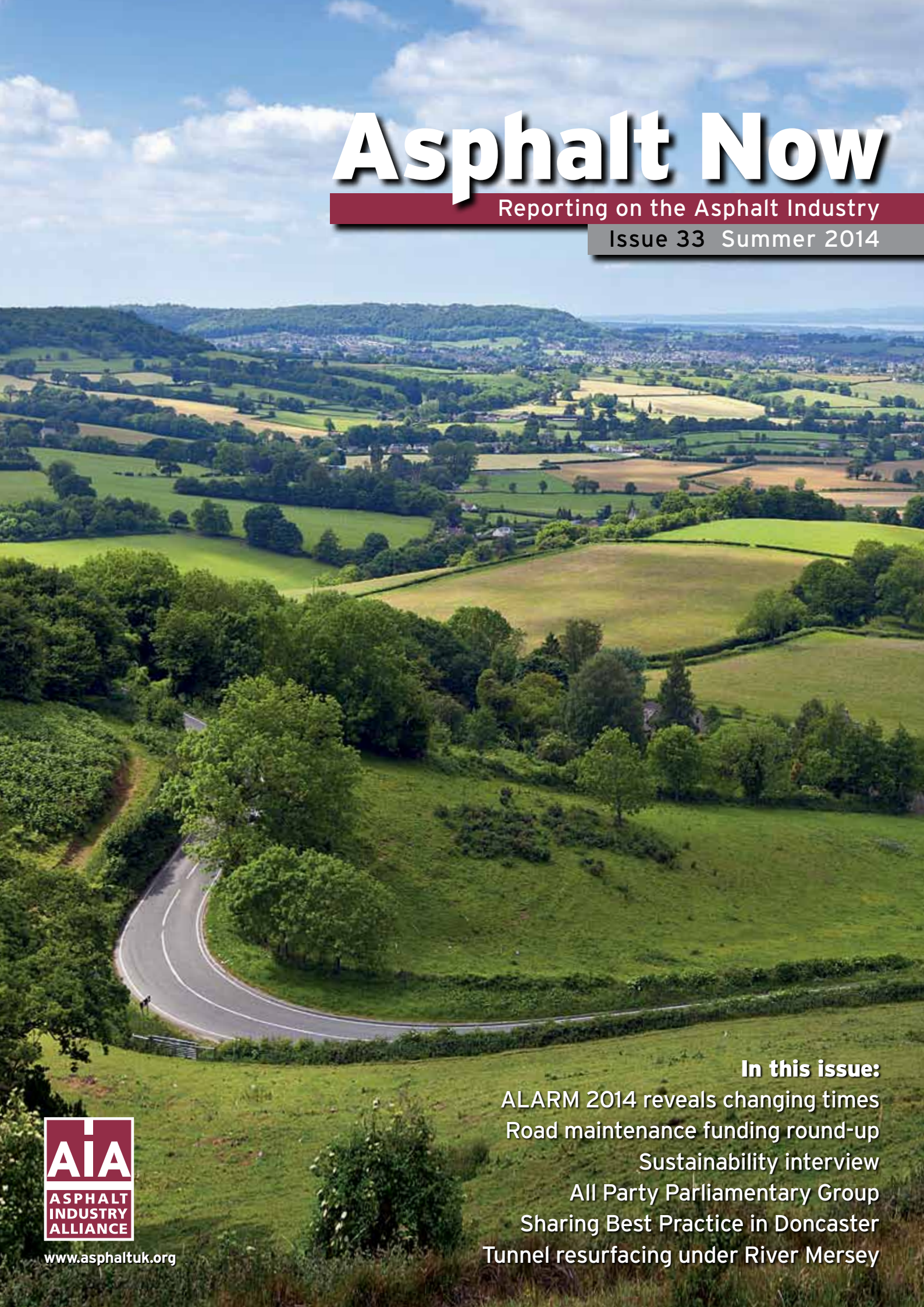
Asphalt Now

Reporting on the Asphalt Industry

Issue 33 Summer 2014



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Positive signs ahead

In April we published the 19th Annual Local Authority Road Maintenance (ALARM) Survey, which reported some welcome good news about the reduction in highways departments' annual budget shortfall (see page 6).

The more positive comments from survey respondents were heartening for the AIA, as were those from the DfT with whom we are keen to continue to work more closely, to help the move towards improved efficiency.

The funding landscape for roads has changed markedly since last year's ALARM Survey, with the government announcing a welcome increase in road infrastructure funding from 2015. This £28 billion, six-year programme of investment includes an allocation to local road maintenance that should return budgets to where they were before the 2010 spending round.

While this is good news for the industry, road owners and road users, we will all still have to work hard together to make best use of the improved funding to come. However, that announcement, along with other helpful emergency funding contributions from central government towards local road network repair, is welcome proof that the parlous state of our local roads is at long last being addressed.

Sustainability remains an important issue for the asphalt industry and this magazine carries that theme, including a discussion about how innovation and responsible resource management are central to the sustainability agenda (page 4); a look at low temperature asphalts (page 8), and how to increase the amount of recycled asphalt they can incorporate (page 9). We also hear one company's view on how single layer surfacing can help cut costs, minimise disruption and enhance sustainability (page 10).

In addition, there is an interesting mix of case studies and news stories which I hope you find informative.

As well as being available in hard copy, this issue can be downloaded online from the AIA website – www.asphaltuk.org.

I hope you enjoy the read and do please feed back any comments about *Asphalt Now* to info@asphaltuk.org.

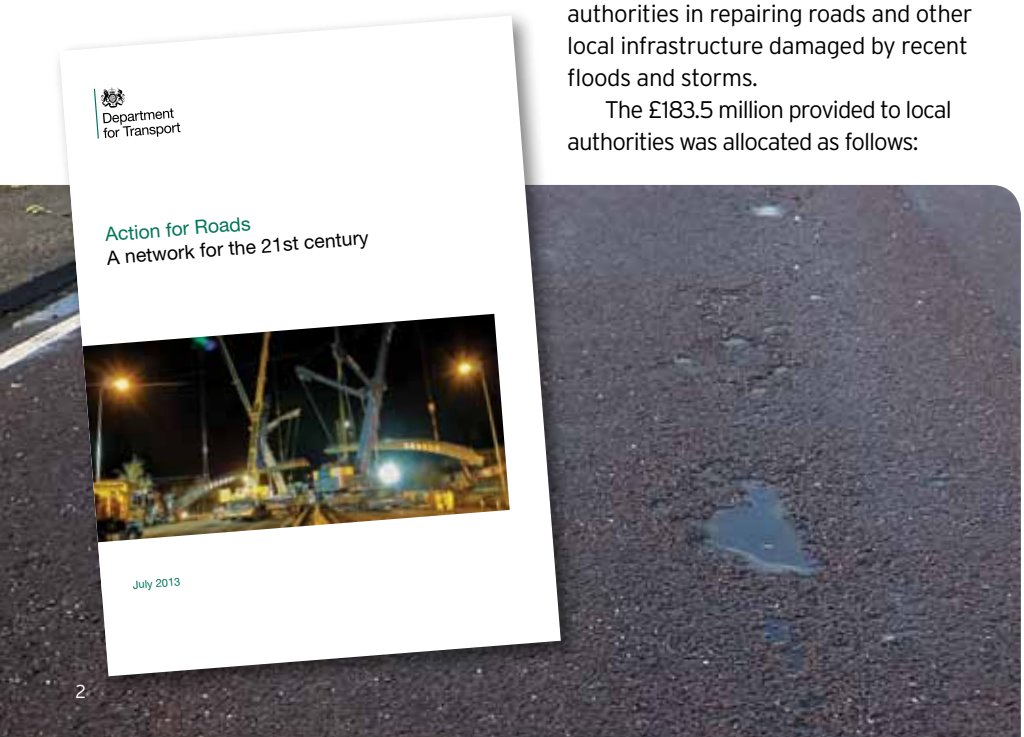
Alan Mackenzie
Chairman, Asphalt Industry Alliance

More funds for maintenance

From longer-term infrastructure investment declarations to the provision of more immediate funding to help repair flood-damaged roads, the funding landscape has been improved by a number of central Government announcements over the past 12 months.

Roads for the 21st Century

Heralded as the biggest investment in roads since the 1970s, the most significant funding announcement was that of £28 billion to be invested in the strategic and local road networks between 2015/16 and 2020/21. This was announced as part of the 2013 Spending Review and the Government has stated its intention to enact legislation to protect the planned increased funding before the next General Election.



Each year from 2015/16 to 2020/21, £976 million will be given to local authorities for road maintenance, which is an increase on the £782 million (excluding the Pothole Challenge Fund) in 2014/15.

Flood recovery funding

In January 2014, the Department for Transport and the Department for Central and Local Government launched the *Severe Weather Recovery Scheme*, to support local authorities in repairing roads and other local infrastructure damaged by recent floods and storms.

The £183.5 million provided to local authorities was allocated as follows:

- £93.5 million – distributed to English local authorities (excluding London) based upon road length and number of bridges with a span greater than 1.5 metres
- £10 million – lump sum provided to Transport for London to distribute amongst London local highway authorities
- £70 million – distributed on the basis of length of road and number of bridges damaged by the flooding (this follows claims made by local authorities)
- £10 million – allocated to Somerset CC to help them implement the transport elements of the Somerset Levels and Moors Action Plan

Pothole Challenge Fund

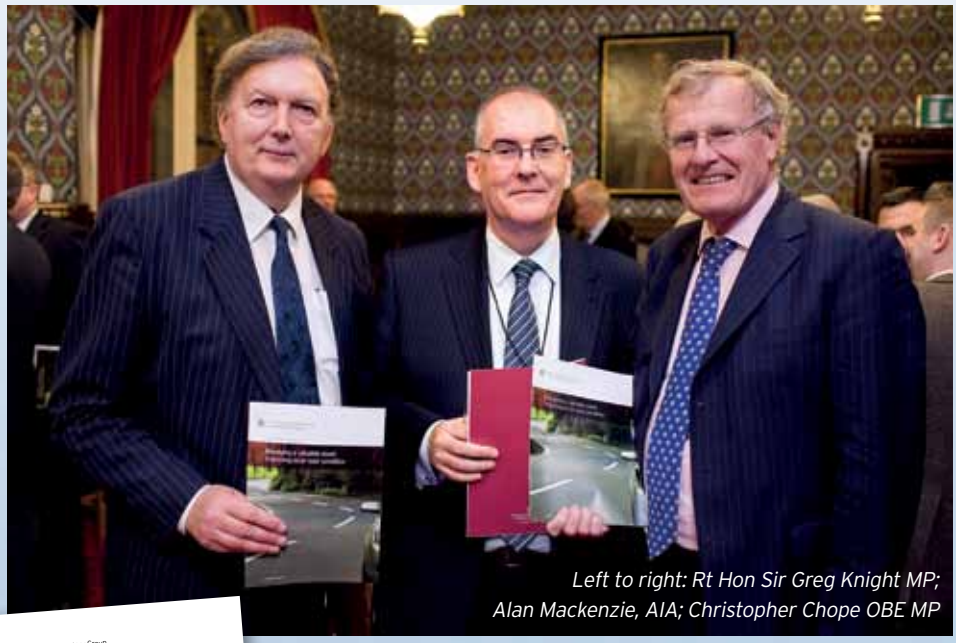
In his 19 March Budget Statement, the Chancellor announced that £200 million would be made available for the financial year 2014/15 to help repair potholes throughout the country, with £168 million for local authorities in England and £32 million for devolved administrations.

The aim was that the repair work should be completed before Winter 2014/15 so a deadline of 22 May was set for local authorities to submit their bids.

The amounts allocated were announced on 20 June and authorities able to demonstrate the benefit that their repair work would have to the local community were favoured.

MPs call for urgent action to stop local roads deteriorating

On 14 October 2013, the All Party Parliamentary Group (APPG) on Highway Maintenance held a reception in the House of Commons to mark the publication of its report, *Managing a valuable asset: improving local road condition*, which was co-sponsored by the Asphalt Industry Alliance (AIA) and the Institute of Highway Engineers.



Left to right: Rt Hon Sir Greg Knight MP; Alan Mackenzie, AIA; Christopher Chope OBE MP

Members of the House of Lords, MPs and other interested parties attended the report launch, where Christopher Chope OBE MP, Chairman of the APPG, called for local authority asset management plans to be made mandatory as part of urgent action to prevent local roads from falling into further disrepair.

Mr Chope said: "Everyone is aware of the poor condition of our roads, not least through feedback from our own constituents. Having devoted numerous meetings to the topic and discussed it with various expert guests, we have reached the conclusion that there is only one question left to ask: *Why isn't more being done to improve the situation?*"

To clarify the problem and solution, the report draws on several expert reports on the subject and recommends:

- Getting local roads into a satisfactory steady state for planned preventative maintenance as soon as possible.
- Improving borrowing facilities to allow councils to prevent roads deteriorating further before additional maintenance funding – promised to start in 2015.
- Making asset management plans mandatory in return for access to central Government funds for road maintenance.
- Allowing further devolution of highways funding decisions, by encouraging decisions on how local authorities can spend central funding allocated for capital outlay to be made locally
- Optimising maintenance schedules across local and national strategic road networks, to minimise disruption to road users and the associated costs

Mr Chope concluded: "The poor condition of our local roads is not just a safety issue. Its impact on our environment and social well-being affects every one of us, as does the economic impact both for taxpayers generally and local business economies. The Group is hoping to take this forward with Robert Goodwill MP, the Minister now responsible for local roads, in the near future."

For more information: www.highwaysmaintenance.org

Roads Minister addresses APPG

Robert Goodwill MP, the Minister responsible for roads, joined the APPG's lunch meeting in early December 2013. Addressing the attendees, he welcomed the Group's report published in October and answered a number of questions from Group members and guests.

In April this year, Tony Ciaburro, Corporate Director of Environment, Development and Transport at Northamptonshire CC, stimulated an energetic discussion on how Highways Agency reform might impact local authorities and the local road network.

At the Group's AGM in July, guest speakers from Kent CC made the case for simplifying local funding. They drew on evidence their council submitted to the Transport Committee for its report on Local Transport Expenditure and on their experience of submitting their bid for the Pothole Challenge Fund.

For more information: www.highwaysmaintenance.org

Innovation and responsible resource management central to the sustainability agenda

Midland Quarry Products is in the vanguard of the asphalt industry when it comes to sustainability. This asphalt and aggregate supplier, part of Hanson UK, has one of the highest levels of recycled asphalt planings in its mixes, along with comparatively low energy use, in terms of kwh per tonne.

Asphalt Now (AN) spoke to Phil Cox (PC), Director of Midland Quarry Products, to find out what sustainability really means to his business and to ask for his view on what might become one of the most important sustainability issues.

AN: I'd like to start by asking what sustainability means to your business?

PC: First and foremost, sustainability is about business survival. The company has to be sustainable financially in order to survive and have a future.

Beyond that, sustainability is about being innovative and responsible in terms of how we utilise materials, plant, energy and human resources. And as a quarry operator, we feel a strong duty of care towards preserving the local environment, protecting wildlife and working with our local communities.

Sustainability also extends to providing a safe and healthy environment for our employees and we pride ourselves on having one of the best health and safety records in the industry.

AN: In terms of materials, what does sustainability look like and what can companies do to improve their sustainability credentials?

PC: The aggregates and asphalt industries are reliant upon finite supplies of resources, so how these are managed is crucial to its long-term viability.

Responsible resource husbandry is the drive to maximise the efficient and effective use of extracted minerals. A good example of this is the proportion of recycled asphalt planings (RAP) – typically up to 35 per cent in the base and binder layers and approximately 10 per cent in the top, surface course – within our asphalt mixes.

Historically, these planings were often only used for minor tracks and pathways, for example in farmyards and on golf courses, but by increasing the proportion used in our mixes we have reduced the amount of virgin material we need to excavate. This benefits our customers, the environment and ourselves, creating a "virtuous green circle".

Being able to demonstrate strong environmental credentials is well-received by local authority clients in particular, as environmental considerations can be an increasingly important factor within their purchasing decision-making processes. This is, of course, when allied to other commercial and quality-based assessments.

There is no shortcut to being a responsible, sustainable operator in the asphalt industry. Only through company-wide commitment and significant investment in developing our ability to re-introduce planings at our main plant has it been possible to raise our RAP percentages to their current levels.

In addition, significant steps have been taken to increase the proportion of "low-grade" or secondary aggregate products that we are using in asphalt. Stone that would previously have been returned to the quarry for restoration is now being reclaimed as aggregate and manufactured sand, after undergoing thorough washing using specialised equipment.

AN: Energy consumption and carbon footprints are metrics commonly used to give an indication of a company's environmental credentials. What should businesses be doing here to reduce their scores?

PC: Once again, investment has a major role to play here, as actively managing your energy consumption and emissions can only take you so far. The best-performing organisations are inevitably those which invest in new, more energy-efficient equipment alongside their energy management programmes. Year-on-year reductions of more than four per cent in energy usage per tonne of material produced can be achieved when active energy management is combined with investing in more efficient plant.

AN: How, if at all, does sustainability extend to the availability and use of human resources?

PC: There is a cautious sense of optimism in the industry that the market for asphalt could be about to grow, after what have universally been extremely challenging times.

In the past few years there has been very little money available to invest in people. Unsurprisingly, the asphalt industry now has a rising age demographic and what could easily become a skills shortage. This is also true of the client and specifier sector, for those tasked with making the necessary informed specification and procurement decisions.

Most, if not all, apprentice schemes closed during the recession, but a number of organisations, including ourselves, are now reintroducing apprenticeships as they once again invest in growing young talent. Skills training is also a growth area, as businesses seek to develop the talent of their own people to fill the gaps created when staff numbers were cut during the downturn.

AN: Are there any other major sustainability issues the asphalt industry needs to address?

PC: Haulage is a crucial issue, even when you put to one side high fuel costs and the ongoing drive to improve the efficiency of how materials are transported – which can in some instances involve a combination of road and rail.

The simple truth is that the number of drivers and vehicles now in service transporting asphalt is unsustainable if there is a significant increase in product volumes. There needs to be some joined up thinking and action across the industry, including clients, to make sure that we are in a position to meet customers' demands for larger volumes of material in the future.

For more information: www.mqp.co.uk

Race against time for Oulton Park

Oulton Park is one of the UK's most picturesque race circuits and hosts major motor racing events including the British Touring Car Championship, British Formula 3 and British Superbikes.

However, by the end of last season, the stresses and strains of competitive motor racing had caused several areas of this popular track in rural Cheshire – which includes a very tight turn and a high-speed banked bend – to become worn and need resurfacing. Understandably, this work had to be done in the off season in January, before racing, and testing, got underway again.

As well as the skid resistance, durability and elastomeric properties needed for the surface of a high-speed race circuit, it was also important, given the expected cold weather in January, that the material transportation time was kept to a minimum to ensure it did not lose too much heat and become difficult to work with.

Surfacing contractor Thomas Bow resurfaced the affected areas of the track with 850 tonnes of 10mm Prixmat, a surfacing material specially designed for demanding high-performance circuits, mixed with 40 tonnes of 10mm SMA PMB. Both materials were supplied from Aggregate Industries' plant in Northwich, less than 10 miles away.

High quality racing was soon taking place again on the resurfaced track, which staged its traditional Easter meeting of the British GT Championship, when a huge grid of stunning supercars raced around the challenging parkland circuit.

For more information: www.aggregate.com

Overcoming the challenges at London Gateway

Difficult ground conditions, intense use, slow-moving vehicles with extremely heavy axle loads and a requirement that the asphalt should last a minimum of 10 years without maintenance were just some of the challenges faced when constructing the port access roads to London Gateway.

When complete, the new deep-water container port and logistics park at Thurrock, on the north bank of the River Thames, will comprise 2,700 metres of quay that can accommodate the next generation of 400 metre-long vessels – which can carry more than 18,000 containers – as well Europe's largest logistics park.

Complex local planning considerations meant that the go-ahead for construction of the access routes into the port and distribution centre was later than scheduled. This added pressure to the need for the work to be completed quickly and carefully, to meet operator DP World's exacting standards.

Cargoes being moved from the port berths to the distribution centre in containers will not just be heavy, but carried on slow-moving vehicles, the most onerous type of loading when it comes to wheel tracking of flexible asphalt pavement.

An added complication was the poor load-bearing capacity of the ground. The site is shale, overlain with alluvial substrate, so the sub-base was constructed and 'preloaded' to allow as much of the expected settlement as possible to occur before construction began. It was also decided that the roads should be able to accommodate a degree of movement, which meant the base and binder layers had to not only display workability, early strength and fatigue resistance, but also include a bitumen with a high softening point to produce a very heavy duty asphalt with a high resistance to wheel track deformation.

After intensive trials to confirm the high-performance characteristics of the proposed materials, Hanson's Tufflex proprietary asphalt was selected for the lower layers, with Hanson Tuffpave on the surface using Nynas Bitumen UK's Endura Z2 binder.

"Endura Z2 is a special, highly polymer-modified hot mix binder," explained Nynas asphalt engineering support manager Jukka Laitinen. "Developed to deliver the optimum balance between toughness and flexibility, it is suitable for the most onerous applications, producing asphalt pavements that are durable, rut resistant and require minimum interventions."

Hanson technical manager Adrian Hadley said: "We had just one week from award of the contract to starting work on site – and only eight weeks to complete the access roads. The project ran very smoothly and the roads are defect free; it was a perfect asphalt solution for a unique set of site conditions."

Nick Horner, project manager for Volker Fitzpatrick, main contractor for the £6.8 million scheme, concluded: "The job was a demanding one, in terms of the timeframe, the need for pavement durability and longevity, plus the poor load-bearing capacity of the ground. The asphalt mixes chosen had to display extraordinary characteristics and we are delighted with the results."

The first berth at London Gateway opened in autumn 2013, and it welcomed its first vessel, the *MOL Caledon*, on 7 November that year.

For more information: www.nynas.com www.heidelbergcement.com/uk/en/hanson/home.htm

Times are

This was the main message from the 19th Annual Local Authority Road Maintenance (ALARM) Survey published in April 2014. It reported some encouragingly positive signs, with a significant reduction in the gap between the funds that local authority highways departments say they need annually to keep their roads in adequate condition, and the amount they actually received.

There are many reasons for this, including improved knowledge sharing and best practice, facilitated by the Highways Maintenance Efficiency Programme; and the growing number of authorities (60 per cent in England) which now have highway asset management plans (HAMPs). Many respondents reported there had been a greater concentration of effort to improve road condition over the last year, and said they had successfully used their HAMP to make the case to their elected members for additional funding to do this, which had reduced their budget shortfall.

The overall picture remained somewhat mixed, with more than two million potholes filled for the second year in a row. Some respondents, however, said that the high number filled was more an indication of the effort made to return roads to a steady state rather than of continuing poor condition.

The survey was completed by 74 per cent of councils in England and Wales and nearly two thirds of them were affected by last winter's deluge of rain. At the time the survey was conducted, most were unable to estimate the cost of damage to their networks and many roads were still under water, so the outlook for future condition is not overly positive.

This probably accounts for the increase in the estimated cost of bringing the local road network back into reasonable condition, from £10.5 billion to its highest ever, £12 billion.

The number of compensation claims for personal injury or for damage to vehicles as a result of poor road condition vary from year to year, with some claims taking a while to be processed, so definite trends are harder to identify. This year claims increased by 20 per cent over the previous year, and the total cost of compensation claims came to £31.6 million across England and Wales. Payouts were down, accounting for only £16.6 million of this, while staff costs incurred by local authorities processing claims had increased from £13 million to £15 million.

Invest now to save later

Asphalt Industry Alliance Chairman Alan Mackenzie commented: "The Government recently also made additional funds available to help combat the results of the relentless rainfall last winter and, separately, to help repair potholes generally. However, money spent on repairing damage never goes as far as money invested in planned, preventative maintenance, and investment up front also has the added benefit of allowing highways departments to plan ahead."

The estimate of £12 billion to bring roads back into a "steady state" reinforces the AIA's mantra of "invest now to save later". And the handful of highway maintenance PFI projects in place across the country clearly

prove the benefit of this approach; the London Borough of Hounslow, for instance reported an improvement in overall network condition of 40 per cent within its first year.

Longer term planning has to be the best way forward and with the sector having invested significant resources in HMEP principles to improve efficiency, it is in better shape than ever to make best use of increased funding. To do so, it is critical that highways departments receive every penny earmarked to help them implement good asset management and improve the local road network.

From the AIA's perspective, Alan Mackenzie says that commitment to a positive, collaborative approach is key to this. "We are firmly resolved to work together and strengthen good communications between suppliers, customers and decision-makers, to ensure that we are all working from a well-informed position in our efforts to help bring positive change for the benefit of our local road network."

For more information: www.asphaltuk.org

Key Findings – ALARM Survey 2014

	England (exc. London)	London	Wales
Percentage of authorities responding	**75%**	**75%**	**68%**
Shortfall in annual road structural budget	£587m	£64m	£62.7m
Average annual budget shortfall per authority	£5.1m	£2m	£2.85m
Percentage of budget used on reactive maintenance	24%	34%	35%
Estimated time to clear carriageway maintenance backlog[1]	12 years	14 years	12 years
Estimated one-time catch-up cost per authority	£90m	£36m	£20m
Percentage of authorities reporting unforeseen additional costs	65%	29%	80%
Average additional cost per authority (where figures available)	£1.6m	£905k	£337k
Frequency of road surfacing (all road classes)	68 years	32 years	68 years
Number of potholes filled over past year	1,747,425	115,264	148,060
Average number filled per authority last year	15,195	3,602	6,730
Average cost to fill one pothole	£52	£70	£52
Total spent filling potholes in past year	£90.9m	£8.1m	£7.7m
Amount paid in road user compensation claims	£11.1m	£4.4m	£1.1m
Staff costs spent on claims (per year) average per authority	£88k	£76k	£112k
Average no utility trenches over past year per authority	13,690	7,890	4,980

[1] *Based on current budgets*

Data in the ALARM Survey is supplied by 74% of the local authorities in England and Wales responsible for roads. Responses were received during January and February 2014. The Annual Local Authority Road Maintenance (ALARM) Survey is commissioned by the Asphalt Industry Alliance (AIA).

Higher hopes for lower temperature asphalt

Uptake of lower temperature asphalts (LTA) in the UK could be set to rise soon. This follows recent key recommendations by the European Standardisation Committees for asphalt products and the results and recommendations of past and ongoing research.

Report TRL666 on *Specification for low temperature asphalt mixtures* was published by TRL in June 2013. This is accompanied by the Carbon Trust Case Study report CTS398 of May 2014 on the findings of a three-year study to improve the carbon efficiency of LTAs, and seeking to highlight some of the barriers to their implementation. Funded by the Carbon Trust and Lafarge Tarmac - with support from the Department for Business Innovation and Skills; Nynas UK; transport R&D consultant TRL; and the Mineral Industry Research Organisation (MIRO) – it has also made recommendations on enabling the lifting of market barriers for the use of lower temperature asphalt in road construction.

The research revealed that LTAs can provide not only numerous efficiency and cost savings to clients and laying contractors, but are also able to deliver valuable benefits to the public and the environment. For instance, shorter cooling times allow faster working so that overall project timescales can be reduced, with less time needed for road possession and traffic management time, resulting in less road user journey disruption. Alternatively, this increased efficiency could enable larger areas to be maintained in the same possession timeframe. Meanwhile, the lower production and handling temperatures associated with LTAs mean less energy is used and that CO_2 emissions can be cut.

As efficiency is central to the Department for Transport's *Action for Roads* policy, which intends to generate efficiency savings of £2.6 billion over the next 10 years, more widespread use of LTAs could play an important part in achieving these savings.

Conventional hot mix asphalt is made by mixing aggregates and bitumen at temperatures of between 120°C and 190°C, depending on the grade of bitumen used. This project successfully trialled the use of an LTA that allows mixing and working at lower temperatures without compromising installed mixture properties.

The total UK carbon footprint associated with asphalt manufacture has been estimated at 786,000 tonnes of CO_2e a year[1], equivalent to 5,000 km driven by a million average family cars[2]. To responsibly play its part in a "low carbon economy", reduction of energy and emissions is a driver for the UK asphalt industry, as well as for its clients.

If low temperature asphalts achieved 21 per cent of the total UK asphalt market over the next decade, it could save £46.2m and around 260,000 tonnes of CO_2 during the manufacturing of these materials over the next 10 years[3]. This calculation assumes a gradual increase in uptake of low temperature asphalt in 10 years, based on UK annual asphalt production volumes of 25MT p.a.

The potential emission-reducing benefits associated with LTAs are of great importance to some highway authorities, for example the West Midlands Highway Alliance, which in September 2013 committed to reduce CO_2 emissions in the production of road and footway materials by 20 per cent by 2015. Keith Gordon, Assistant Director Efficiency & Delivery for the West Midlands Highway Alliance, is positive about meeting this commitment, reporting that "Preparations are well underway to deliver this and it is anticipated that over 300,000 tonnes of low temperature asphalt will be laid by 2015".

To date in the UK, the adoption of LTAs, including Warm Mix Asphalts, has been much slower than in countries such as the United States, where the Asphalt Pavement Alliance reports that LTAs account for approximately 30 per cent of the total asphalt market. Barriers to their use in the UK have commonly been cited to include a lack of long-term UK performance data and material costs, which are impacted by supply capacity and consistency of volume demand.

Promising times for LTAs

Whilst lower temperature asphalt technologies are available today, the market shift to adopt them will be gradual as companies need to recover the significant capital investment in equipment. The global energy savings from producing LTAs will, therefore, accrue over time as more customers specify and adopt lower temperature materials and more plants are fully switched over, particularly to avoid them having to switch from "hot to cold to hot". When LTAs become "the norm" then even more real benefits will be seen, both in terms of material cost reductions and reducing emissions.

In support of pushes towards lower temperature "normalisation", the European Standards Committee responsible for asphalt products recently accepted a proposal to encourage their development by not creating artificial or qualitative differentiations via new standards (except in the case of bitumen emulsion based mixtures). This is on the basis that "asphalts are asphalts" in terms of performance regardless of production temperature and when supported by appropriate CE Marked Declaration of Performance. This follows on from the revision of the Standards in 2010 which removed minimum production temperatures, thereby enabling producers to develop technologies to drive them down. National installation requirements and guidance such as minimum temperatures found in BS594987 will also need to reflect this move.

At an industry level, MPA and RBA are soon to report on collaborative research with the Highways Agency on reduced energy asphalts, including installation of a more heavily trafficked demonstration site on the A5.

The *status quo* regarding the current low level of LTA usage compared to conventional asphalt in the UK seems to be changing. "Carbon reduction is all about innovation. You only get different results by doing things differently; it's that simple," says Doug Sinclair, Major Projects Portfolio Office Director at the Highways Agency.

For more information:
www.lafargetarmac.com

[1] *Carbon Trust – CTS398 – Case Study Low Temperature Asphalt, May 2014.*
[2] Assuming the average car emits 150g/CO_2/km.
[3] The calculations do not reflect inflation on fuel costs over the 10-year period. The calculation is based on the data generated from the site trial installed within the project. It also does not account for capital expenditure required to install equipment to manufacture LTA, and additional materials required for some LTA mixes.

Tunnel resurfacing challenges overcome under the River Mersey

Height restrictions within the Kingsway tunnel meant that innovative thinking was required to resurface this 1.5 mile twin-bore dual carriageway, which runs under the River Mersey and links Liverpool to Wallasey.

Instead of conventional six and eight-wheeler tippers, which require more headroom than was available within the tunnel, the Aggregate Industries team used a fleet of 11 Non Tipping Trucks (NTT) to supply asphalt to two spray jet-enabled pavers in echelon. Not only were fewer vehicle movements required, as the NTTs can carry more tonnage, but this also avoided potential material workability issues. If conventional tippers had been used, secondary transport would have been needed to get material to the pavers, leading to excessive cooling.

The existing concrete deck joints were cleaned and sealed, and the first paver had an averaging beam attached to the front to give optimal drivability to the surface finish. Finally, once both lanes had been resurfaced, the joints were re-cut and resealed.

Originally, Mersey Tunnel Police were due to conduct all the traffic management for this critical artery into and out of Liverpool except on the approaches, which was down to supply chain partner Aggregate Industries Traffic Management Division. However, four weeks into the project, Mersey Tunnel Police gave Aggregate Industries full responsibility to carry out all the traffic management.

For more information: www.aggregate.com

Increasing the amount of recycled asphalt in Warm Mix Asphalt

A firm from the Netherlands has developed a way of incorporating up to 60 per cent of recycled asphalt into the production of Warm Mix Asphalt (WMA).

Key to this breakthrough is the composition of a special soft type of bitumen used to coat the sand and gravel, which means that the recycled asphalt can be incorporated into the WMA at a temperature about 50°C cooler than that used for conventional asphalt.

To give the road surface the necessary performance qualities, a harder bitumen – foamed with water to enable it to mix easily at lower temperatures – is also added to the asphalt mixture during preparation.

Dutch construction firm Heijmans worked with Shell for around a year to adjust the bitumen formulation to make the foam process work with recycled asphalt, and Greenway LE asphalt has now been laid on a test road along a railway line.

For more information: www.shell.co.uk www.heijmans.nl

Single layer surfacing: a route to cutting costs, enhancing sustainability and minimising disruption?

By Brian Kent, Technical Director at Lafarge Tarmac

Delivering highways projects more efficiently, cost-effectively and sustainably is the holy grail of highways maintenance and construction. Meeting these objectives is key to helping local authorities and network operators cut the financial and environmental cost of maintaining the road asset while minimising disruption to the public.

Costs can generally be lowered on any project if time savings can be achieved. There is a major requirement for the highways industry to cut project timescales and accelerate delivery. Construction 2025, the Government's industrial strategy, sets out ambitious targets to deliver a 50 per cent decrease in the overall time to deliver new build projects or refurbish existing assets. Reducing project timescales also remains an important strategic driver for the Highways Agency. This driver is evident in the new £5 billion Collaborative Delivery Framework, where the Highways Agency has indicated that it will seek supply chain partners who have the necessary capacity and capability to drive quicker delivery and harness innovation.

From a purely materials perspective, this challenge requires highways stakeholders to engage suppliers and contractors as early as possible, to unlock expertise and gain a better understanding of how specification decisions and considered use of innovative surfacing products can cut project timescales and lower costs in the drive for greater cost and resource efficiency.

For example, the widespread use of Stone Mastic Asphalt (SMA) and thin surfacing on UK motorways has driven a significant increase in demand for high Polished Stone Value (PSV) aggregates, with a particular emphasis on 14mm and 10mm. As a result, the industry is frequently faced with availability issues, resulting in increased operational, logistical and in turn product costs. This approach has also introduced a major challenge with regard to future sustainability.

SMA by design contains approximately 70 to 75 per cent of a single size aggregate, whereas Hot Rolled Asphalt (HRA), its predecessor, used a 30 or 35 per cent single size. The only high PSV requirement related to the pre-coated chippings embedded on the surface at around 15kg/per square metre.

This high requirement for 14mm and 10mm high PSV aggregates has increased quarrying costs. These costs are derived from the increased quarrying required to obtain the premium sizes, predominantly from accelerated direct blasting and crushing procedures, but also by re-crushing larger, currently under-utilised, sizes, including 20mm aggregate. It should also be noted that each crushing operation automatically results in the production of an under-utilised dust fraction. Therefore, as we increase production of the premium sizes, we also increase the volume of high quality rock that simply becomes dust on a stockpile.

In the context of greater financial, environmental and time pressures on highways projects, it is important that asphalt products not only help clients and contractors to lay materials quickly and cost-effectively, but also conserve premium primary aggregates where possible.

These important factors are driving companies to develop new products. For example Lafarge Tarmac's Ultipave Single Layer, a surfacing only, or dual layer asphalt product for the strategic and local road networks which significantly reduces laying time on site, delivering cost savings to the client, and minimises disruption to the public.

With regard to sustainability, a tonne of this product only contains circa 20 per cent of 14mm aggregate and virtually no 10mm aggregate at all, therefore ensuring that for every tonne of the 20mm product produced, approximately 0.5 tonnes of precious 14mm aggregates, are conserved for future use.

This solution can be laid to a depth of between 50 – 75mm and reduces the time required on site, thereby also reducing the plant, labour and traffic management costs. Another advantage is that with only one layer to bond, the cost of bond coat operations is also significantly reduced.

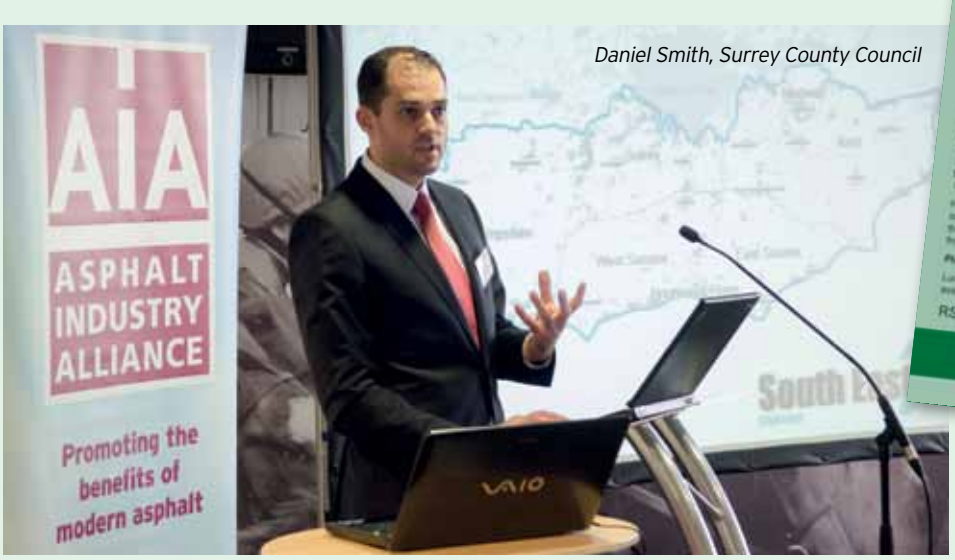
This approach continues to deliver the superior rut resistance expected from the 14 and 10mm products. It also adds benefits of enhanced structural contribution compared to use of a regulating course and thin surfacing, as well as fewer *in situ* voids, facilitated by greater heat retention during the compaction process.

Local authorities and network operators are under continuous pressure to build new roads and maintain the existing road asset using approaches which are efficient, cost-effective and sustainable. Early technical engagement of suppliers, innovation and careful product selection is critical to meeting these goals. Asphalt solutions can provide an important opportunity to reduce laying times, minimise disruption to the public and deliver cost benefits to clients. Understanding the nuances of innovative products has never been so important.

For more information:
www.lafargetarmac.com

Local authorities share best practice in Doncaster

Over 90 delegates from 42 different local authorities took part in the AIA's third Sharing Best Practice event, Planning a Better Road Ahead, held at Doncaster Racecourse in November 2013.



Daniel Smith, Surrey County Council

Chaired by former BBC TV North transport correspondent Alan Whitehouse and organised in conjunction with ADEPT and APSE, this interactive event gave delegates an opportunity to learn from and share best practice with other local authorities from around the country. There was also the opportunity to discuss how best to prepare for using the increased highway maintenance investment promised for 2015.

Due to the high number of delegates, a series of extended question time sessions with speakers were held throughout the day, rather than the delegates participating in round table discussions. These sessions proved very popular and enabled healthy debate between the delegates and speakers.

Delegates listened to presentations from local authorities across England and Scotland on a range of topics which included: Managing the Asset; Planning the Service for the Future; and Sustainability to improve Productivity. All the presentations can be viewed from within the Conferences and Events section of the AIA's website.

Trevor Wallis, former Project Director for the London Borough of Hounslow, opened proceedings by highlighting his three simple golden rules for asset management based on his experience of PFIs gained from both Hounslow and Portsmouth.

A presentation from Falkirk Council and SCOTS (Society of Chief Officers of Transportation in Scotland) followed, outlining the activities surrounding the SCOTS Road Asset Management Project and the benefits of benchmarking.

The final two morning presentations came from Cumbria County Council, with Andrew Moss, the County's Assistant Director Highways and Transport, speaking about having a fit-for-purpose highways service for the next five to 10 years. This was followed by a joint presentation from Andrew Martin, Head of Highways Operations at Dorset County Council, and Denis Curran, Major Projects Director for Hanson Contracting, on how Dorset Highways Strategic Partnership has progressed over the years and the benefits of working in close partnership.

The afternoon session commenced with a presentation by Dr Paul Phillips, Technical and Development Director of Aggregate Industries, on The West Midlands consortia of local authorities' target to reach 20 per cent usage of low temperature asphalt by 2015. Many thanks to Dr Phillips, who gallantly stood in to present this topic due to last-minute speaker unavailability.

Daniel Smith from Surrey County Council and Luke Bridges from MTS Environmental outlined the Highways Recycling Initiative for the SE7, a group of seven local authorities in the South East.

The event concluded with Paul Phillips once again taking to the stand, this time to outline the benefits of asphalt for a sustainable world.

Details of future AIA events will be posted on the AIA website at http://www.asphaltuk.org/news-conferences.asp

Stop press – next Sharing Best Practice event will take place on 13 November 2014 again in Doncaster. John Dowie, Director of Strategic Roads at the DfT will be the keynote speaker. Further details will be available soon. Places are likely to go quickly so please RSVP quickly to avoid disappointment. If you would like to be added to the invitation list please email info@asphaltuk.org

From left to right: Alan Mackenzie, Asphalt Industry Alliance; Dr Paul Phillips, Asphalt Industry Alliance; Phil Brennan, APSE; Daniel Smith, Surrey County Council and Luke Bridges, MTS Environmental

Weather-resistant paving solution for New Brighton coastline

Low sea defences, waves which can reach in excess of 40ft and decades of reduced investment had left the once-popular seaside resort of New Brighton in need of attention.

To attract visitors back to the area, Wirral Borough Council developed a £60 million regeneration scheme which included an attractive and vibrant 14 hectare promenade along the neglected sea front.

"In the past, the strong winds and high waves caused severe damage to the promenade infrastructure, carrying away part of the existing surfacing and on occasion leaving the promenade under water for up to a week", explained Shaun Brady, Highways Asset Manager at Wirral Borough Council.

The chosen paving solution had to not only look good, but also be tough, durable and retain resilience in order to cope with these harsh weather conditions. Because the sea defence wall is very low, the promenade surface had to be non-porous and smooth enough to allow seawater to run back in to the estuary, rather than flooding the promenade or running in to the town.

The solution

Using a polymer modified synthetic clear binder called Shell Mexphalte C LT, Lafarge Tarmac developed a bespoke surfacing solution that had an attractive, sand-coloured finish which emulated the colours of the New Brighton coastline.

"Once we were satisfied with a binder course that was resistant to salt water, we developed a blend of Mastertint that would demonstrate excellent performance in the wet and sometimes harsh environment" added Brian Kent, Technical Director at Lafarge Tarmac.

In total, 800 tonnes of coloured asphalt was used to cover around 9 km of the promenade, giving Wirral Borough Council a practical paving solutions that is durable, tough and also contributes to good urban design.

For more information: www.shell.co.uk www.lafargetarmac.com

New Chairman at RBA

Dave Foster, UK Bitumen Business Manager for Shell Bitumen, is the new Chairman of the Refined Bitumen Association (RBA), the representative body of the major bitumen producers in the UK.

Dave took over as Chairman from Andrew Williams, UK Distribution Manager at Nynas, and brings a wealth of experience, expertise and industry knowledge to the role.

"Despite the rationalisation in the oil industry and bitumen supply-chain in the UK, the RBA continues to set and maintain the highest technology and HSE standards", commented Dave Foster. "Increased advocacy and continued collaboration with key partners such as the MPA, together with our support for the Asphalt Industry Alliance, will continue to play an important part of the RBA's activities moving forward".

The RBA works closely with the European bitumen association, Eurobitume, particularly on technical issues and safety initiatives. An inherent part of this work is developing closer liaison with its peer associations ARBIT in Germany and GPB in France. The association is also involved in Eurobitume's technical, and health and safety committees, helping to ensure consistent, high standards throughout the industry, and will continue to work to promote best practices relating to safety, storage and handling of bitumen. Several new guidance notes and tool box talks on topics ranging from PPE to safe delivery have been prepared and are available on the website, and new Bitumen Burns first aid advice has been prepared by Eurobitume.

For more information: www.bitumenuk.com

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