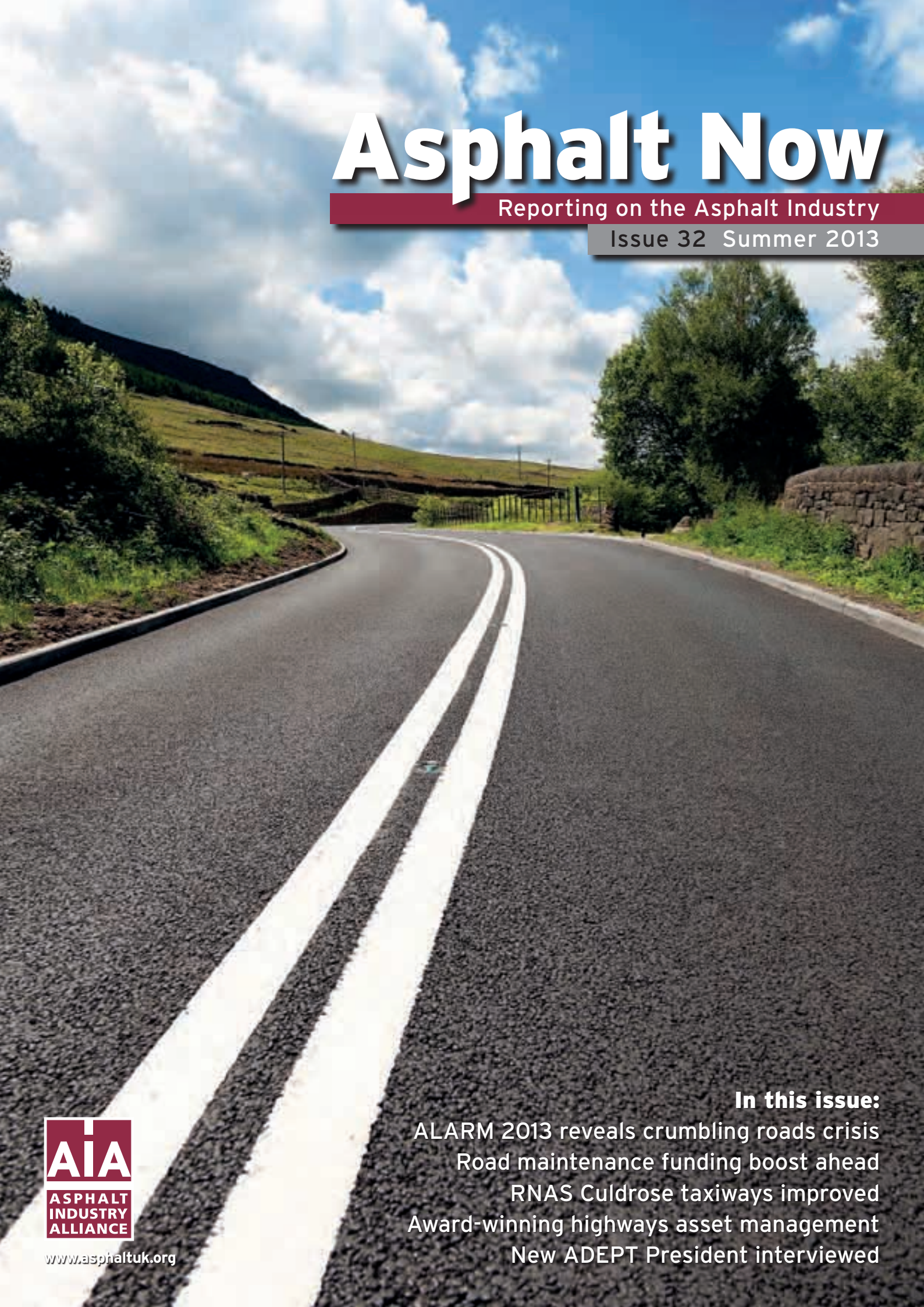
Asphalt Now

Reporting on the Asphalt Industry

Issue 32 Summer 2013



In this issue:

ALARM 2013 reveals crumbling roads crisis

Road maintenance funding boost ahead

RNAS Culdrose taxiways improved

Award-winning highways asset management

New ADEPT President interviewed

AIA
ASPHALT INDUSTRY ALLIANCE

www.asphaltuk.org

Chairman's Introduction

The Government's £6 billion commitment to local road maintenance funding announced in June – as part of a pledged £28 billion six-year investment in roads from 2015/16 – is good news for road users, local authorities and the road maintenance industry.

The AIA's 2013 Annual Local Authority Road Maintenance (ALARM) Survey published earlier this year again highlighted the deteriorating condition of local roads brought about by decades of underfunding. The survey was completed by 75 per cent of councils across England and Wales and revealed a £10.5 billion crumbling road crisis, with over two million potholes filled in the last 12 months and £32 million paid out by local authorities in road user compensation claims due to poor road condition.

Clearly more investment is needed to stop the rot, so it is a shame that the welcome funding boost, which should help councils move away from a patch-and-mend approach to planned preventative maintenance, will not come through until 2015.

Over the past few months asphalt suppliers, contractors, local authorities and industry bodies have continued their search for more efficient and cost-effective ways of working. Increased collaboration, longer term planning, and raising the percentage of more cost-effective planned preventative maintenance, have been to the fore and you will see some examples in this issue.

There is also an interview with the president of ADEPT, Steve Kent – now Strategic Advisor at Cheshire West and Chester Council and also an HMEP Advocate – who shares his thoughts on what he sees as being some of the main issues facing the industry.

In addition, there is an interesting mix of articles covering topics ranging from SMAs and an international research study into the long term durability of different PMBs, to airfield resurfacing.

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

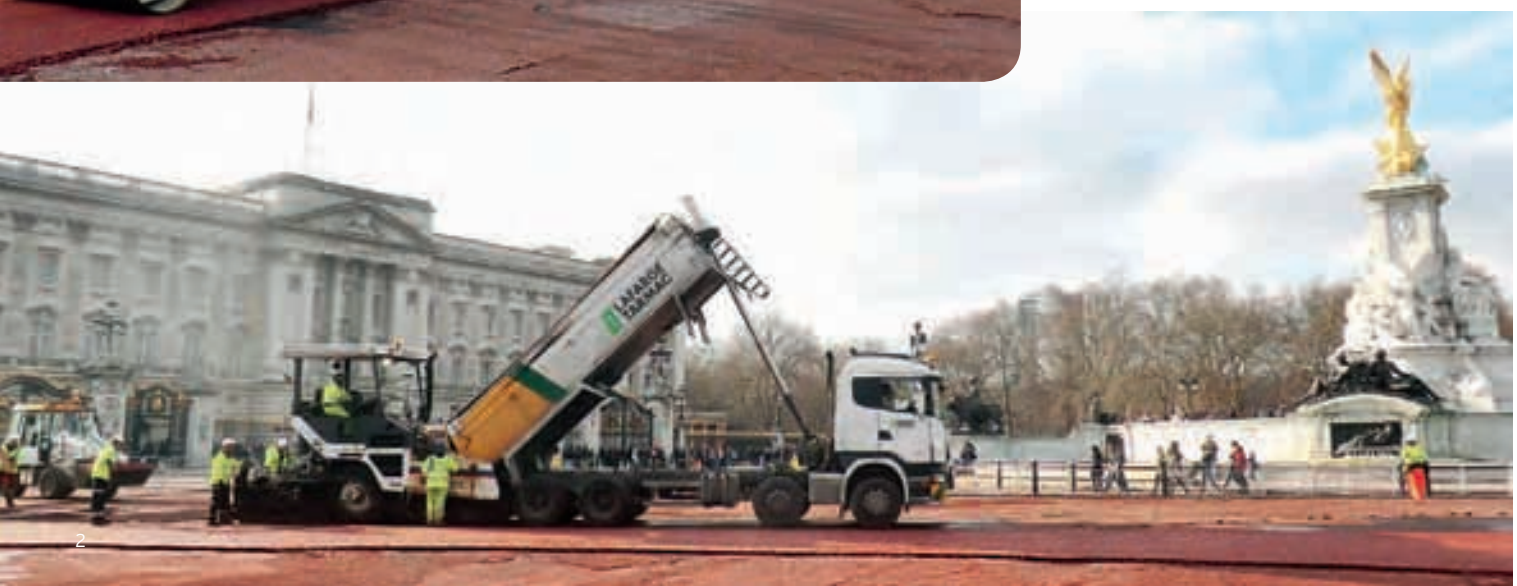
Regal red road

Resurfacing jobs don't come much higher profile than The Mall, outside Buckingham Palace.

Giving the asphalt its iconic red colour was a very labour intensive job for Lafarge Tarmac, in order to ensure consistent quality and colour tone. This required the careful manual addition of 1,000 20kg bags of red pigment during mixing.

Two bags of pigment were added per tonne of asphalt, until a total of approximately 500 tonnes of finished material had been mixed and delivered.

For further information: www.lafargetarmac.com



Long term European study of PMB durability

An academic study carried out for the Swiss national road federation has revealed large differences between the ageing performance of different polymer modified bitumen (PMB) binders under extreme temperature variances.

Lausanne University compared the performance of 16 asphalt road surfaces, located together in a mountainous area of Switzerland where temperatures reach extremes in summer and winter, and the materials are exposed to high levels of oxidising and UV light ageing. The surfaces were monitored over a 14-19 year period, with only the best-performing materials studied over the full term.

The study clearly showed that assumptions of performance cannot be made based just on the fact that the binder contains polymers. It is critically important to understand the overall application and performance enhancement required from the polymer modified bitumen prior to specification.

"The Styrelf section is the only strip of road surface in the test location still in place 21 years after the study began without needing resurfacing," commented Gary Schofield, Technical Manager for Total Bitumen, which produces Styrelf binder. The asphalt contains a styrene-butadiene-styrene (SBS) polymer where

a cross-linking additive had been added during manufacture to create a single network of interlinked polymer molecules.

Cross-linking the polymers greatly reduces the susceptibility of the polymer chains to oxidation, which means that even though ageing of the bitumen through oxidation still occurs, it is at a much slower rate.

For further information: www.bitumentotal.co.uk

Highway maintenance spending gets a welcome boost

The AIA has been pressing for additional funds to tackle the long term shortfall in road maintenance funding, and welcomed the recent announcement of £6 billion funding for local road maintenance.

The Spending Round 2013 revealed that £28 billion will be spent on improving the road network, with just under £6 billion – allocated in six equal instalments of £976 million – earmarked for local road maintenance over the six-year period from 2015/16 to 2020/21.

Comparing the new figures against those from the 2010 Comprehensive Spending Review for the current five-year period – £871 million for 2010/11, £806 million for 2011/12, £779 million for 2012/13, £750 million for 2013/14 and £707 million for 2014/15 – shows that the £976 million represents an average increase of £193.4 million each year for local road maintenance (unadjusted for inflation).

"The additional money will help local authorities make more efficient use of their budgets by enabling them to commission more cost-effective, longer term, planned maintenance, and reduce the percentage of more expensive reactive maintenance. However, we are disappointed that the additional money will not be available until 2015/16, so we will see two more years of under-funding and deterioration of the network," commented AIA Chairman Alan Mackenzie.

Transport Secretary Patrick McLoughlin subsequently announced the Government's intention to get new legislation brought in to ensure the Spending Round pledges become reality irrespective of who will be in Government at the time.

For further information: www.gov.uk/government/publications/investing-in-britains-future

Research reveals £10 bill

QUICK FACTS FROM ALARM 2013:

£829 million annual funding shortfall – England and London

£6.2 million annual budget shortfall (per authority, England)

1 in 5 roads with residual life of less than 5 years

£338 million – cost of damage caused by 2012 extreme rainfall

£10.5 billion – estimated "one-off" cost to get roads back into reasonable condition

£32 million – amount paid in road user compensation claims

2.2 million potholes filled across England and Wales

£113 million – total spent filling potholes – England and Wales

The AIA's 18th Annual Local Authority Road Maintenance (ALARM) Survey of local road network condition and funding revealed a crumbling road crisis of increasing concern, prompting renewed calls for Government support for increased and longer term funding.

Completed by 75 per cent of councils across England and Wales, the survey published in March revealed the number of potholes filled over the last year rose to over two million, an increase of 29 per cent on the previous year. The cost of filling the estimated 2.2 million potholes across England and Wales came to £113 million, while local authorities paid out £32 million in road user compensation claims, and the cost of staff time spent on claims amounted to over £13 million. Last year, councils paid out 50 per cent more than the previous year in compensation claims from road users for damage or injury due to poor road condition.

While the cost of filling potholes is not increasing significantly overall, their presence indicates poor road condition that is costing the country heavily in many other ways. This year, local authorities in England reported a shortfall in their annual budgets of £829 million. Across England and Wales, authorities estimate that £10.5 billion would be needed to bring their roads back into reasonable condition.

The AIA has again called for action from central Government to help introduce longer term funding mechanisms, allowing councils to move from costly one-year cycles of highly reactive work to planned, preventative maintenance programmes.

"Constantly having to patch up crumbling roads, rather than using highway engineers' skills properly to ensure good road condition in a planned and cost effective way, is nonsensical and costly to the country," says AIA Chairman, Alan Mackenzie.

"The DfT's *Potholes Review* was a welcome initiative and concluded that 'prevention is better than cure'. When you add up all the costs incurred by not following this simple advice, it's hard to understand why central Government cannot find a way to invest in this much needed work and save on higher costs in the future."

Media interest greater than ever

Media and public interest in local road maintenance is higher than ever, with a record-breaking 194 articles, interviews and comments in national and regional newspapers, consumer and trade magazines, radio and television covering the publication of ALARM 2013.

In total, ALARM 2013 generated over one hour of TV coverage (including *BBC, ITV* and *Sky News*), more than four hours of radio coverage (including BBC Radio 4's flagship *Today* programme), 18 items in national daily and Sunday newspapers (including the *Financial Times, The Sunday Times* and *The Sun*) and numerous mentions on social media networks.

The campaign's success this year can be attributed to a combination of factors, not least the increasingly poor condition of roads, which is obvious to all road users and became an issue during the subsequent local elections in May.

For further information:
www.asphaltuk.org/alarm-survey.asp

ion crumbling road crisis

Increasing investment in highway maintenance

MPs, Peers and a select list of council leaders and senior councillors discussed different ways of improving investment in local highway maintenance at the Highway Maintenance All Party Parliamentary Group (APPG) roundtable meeting in May.

Chaired by Christopher Chope OBE MP, a wide range of funding initiatives were discussed, including:

- The Welsh Local Government Borrowing Initiative, which transformed how Welsh local authorities were able to address highway maintenance;
- Highway maintenance and management Private Finance Initiative (PFI), as used by Portsmouth City Council
- Private Finance 2 (PF2), a possible replacement for the PFI model, which would continue to involve a blend of Industry funding and government funding;
- Equity Finance;
- Debt Finance; and
- Prudential borrowing, which was the route taken by Blackpool Council in raising an additional £30 million.

The Group is now considering the production of a report on how best to address the increasingly critical condition of local roads.

For further information: www.highwaysmaintenance.org

Beyond asset management: making the business case for well-

Steve Kent, Strategic Advisor at Cheshire West and Chester Council and an HMEP Advocate, recently took up the reins as President of ADEPT. *Asphalt Now* took the opportunity to get an inside track on what Steve sees as some of the main issues facing the industry.

Asphalt Now (AN): What are the priority areas that you think need to be addressed?

Steve Kent (SK): I think they can probably be grouped within four broad areas:

1. **Growth,**
2. **Collaboration,**
3. **The localism agenda and**
4. **Making a powerful business case.**

AN: What do you think of the Government's "going for growth" mission and recent announcement that £28 billion will be spent on improving the road network between 2015/16 and 2020/21?

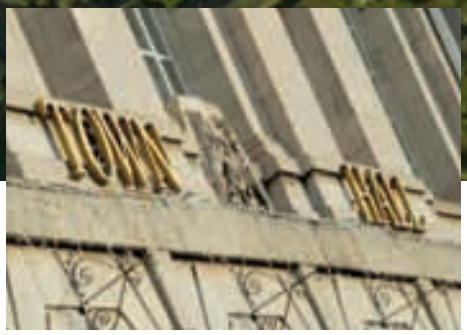
SK: ADEPT is seeking to complement the Government's going for growth agenda with our own *Prospectus for Growth*, which has a substantial focus on delivering new infrastructure projects to support economic generation. In fairness to the Government, they have also grasped the importance of reversing, or at least halting, the deterioration of the local road network, and the additional maintenance funding will have a positive part to play in that.

Aside from the welcome funding uplift, another significant benefit is that by having this six-year funding clarity, it is now much easier for local authorities to plan their preventative road maintenance activity and so reduce the amount of reactive road maintenance they will need to undertake – which typically is approximately 20 times more expensive on a metre for metre basis than planned preventative maintenance.

ADEPT

ASSOCIATION OF DIRECTORS OF ENVIRONMENT, ECONOMY PLANNING AND TRANSPORT

-maintained local highways



AN: OK, so what do you mean by collaboration and who should be doing it?

SK: In the straitened economic environment in which we currently operate, partnerships and collaborations are an invaluable way of closing the funding, expertise and resource gaps which now exist. More partnerships between local authorities are needed, not only to achieve economies of scale in procurement and delivery, but also to fill the gaps created by the shrinkage in local authority highways departments in areas such as materials laboratories (which are now a real rarity) and specialist technical engineers, for example.

There is also scope for greater collaboration between industry and clients, continuing the increasing number of true partnerships rather than the historic buyer/supplier way of working.

AN: So how is the localism agenda impacting highway maintenance and local authorities?

SK: The challenge for local authorities is how to get the best out of their shared collaborations and partnerships, while at the same time addressing the growing demands from their communities and politicians for greater influence and responsiveness. A good example is the condition of local residential streets and footways, which would be immaculate if the only consideration local authority highways departments had was to meet the demands of their more outspoken residents. The balance that local authorities need to strike is successfully addressing the localism desires whilst maintaining and delivering against a properly formulated asset management plan.

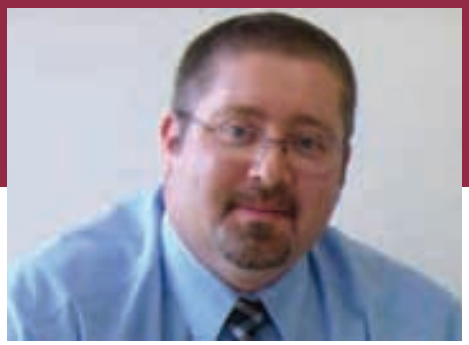
To do this requires a "softer" set of skills alongside the technical skills more traditionally associated with local authority highways departments.

AN: Finally, how exactly do you expect to make the business case for highway maintenance?

SK: This is a challenge shared by industry and the local authority network, which need to be able to present a credible, robust business case for further investment in long term maintenance work on the local road network. Having an asset management plan in place is the essential precursor to being able to make a strong, reasoned economic case for additional investment in local road maintenance, and so we need to push hard for all local authorities to have in place a sound asset management plan – as this will help ensure that an appropriate balance is struck between preventative and reactive maintenance.

Many local authorities are already there, or very nearly there, in terms of having an asset management plan in place, but this will be restricted to valuing just the physical highway asset. What we now need to do is go beyond asset management and make a comprehensive business case for making the local road network a well-maintained asset, including a range of wider social and economic factors.

For further information: www.adeptnet.org.uk



Materials: every

Director of Asphalt at the Mineral Products Association (MPA), Malcolm Simms, reflects on why today's widely used negatively textured asphalts sometimes receive an undeserved "bad press", concluding that SMAs and their like are here to stay and, with appropriate attention to detail, can deliver many positives.

Panellists (below) at the MPA Asphalt conference debate on SMA-type materials (l-r):
Dougie Miller, *Transport Scotland;*
Donna James, *Highways Agency;*
Ian Carswell, *TRL;*
Robert Gosling, *MPA;*
Bob Noakes, *ADEPT*
Debate Chairman, Alan Mackenzie *Chairman, AIA*

In November 2012, the MPA Asphalt Conference included a debate on SMA-type surfacing materials, drawing views from materials experts and specifiers involved in both strategic and local roads. This highlighted some negative views, balanced by more positive experiences, and concluded by supporting a message conveyed earlier in the conference that client/supplier communication should be improved to ensure that the correct materials are used.

"We know that some have had issues with the durability of thin surfacings, but there is no reason why they should not at the very least achieve their expected lifespans," says Simms. "Research has shown that when correctly specified, designed, produced and installed, following the principles in *Road Note 42* (TRL, 2008), they provide an excellent and durable running surface with low noise, low spray and comfortable ride characteristics."

The "new" thin surface course systems (TSCSs) – negatively textured surfacings, SMAs, call them what you will – arrived in this country over 20 years ago and had been extensively used on the continent before then. So why are they not perceived positively by some?

Simms has a theory: "When thin surfacings first arrived their benefits were so attractive that they were perhaps too widely adopted for use on roads where they were not appropriate, for example because the underlying structure was unsound; and in a very real sense they became victims of their own success."

SMAs: the Beginnings

In the late 1980s and early '90s, the nearside lanes of the high-speed network were suffering from rutting in HRA surface courses due to increased HGV axle loads and the use of super single tyres, both of which apply higher stress levels to road surfaces. Attempts to rectify this by using stiffer mixes led to other difficulties in applying chippings and fretting of the surface.

Employing technologies from Europe, where they were already known for being rut resistant and durable, SMAs were developed in the UK. Their intended use was on high speed, high volume roads. Their development was in line with the existing macro-texture requirements derived for positively textured HRAs and which correlated well with skidding resistance.

"With the benefit of hindsight, those requirements were not 100 per cent appropriate for negatively textured materials," Simms points out, and this led to clients specifying what are now recognised to be higher than necessary textures for SMAs. This resulted in more open-graded SMAs with more surface voids. Research has subsequently identified that skid resistance can be retained with lower textures and this has been reflected in a change to the Highways Agency's (HA's) specifications, which is also expected to enhance durability. *[Interim Advice Note, September 2012 – IAN 154/12.]*

negative has a positive...

The take up of SMAs

"Because of their noise reducing properties, and doubtless also influenced by the fact that SMAs could be laid thinner and more quickly than traditional HRA materials and were therefore cheaper, local authorities also became keen to specify SMAs," observes Simms.

"During this time clients were facing increased budgetary pressures and the industry was experiencing higher raw materials and energy costs, especially in the form of hydrocarbon costs. These factors may have contributed to a failure initially to address underlying structural issues where thin surface materials were being specified.

"Again, with hindsight, the pre-requisite of sound substrates on which to lay thinner materials was perhaps in some cases overlooked in the rush to adopt these new materials – an error for which both sides of industry should probably share responsibility – so it is no surprise that on some sites the materials failed to perform to expectations. It is probably also true that on certain sites durability has not been satisfactorily achieved with the higher textured SMA and TSCS variants, and a more dense material could have delivered enhanced performance."

SMAs are fit for purpose

The industry has been working with the Highways Agency ever since SMAs were introduced to assess their ongoing performance. All the research has indicated that service lives across the majority of the road network have been achieved as anticipated in the *Design Manual for Roads and Bridges, HD37/99* and, overall, better than might be perceived.

The panel of experts at the MPA's November 2012 conference reinforced the view that SMAs have a clear role to play on both strategic and local networks and reiterated the importance of addressing the key principles of: pavement design; material specification; and drainage design.

While the higher texture and voids of some SMAs can reduce noise and spray for road users, they may also permit water ingress. So the provision of appropriate drainage, combined with the sealing of joints and layers, is key to preventing this and to ensuring that water can drain away from the road rather than into the substrate.

Moving forward positively

A clear demonstration of industry's commitment to clients is the ongoing research it co-sponsors with the HA. The most recent project addressed practical and specification based moves to enhance the durability of thin surface course materials, and also studied frictional characteristics to ensure that they are not compromised by high levels of recycled content.

"SMAs and their like are here to stay and can deliver many positives for road owners and users," concludes Simms. "The key to this is working collectively to ensure they are correctly specified, designed, produced and installed to derive the maximum benefits."

Road user statistics at your fingertips

Whether it is commuting, commercial haulage or simply leisure travel, roads are the arteries that help us all meet our journey needs and keep the UK's pulse pumping. With a subject so complex and with transport infrastructure seemingly continually in the news, there is no shortage of information available. In fact, there is so much data around that a valid question to ask is: "Where should you go for credible road data?"

Covering topics such as road networks, road usage, traffic volume and environmental considerations, RoadFile is a web solution that collates road-related statistics from sources such as the Department of Transport, European Commission and even the ALARM Survey all in one place – an electronic hub for unbiased data which is free to use.

RoadFile is the initiative of the Road Users' Alliance, which consists of key stakeholders from various interest groups and industries – all with a common aim to improve the UK's road network and provide better roads for all users. RoadFile started life as a printed booklet, but to ensure it remains easily accessible, offers improved search facilities and can be updated efficiently, it is now produced as an online tool which can be accessed at www.roadusers.org.uk.

The data collected represents an overview of the current situation for key common issues related to roads, and is presented in eight user-friendly, searchable chapters. Depending on the timeline of the source reference, the data is updated at least annually. The aim is to provide valuable knowledge for all road users, to highlight the important role the road network plays in both our society and economy, and further increase awareness of the need to maintain and develop better roads for all.

For further information: www.roadusers.org.uk

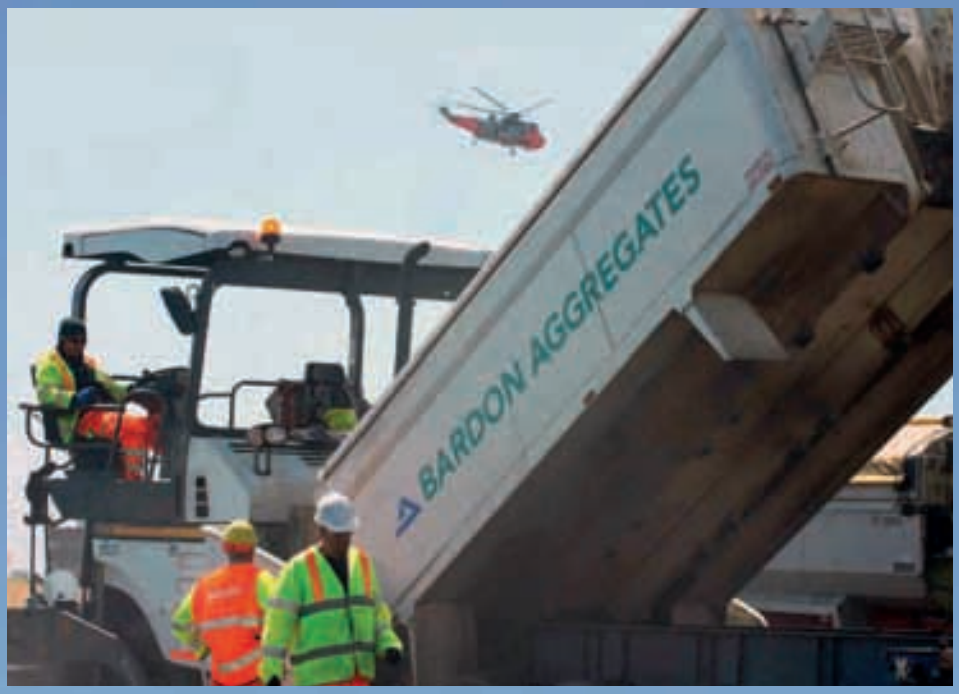
Project 30 scheme wins CIHT's Highway Asset Management Award

Project 30, a pioneering four-year initiative to revitalise Blackpool's highways network which is predicted to deliver savings of over £100 million to the local authority over the next 25 years, won the Highway Asset Management Award at the Chartered Institution of Highways and Transportation (CIHT) Awards in June, 2013.

The Project 30 name came from the fact that Blackpool Council used a prudential borrowing model to secure an additional £30 million of funding, which it is spending over a four-year period to repair or replace over 40 miles of local roads.

A true public and private sector partnership between Blackpool Council and Lafarge Tarmac's Contracting Division, Project 30 will not only significantly improve the condition, safety and appearance of Blackpool's roads, but importantly it will also unlock long term savings for the local authority and deliver better value for tax payers.

For further information: www.lafargetarmac.com



Meeting the demands of Europe's largest helicopter base

Royal Naval Air Station Culdrose, near Helston in Cornwall, is the largest helicopter base in Europe – with some 75 aircraft and 3,000 personnel – and is home to the Royal Navy's Merlins and a sizable proportion of its Sea Kings.

The airfield had received numerous maintenance treatments since it opened in 1947, including several applications of slurry seal surfacing that were beginning to delaminate and flake off. Taxiway surfacings were in a poor state, which presented a risk of Foreign Object Damage (FOD) causing problems for the safe operation of aircraft.

Bardon Contracting, supply chain partner to prime contractor Debut Services, was confident it could provide a significant improvement in value for money by further extending the life of the Marshall Asphalt runways – normally renewed every 12 to 15 years – by using polymer modified binders to enhance the asphalt's resistance to reflective cracking at low temperatures.

Nynas Endura Z2 polymer modified bitumen was chosen for the taxiway improvements and incorporated into asphalt designed by Aggregate Industries, to ensure that the surfacing resists rutting caused by tightly turning aircraft using taxiways at low speed. The bitumen was mixed with hard wearing Cornish dolerite to produce an SMA surface course, which was laid to a thickness of 50mm over an SMA binder course of the same depth.

"Polymer modified binder used within an SMA ensures a surfacing material has added cohesion and adhesion – and this is particularly important for airfields," said Nynas asphalt engineering support manager Jukka Laitinen. "We carried out a comprehensive set of specialist tests as per the contract specification, which included low temperature indirect tensile strength tests after ageing at – 18ºC."

For further information: www.aggregate.com, www.nynas.com/en and www.royalnavy.mod.uk/The-Fleet/Air-Stations/RNAS-Culdrose

Local road condition by numbers stats cards

The AIA has produced a quantity of handy information cards, with 10 useful statistics – drawn primarily from the 2013 ALARM Survey – regarding the local network in England and Wales and its condition.

The information shown on the '*Local road condition by numbers*' cards is:

95 per cent of the road network is local roads

Over 2 million potholes were filled during 2012

1 in 5 roads has less than 5 years' life

£10.5 billion – estimated cost to bring local roads back into steady state

£32 million – estimated amount paid in road user compensation claims in 2012

£800 million – 2011/12 budget shortfall in annual local authority highway maintenance budget

20 times more expensive to carry out reactive maintenance than regular preventative maintenance

£5 billion – estimated annual cost to local economies resulting from poor local road condition

Over £100 million annual expenditure on filling potholes – average cost to fill one pothole is **£52**

19 per cent reduction in central government funding of local authority highway maintenance by April 2015

Ideal for keeping in a pocket, purse, wallet or with your own business cards, the information cards are available from the AIA Press Office. To request some for yourself and colleagues, please send an email to info@asphaltuk.org or call 020 722 0136

Early consultation cuts costs and increases recycling

A school contract in Fife has shown the benefits of a partnership approach by delivering cost savings and enhanced environmental credentials.

Morrison Construction appointed Breedon Aggregates at an early stage to carry out all the surfacing work at Abernethy Primary School, which was to undergo a three-stage expansion and refurbishment.

Stage one involved constructing a pre-fabricated, modular, temporary school, complete with playground, to accommodate the pupils during the construction period. Asphalt concrete provided better grip qualities than the originally specified hot rolled asphalt (HRA), and as it was laid at a reduced thickness also delivered significant cost savings over the more expensive HRA, which were benefits understandably welcomed by the client on this tightly funded project.

Stage two saw the construction of the new school and playground, which the pupils celebrated by adding their own artistic finish to the final surface. Early consultation meant possible cost savings could be identified in advance.

Finally, once the students and staff were safely installed in their shiny new school, stage three involved dismantling and removing the temporary school and playground to make way for a brand new multi-use sports pitch. The project's environmental credentials were also enhanced in this phase, when the temporary playground was broken up and the material was returned to nearby Clatchard Craig Quarry, where it was crushed and screened for re-use.

For further information:
www.breedonaggregates.com

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