BRITPAVE® NEWS

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Examining infrastructure issues. Fowarding infrastructure solutions.

TURN FUNDING ANNOUNCEMENTS INTO ACTION

EXPOSED AGGREGATE CONCRETE SUCCESS

SOIL STABILISATION RESEARCH

PORTS EXPANSION NEEDS LOW COST, HIGH PERFORMANCE PAVEMENT OPTION

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Editor's Note

Infrastructure investment is a key economic driver. It provides a positive 'multiplier effect' for the economy by helping to attract and retain wider private sector investment. With the UK's infrastructure comparing poorly against other competitor economies, indeed according to the World Economic Forum the UK is ranked just 28th for the quality of its infrastructure, upgrading it is essential.

It seems that the government is at last recognising the fact that something has to be done. Recent announcements have pledged £36 billion for the start of over 200 infrastructure projects during 2014/15. Key projects include the Mersey Gateway Bridge, the A1 Barton to Leeming motorway upgrade plus improvements to the M3, M6, M25 and M1. This announcement follows the 2013 Spending Review which saw the Treasury commit to invest over £100 billion for specific projects in the next parliament.

The recognition of the need to invest has been mirrored by the recognition of the need for this investment to be long-term. This is involves a growing appreciation of the benefits of minimum maintenance and whole life costing both of which lend themselves to concrete infrastructure solutions. As the industry focal point for cementitious infrastructure, Britpave through its sector specific task groups is developing a range technical and best practice guidance that forward cost effective, long-term and minimum maintenance solutions. You will find details of these initiatives in this issue of Britpave News.

Steve Elliott
Britpave General Manager

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.

Turn Funding Announcements into Action

New funding announcements and prime ministerial photo-opportunities at major contractors suggest that infrastructure is playing an increasingly central role in the government's economic strategy. However, before we start to believe that the UK is on the verge of a golden age of infrastructure investment, it is important to remember that announcements must be turned into real action.

The publication of the new National Infrastructure Plan outlining £377bn of public and private sector investment and of the Infrastructure Pipeline demonstrated that the government was at last realising the economic importance of investing in infrastructure. Good transport infrastructure has both local and global economic benefits. It enables fast and efficient transfer of people and goods and increases global competitiveness and attraction for investment. The significant economic impact of infrastructure projects is underlined by High Speed 2 (HS2), which the consultants KPMG calculate will have an economic benefit of over £53 billion.

The construction sector that delivers the infrastructure projects also provides economic benefits. It employs over three million people across a huge supply chain with economists estimating that every £1 spent on construction generates £3 in economic activity. In total, the construction industry's contributes 6.4 per cent of UK GDP.

Small wonder that the Prime Minister David Cameron and Chancellor George Osborne recently made a rare joint appearance at Britpave member Skanka's headquarters to announce that delivering a first-class infrastructure was a "crucial part" of the government's long-term economic plan. The photo-opportunity was to announce £36 billion infrastructure investment for 2014 -15 with 200 major projects to get under way.

For once the government rhetoric seems that it will be translated into action which is important as according to the National Infrastructure some £400 billion needs to be invested between now and 2020 if the UK wants to remain competitive in a global market.

Our global competitors continue to set an example on how to fund infrastructure projects. In Canada, pension funds are invested directly into infrastructure thereby reducing the reliance on bank finance. In Australia, the government shares refinancing risk on projects to allow short-term bank lending during the construction phase. Meanwhile, Germany and Brazil, among others, have state-owned infrastructure banks that lend to projects. A further consideration is that the UK is the only G20 country that does not offer tax relief for infrastructure investment in buildings and structures.

The need to increase infrastructure investment is set against a background of decades of under- funding together with government's continued determination to balance the books. This means that if infrastructure investment is to fulfil its role in the government's economic strategy then new, innovative ways of funding must be delivered as part of a financial environment that makes it attractive to invest.

Roads Task Group Update

It seems, at last, that the long-term performance and minimum maintenance benefits of concrete roads are being properly acknowledged. The Britpave Roads Task Group is working on a number of initiatives to forward the benefits of a wide range of concrete road solutions. Importantly, the Task Group is working increasingly closer with the Mineral Products Association and has increased its direct dialogue with senior engineers at the Highways Agency.

The findings of the noise survey carried out on the section of exposed aggregate concrete road surface (EACS) on the A449 are very positive, please see below. The Task Group is also to determine the long-term noise reducing benefits of groove and grind concrete road surfaces. A section of groove and grind on the A14 is to be core tested to ascertain its current profile and local residents are to be contacted for their feedback on the noise reduction levels.

The Task Group is also reviewing and updating a number of key sections of the Design Manual for Roads and Bridges including HD26, HD32 HD38. Key Britpave guidance documents are also being updated including 'Hydraulically-bound mixtures for pavements in winter' and 'Online motorway widening'.

Exposed Aggregate Concrete Surface 15 Years On

The A449 Coldra to Usk rehabilitation scheme constructed in 1998/9, was one of the most innovative highway projects of the time, involving the first overlay in the UK of a life expired rigid carriageway with a continuously reinforced concrete pavement (CRCP). The project also incorporated the UK's first full scale use of two-layer exposed aggregate concrete surface (EACS) and it remains the largest such project in the UK.

The Britpave Roads Task Group recently commissioned TRL to assess the noise characteristics of the surface after 15 years. The long term acoustic performance of the EACS was assessed by repeating noise measurements originally taken in 1999. The testing showed that the surface is degrading acoustically at a very slow rate, when compared with other asphaltic low noise surfaces, such that noise levels from EACS are ultimately lower than asphaltic surface courses.

The surface is performing very well in terms of skidding resistance with the latest SCRIM results indicating levels considerably above intervention point, and the possibility of 10 to 15 year's further service in hand.

This is very encouraging news for clients and contractors seeking a low maintenance pavement solution for heavily trafficked roads. It is evident that EACS can be expected to provide up to 30 years maintenance free operation. EACS currently requires a Departure from Standards for use in England, but this is expected to change when the relevant standard moves to performance criteria in the near future.

Low Maintenance Highways Pavements Seminar

Britpave and MPA The Concrete Centre are to host an important half-day seminar 'Low Maintenance Highway Pavements', from 1pm, Tuesday 7th October 2014, at IET Birmingham. The event will examine solutions for transforming the Strategic Roads Network with low-maintenance highway pavements and will highlight the role that concrete will play in achieving this objective.

Road network overviews, technical presentations and project cases studies will be given by senior engineers from the Highways Agency together with industry consultants and contractors.

Attendance is free. For exhibiting opportunities from £450 contact Claire Ackerman: CAckerman@concretecentre.com. The seminar is worth 3 CPD hours

- For further information and registration please visit: **www.concretecentre.com/events**

New Roller Compacted Concrete Guidance

Roller-compacted concrete (RCC) pavements offer a competitive and long-lasting alternative to asphalt. New Britpave guidance aims to encourage greater use of an approach used in the United States since the 1930's but which has yet to gain mainstream recognition in the UK.

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 has the same constituents as conventional concrete - cement, water and aggregates – and requires no formwork, reinforcement or finishing.

RCC combines the strength, long-term performance and minimal maintenance of conventional concrete with the economy and simplicity of asphalt. '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.

Increasingly, RCC with induced cracking and binder/surface courses is being considered for truck lanes and motorway widening projects and as an economic alternative to fully flexible pavements.

RCC has significant potential for the UK road network and this new guidance should help forward its use. It is economic and fast to lay, has long-term performance with minimum maintenance, resists rutting and potholes and can use waste materials for its construction whilst at the end-of-life it can be crushed and recycled for a new pavement.

Britpave Guide to Roller Compacted Concrete is available from **www.britpave.org.uk,** free for members, £10 plus p&p for non-members.

CEMEX Takes Delivery of New RAPIDMIX400CW

CEMEX Paving Solutions has taken delivery of a new Rapidmix400CW, the high volume mobile continuous mixing plant manufactured by Rapid International Limited. The plant was sold in partnership with leading machinery dealers DUO plc. The new Rapidmix400CW extends the capabilities for the CEMEX division to deliver so much more on projects.

Fully mobile and self contained, the Rapidmix400CW offers a complete plant powered by its own power source, with on-board compressor and generator. Fitted with a self erecting system, using hydraulics, the plant can change from travel mode to fully operational within a few hours. The Rapidmix400CW mixes up to 400 tonnes per hour depending on application and provides feed rates that are fully adjustable for the aggregate, cement and water systems.

The recently updated unit incorporates full weighing options for all materials - aggregates, cement and water, which means the new generation Rapidmix400CW offers record keeping that is automated, precise and detailed. The Rapidmix is an ideal solution for a wide variety of applications, including - Roller compacted concrete (RCC), Cement Bound Materials (CBM), Bentonite Enriched Soils, Coldmix bitumen emulsions, Contaminated Land Treatment and Recycled Asphalt Paving (RAP).

Of the new plant addition, James Playford, Business Development Manager CEMEX Paving Solutions, said: "With the increase in use of cementitious materials such as roller compacted concrete the new Rapidmix400CW from Rapid International was the ideal choice for CEMEX UK. The machine offers CEMEX UK multiple benefits including low operating costs, excellent mobility and high outputs to meet the challenging demands of today's projects."

■ For further information visit: **www.rapidinternational.com**

Highways Agency Reform Welcomed

Britpave has welcomed the government's go ahead for the reform of the Highways Agency which will see it become a government-owned company in less than a year. The reform will see long-term funding and a step change in way that strategic roads are managed and maintained as it will provide a guaranteed budget across five years and allow the Highways Agency greater independence to plan ahead. This will provide long-term stability and certainty of budget which will give the supply chain greater confidence to develop its workforce to meet future demands.

Graham Dalton, Chief Executive at the Highways Agency, outlined the proposed changes at the Britpave seminar 'Invest in Infrastructure'. He explained: "Becoming a government-owned company will put us in the best place to deliver the huge step-up in investment pledged by the government. We will have the commercial flexibility to work more efficiently and effectively and to respond to the expectations of our customers and other stakeholders."

■ For further information on the new-look Highways Agency visit: **www.highways.gov.uk**

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Ports Expansion Needs Low-Cost High Performance Pavement Option

The significant investment and expansion programme by UK ports calls for a better heavy duty pavement option. New technical guidance, currently being developed by infrastructure group Britpave, will encourage greater awareness of roller compacted concrete (RCC) by the ports industry reports Daniel Jackson, Chairman of the Britpave Heavy Duty Pavements Task Group.

The ports sector is expanding. According to Oxford Economics, it is the one of the most investment-intensive sectors of the UK economy. Between 2007 and 2011 the total investment of members of the UK Major Ports Group, the trade association representing the main commercial ports responsible for 70 per cent of all UK port tonnage, was £1.4 billion. Like any other industry sector, the investment by ports must have a financially driven approach to capital expenditure. As pavements are a significant part of capital costs any savings in paving construction and maintenance must be considered. This explains why ports and container terminals are increasingly examining the potential of roller compacted concrete (RCC) for the construction of pavements.

Ports and container terminals generally comprise large open areas. This makes them extremely suitable for large-scale RCC mechanical construction which offers a number of advantages over more traditional pavement options. RCC combines the strength, long-term performance and minimal maintenance of conventional concrete with the economy and simplicity of asphalt. Further advantages include minimal rutting, it can span localised soft subgrades, it has the durability to resist freeze-thaw damage, will not deform under heavy concentrated loads and will not deteriorate from fuel and hydraulic fluid spills.

There is also a growing commercial argument. RCC has become more cost competitive and is now up to 20 per cent less than pavement quality concrete and concrete block surfaced pavements. RCC can be constructed quickly and efficiently due to the limited number of construction components.

RCC offers the ports sector a proven, long-term, low-maintenance pavement option that is economic and efficient. It is used regularly for parking and industrial hardstanding areas and now should be seriously considered as a viable alternative to more traditional port pavements. It is hoped that the new RCC for ports guidance from Britpave will give port engineers the information and confidence to specify this low-cost pavement option.

Heavy Duty Pavements Task Group Update

The Task Group continues to work closely with Defence Infrastructure Organisation on the reviewing and updating of their Cement-Bound Materials (CBM) and Hydraulically-Bound Materials (HBM) specifications. In addition, the Task Group is assisting with the revision and updating of DIO Concrete Specification 33.

Recognising the significant investment and expansion programme being undertaken by UK ports, The Task Group is developing new technical guidance on roller compacted concrete (RCC) which offers ports a better heavy duty pavement option in terms of long-term performance and durability (see opposite for further details).

The latest in the Rigid Airfield Pavements Guidance Notes series, 'Pavement Quality Concrete Materials and Production' has been circulated to airport owners and engineers. Other Guidance Notes include and are available from the Britpave office or website:

- Guidance Note 1 – Concrete joints and joint sealing
- Guidance Note 2 – Design and evaluation methods
- Guidance Note 3 – Principles of design and assessment
- Guidance Note 4 – Surface finish, regularity and texture
- Guidance Note 5 – Keyed longitudinal joints for airfield pavements

Discussion Paper Considers Role of Regional Airports

The Airports Commission is calling for evidence on the connectivity and business models of the UK's existing airport capacity. The Commission wishes to examine fully the national aviation picture from which it is considering the additional capacity in London and the south east. The call for evidence focuses on the domestic and international connectivity provided by regional airports and those airports serving London and the south east other than Heathrow and Gatwick.

Launching the consultation, Sir Howard Davies, Chair of the Airports Commission said: "Regional airports and those in London and the south east other than Gatwick and Heathrow remain critical to the Commission's analysis. It is clear that in the future these airports will play a crucial national role, especially at a time when the major London airports are operating very close to capacity."

The consultation will examine connectivity trends at these airports, how the business models of these airports are developing and whether the connectivity currently provided can be enhanced.

Evidence can be submitted at: **www.gov.uk/government/consultations/use-of-the-uks-existing-airport-capacity-call-for-evidence**

Reaching New Heights

Newly elected member of Britpave, Colas have recently installed a concrete and asphalt extension to the existing runway at Birmingham Airport.

With an impressive history of constructing infrastructure at major airports in the UK and across the world Colas has a reputation for delivering high quality, innovative solutions to Airport Operators in challenging conditions.

Birmingham Airport's 405m operational runway extension was constructed by a Colas Joint Venture which is also built adjacent to the A45 road improvement project for Birmingham City Council and Solihull Metropolitan Borough Council. The two schemes were run as one construction project to generate savings that made both projects more cost efficient. The road diversion created the land for the runway extension so undertaking the work simultaneously was key.

The work for the runway extension involved the construction of a composite concrete and asphalt extension to the existing runway. The extension of the main runway was constructed using a keel section in the centre of the runway, tin the area of maximum loading. The pavement design enabled us to reduce the width of the full strength pavement to the central area and linearly reducing the structural thickness to 300mm. The vertical bays were linked by dowels and varied in depth from 300–400mm within the extension and 195-210mm within the shoulders to the extension. The mix design produced a compressive strength in excess of 55MPa at seven days.

The concrete batching plant was setup on-site enabling all concrete needed as part of the extension and taxiway, perimeter road and Centro road works to be batched locally. This had the following advantages:

- The availability of a constant supply of bespoke mixes of high quality concrete. With reduced risk of traffic delays
- A steady supply of concrete enhanced productivity in particular during night works where the working window was limited to 5-6 hours.
- Minimisation of disruption on local roads and disturbance to local residents as a result of deliveries.

A no fines concrete mix was used for the delethalisation of the taxiways and vertical facing edges where required. The voids formed in the no fines produced a suitable surface for the topsoil to integrate with and a passage for the standing water to seep through, whilst maintaining the structural function.

In the last five years Colas have constructed £750m worth of airport infrastructure across five continents. This work has been a combination of pavement quality concrete and asphalt surfacing.

The Colas Centre for Science and Techniques in Paris is central to Colas' ability to deliver the correct solution for every project. With a €70m annual research and development budget and 2,000 technical staff involved in research activities, finding the correct solutions for their clients is a key driver for the business.

■ For further information visit: **www.colas.co.uk**

Britpave Soil Stabilisation Task Group Update

The Soil Stabilisation task group is continuing to work closely with the Highways Agency on progressing the review and updating of HA74 'Treatment of Fill and Capping Materials using either Lime or Cement or Both'. HA74 forms part of the Design Manual for Roads Bridges. Britpave has been awarded the role of A74 guardian by the Highways Agency. Work is also progressing on the development of NHBC guidance for soil stabilisation for housing developments for which the Task Group has provided support funding.

New issues to be addressed include lobbying government to amend new rules which will see all clay soils that are stabilised being subject to the Aggregates Levy. The levy of £2 per tonne will apply to the total weight of soil that is stabilised. The removal of clay exemption is contrary to the logic of the Aggregates Levy as the clay is not used as an aggregate and the clay is not extracted. When clay is stabilised with lime or cement, 'stabilisation' is the result of a pozzolanic (chemical reaction between the binder and the clay. The clay is not inert but is an essential ingredient of a chemical reaction. This 'chemical reaction' is the reason why clay, when used in ceramic products, has been exempted. The same argument applies to soil stabilisation.

The task group is also to examine how best to develop and forward contractor best practice and quality to underline the 'badge of honour' of Britpave membership.

Cement Soil Stabilisation Could Save Ancient Woodland

With housing need and demand outstripping supply, the Environment Secretary Owen Paterson has suggested building on Britain's ancient woodlands. The use of cement to remediate brownfield land could make this unnecessary.Paterson argued that developers could be granted permission to build on ancient woodland if they agree to offset the damage by planting new trees elsewhere. Ancient woodland is classed as areas that have been continuously wooded for over 400 years. A third of woods in England are ancient, covering 350,000 hectares.

"Before building on ancient woodlands the full potential of building on brownfield land should be realised", said Al McDermid, Chairman of the Britpave Soil Stabilisation Task Group. "According to the Campaign to Protect Rural England, government figures show that the amount of brownfield land becoming available for re-development is far outstripping the rate at which is it being used. There is enough for 1.5 million new homes."

Brownfield land is often more difficult to use than greenfield sites particularly if the site has been contaminated by previous industrial use. The traditional approach to this has been to simply dig up the problem soil and dump it elsewhere. This is not the most sustainable or cost effective approach. Using cementitious binding materials such as cement, lime fly ash or ground granulated blast furnace slag (GGBS) renders potential contaminants immobile and unleachable. Stabilisation of the soil treats the contaminants to produce a soil that is less toxic. Solidification improves the physical properties of the stabilised soil to provide a strong engineered construction material.

"Soil stabilisation/solidification is a most effective way to bring brownfield land back into productive use," said McDermind. "Of the estimated 61,920ha of brownfield land in England, 54% is derelict or vacant. Soil stabilisation/solidification could help bring this land back into use and so negate the need to dig up our ancient woodlands."

New Research on Swell Tests Could Further Use of Soil Stabilisation

New research into test methods for assessing potential soil stabilisation swell could further the use of soil stabillisation to improve weak and poor soil into a sound and stable construction material.

Stabilising soil with lime and/or cement is an effective method of converting weak soil into an useable construction material. In rare circumstances, the presence of sulfates in wet soil can potentially cause swell problems due to calcium (from the lime or cement binder) reacting with alumina (a primary constituent of clay) and sulfates to produce calcium-aluminate-sulfate-hydrate materials which have a very large expansion potential of up to 250 per cent.

The research was carried out by Balfour Beatty Construction Services and the Cementitious Slag Makers Association members of the Soil Stabilisation Task Group. It evaluated three test methods used for assessing the potential for stabilised soils to swell due to the presence of sulfates or sulfides in the soil. These included: California Bearing Ratio (CBR) swell test; accelerated, unconfined expansion test; loss-of-strength immersion test. They were each tested on three clay types stabilised with various combinations of lime, cement and GGBS. The clay types included a highly plastic but 'zero sulfate' glacial clay, a Lias clay with medium sulphates and a London clay with low sulfate but high sulfide.

It was found that whilst all three tests detected potential problems with the medium sulfate soil there was no evidence that European accelerated test is any better at detecting the potential for swell than the CBR test. The loss-of-strength immersion test was the most severe of the tests and may be overly severe for evaluating mixtures with lower binder contents. All three test methods showed an enhanced resistance to sulfate disruption where the binder used included GGBS.

"There is a difference in opinion as to which is the most suitable test method to assess the swelling potential of stabilised soils", said Al McDermid, Chairman of the Britpave Soil Stabilisation Task Group. "This research demonstrates the capabilities and limitations of the three main test methods thereby allowing an informed decision to be made."

A free copy of the report 'A Comparison of 3 Swell/Stability Tests on Clay Soils Treated with Lime, Cement and GGBS', may be downloaded from the Britpave website: **www.britpave.org.uk/FreePublicationsSoilStab.ink**

Soil Stabilisation Paper Transfers Science to Practice

Geotechnics expert at Nottingham Trent University's Schools of Architecture, Design and the Built Environment, Paul Beetham, together with industry and academic co-authors have published a review paper 'Lime Stabilisation for Earthworks: A UK Perspective' . The paper aims to make the findings of academic research accessible to industry so that contractors are able to apply it to their day-to-day work. Of particular focus is sulphate swelling and how the science has moved forward to better understand and avoid issues such as the M40 failure in the late 1980s.

Paul Beetham, said: "The thrust of the paper is to transfer science to practice. People often say 'lime stabilisation is a black art' and this can reflect a lack of trust. This paper clearly explains the underpinning science and it arms clients, contractors and consultants with practice ready knowledge. Applying this knowledge will help to create greater confidence in this ground improvement approach."

The review paper is available online at:
http://www.icevirtuallibrary.com/content/serial/grim/fasttrack.

SOIL STABILISATION IN PRACTICE

King Edwards Quay, Colchester

The project involved the construction of a mixed-use development including 765-bed student accommodation for Essex University. A large stockpile of wet drainage arisings had accumulated on Phase One. With around 4,000m³ of fill required for this area, it made financial sense to stabilise some of the stockpile material and muck away the balance rather than muck away the entire stockpile and import fill material

Soil stabilisation contractor Pryor Stabilisation tested samples of the stockpile for its suitability to achieve the required strengths. This being determined, the outside of the stockpile was brought up to formation with each layer being modified and then stabilised. The surplus stockpile was pushed onto the piling mat to be mucked away at a later time whilst the hole that was left where the stockpile had been was again brought up in modified layers and the formation was then stabilised. Pryor finished off by placing a layer of recycled crushed concrete for the piling contractor to run on.

Jaguar Landrover, Solihull

The location of the site within the centre of the Jaguar Landrover production facility called for a careful approach. With the Landrover paint shop forming one site boundary and storage areas for up to 700 news vehicles awaiting shipment on the others, the potential issue of dirt and dust release during soil stabilisation works was significant.

Combined Soil Stabilisation Ltd approached the potential problem of dust release by using an integrated mixer the silo of which was vented into a water tank instead of the traditional sock to prevent any dust escape during materials transfer. This approach was successfully used for spreading mixing and filling for both the lime and cement stabilisation works. Weather conditions, in particular wind speed and direction, were constantly monitored with work being halted if there was any risk for airborne dust release. The project involved lime modification sub-grade layer in the cohesive-made ground to provide a minimum strength of 5% CBR.

Subsequently, a layer of site worn granular material was placed and cement stabilised to provide a 15% CBR capping layer. The two layers formed a piling platform to support a 350kpa piling rig.

Ercall Wood College, Telford

The soil stabilisation project was for an improved haul road for the new the college buildings currently under construction. The existing road had become too wet and muddy for the transportation of construction and building materials.

Following initial sampling and undertaking of a design exercise, TR Stabilisation proposed stabilisation for the strengthening of the haul road and turning circle.

The base of 1,800cu.m³ of the haul road was treated with lime to achieve a CBR of 5% with 3,700m² of the surface being treated with lime and cement to provide a stabilised capping replacement CBR of 15%. The material was treated by applying the binder to the surface using a tractor-towed spreader and then mixing-in using a Wirtgen WER2500S rotivator. The material was then compacted, trimmed to tolerance and stone applied to the surface. The approach was fast and efficient with a tight project deadline being successfully met.

Rail Task Group update

There is increased dialogue between Britpave and HS2, with Britpave continuing to forward the benefits of slab track over ballast track. In particular, the Task Group is to work on establishing current slab track initial, maintenance and whole life costs. There is also a reported increased interest in slab track by Network Rail.

The Task Group is also to examine further the growing market potential of guided bus lanes following reports of growing interest from local highway authorities.

Network Rail Investment

Network Rail has announced a five-year plan to invest £38 billion in rail infrastructure. The plan, which runs from 2014 – 2019, includes:

- Up to 700 more trains a day between major northern cities
- 20% increase in the capacity of London's commuter trains
- 1,350km of track to be electrified
- An east-west rail project connecting Oxford and Milton Keynes
- Upgrades for stations including Birmingham New Street and Manchester Victoria
- £13 billion towards replacing and renewing 7,000km old trail track.

By the end of the plan, known as Control Period 5, the upgrade to the cross-London Thameslink line will be finished and construction of Crossrail in London will also have been completed.

With the rail network experiencing huge growth in passenger numbers, investment in increasing capacity and improving reliability is essential particularly if Network Rail is to meet its stringent punctuality targets of 92.5 per cent of all trains arriving on time.

HS2 Makes Progress

Britpave Rail Task Group has developed an ongoing dialogue with HS2 to examine and forward possible concrete slab track solutions. High Speed 2 is much more than reducing journey times between London and Birmingham. It is a major opportunity to revitalise the UK's rail network. This was underlined by the cross-party support for HS2 following the Second Reading of the High Speed Rail Bill that demonstrated that the UK is ready to invest in 21st century transport infrastructure.

Not that the project is without its chorus of detractors. However, a recent report from HSR Industry Leaders Group, a coalition of industry experts committed to supporting the successful delivery of a world-class high speed UK rail network, counters criticism of the project with a number of pro-HS2 arguments. 'Great Britain: Connected or Not?', outlines the negative economic and social consequences of not proceeding with HS2. These include:

- Only a small fraction of the funding allocated to HS2 is likely to be reallocated to other infrastructure projects. The most likely estimate is that just £2 billion of the £42 billion allocated to HS2 would be made available to the Department for Transport. Based on current spending patterns, only £670 million of this would potentially be reallocated to national rail.
- Not going forward with HS2 would signal to potential investors an unwillingness to invest in its creaking infrastructure, putting off business looking to develop in the UK.
- The opportunity to regenerate the Midlands and North of England would be missed, HS2 is expected to transform development in major cities and drive private sector investment.
- Losing HS2 would result in a loss of investment in the national workforce and would lead to highly skilled engineers leaving the UK to work overseas. HS2 is predicted to create 20,000 new jobs in construction alone.
- There will be a stagnating effect on the UK's economy with key regions becoming increasingly disconnected as congestion clogs the overloaded national transport system.
- Without HS2 it will not possible to accommodate any significant growth in rail freight capacity. This will lead to greater overcrowding on the road network.

Failure to proceed with HS2 will have severe economic and environmental repercussions for the UK. The vision of a high speed rail network connecting the UK with Europe must become a reality.

Be Informed

An important output of Britpave and its task groups is its published technical and best practice guidance. Recent publications include: 'Rigid Airfield Pavements – Pavement Quality Concrete Materials and Production'; 'Concreting Pavements in Winter'; 'Britpave Guide to Roller Compacted Concrete Pavements'.

To access the library of industry technical information and guidance covering roads, airports, rail track and soil stabilisation visit: **www.britpave.org.uk/Shop.ink**

New Members

A warm welcome to the following new Britpave members:

Pryor Stabilisation

Pryor Stabilisation is part of the Pryor Group of companies and, as such, can offer fully integrated solutions to earthworks packages. Although the company is new, the experience behind it is massive, from estimators to project managers to foremen and operatives, all have many years in the soil stabilisation industry. Contracts carried out-to-date range from cement stabilised sub-base for a road, improving large quantities of soil too wet to use during the washout 2013-2014 winter, stabilising a large wet stockpile of drainage arisings into a piling mat, road recycling the existing sub formation and sub-base of a busy main road. The list goes on.

CJ Pryor Stabilisation offers a young dynamic team with the experience to back it up. The company aims to provide the right solution for any site conditions.

For further information contact Graham Clark,
tel: 07930 638771, or email: GrahamClark@Pryor.co.uk

T R Stabilisation

T R Stabilisation is able to offer a complete soil stabilisation and lime modification package from initial design to final reporting. The company uses four different approaches dependent upon factors such as the size of the site and dust control issues for built-up areas. Each approach requires different plant:

- Wirtgen WR2500SK Integrated Mixer for environmentally sensitive sites where dust creation could be an issue
- Wirtgen WR2500S and Spreader for sites requiring high levels of productions
- Tractor-towed Integrated Mixer where sites have both environmental and limited access issues
- Tractor-towed Mixer and Spreader for smaller sites

For contact details and examples of recent projects visit:
www.trstabilisation.co.uk

Colas Ltd

Colas is an ambitious, award-winning business, delivering sustainable solutions for the design, building and maintenance of the UK's transport infrastructure. We have unrivalled expertise based not only on our long history, but also on the strength we derive from being part of the world-leading International Colas Group. The Group has excellent R&D facilities, giving us access to innovative new products, processes and ideas.

The company aims to be an 'Intelligent Service Provider' for our customers. Not just to work harder, but to work smarter, together. This means establishing a real understanding of the client's challenge before offering solutions that provide real value by being cost-effective, sustainable and long-term. Above all, Colas is not about offering quick fixes but helping clients to make the right choices and investments for long-term benefits.

For areas of expertise and contact details visit: **www.colas.co.uk**

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.

Arup & Partners Ltd – www.arup.com
Atkins Ltd – www.atkinsglobal.com
Balfour Beatty Ltd – www.balfourbeatty.co.uk
Ballast Phoenix Ltd – www.ballastphoenix.xo.uk
BAM Contractors – www.bamcontractors.ie
Bardon Composites Pavements t/a Aggregate Ind – www.aggregate.com
Barton Plant Ltd – www.barton-plant.co.uk
Beach Soil Stabilisation – www.beachstabilisation.com
Birse Civils Ltd – www.birsecl.co.uk
British Lime Association – www.britishlime.org
Carillion Group – www.carillionplc.com
CEMEX UK – www.cemex.co.uk
Colas Ltd – www.colas.co.uk
Combined Soil Stabilisation Ltd – www.combinedssl.co.uk
Complete Design Partnership Ltd – www.cdpbroms.co.uk
Costain Ltd – www.costain.com
Dublin Airport Authority plc – www.dublin-airport.com
East Midlands Drilling – www.emdd.com
Elkem Materials Ltd – www.concrete.elkem.com
Enterprise Mouchel Ltd – www.enterprisemouchel.com
Extrudakerb Ltd – www.extrudakerb.co.uk
Fixing Centre Ltd – www.fixingcentre@btconnect.com
Geofirma Soils Engineering Ltd – www.geofirma.co.uk
Gill Civil Engineering Ltd – www.gillgrouphouse.com
Gomaco International Ltd – www.gomaco.com
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Interserve Construction Ltd – www.interserveplc.co.uk
Joe Roocroft & Sons Ltd – www.roocroftfencing.co.uk
John Donegan Consultant – www.jpdonegan.consult@gmail.com
Kerbing West Slipform Ltd – www.kerbingwest.com.au
Lafarge Tarmac Ltd – www.larfargetarmac.com
Lagan Construction Ltd – www.laganconstruction.com
Morgan Sindell plc – www.morganest.com
Norder Design Associates Ltd – www.norder.co.uk
PJ Davidson (UK) Ltd – www.pjd.uk.net
Pryor Stabilisation – www.pryor.co.uk
Rapid International Ltd – www.rapidinternational.com
RJT Excavations Ltd – www.rjtexcavations.co.uk
RPS Group plc – www.rpsgroup.com
Skanska UK plc – www.skanska.co.uk
TR Stabilisation – www.trstabilisation.co.uk
TRL Ltd – www.trl.co.uk
Tyrolit Ltd – www.tyrolit.com
University of Nottingham – www.civeng.nottingham.ac.uk
UK Quality Ash Association (UKQAA) – www.ukqaa.org.uk
VolkerFiztpatrick Ltd – www.volkerfitzpatrick.co.uk
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