

# BRITPAVE NEWS

ISSUE 35 - WINTER 2017

2017 industry conference  
report

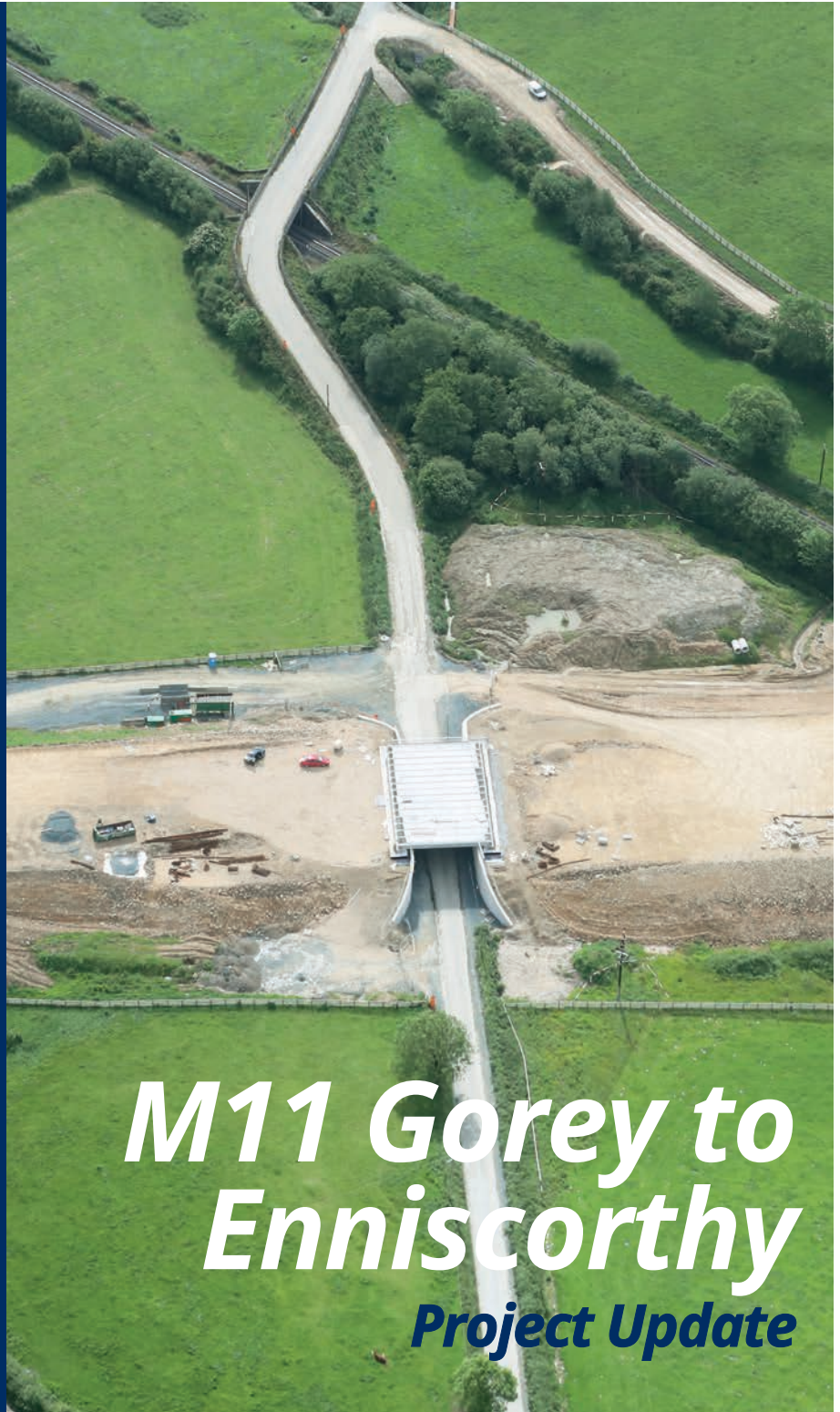
Infrastructure must  
double output

RCC to be included in  
DMRB

Soil stabilisation update

New busway guidance

Britpave members' news



## *M11 Gorey to Enniscorthy Project Update*

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## CHAIRMAN'S WELCOME

Welcome to the Winter 2017 issue of Britpave News which, in addition to infrastructure and project news, reports on recent Britpave industry outputs.

Earlier this year the revised DIO Specification 033 Pavement Quality Concrete for Airfields was published with the DIO stating that "the completion of this documents is a testimony to the close working relationship between Britpave members and the Defence Infrastructure Organisation". Britpave is now working with DIO on a revised wet lean specification.

In a similar way, Britpave has worked closely with Highways England on new Soil Improvement and Soil Stabilisation guidance. This was launched at the recent Britpave infrastructure conference. Britpave are also supporting BSI and Highways England in the revision of BS1924 Stabilised Materials for Civil Engineering Purposes.

A further project with Highways England and the MPA has resulted in roller compacted concrete being included in the Design Manual for Roads and Bridges and in the updates for the Specification for Highways Works and Notes for Guidance Series 1000. The inclusion of RCC is a significant step for the concrete industry.

Also made available at the conference was the new edition of the Guided Busways Design Handbook which provides technical guidance on a potential growth market.

All of the above has been made possible due to those Britpave members who have got involved and so generously given their time. Remember, all members are more than welcome to attend any working group meeting or provide ideas for future Britpave initiatives.

### Joe Quirke

Britpave Chairman and Engineering Manager, VolkerFitzpatrick



The British Cementitious Paving Association

**Britpave**, the British In-situ Cementitious Paving Association, promotes the better and greater use of concrete and insitu cementitious infrastructure solutions. Its members include major contractors, specialist equipment and material suppliers, consulting engineers and interested trade associations. Together, they provide a single voice for the insitu concrete paving industry.

**Britpave News** is published regularly by Britpave with the aim of keeping members up to date on Association matters, industry developments and member company news and views. Please help keep us in the picture on all of this by sending us any relevant information that you feel may be of interest to the membership.

**Disclaimer:** All articles are published in good faith. Britpave will not be held responsible for any errors, misinformation and opinions in articles submitted for this newsletter.



## ➤ INFRASTRUCTURE SECTOR MUST DOUBLE ITS OUTPUT

**The UK construction industry needs to significantly increase its rate of infrastructure delivery to more than £95,000 of output per minute for the next decade to come even close to meeting national ambitions, says Arcadis in a new report 'Opportunity Knocks: Delivering the UK's Infrastructure Pipeline'.**

While demand for new infrastructure is creating an unprecedented opportunity to create jobs and drive growth, actually delivering the UK's ambitions will mean more than doubling the historic peak output of £20bn a year. This will require a major step-change in how construction is planned and delivered in the UK.

Arcadis says that the opportunities for the industry are huge, with more major infrastructure programmes simultaneously underway than ever before. The Greater London region alone will see over £28bn of infrastructure investment in the next four years, including Thames Tideway Tunnel, as well as significant investment in the rail network. Meanwhile the Northern Powerhouse region, which includes Manchester and Leeds, has more than £13bn of combined infrastructure opportunity to 2021, with schemes such as the Manchester Airport Transformation Programme and Network Rail's Transpennine Route Upgrade all coming to the fore.

Arcadis' assessment is based on the current iteration of the National Infrastructure and Construction Pipeline (NICP), which features upwards of £500bn of infrastructure spend over the next ten years. However, as Arcadis points out in its report, although the NICP represents the largest

potential spend seen so far on infrastructure, it actually understates the real scale of the opportunity.

For example, the NICP currently excludes some of the UK's most important future programmes, such as Heathrow's proposed third runway and Highways England's Lower Thames Crossing. Equally, future programmes to adapt existing infrastructure related to disruptive technologies, such as autonomous vehicles or the battery storage of energy, could also come to market in the next ten years but don't feature in the pipeline.

With construction of such a large infrastructure pipeline now underway, competition is rife for access to the best supply chain, technology, and design and delivery talent. Operating in this increasingly crowded market is putting the industry under growing pressure to meet targets, forcing new delivery approaches if the industry is to keep pace. Arcadis believes that the infrastructure sector must start to do things differently and innovate on a massive scale to achieve the step-change required. This includes digital solutions, offsite manufacture and offshore design, investment in skills and training, sharing of resources and better alignment with regional development agendas. It is also essential that the industry continues to collaborate across sectors and the supply chain to help speed up the pace of delivery.

To download a copy of the report visit:  
<http://bit.ly/2xdXm2r>



## ▶ ROLLER COMPACTED CONCRETE INCLUDED IN DMRB

**Roller-compacted concrete (RCC) pavements offer a competitive and long-lasting road surface option. Despite this, and the fact that it has been used in the States since the 1930's, has yet to gain mainstream recognition in the UK. The inclusion of RCC in the Design Manual for Roads and Bridges (DMRB) could change that.**

Roller compacted concrete (RCC) takes its name from the construction method used – it is placed by modified asphalt paving equipment, but it is stiff enough to be compacted by vibratory rollers. RCC requires no formwork or reinforcement, the surface texture is smooth and suitable for parking, materials handling and road pavements where the traffic speeds are relatively low (< 60km/hour). For higher speed highway and airfield pavements it is necessary to provide the RCC with an asphalt surface in order to meet skid resistance and surface regularity requirements. Alternatively, the RCC surface may be treated by grooving and grinding to gain the required surface parameters.

RCC combines the strength, long-term performance and minimal maintenance of conventional pavement quality concrete (PQC) with the economy and simplicity of asphalt. For roads, RCC offers further advantages that include minimal rutting, it can span localised soft subgrades and will not deform under heavy concentrated loads. In addition, at end-of-life it can be crushed and recycled for a new pavement. The economic benefits of RCC are of interest to Highways England who are increasingly focussed on efficiency and the resultant cost savings. Here, RCC offers cheaper material costs than fully flexible paving solutions, it is stronger than flexible solutions and can be thinner for similar traffic loading.

The economy of RCC is in its simple application. Large-capacity mixers continually blend the RCC which is transported to site and discharged into an asphalt paver. This places the materials in layers up to 250mm thick and 13m wide. Compaction starts immediately after placement and continues until the pavement meets density requirements. Curing ensures a strong and durable



pavement. Where appearance is important, joints can be saw cut into the RCC to control crack location. If economy outweighs appearance, then the RCC can be allowed to crack naturally.

A well-designed RCC mixture, because of its grading and crushed aggregate, will be mechanically stable and have a very high Immediate Bearing Index (IBI). This allows a subsequent layer such as a bituminous surfacing to be load immediately on completion of compaction of the RCC and so permit early opening of pavements to light traffic. Heavy loadings should not be imposed until the material has gain sufficient strength – the threshold for general traffic is an in-situ strength of 20MPa.

RCC has significant potential for the UK road network and is increasingly being considered for truck lanes and motorway widening projects. This potential could be realised following the completion of a joint Highways England/Britpave/MPA project to include RCC in the Design Manual for Roads and Bridges (DMRB) HD26 and in the updates in the Specification for Highway Works and Notes for Guidance Series 1000. The inclusion of RCC is a significant step for the concrete industry in assisting Highways England to achieve best value for their highways

programme by forwarding cost efficient and effective pavement solutions. Britpave members David York of Ballast Phoenix and David Fanthorpe of CH2M together with consultant John Donegan worked on developing a test regime for each of the four major MPA aggregate companies – Aggregate Industries, Cemex, Hanson and Tarmac. The resulting data was used to develop a relationship between compressive strength cubes and flexural strength of laid RCC.

The key output from the initial investigation work was the determining of the robust relationship between flexural strength of 28 day old RCC at as laid density and the cube strengths from routine QC testing. CH2M used the data to develop the design charts for inclusion in the DMRB HD26.

HD 26 designs for RCC are based on a characteristic compressive strength 50 MPa and flexural strength 5.0 MPa at 95% in-situ relative density.

Aiming to forward the benefits of RCC, the '*Britpave Guide to Roller Compacted Concretes*', describes the benefits, properties and applications of RCC, provides recommendations on mix design and materials selection, and discusses applicable design methods, construction methodology and techniques. Quality control recommendations are given in the context of standard UK tests and procedures.

*Britpave Guide to Roller Compacted Concrete is available from [www.britpave.org.uk](http://www.britpave.org.uk), free for members, £10 plus p&p for non-members*



# M11 GOREY TO ENNISCORTHY MOTORWAY PROJECT UPDATE



**Major progress has been made at the new €350 million M11 Gorey to Enniscorthy motorway project. The public-private partnership project (PPP) involves the design, construction, financing, operation and maintenance of 32.1km of the M11 motorway, a section N80 dual carriageway and a further 8.0km of the N30 single carriageway. The design and construct element is being carried out Bam Civil Ltd and Dragados in joint venture. BAM Civil Ltd are long time members of Britpave and are no strangers to developing and using the latest pavement technologies in their design and construct projects. Indeed to this end BAM Civil Ltd and Britpave have co-operated since their introduction by David York in 2001.**

The M11 Gorey to Enniscorthy Scheme will provide a high quality safe link within the South East region and ease congestion by bypassing Ferns, Camolin and Enniscorthy. The main structural feature of the scheme will be a crossing of the River Slaney combined with an adjacent crossing of the Dublin-Rosslare railway line. The new road will be operational in August 2019, followed by a 25 year concession period for the consortium.

The scheme comprises of a new motorway from the end of the Gorey Bypass at Clogh to the townland of Scurlockbush, south of Enniscorthy. Other features of the new scheme will consist of the following:

- › A new, all movements grade separated junction in Frankfort, with tie-ins to the existing M11 and new access roads.
- › A new all movements grade separated junction in Ballydawmore, with tie-ins to the new N80 Link Road and R744 Link Road.
- › A new at-grade roundabout in Scurlocksbush with tie-ins to the existing N11.
- › Two, connected at-grade roundabouts in Ballynahallin / Clavass, with tie-ins to the existing N80.

5 roads have already been diverted through alternative routes at Rockspring, Knockrathkyle and Scurlocksbush, Monart, and Killaligan in order to allow the construction of new bridges over the future motorway. More roads will be diverted with a target to have most of the structure works completed by the first quarter of 2018. Interceptor drainage, silt fencing and siltation ponds/settlement lagoons have been installed along the scheme to mitigate the effect of the works on the surface water network. Drainage works for the carriageway in underway in readiness for the start of pavement works.

Of particular interest to Britpave members will be that:

- › The earthworks haul roads have been stabilised with lime to improve the earthmoving operation



- The pavement will be a flexible composite construction with an insitu stabilised subbase layer, overlaid with CBGM topped with two layers of asphalt
- The aggregates for the subbase and CBGM have been won on site
- The median barrier will be N2 extruded concrete for the entire works
- There is a further 70km of extruded concrete drainage channel and concrete kerb.

15 bridges are currently under progress. For the bridge over the railway line at Ballygullen, the abutments are complete for installation of the deck beams. The works for the bridge at the Slaney River and adjoining railway line have also advanced. The columns for the two abutments

and two intermediate piers have been cast, and the works for the abutments continue. Meanwhile the steel beams of the bridge have fabricated in Tomelloso, Spain and delivered. When installed, the three span bridge will measure approximately 154m and will be crossing the River Slaney and the railway line. On the west side of the river 10 new flood relief culvert arches are to be installed. This area is in a flood plain and thus the design team developed the multiple precast arch bridging solution with a total length of 670m. For the bridge over River Urrin, all 9 columns with a height of 8m each have been constructed and now works are ongoing for the bridge abutments. This structure is targeted to be completed later this year.

**Project credits:**

Client: National Roads Authority, Ireland

Main contractor: BAM Civil Ltd and Dragados Joint Venture

## ➤ CHOCKS AWAY FOR EAST MIDLANDS AIRPORT



Britpave member Gill Civil has completed both the re-configuration of the central apron at East Midlands Airport and the installation of electrical duct pits, lighting column bases and reinstatement of pavement quality concrete.



## ➤ BRITPAVE 2017 INFRASTRUCTURE CONFERENCE: A CURRENT PERSPECTIVE

**The 2017 Britpave Infrastructure Conference examined the key challenges facing the UK and how to meet those challenges with an improved procurement approach, a greater understanding of cementitious solutions and the development of new industry best practice guidance. It finished with a report on a major infrastructure project that is successfully breaking records.**

Dan Lewis, Senior Infrastructure Adviser for the Institute of Directors, opened the conference by explaining the major driver for new and better infrastructure is population growth. With the UK's population predicted to grow to 70 million by 2030 that is a challenge indeed. He argued that in the 21st Century, the challenge is to make infrastructure investments smarter and ensure that they are backed by public support. He proposed that in a resource constrained world this require the use of an 'infrastructure best value index' to score potential projects against each other. This would include criteria such as steady flow of capital expenditure, operational and whole life costs, urban regeneration benefits and support from local communities. "Such an index would enable the government to prioritise. To say no to those where the sums do not add up and yes to those where they do", said Lewis. Using this approach Lewis believes that planning for the building of two further runways in the South East should start, roads should be repurposed to better suit buses – the unsung hero of public transport, and work on 'shovel-ready' projects in the Northern Powerhouse and the Midlands Engine should be accelerated. He also called for the establishment of a UK roads database covering traffic, accidents, costs and air pollution saying that:

"Roads are the hardest-working muscles in the UK's transport infrastructure but we know too little about them. The more information we have about them, the more efficient our investment can be."

The other driver for quality infrastructure is economic growth explained Thomas Barlow, Senior Policy Adviser at the CBI. He pointed out that over half of UK firms believe that infrastructure has failed to improve over the past five years and that the UK is ranked 24th in the world for the quality of its infrastructure – well behind many of our OECD competitors. Daring to speak the B word – Brexit – Barlow said that we are living in uncertain times and that in uncertain times one thing is clear: the positive impact that infrastructure investment can bring should make it a priority for government and business. Infrastructure has a vital role to play in strengthening the UK's competitiveness and improving its productivity. As an example, Barlow pointed out that if the commuter travel times between Manchester and Leeds were reduced to 30 minutes then the productivity of Leeds would increase by 10%. Linking up regional cities with better infrastructure would add £175 billion to the national economy by 2024.

The government has announced a pipeline of infrastructure projects. Maintaining a relentless focus on delivery must form a core part of their approach taken on infrastructure. "High quality infrastructure is paramount for business growth. We need to prove that Britain is open and ready for business", said Barlow. "Uncertainty should be seen as a significant opportunity to drive growth and prosperity right across the country: government and industry must now join forces to seize it."



Moving from generic UK infrastructure challenges to those that are more project specific Paul Toyne explained how changes in public procurement approaches are an important driver for change in the infrastructure sector. In January 2017 the government published its industrial strategy green paper. Amongst a range of proposals was the identification of need to improve procurement with a real commitment to rolled out the Balanced Scorecard Approach (BSC) to be applicable to all major central government projects over £10 million.

BSC requires that a wide set of social, economic and environmental values are considered when evaluating procurement decisions against value for money. Social values that are relevant include responsible sourcing, supply chain management, skills and training development, long-term unemployment and diversity of supply chain.

The objective is to assist UK-based suppliers to compete effectively for government contracts throughout the supply chain whilst promoting innovation and improving productivity. Toyne explained the process that construction companies need to follow when adopting BSC and demonstrated the value of getting it right. The refurbished Gatcosh Crime Campus, Scotland, saw 88% of the procurement spent with local suppliers. This supported 200 local jobs and injected £25.3 million into the local economy. The project resulted in 6 new apprenticeships that provided a social value of over £721,000.

There is an increased onus on proving the worth of a project beyond its initial capital cost. BSC is not prescriptive but it covers the elements that the cementitious supply chain must now consider as part of the procurement process.

A further consideration when examining how best to meet the challenges facing UK infrastructure is ensuring that you fully know how to understand and forward the performance capabilities of your construction material. Peter Sanders, Senior Research at TRL, presented the findings of new research that updates the knowledge gained from previous studies in the applicability of concrete re-texturing techniques as a method of restoring road surface skid resistance and texture. Approximately 3.5% of the national road network has a concrete surface construction. Many of these roads have been in service for over 30 years. After extended use the surface laitance is reduced due to the abrasive action of trafficking and weathering. The research examined the ability of longitudinal diamond grinding, shot blasting, bush hammering and fine milling to restore skid resistance, texture and friction characteristics. As a result of the research approximate service lives estimated from previous studies were reviewed and amended based on

the new evidence collected from a range of sites including the A46, A14, A12, M27 and A30.

For shot blasting and bush hammering the re-texturing service life was found to be consistent with previous studies at 15 months. For fine milling the service life estimate was increased to 49 months and for longitudinal diamond grinding the service life was increased from 52 months to 72 months. An additional advantage with the longitudinal diamond grinding was that the treatment resulted in a quieter new concrete surface compared with the original with a noise reduction of up to 6 dB.

Sanders reported that: "The research aims to provide advice on the use of re-texturing techniques and it shows that concrete re-texturing offers a viable cost effective alternative to bituminous surfacing where the concrete pavement is structurally sound."

New guidance and advice was also provided by the launch of the new Soil Improvement and Soil Stabilisation: A Definitive Guide. Steve Dunn, Managing Director of Geofirma, explained how the guide offers a "why, what and how" and how one member of the Britpave working group that developed the guidance said: "this is the type of guide that I wish was available when I first started out in this industry". Further information on the new guide may be found on Page 11 of this issue of Britpave News.

The final presentation was given by Jim Webster, Head of Materials Services, Carillion. He provided an in-depth project report on the cementitious pavement and foundations for the Aberdeen Western Peripheral Route (AWPR). This is a major transport infrastructure project comprising a 46 km dual carriageway new road and a 9 km upgrade from single to dual carriageway. It will significantly improve travel in and around Aberdeen and the north east of Scotland. Currently under construction, this is Scotland's largest Non-Profit Distributing (NPD) contract and is being delivered by Connect Roads, a consortium comprising Balfour Beatty, Galliford Try (Morrison Construction) and Carillion. Webster explained the background to the decisions to install a CRCP pavement with innovative prefabricated reinforcement panels above a pavement foundation combination of CBGM and Wet Lean and highlighted a number of firsts and record breaking achievements. "This is a high profile challenging project where project team has responded with good collaboration and forward thinking", said Webster.

On behalf of the audience, Steve Elliott, Britpave General Manager, thanked the speakers for providing a range of informative presentations that showed how the cementitious sector is more than able to meet the challenges facing UK infrastructure.

# IMPROVING THE RELIABILITY AND SPEED OF BUS JOURNEYS



A new report outlining the socio-economic benefit of bus travel and demonstrating how these benefits can be further enhanced via the provision of concrete guided busways has been published by Britpave.

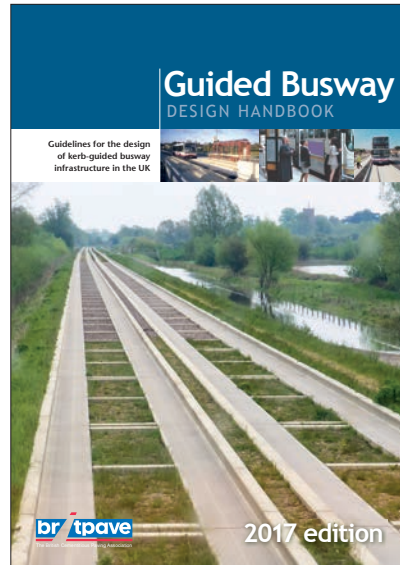
Accounting for two out of three public transport journeys,

bus travel plays an important, and can play an even greater, role in improving local commuting, reducing congestion and carbon emissions and creating more liveable cities. The figures speak for themselves. Bus commuters generate £64 billion in output annually. 33% of city centre visitors made their most recent trip by bus, more than any other mode of transport including the car. Best used bus services in urban areas can reduce carbon emissions from road transport by up to 75%.

However, as the report 'The Benefits of Concrete Guided Busways', points out that the potential of bus travel is being stifled by increased congestion. For example, bus journey times in the West Midlands have increased by 8% over the last seven years. In Oxford, which has one of the UK's highest level of bus usage, bus speeds have fallen to below 10mph. Britpave believes that the solution is the guided busway that segregate buses from other road traffic thereby removing the problems of traffic congestion, obstruction from parked vehicles and the use of bus lanes by unauthorised vehicles. This allows the operation of regular bus services that have more reliable and faster journey times which make taking the bus a more attractive travel option.

Concrete guided busways are relatively simple to construct. They typically consist of two 180mm high concrete kerbs set 260mm apart on a concrete roadway. The kerbs act both the guide for the bus and a physical segregation from other traffic. Once in the guideway, the bus is guided by two lateral guide wheels connected to the bus steering mechanism. On leaving the busway the kerbs terminate and release the guided wheels allowing the driver to resume steering.

'The Benefits of Concrete Guided Busways' is available as a free download from [www.britpave.org.uk](http://www.britpave.org.uk)



## BUSWAYS GUIDANCE

First published by Britpave in 2004, the Guided Busway Design Handbook provides industry guidance and best practice on the design and implementation of kerb-guided busway systems. It covers relevant design standards, provides

busway scheme examples and offer guidance on geometric guideway design, stops and pedestrian crossings plus loading and structures. Both urban bus priority schemes and independent light rapid transit schemes are considered.

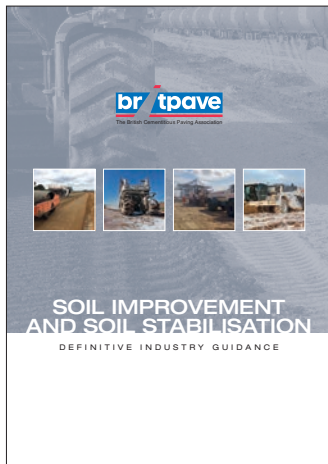
Two important chapters of the guide have now been updated: Chapter 3: Geometrical Design of Guideway and Chapter 9: Construction. It has been updated by Arup with the assistance of the Britpave Rail Task Group.

Chapter 3 has been updated to incorporate the various lessons learnt from Cambridge and Luton. There is now a section which deals with the particular issues relating to geometry design for precast busway. Chapter 9 has been updated to include reference to the Leigh to Ellenbrook Guided Busway, Manchester.

Copies of 'The Guided Busway Design Handbook' may be downloaded from [www.britpave.org.uk](http://www.britpave.org.uk)



## > NEW STABILISATION GUIDANCE



Launched at the Britpave industry conference (see pages 8 – 9) was a new introductory and technical guide to mix-in-place soil improvement and stabilisation. It outlines industry best practice and provides technical information plus signposts to industry standards and further reading. 'Soil Improvement and Soil

**Stabilisation: A Definitive Guide' explains the what, why, where and how of soil stabilisation.**

The guide concentrates on the use of binders to improve and stabilise clays and fine-grained soils. The common binders discussed are lime, cement and ground granulated blast furnace slag (ggbs). Fly ash is covered even though it is less commonly used and the UK supply is set to decline as UK coal-fired power stations are being decommissioned. The use of foamed bitumen as a binder for coarse-grained soils and aggregates is a niche technique and is not included. Unlike Advice Note HA/74/07, this guide seeks to describe the process of soil stabilisation for all infrastructure sectors not just highway works and slope repairs.

Thanks are extended to the members of the working group for their valued input: Beach Ground Engineering, Balfour Beatty, AECOM, Combined Soil Stabilisation, Geofirma, Carillion, VolkerFitzpatrick and Highways England.

To download a copy of '*Soil Improvement and Soil Stabilisation: A Definitive Guide*' visit the publication section at [www.britpave.org.uk](http://www.britpave.org.uk)

## > BS 1924 REVISION UPDATE

Britpave are supporting BSI and Highways England via BSI working group B510\_4 in the development of British standards. The works comprise:

- > an update to the existing British Standard for the sampling and methods of testing materials treated with hydraulic binder for civil engineering purposes and
- > the creation of a new British Standard which is envisaged to be used on all UK pavement schemes that incorporate hydraulically bound materials.

The revised standards will replace BS 1924 Part 1 and 2, last updated in 1990. The revision includes alignment with BS EN standards and introduction of new tests such as the light weight deflectometer for measuring surface modulus.

The new British Standard will cover the specification for materials, production, transport, laying, compaction, testing and compliance of hydraulically bound materials for pavement applications. It will include specification of the following treated materials:

- > Rolled compacted concrete (RCC),
- > Hydraulically bound granular materials (HBGM), and
- > Hydraulic stabilised soils (HSS).

This standard is complementary to the new Britpave guidance for soil stabilisation. The project has been led by AECOM's pavement and materials team, with support from specialist consultants, the B510\_4 committee. In addition, early industry consultation on the newly introduced test methods in S 1924 having been underway since mid-2017. Prior to publication the suite of standards will go to review of B510\_4, followed by wider consultation in early 2018.

## > BINDER R&D WORKSHOP

**Britpave is planning to hold a one-day workshop on global soil stabilisation binder research and development. The workshop will be held early next year.**

Al McDermid, Chair of the Britpave Soil Stabilisation Task Group believes that soil stabilisation remains a fairly niche market with only a small percentage of the vast potential of contracts using the process. Mostly lime, cement and ground granulated blast slag (GGBS) are used as binders. While their use is successful, there is a range of global binder developments that offer new UK applications for soil stabilisation.

The proposed workshop will provide the opportunity for binder suppliers to present their latest binder developments and allow contractors to quiz them on their potential use. Further details will be circulated via the monthly Britpave Bulletin email update.

## BARTON MAKING THE EARTH MOVE

Barton are back in action for IDI Gazeley at their flagship distribution site, Gallagher Logistics Park at Magna Park Milton Keynes. As the contracting arm of The Bennie Group, main contractor Barton have thrown an impressive team and fleet of their own kit at the job to meet the challenging 24 week programme. In excess of 270,000 cu m of soil will be moved as part of a complete infrastructure package on this high-profile scheme. Fellow group company, Peter Bennie Ltd are supplying the project with over 100,000 tonnes of stone from their nearby Wroxton Quarry to further demonstrate the significant benefit and value being delivered by The Bennie Group.

The busiest single day so far saw an impressive 3600 tonnes of stone delivered and profiled by the team with plenty more to follow.

## INTERSERVE WINS 2 YEAR DIO CONTRACT

Interserve has secured a two-year contract extension with the Defence Infrastructure Organisation worth up to £265m. The contractor will provide infrastructure support alongside planned and reactive work at four international bases for the Joint Forces Command (JFC): the Falkland Islands, Ascension Island, Gibraltar and Cyprus. Interserve will also provide a number of site-specific services across the bases, such as aircraft handling at Ascension Island; power generation, water treatment and plant management in the Falklands; and support for visiting vessels in Gibraltar.

The firm has worked with the JFC across its operating bases for more than 10 years. Chief executive Adrian Ringrose said: "With extensive defence expertise and a 10-year track record working with the DIO and JFC on this specific portfolio, we are well equipped to meet the varied and changing requirements of our armed forces across these strategic sites. We are extremely proud to support the building and maintenance of the infrastructure required for our country's defence efforts both at home and abroad."

The contract is the latest major deal that Interserve has won with the DIO, after the firm bagged a £230m contract to provide support services to the United States Air Force's UK estate in April last year.

## 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](http://www.aecom.com)

Allied Infrastructure Management Ltd - [www.alliedinfrastructure.co.uk](http://www.alliedinfrastructure.co.uk)

Arup and Partners Ltd - [www.arup.com](http://www.arup.com)

Atkins Ltd - [www.atkinsglobal.com](http://www.atkinsglobal.com)

Balfour Beatty Ltd - [www.balfourbeatty.co.uk](http://www.balfourbeatty.co.uk)

Ballast Phoenix Ltd - [www.ballastphoenix.co.uk](http://www.ballastphoenix.co.uk)

BAM Contractors - [www.bamcontractors.ie](http://www.bamcontractors.ie)

Bardon Composites Pavements t/a Aggregate Ind - [www.aggregate.com](http://www.aggregate.com)

Barton Plant Ltd - [www.barton-plant.co.uk](http://www.barton-plant.co.uk)

Beach Ground Engineering Ltd - [www.beachgroundengineering.co.uk](http://www.beachgroundengineering.co.uk)

British Lime Association - [www.britishlime.org](http://www.britishlime.org)

Carillion plc - [www.carillionplc.com](http://www.carillionplc.com)

CEMEX UK - [www.cemex.co.uk](http://www.cemex.co.uk)

CH2M - [www.ch2m.com](http://www.ch2m.com)

Colas Ltd - [www.colas.co.uk](http://www.colas.co.uk)

Combined Soil Stabilisation Ltd - [www.combinedssl.co.uk](http://www.combinedssl.co.uk)

Complete Design Partnership Ltd - [www.cdpbroms.co.uk](http://www.cdpbroms.co.uk)

Costain Ltd - [www.costain.com](http://www.costain.com)

Dublin Airport Authority plc - [www.dublin-airport.com](http://www.dublin-airport.com)

Ecocem - [www.ecocem.ie](http://www.ecocem.ie)

Extrudakerb Ltd - [www.extrudakerb.co.uk](http://www.extrudakerb.co.uk)

Geofirma Soil Engineering Ltd - [www.geofirma.co.uk](http://www.geofirma.co.uk)

Gill Civil Engineering Ltd - [www.gillgrouphouse.com](http://www.gillgrouphouse.com)

Gomaco International Ltd - [www.gomaco.com](http://www.gomaco.com)

Hanson UK Ltd - [www.hanson.biz](http://www.hanson.biz)

Interserve Construction Ltd - [www.interserve.com](http://www.interserve.com)

Lagan Construction International - [www.laganconstruction.com](http://www.laganconstruction.com)

Morgan Sindall Construction and Infrastructure Ltd - [www.morgansindall.com](http://www.morgansindall.com)

Norder Design Associates Ltd - [www.norder.co.uk](http://www.norder.co.uk)

PJ Davidson (UK) Ltd - [www.pjd.uk.net](http://www.pjd.uk.net)

Power Plane Ltd - [www.powerplane.co.uk](http://www.powerplane.co.uk)

RJT Excavations Ltd - [www.rjtexcavations.co.uk](http://www.rjtexcavations.co.uk)

RPS Group plc - [www.rpsgroup.com](http://www.rpsgroup.com)

SGE - [www.sgeworks.co.uk](http://www.sgeworks.co.uk)

Smith Construction (Heckington) Ltd - [www.smithsportscivils.co.uk](http://www.smithsportscivils.co.uk)

Tarmac Ltd - [www.tarmac.com](http://www.tarmac.com)

Tata Steel Shapfell - [www.tatasteeleurope.com](http://www.tatasteeleurope.com)

TR Stabilisation - [www.trstabilisation.co.uk](http://www.trstabilisation.co.uk)

Tyrolit Ltd - [www.tyrolit.com](http://www.tyrolit.com)

University of Nottingham - [www.civeng.nottingham.ac.uk](http://www.civeng.nottingham.ac.uk)

UK Quality Ash Association (UKQAA) - [www.ukqaa.org.uk](http://www.ukqaa.org.uk)

VolkerFitzpatrick Ltd - [www.volkerfitzpatrick.co.uk](http://www.volkerfitzpatrick.co.uk)