

# Newsletter

**br / tpave**

The British In-situ Concrete Paving Association

Winter 2003/2004 | 8

## High-speed line *out of date already?*

Prime Minister Tony Blair opened the £1,900 million first section of the Channel Tunnel Rail Link on 16 September 2003 amid much back slapping. Discounting the Channel Tunnel itself, the 69 km section is the first major UK rail project to be completed in over a century and the first high-speed rail line ever in the UK. Section 2 is due for completion in 2007, involving 24 km of tunnelling from north Kent to St Pancras in London.

There is much to celebrate. It is a Public Private Partnership scheme that came in on time and on budget that permits speeds of up to 186 mph. It cuts journey times by 20 minutes and increases reliability, plus 8000 or so jobs were created during construction.

Some aspects are innovative, like the use of TVM 430 signalling system used on French TGV trains for automatic train protection. The environmental and ecological measures set new standards but there are dissenting voices about the choice of track technology.

Britpave, the British In-situ Paving Association, claims that the new link is already out of date before a train has used it. The new track has been built using ballast track and while this approach has been used for the past 150 years, faster and heavier trains and increased usage mean that ballast track belongs to another age. Britpave points to Japan and Continental Europe where network efficiency has increased and unplanned maintenance decreased through use of concrete slabtracks. While initial costs are higher, low maintenance and reduced disruption means whole-life savings.

So why use old technology on the UK's most advanced rail kit? A CTRL spokesperson says that, despite significant advances in paved concrete track, Union Railways believes its whole life cost is greater than conventional ballasted track, unless there are technical considerations such as tunnel construction.

Britpave says absolute balderdash. CTRL says no, we've done the figures, honest. Perhaps the bickering about such a fundamental issue is the reason why our bit of the London-Paris high-speed line is only now half complete, 10 years after the French finished their much longer section.

Reprinted from *Transportation Professional*, October 2003, Dr Endsleigh's Professional Opinion.

## BREAKING BARRIERS TAKING THE LEAD FROM THE DUTCH



*Slipforming the Dutch step barrier.*

### Britpave's Special Applications Task Group visited the Netherlands in October to investigate the Dutch step barrier and its potential for use in the UK.

This follows on from the progress made by the Group in promoting the use of concrete barriers in the UK and the protection it offers the road user from the risk of cross-over accidents. In addition, the HA has been re-investigating the whole life costing of barriers, including allowance for maintenance and associated traffic congestion.

John Donegan, James Charlesworth, Adian Erwee and David Jones took part in the wide-ranging three-day visit, which started in Utrecht with discussions with Britpave member, Cobeton. Here Klaas Brouwer and Huub Vissers explained the construction aspects of the Dutch step barrier, including specifications and the standards that need to be adhered to. This was followed by a tour of their depot and the equipment that they had developed for concrete slipforming in tunnels.

The delegation was pleased to meet Martin van de Pol (retired from the Dutch equivalent of TRL) who is the expert on dynamic analysis of barriers, which is

necessary to determine the optimum dimensions prior to full testing – an expensive exercise. Martin gave the visitors an excellent insight into the development of the step barrier, which included the UK's VCB and the USA's New Jersey barrier. Much research had been done to develop the optimum side slope and to investigate the failure criteria and modes.

The Group appreciated his input, and considered that, if further research was required into an H4 step barrier, he should be the person to do it.

The Group then went onto visit sites where the step barrier had been used extensively. It was interesting to note that the same profile is used in almost all locations, including against abutments and on bridges.

### *Diary Date*

**Britpave Conference 2004**  
27 – 28 September  
Belton Woods Hotel  
Near Grantham



# BREAKING BARRIERS *continued...*

It was noticeable in Holland that all centre island barriers, whether steel or concrete, had to provide an H2 level of containment, rather than the N2 level used for the bulk of UK barriers, which have seen so many crossover accidents.

In a visit to a new highway, the Group was interested to see that it was of concrete overlaid with an asphalt wearing course – a type of construction being promoted by Britpave in the UK.

A visit was paid to Haitsma Beton, a precast concrete manufacturer who has patented a precast concrete step barrier with an H2 level of containment. The Group was impressed with Haitsma's website ([www.haitsma.nl](http://www.haitsma.nl)) that allows downloading of AutoCAD drawings and sees benefits in adopting a similar feature for Britpave's website.

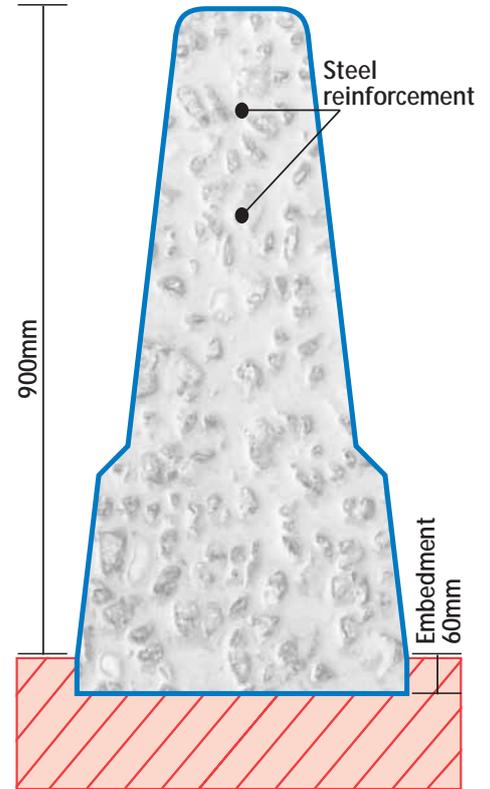
At the Department of Transport, Fred Verweij, Head of Road Design, explained

their views on road safety. The Group was very impressed with the high level of engineering logic that was applied to their decisions without consideration of political implications. Decisions on whether to use steel or concrete barriers are taken by the Ministry rather than being left to the contractor.

Their primary aim for road safety was to have as wide an open space as possible at the centre and at the sides without any obstructions. It is only when this space is not available that barriers are considered.

It was stated that in the Netherlands there have been 50 deaths in five years from barrier crash incidents, but no distinction was made between steel or concrete barriers.

For more information about this study tour contact [adrian.erwee@burksgreen.com](mailto:adrian.erwee@burksgreen.com)



*The Dutch step barrier.*

## The way forward in the UK

Britpave is working on obtaining accreditation for a concrete barrier with a containment level of H2. The Highways Agency has said that if Britpave can produce all the relevant documentation there is no reason why the Dutch step barrier cannot be approved for use in the UK.

This would save many thousands of pounds in crash testing fees for the UK H2 concrete barrier. Britpave has agreed to pay the Dutch Ministry of Transport for their documentation, which includes:

- Crash test reports for bus and car for both the concrete step barrier and steel barrier.
- Copies of the crash videos for each vehicle for both barrier types.
- Certification from the contractor who constructed the tested barriers.
- Electronic copies of relevant AutoCAD drawings.
- Dutch construction specifications.
- Published articles and presentations on concrete barriers and associated road safety topics.

The Dutch Ministry also expressed an interest in partnering Britpave in the development of an H4 containment Dutch step barrier where they would contribute to the research and development by carrying out tasks such as simulation analysis.

Britpave is promoting the Dutch step design because:

- The step profile provides a superior containment level.
- The barrier is easier to construct as it contains less reinforcement than the UK designs.
- It has been tested and accredited, and has been adopted by the Netherlands, Belgium and the Republic of Ireland.

## Advantages of concrete barriers

- They provide a high level of containment (H2) when compared with the present steel and wire rope barriers, which offer only N2 containment.
- Crossover accidents are eliminated.
- A design life of 50 years and probably longer.
- Minimal maintenance requirements (in the Netherlands, the in-situ concrete barrier has only ever had to be repaired once).
- Traffic congestion due to barrier repairs is almost entirely eliminated.
- Increased safety for workers who have reduced need to work on motorways.



*Slipforming a step barrier in the Netherlands.*



# *Britpave Conference* **'Keeping Britain Moving'**

The 12th Annual Britpave Conference and Dinner took place over two days at the Tortworth Court Hotel in Gloucestershire. Both the Dinner and the Conference were well attended by representatives of industry and government plus overseas delegates, who all judged the event a success.

With its theme of 'Keeping Britain Moving' there were presentations of interest to all sectors of the concrete paving industry and some impressive reports of work undertaken by the various Task Groups.

Key note speaker, Ms Ginny Clarke, Chief Engineer of the Highways Agency, gave a resumé of the HA's current plans and philosophy. While agreeing with Britpave that whole life costing was desirable, financial considerations meant that the HA was currently procuring schemes in terms of their affordability.

Britpave was pleased to welcome Professor Hermann Sommer, a consultant from Austria, and a recognised authority on concrete paving. He spoke on upgrading the roads in Austria to meet the challenges of the growing EU. Strategically placed at a cross roads between north and south, east and west, Austrian roads were used by a massive amount of through traffic, set to increase with the enlargement of the EU to the east. Prof Sommer explained how concrete was being used to widen and strengthen his country's strategic road network.

Other speakers covered airfield, rail and soil stabilisation topics, followed by European standards.



*Ms Ginny Clarke.*



*Professor Hermann Sommer.*



*The conference audience watches Britpave's presentation, 'Keeping Britain Moving'.*



*Sharing the glittering Britpave Cup, left to right John Donegan, Carl Carper, Adrian Erwee and Rory Keogh.*

Last year's winners of the Britpave Golf Cup, John Donegan and Adrian Erwee, of SIAC UK and Burks Green, triumphed again this year. They

generously stood aside to let the second placed Rory Keogh and Carl Carper of Gomaco take the trophy away with them.

## **Next Year**

Make a note of next year's conference to be held on **27 and 28 September** at Belton Woods Hotel, near Grantham. Watch the website for more information.

For a copy of the 2003 Conference papers on CD ring Britpave on **01344 725 731** or e-mail [info@britpave.org.uk](mailto:info@britpave.org.uk)





# PIARC - 22<sup>nd</sup> World Road Congress

Almost 3000 delegates from around the world gathered in Durban in October for the 22nd World Road Congress. The event, held in the massive International Congress Centre, was officially opened by the Deputy President, Jacob Thuma, who was followed by South Africa's Minister of Transport, Dr Omar.

The first official session, the Ministers' session, saw over 30 Transport Ministers give their views. The UK Roads

Minister, David Jamieson, gave a short presentation which stated how the 10 year plan has set the strategic objectives of the government. He welcomed the role of the private sector in driving projects through to completion in a competitive situation and also stressed the importance of environmental issues and of consultation.

Interestingly, he admitted that the planning and consultative processes are

taking far too long! He went on to praise the private sector for delivering a good transport system, and he asserted that the UK procurement system safeguards the environment while providing value for money.

There were about 100 UK delegates to the Congress, including a large group from the HA and TRL. UK exhibitors included Mouchel Parkman, Halcrow, Mott MacDonald, Aperio and Exor Corporation.

## PERFORMANCE SPECIFICATIONS RULE COMMITTEE ON ROAD PAVEMENT C7/8 - SYNOPSIS REPORT



Durban's International Congress Centre.

The Technical Committee on Road Pavements C7/8 reported that road administrations are increasingly seeking to develop partnerships and make use of expertise from all industry sectors. This range of expertise is needed to foster innovation and to develop and implement performance specifications. It is also essential to improve the decision-making process for selecting and maintaining pavements as well as implementing new techniques in areas such as pavement recycling.

Road authorities have a vital part to play in stimulating innovation. They must clearly articulate their innovation needs, the performance expected of new technology, and evaluate the outcomes.

The introduction of performance specifications requires a profound change in roles and responsibilities and a new sharing of risks between the client and contractor. Performance specifications and the potential for innovation do not lie with the contractors alone – each player remains dependent on the other to guarantee successful development and implementation.

### The Committee reached the following conclusions:

- Make pavement selection decisions supported by a well thought out process. Use whole life cost estimates to compare different pavement designs and as an input to the decision-making recommendations.
- Consider recycling as a valuable option when rehabilitating pavements. Governments should support the introduction of recycling techniques by creating a market through regulation or taxes. Encourage the co-operation between clients and contractors to ensure efficient implementation.
- Study the use of performance specifications in markets where the scope and context of projects justifies this. Support and stimulate testing of performance specifications to increase experience, transfer knowledge and make the most of benefits of such specifications.
- Preserve and fuel the expertise required by contractors, the client and other partners to promote a climate of constructive and lasting dialogue in developing and implementing

innovations and performance specifications. For the client, preserve the knowledge and competency necessary to define objectives, develop methods and audit activities, and to respond adequately to unexpected situations. The client should also be capable of co-ordinating implementation of all innovations and developing its own products and techniques that are within the jurisdiction of the public sector.

- Share the experience gained at the international level to ensure progress in innovations and harmonisation of performance specifications. Use the PIARC network as a privileged forum for producing complete and objective assessments that can serve as a reference.

### Committee vacancy

The UK members of this committee for the past four years have been David Jones, Britpave, John Williams, HA, and Sally Ellis, TRL. The new committee reconvenes for a four-year session in Paris early in 2004. Britpave can no longer support this committee. David Jones has completed four years with the old C7 Concrete Roads Committee while at BCA, and has now stood down from the C7/C8 Road Pavements. A vacancy therefore exists on that committee, and no doubt a private sector nominee would be welcomed by the British National Committee (BNC). If you are interested, contact David Jones or Mark Neave, BNC, at [piarc.bnc@highways.gsi.gov.uk](mailto:piarc.bnc@highways.gsi.gov.uk)



# meets in Durban, South Africa

## Airfields SESSIONS

One important part of the Congress was the inclusion of two Airfields Sessions. These were organised and chaired by John Cook of Defence Estates. Britpave contributors included the Chairman of our Airfields Task Group, Peter Tindall of TSP, Graham Woodman of WSP and Sally Ellis of TRL.

This session was primarily aimed at promoting good practice in airfield pavement engineering, including the sharing of expertise with experts from the road pavement sector. The two half-day sessions were divided into three parts and included presentations from leading experts from the airfield and road sectors and discussions with the audience. The three themes were:

- 1 Functioning requirements/surface characteristics of airfield pavements.
- 2 Design and construction.
- 3 Maintenance, restoration and pavement management systems.



*Airfields Task Group Chairman, Peter Tindall, making his presentation in Durban.*

## Britpave's 3rd airfield guidance note

Peter Tindall launched Britpave's 3rd guidance note for rigid airfield pavements to the international audience in Durban. Entitled *Principles of design and assessment*, it gives world-class advice on design principles, design parameters, specification and evaluation of the pavement in use.

For a copy contact [info@britpave.org.uk](mailto:info@britpave.org.uk) or download it free from [www.britpave.org.uk](http://www.britpave.org.uk)



*Low maintenance truck lanes keep the traffic flowing up the steep incline inland from Durban.*

## The ultimate low noise surface?

Some years ago a Britpave/BCA group visited Japan, and one of the experimental road surfaces they saw was described as a porous elastic road surface that they have been developing since 1993. Mr S Meiarashi of Japan's Public Works Research Institute (PWRI) presented a paper in Durban outlining the substantial progress that has been made since then in developing this ultra-low noise surface.

Porous elastic road surface (PERS) is a porous structure composed of granulated rubber from old tyres and urethane resin as binder, and has a porosity of approximately 40%. In trials, a noise reduction of approximately 13 dB(A) has been achieved for cars and 6 dB(A) for trucks has been achieved.

The PWRI has worked on several of the problems associated with the material. The problems of insufficient adhesion between pavement and base course, low skid resistance and poor fire performance have all been solved to the satisfaction of the Japanese Researchers.

In a trial section constructed on an urban highway the adhesion problems were overcome by the use of epoxy resin between the base course and the PERS.

Durability and wear resistance tests were carried out and gave satisfactory results. Results from wet skidding tests met the technical guidelines for highway design in Japan.

Fire resistance was thought to be a problem, since rubber may burn fiercely. The rubber mix used means that this surface now burns less strongly than dense asphalt.

The Japanese have carried out much interesting work to investigate buildability, and pre-fabricated types of PERS have been tested. All have used concrete bases, and include interlocking concrete blocks (block paving), prestressed concrete panels and reinforced concrete panels. For the test section, the PERS used a concrete block base. Further trials are planned, and other base courses will be trialled.

For further information e-mail [mei@pwri.go.jp](mailto:mei@pwri.go.jp) or ring Britpave for a copy of the paper.

## Meanwhile, in the UK steel fibres from tyres used in concrete

The University of Sheffield has recently completed a DTI Partners in Innovation Project, 'Demonstrating steel fibres from waste tyres as reinforcement in concrete'. The findings from the project indicated that the use of recycled steel fibres in concrete leads to an increase in strength, ductility and toughness and hence could be used in a range of specialist applications, such as impact and sound barriers.

In addition to the environmental benefits that could be gained by the extensive use of these fibres in concrete construction, is their relative low cost in comparison with conventional steel fibres.

For more information contact Dr Kypros Pilakoutas on **01142 225 065** or visit [www.shef.ac.uk/tyre-recycling](http://www.shef.ac.uk/tyre-recycling)



# Belgians know the value of



*The Britpave team.*

At the end of August, 18 Britpave members visited Belgium. Highlights of the tour included seeing paving of CRCP on the main Ostend/Brussels E40/A10 motorway and also the Ghent Ring Road.

Delegates also saw examples of exposed aggregate paving in a suburban situation and finished examples of the step barrier.

In addition, an experimental stretch of low noise highway at Herne was visited enabling many members to see porous concrete for the first time.

Thanks are due to the contractor on the A10, Betonac, for allowing us to visit their contract, and to Febelcem, the Belgian

Cement Association. The Association organised the programme, gave several interesting presentations and hosted a very pleasant welcoming dinner for the delegation where it was able to debate with highway administration guests, Belgian contractors, road research laboratory representatives and senior Febelcem engineers.

Particular mention must be made of Ir Luc Rens, who acted as technical expert and amiable host over the two days, and to Ir Chris Caestecker, Ministry of Flemish Community, Department of the Environment and Infrastructure, for his input into this very successful visit.

## Technical aspects

A condition of the contract was that three lanes of traffic in both directions would have to be kept open at all times. High traffic volumes, 57,000 vehicles per day in each direction, resulted in the decision to replace the steel barrier in the central reservation with a concrete barrier, and to extend the carriageway into the area thus made available. Since the camber of the A10 was less than 2% in some places it was decided to create a new longitudinal and transverse profile.



*Following up with hand finishing.*

The reconstruction of the road surfacing consisted of scraping off the existing asphalt surface to a variable depth, and providing a camber of 2.5%. The new longitudinal profile took account of the depth of the concrete base and the height under existing bridges.

Since the asphalt surfacing had been removed almost to foundation level, a new 50 mm deep asphalt interlayer was laid to provide a good waterproofing for the foundation and smooth working surface for the concrete.

# CRCP inlay on E40/A10 Brussels to Ostend



*Concrete being placed by bucket in front of the paver.*

The Grand-Bigard to Affligem section of the A10 has an ongoing problem with its existing asphalt surface that has degraded badly. It has been laid over old concrete slabs and exhibited a combination of rutting and reflective cracking which meant that maintenance costs were escalating.

In 2001 a government project steering group was set up with the aim of deciding how to renew this busy traffic artery with minimum delays to the motorist. In order to produce a road surface that would not need frequent repairs, and to ensure that no major maintenance would be needed for the next 40 years, the group decided that a CRCP inlay with an exposed aggregate surface would be the best solution.

## Mix composition

Water	160 l
Cement CEM 111/A 42.5 N LA	400 kg
Concreting sand 0/5 mm	445 kg
Sand 0/2 mm	150 kg
Porphyry crushed rock 4/7 mm	370 kg
Porphyry crushed rock 7/14 mm	553 kg
Porphyry crushed rock 14/20 mm	309 kg
Plasticiser	0.6 kg
Air entraining agent	0.3 kg

In order to keep down the surface noise the maximum nominal dimension of the aggregate was restricted to 20 mm, and use made of a high content of the 4/7 mm aggregate in order to obtain the best surface texture when exposing the aggregate by longitudinal brushing.



# SEASONAL REMINDER Winter Paving

Britpave, in conjunction with the Highways Agency, has produced an eight-page guide to concreting pavements in winter temperatures. The guide aims to give sound practical advice that can be followed by contractors and designers alike when faced with temperatures around or below freezing point. The importance of planning is stressed before rushing to put in place the measures outlined in the report, and note is taken of the economic consequences, which will vary from contract to contract.

Sound practical advice is given on the storage and delivery of cement, aggregates, water, and admixtures. The initial temperature of the concrete at the point of placing is a determinant of how quickly the concrete gains strength. This temperature, combined with any protective measures taken, must also ensure that the water in the concrete does not freeze until the concrete is strong enough to withstand freezing.

As well as giving examples of temperature calculations, the importance of pre concreting preparations is flagged up as a key factor.

Successful paving in these temperatures means ensuring that concrete is protected immediately after placement to prevent early age freezing. Practical advice is given on protective materials and methods. Once again contractors are cautioned to balance the cost of taking steps to protect concrete against the cost of keeping the paving operation moving forward. But with more and more contracts rewarding early completion, the importance of this document in showing how paving can continue in winter conditions is evident.

Finally the publication reminds readers of the vital role curing procedures have to play once protection is removed from the finished pavement.

Concreting pavements in winter can be downloaded from Britpave's website [www.britpave.org.uk](http://www.britpave.org.uk) and is available from Britpave on 01344 725 731.

# concrete paving

To obtain a good frost resistance, a minimum cement content of 400 kg/m<sup>3</sup> was required. This was augmented by the use of an air entraining agent that provides a higher frost resistance in the presence of de-icing salts.

Each phase of the new road was opened to traffic only six days after completion. The average compressive strength after five days taken on three cores was measured at 50 MPa.



Equipment used to expose the surface aggregate.

## Reinforcement

The longitudinal and transverse reinforcement was tied on site and consisted of:

- Longitudinal - 20 mm dia. at 180 mm centres
- Transverse - 16 mm dia at 700 mm centres
- Top cover 80 mm
- Height of supports 120 mm
- Longitudinal laps 800 mm

The final running surface used the Robuco process for exposing the aggregate. This involves spraying the finished surface with a retarder immediately after paving, protecting it with clear plastic sheeting, and mechanically brushing off the mortar some 18 to 36 hours after paving before applying a curing compound.

The double-sided concrete safety barrier was a New Jersey Type F, which has been shown to more effectively contain cars, and at 1 m tall is very unlikely to allow a cross-over accident.

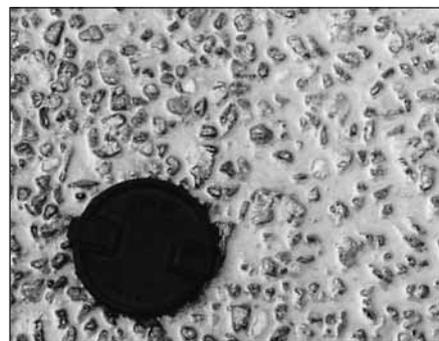
Lamp posts 20 m high at 90 m intervals were built into the barriers by means of cut outs. These were sawn out of the fresh concrete barrier a few hours after its installation, care being taken not to damage the reinforcing. The openings were sealed with preformed aluminium plates.

A wireless-guided Gomaco GHP 2800 was used to pave the highway, while the barrier was slipformed with a Gomaco Commander 3.

Concrete was supplied by a Compactor's plant close to the site. Daily production rates were 1,300 m<sup>3</sup> of concrete in a 12 hour shift.

This 16.6 km contract was completed in 126 days, using some 28,000 tonnes of cement.

For more information see [www.betonac.be](http://www.betonac.be)



Finished surface.

The delegation was also taken to see the CRCP paving on the Ghent Ring Road where recycled concrete was being used in the sub base.

The importance of concrete roads in Belgium road network is evident from the table below that was provided by Febelcem.

Road Type	Length	% Concrete
Highways	1,700 km	36
Regional	14,000 km	13
Provincial	1,400 km	20
Communal	133,000 km	15
Rural	5,000 km	60



Lorraine Avenue – new overlay on Belgium's oldest concrete road, in use since 1925.



## A tale of two countries

**In the US** the State of Texas is inviting UK companies to become involved in the development of the £115,000 million Trans Texas Corridors. The proposed 6700km project will comprise four 400 m wide corridors formed by a six-lane passenger transport route, a four-lane truck route, plus six rail lines – two each for high speed rail, commuter services and freight.

In a state that handles around 70% of America's trade with Mexico and where the volume of freight is increasing by 30% each year, the new corridors were viewed as vital to meet this growth and provide safe reliable transport links.

The Texans recently completed a tour of Europe to encourage interest and to learn about PFI best practice from European experience.

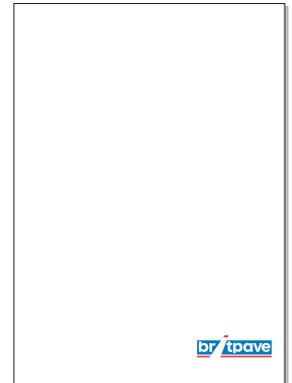
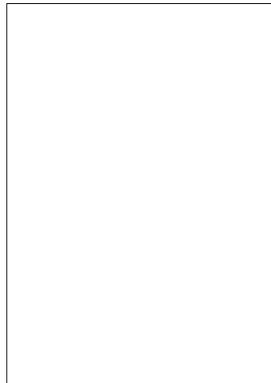
**In the UK**, the CBI has recently issued a stark warning that the government's failure to improve the transport system is 'tarnishing' the UK's reputation as place to do business. It has published a report showing that the UK's domestic transport system is being outperformed by international competitors, including the US, France, Germany, Italy and the Netherlands. The report says that over 85% of senior business people believe investment decisions are influenced by quality of transport, while almost 70% consider the UK transport system to be poor.

The CBI praises the UK's strong international air and sea links, but warns that capacity is reaching breaking point with improvements hampered by slow decision-making. It says all leading economies struggle to deliver infrastructure projects and ease congestion, but UK roads are the most packed in Europe and UK railways are less reliable than many other competitors.

**Also in the UK**, the Highways Agency has rebuffed a move to give inter-urban buses and coaches dedicated lanes on a number of motorways in the South East.

Following recommendations from the Thames Valley and Orbital multimodal studies, the Transport Secretary, Alistair Darling, asked the Agency in July to consider priority measures. The studies said that high-quality coaches offered the best chance of modal shift. The Southeast Regional Assembly and local authorities have taken up the suggestion, but Paul Harwood, the HA's regional manager claims that introducing coach lanes on motorways would cause chaos, and rejects traffic management systems purely for buses as too expensive.

## New from Britpave



Available from Britpave on 01344 725 731, or downloadable from [www.britpave.org.uk](http://www.britpave.org.uk)

### Slab track studies

Britpave recently published two scoping studies on slab track. They were carried out by Ove Arup on Britpave's behalf in order to ascertain the currently published best practice worldwide.

The study on the commercial case found that, from papers reviewed, it was generally accepted that slab track offers a cost-effective alternative to ballasted track if the two systems are compared in life cycle cost terms. However, there has been surprisingly little information in the public domain, but now we have got the definitive list of published resources.

The safety study identified that, although it is generally accepted in the rail industry that slab track provides benefits in terms of safety when

compared with traditional ballasted forms, again there was surprisingly little that had been published. This report brings together all available information.

### Truck lanes

This publication presents the case for truck lanes on the UK's motorways as a means to produce a longer lasting lanes 1 and 2. Built from concrete, with a thin asphalt overlay, these lanes would provide a durable carriageway with a life at least 40 years with the minimum of disruptive maintenance.

In it, Britpave calls on the government and its agencies to take the opportunity afforded by its major programme of trunk road and motorway widening to adopt more far-sighted and sustainable solutions.

### Fitzpatrick for Fairford

Defence Estates has chosen Fitzpatrick to build a new platform for two giant C5 transporter planes at RAF Fairford in Gloucestershire. This is the largest plane operated by the Military and is capable of carrying loads of up to 250,000 lb.

The £47 million contract also includes the enlargement of four existing hardstandings and the creation of an additional one with access runway. A 450 m stretch of the existing Northeast loop taxiway will also be reconstructed and more than 2,000 m of drainage installed.

During the work, some 7,000 m<sup>3</sup> of broken out concrete and 8,000 m<sup>3</sup> of asphalt planings will be recycled. Fitzpatrick will use its own batching and slipforming plant to lay more than 78,000 m<sup>2</sup> of pavement quality concrete. The 33-week project is due for completion in early summer 2004.



The British In-situ Concrete Paving Association

Britpave Newsletter 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.

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