congratulations also to their employers, Balfour Beatty, PJ Davidson and ISC Contracting, for investing in and developing the future talent that this industry needs."*

HOLCIM AND BLUE PHOENIX SHOW BENEFITS OF EARLY ENGAGEMENT

Holcim UK has successfully delivered the resurfacing of Blue Phoenix's Tilbury Yard transforming a sunken and uneven pavement to one that is fully able to meet future challenges.



Located in Tilbury Docks, Essex, the existing yard had experienced significant settlement over time. This had resulted in level changes that prevented surface water from reaching the single existing drainage gully creating areas of standing water that affected the yard's usability. In addition, the pavement suffered from structural cracking and break-up.

Working closely with Blue Phoenix through extensive Early Contractor Involvement (ECI), Holcim developed a suitable construction solution. This included working with a specialist designer who undertook detailed 3D mapping of the existing yard and re-modelled it to take account of water flow and level control. This new model was used within the paving machine to accurately rebuild the new pavement with the primary objectives of restoring levels, improving drainage and increasing structural strength.

The works were undertaken between August and September 2026, with Holcim being responsible for both the main contracting and surfacing elements of the project. Rather than simply resurfacing the existing levels, Holcim worked with Blue Phoenix to establish a completely new profile that would address the underlying drainage issues.

The project utilised a considerable amount of recycled and locally sourced materials in some 3,500 tonnes of Blue Phoenix IBAA, approximately 2,800 tonnes of C8/10 concrete incorporating a mix of IBAA and Holcim materials and approximately 2,500 tonnes of RCC. This approach underlined the potential for recycled materials to play a significant role in delivering both improved engineering performance and a more circular approach to material sourcing and use.



In addition to demonstrating the potential of recycled materials, the project proved the value of early engagement and collaboration that ensured that it was delivered safely, on programme and within budget.

SIZEWELL C GETS ITS FIRST ON-SITE BATCHING PLANT

Heidelberg Materials UK has installed the first on-site concrete batching plant at Sizewell C in East Suffolk, where we are supplying high specification nuclear grade concrete to help build the new power station.

The plant is currently producing specialist concrete to construct the cut-off wall which will create a watertight barrier around the perimeter of the new nuclear power station, in collaboration with the Civil Works Alliance. The CWA is formed of Balfour Beatty, Bouygues Travaux Publics, Laing O'Rourke and Sizewell C. The off-cut wall will enable approximately 4M m³ of earth to be excavated to allow the construction of the two 1.6GW reactor units.

Major Projects Director, Sean Hunter, said: "Our involvement at Sizewell builds on our expertise in supplying high-quality materials to Hinkley Point C through intelligent replication. At its height we employed over 80 people on the Somerset site but at Sizewell this could reach 200.

"Our nuclear team has wide-ranging experience in the sector including liaising with the Office of Nuclear Regulation to produce the detailed quality and health and safety control documents that cover every aspect of working on a nuclear site.

"Heidelberg Materials was the first company in the UK certified to produce nuclear grade concrete in accordance with BS EN 19443. The level of our involvement at Sizewell reinforces our leading position in the growing nuclear sector and means we are uniquely placed to help deliver the UK's low carbon energy infrastructure."

BS EN 19443 specifies "requirements for the application of ISO 9001:2015 by organisations in the supply chain of the nuclear energy sector supplying products and services important to nuclear safety (ITNS)".





SLIPFORMED PROGRESS ON THE A428

PJ Davidson is progressing well with its contract to provide slipform concrete drainage and barriers as part of the major project to provide a new 10-mile dual carriageway and upgrades to the A428 Black Cat and Caxton Gibbet junctions.

The A1, A421, and A428 around Black Cat roundabout (Bedfordshire) and Caxton Gibbet roundabout (Cambridgeshire) are well known for heavy traffic and frequent delays. The new dual carriageway will replace the only stretch of single carriageway between the M1 near Milton Keynes and the east coast ports of Harwich and Felixstowe

The fast rate of progress in underlined by the speed of PJ Davidson's barrier installation. For example, in just one shift starting at 07.30am and finishing at 5.30pm, 150m^3 of concrete was placed, slipforming 389 metres of the Davidsons Concrete Barrier + Foundation (DCBF).

In all, PJD's scope of works includes approximately 25km of slip formed slot drainage, 21km of central reservation DCB and 1.5km of surface water channel.



NEW WELL-MANAGED HIGHWAY INFRASTRUCTURE CODE

The updated 'Well-managed Highway Infrastructure: A Code of Practice' has been published, providing refreshed guidance to support the effective management of highway infrastructure across the UK.

The update strengthens and expands guidance across a range of areas, including resilience, workforce capability and competence, emerging technologies such as artificial intelligence, and the long-term management of highway assets. It also refreshes existing guidance to reflect current industry practice and emerging challenges, helping authorities maintain safe, reliable and sustainable networks that support economic activity, connect communities and provide value for road users.

Led by the UK Roads Leadership Group and the Department for Transport, the revised Code was developed with input from 100 volunteers across the highways sector. AtkinsRéalis acted as a delivery partner to coordinate the update, providing technical input and content development, and developing supporting materials for launch and embedment.

The updated Code builds on the approach established in the 2016 edition, retaining the principle of risk-based decision-making while ensuring it remains fit for the modern-day challenges facing highway authorities.

The Code will be available through a new digital platform, supported by resources explaining key changes and Quick Guides for non-technical audiences. Case studies will also be published to support knowledge sharing across authorities. Face-to-face and virtual embedment workshops in November 2026 will help practitioners and organisations understand and apply the new guidance.

For further information and downloads, visit: **https://bit.ly/3V3AJuj**

CONCRETE ALBEDO TO BEAT CITY HEAT

As the UK reaches the end of the hottest summer on record, new research from the Ordnance Survey (OS) has revealed which cities are most vulnerable to extreme heat. There is a concrete infrastructure solution.

The OS analysis found more than eight in ten cities in Great Britain are vulnerable to urban heat islands with 83% of Britain's cities (59 cities) already highly vulnerable to urban heat, with the remaining 17% (12 cities) classed as moderately vulnerable today. By 2040, rising summer temperatures are projected to push every city into the high vulnerability category, and by the turn of the century 63% (45 cities) are set to cross into severe heat vulnerability, the most serious level in the Index. Not only is the urban heat island effect set to intensify in London, but cities like Portsmouth will be particularly vulnerable. The other cities projected to warm most between present day and 2070 to 2100 are Leicester, Exeter, Nottingham, Brighton and Bristol.

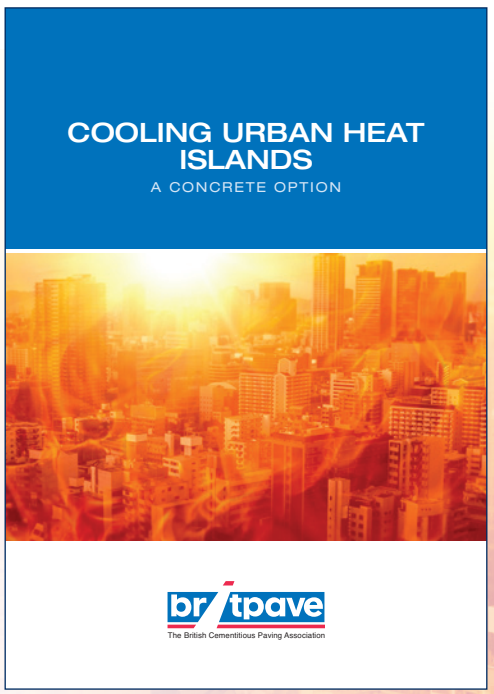
Urban heat islands form where dense buildings, roads and hard surfaces absorb solar heat during the day, keeping cities significantly warmer than surrounding countryside. Cities are generally warmer than adjacent suburban and rural areas. For example, London can be 4oC hotter than outer areas. This can reach 10oC during extreme heat events. Tall buildings and narrow streets reduce wind speeds that would otherwise carry heat away, while a lack of trees and water sources eliminate the natural cooling effects of shading and evaporation.

The impact of urban heat islands can be deadly. Early assessment by the UK Health Security Agency (UKHSA) estimates there were 2,877 heat-associated deaths during 2 notable periods of hot weather in May and June 2026, almost double the figure reported annually for 2025.

There is a concrete solution at our feet: utilise the solar reflectance – or albedo – of concrete roads and pavements. Concrete roads can reflect 25% to 50% of sunlight and solar radiation back into space. This high albedo rating compares to asphalt roads that have an albedo rating of just 5%.

Increasingly, the use of solar reflectance is being viewed as a way to reduce global warming. Given that roads and pavements can cover up to 40% of a city's urban land mass, the solar reflection of concrete can be a powerful tool to reduce urban temperatures. Research carried by the Massachusetts Institute of Technology Concrete Sustainability Hub calculated that the use of albedo reflective payments could reduce peak summer air temperatures in Boston by 1.7°C and in Pheonix by 2.1°C. In China, research into reducing urban heat temperatures in the city of Tianjin found that a reflective albedo of just 0.5 can reduce road surface temperature by 6°C.

'Cooling Urban Heat Islands: a concrete option' may be downloaded from **www.britpave.org.uk/publications**

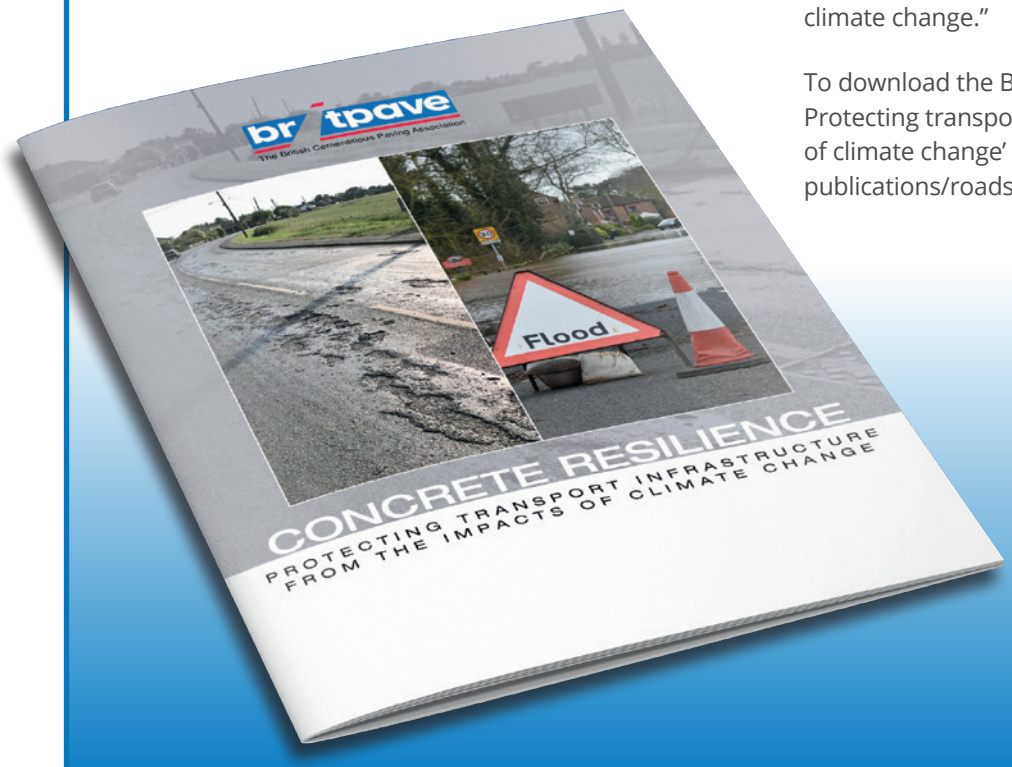


SUPER EL NINO EVENTS CALL FOR MORE RESILIENT INFRASTRUCTURE

Scientists are predicting a powerful "super El Niño" weather pattern that may drive up temperatures and could make 2027 the hottest on record. The negative impact on the UK's roads, runways and railways could be severe.

A number of weather forecasters believe that the summer of 2027 could see temperatures in the UK reach 40oC, a temperature only before experienced in 2022. There is now a 70 - 80 per cent chance of a "very strong" El Niño affecting next year's summer temperatures. Mark Maslin, a professor of earth system science at University College London has warned that it may be the most severe ever recorded. He said "El Niño will really start to bite in the autumn. We could see a return of record-breaking 40C weather next summer."

When temperatures in the UK peaked at 40oC in the summer of 2022, transport infrastructure proved unable to cope with asphalt roads throughout the country reported to be melting. Similarly, flights were stopped at RAF Brize Norton in Oxfordshire and Luton Airport in Bedfordshire when the tarmac runways melted. The impact of the high temperatures was also felt on the railway network with timber sleepers at Battersea, London, catching fire.



Al McDermid, Britpave chairman, said: "High summer temperatures call for transport infrastructure that is climate resilient. Concrete roads and runways do not melt. Concrete railway sleepers do not catch fire. Importantly, they continue to function safely and cost-effectively."

McDermid points out the concrete infrastructure is also better for being future-proofed against future climate change impacts: "Concrete pavements and rail systems provide better long-term sustainable and economic solutions as they will not need maintenance, repair, or replacement after extreme heatwave events. Concrete pavements do not soften and rut, their stiffness and strength remains constant, and their long-term performance is unmatched."

He added: "It is not just extreme temperatures that prove challenging. Concrete infrastructure also offers greater resilience to the extreme rainfall and flooding events predicted to result from future climate change."

To download the Britpave report 'Concrete resilience: Protecting transport infrastructure from the impacts of climate change' visit: www.britpave.org.uk/publications/roads

MEMBERS' NEWS

COSTAIN

Costain has been selected by WSP to provide specialist consultancy services to TfL for the proposed London Overground route,a proposed 18.5-kilometre London Overground route that would connect Hounslow in the south to Hendon in the north. Costain will draw on its strong track record delivering engineering-led solutions for complex rail infrastructure to provide engineering, constructability and consultancy expertise, covering further stakeholder engagement, timetable development and demand forecasting as TfL continues to assess how the programme could be delivered.

reclinker

Reclinker, the company turning demolition waste into low-carbon cement, has secured £10 million in Series A funding to take its breakthrough cement recycling process from successful trials to full commercial production. The round is co-led by specialist climate tech investors, Clean Growth Fund and AP Ventures, with further participation from Development Bank of Wales and existing investors including Zero Carbon Capital and Cambridge Enterprise.

TARMAC
A CRH COMPANY



Tunstead Packing Plant, one of Tarmac's most significant operations in the Peak District, recently partnered with local school, Litton Church of England Primary School, to transform a new concrete wall into a vibrant display promoting workplace safety. The initiative invited pupils to create a series of safety-themed artworks inspired by warehouse operations and forklift truck safety, encouraging them to think creatively about staying safe while learning more about careers in industry, logistics and engineering. The project followed the installation of a large concrete wall at the Tunstead site, designed to separate forklift movements from the control panel area. While the structure provides an important operational safety function, the team also recognised an opportunity to create a more engaging workspace that reinforces Tarmac's strong safety culture while celebrating its connection with the local community.

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

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

Costain Ltd - www.costain.com

Extrudakerb - www.extrudakerb.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

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

Mott MacDonald – www.mottmac.com

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

On Grade Ltd - www.ongradeltd.co.uk

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

Power Better Soil Solutions – www.powerbetter.biz

Reclinker – www.reclinker.com

Remediology (SE) Ltd - www.remediology.com

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

VolkerFitzpatrick Ltd - www.volkerfitzpatrick.co.uk

Wedgewood Groundworks - www.wedgewoodgroundworks.co.uk