pave-it

news from interpave

june 2003 issue one

INSIDE »»»»

make the world a more sociable place switch to low tar

Aren't you tired of tarmac? All the monotony, cracking and unsightly patches where it's been dug up. No wonder, in a recent MORI* poll which examined paving material options, black tarmac scraped in with just 8% of the vote.

By contrast, 70% of people preferred block paving. It's also proving highly popular with local authorities. Versatile, strong and slip resistant, concrete block paving is suitable for roads as well as pavements, and meets a wide range of council needs (such as traffic calming).

Concrete block paving has become synonymous with urban regeneration, transforming run-down areas into attractive and people-friendly spaces. And because it's so durable and easy to reinstate, it offers long-term savings over tarmac.

With the momentum growing for better public space, there's never been a better time to switch to concrete block paving, and away from high tar.

***MORI surveyed a nationally representative sample of the general public in summer 2001.**

Interpave
THE PRECAST CONCRETE PAVING AND KERB ASSOCIATION

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pave-it CONTENTS

ABOUT INTERPAVE

Interpave – the Precast Concrete Paving & Kerb Association – represents the leading manufacturers of concrete block paving, flags and kerbs. It acts to maintain the highest standards of product quality and to expand the use of these materials through education, technical and marketing campaigns.

Interpave is a product association of the British Precast Concrete Federation.

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welcome

As development director of Interpave – the Precast Concrete Paving & Kerb Association – I would like to welcome you to the first edition of Pave-It. The publication of our new magazine comes at an exciting time when the use of these products is increasing year by year.

Manufacturers are constantly devising new products and systems to expand the creative and practical applications of concrete products, offering designers and end users an ever expanding range of options to suit their needs.

With each edition, we intend to convey new ideas as well as keeping you informed of the latest products and innovations. We will feature informative, detailed case studies on projects, here and abroad. We're also running articles from guest contributors, from a variety of perspectives.

In the first Pave-It edition, Tom Franklin, director of Living Streets, writes on building stronger communities by improving their

news

MORE THAN 22 million square metres of concrete block paving were laid in this country last year – a record. That's thanks to its versatility, strength and ever-expanding product range. And the public clearly has an appetite for more.

A RESOUNDING 70% OF PEOPLE FAVOUR BLOCK PAVING COMPARED TO OTHER TYPES OF HARD SURFACING. IN A SURVEY BY TOP POLLSTERS MORI, 80% OF RESPONDENTS SAID THEY WANTED THEIR COUNCIL TO SPEND MORE ON MAINTAINING AND UPGRADING PAVEMENTS.

FOR PAVEMENTS AND PATHWAYS GENERALLY, TOWN CENTRES AND THE STREETS WHERE PEOPLE LIVE, BLOCK PAVING WAS THE PUBLIC'S FAVOURITE CHOICE – EVEN WHEN THEY WERE TOLD INITIAL COSTS COULD BE HIGHER THAN BLACKTOP, WHICH TOOK JUST 8% OF THE VOTE.

THE POPULARITY of concrete block paving puts it at the centre of the urban regeneration drive.

The Government has made clear that 'liveability', building stronger communities by improving their environment, is high on its agenda. Legislative reform is in the air.

The Office of the Deputy Prime Minister (ODPM), in its 10-year transport plan, recognises walking as a mode of transport. Wider and better maintained footpaths are key elements in the Government's proposed integrated transport system.

More recently, in a report with the ODPM, the Commission for Architecture and the Built Environment says streets define neighbourhoods, and that it's impossible to have a good street without a good design and quality materials.

One reason why block paving is favoured for regeneration is that large expanses can be broken down by colour and pattern to make them more attractive and easily navigable.

People like the distinctive look and richness of block paving, its colours, textures, shapes and eye-catching bond patterns. The intricate geometry can lift an inner city streetscape far more than a stretch of sticky new blacktop ever could.

It also scores on physical, economic and maintenance criteria – concrete block paving is renowned for its high strength, durability, resistance to freeze-thaw cycles and to a range of oils and chemicals. It does not deform in the summer sun and its coarse texture provides excellent slip and skid resistance. For maintenance, you merely need to unzip it and then reinstate it after the work is complete. There's no need for ugly patching.

environment. 'Liveability' is high on the agenda in Whitehall and legislation is possible that will soon put better quality paving at the centre of urban regeneration.

Our other guest contributor is Professor Chris Pratt, from Coventry University, writing on the key role that permeable pavements can play in flood and pollution control – a major environmental concern these days. Permeable pavements have proved their worth on projects in this country and on the Continent.

Our inaugural edition includes coverage of the Interpave / Public Sector & Local Government magazine awards of 2002.

The award winners are all different, but share a common theme. They used the varied colours, textures, shapes and patterns available in concrete paving products to transform neighbourhoods cost-effectively.

We also feature the fascinating story of the regeneration project in historic Bury St Edmunds. This makeover project had it all – a townscape and road grid that date back a thousand years, medieval architecture and a need for a practical, sympathetic approach which matches the needs of the modern town it is.

We hope you find these articles and other features to be informative and inspiring.

If you like what you see, or there's something you want to see more of, then please let us know. Similarly if you want to know more about Interpave, or Interlay – our newly amalgamated contractors' association – then please get in touch.

Finally, you can help us to help you by completing the fax-back form in this edition. This will ensure you receive future editions, and will keep up to date with the latest news and information.

JOHN HOWE
DEVELOPMENT DIRECTOR
INTERPAVE

"STREETS ARE THE ONE PUBLIC SERVICE THAT WE USE ALL THE TIME."
Tony Blair

Over the long term, it's far more cost-effective than blacktop.

Concrete block paving was launched in the 1970s, and has seen exponential growth every year since. Yet annual sales per capita are just half those in Germany and the Netherlands. So the potential in this country is still immense.

SEVEN OF the most traffic-heavy High Streets in Britain are to be overhauled in a pilot scheme by Transport 2000 aimed at making roads more pedestrian-friendly.

The seven are in London, Kent, Derbyshire, Yorkshire, Worcestershire, Humberside and Bedfordshire.

Plans could include reallocating road space to pedestrians and cyclists, traffic calming and improved crossings.

The Institution of Civil Engineers is supporting the scheme. It reckons towns need to spend £5.5 billion on road repairs and £1.7 billion to improve footpaths and streetlights. The pilot scheme could set down a map of best practice for other local authorities, the institution says.

YOU CAN get the latest design guides and technical knowhow, for free, by logging on to the new Interpave website, **www.paving.org.uk**

We've taken on board comments from across the industry in upgrading the site. New features include sections dedicated to designers and construction practice, more in-depth coverage of the products and their applications, and, of course, free downloads.

To get the most from the site, you'll need to tell us a little about yourself. But signing up is quick and easy.

IS YOUR REGENERATION PROJECT A CUT ABOVE THE REST? YOU CAN FIND OUT BY ENTERING THE 2004 PSLG/INTERPAVE AWARDS. THE AWARDS, JUDGED BY A PANEL OF INDUSTRY EXPERTS, RECOGNISE EXCELLENCE IN LOCAL AUTHORITIES' USE OF CONCRETE PAVING PRODUCTS IN PUBLIC SPACES.

THE STANDARD IS VERY HIGH. YOU CAN SEE THE 2002 AWARD WINNERS IN THIS EDITION, WHERE WORCESTER BEAT A STRONG FIELD TO TAKE THE TITLE FOR ITS DRAMATIC MAKEOVER OF QUAYHEAD SQUARE.

IF YOU THINK YOU HAVE WHAT IT TAKES THEN PRE-BOOK YOUR ENTRY PACK NOW BY EMAILING INFO@PAVING.ORG.UK. THE 2004 AWARD WILL BE PRESENTED ON 12 OCTOBER 2004 AT THE RICS HEADQUARTERS IN PARLIAMENT SQUARE, LONDON.

CASE STUDY

Block paving replaces asphalt road surfacing in historic town centre

Planners and engineers in Bury St Edmunds faced a major challenge. How could they preserve the heritage of a townscape dating back nearly a thousand years, and yet provide road surfacing equipped for present and future generations?

SET IN THE HEART of East Anglia, the ancient town of Bury St Edmunds is steeped in history and boasts a magnificent and varied architectural heritage. It grew up around the great Benedictine monastery founded in 1020 and several medieval buildings survive along with those from the 17th century through to the Georgian, Regency and Victorian periods. The town also has a rectangular grid street plan, laid out in 1068 and an early example of town planning.

One regular visitor to the town was Charles Dickens and in the Pickwick Papers he wrote 'the coach rattled through the well-paved streets of a handsome little town of thriving and cleanly appearance'. That description is just as fitting today, thanks to the replacement of asphalt highway surfacing in the historic core zone by concrete block paving, a material considered more worthy of this important location.

Bury St Edmunds District Council wanted an attractive and functional road surface in harmony with the townscape's natural materials – dressed stone, flint, handmade bricks and stucco render. It was also seeking a more economical and hard-wearing surface than asphalt, and to slow down motorists – without resorting to changes in road form.

The entire length of medieval thoroughfares such as Crown Street – site of the cathedral and 15th century St Mary's church – were resurfaced in block paving. The work has been phased over 12 years since the early 1990s. It formed part of the council's Environmental Enhancement Scheme, funded jointly by the council and English Heritage.

The first part of the project centred on Abbeygate, a pedestrianised shopping street facing the great medieval gate to the abbey. Here, for the only time in the project, clay pavers replaced the asphalt. The council's development services manager David Bradley says: "In its totality clay paving didn't coordinate with the other materials, being too assertive and actually competing with the townscape. We also found clay paving harder to maintain than concrete. It doesn't hold together so well and there were difficulties over dimensional stability and product consistency."

So the council adopted concrete block paving for the remaining schemes. It chose the irregular 'weathered' appearance of rumbled blocks in various sizes for increased pattern making potential. It picked charcoal with an extra strong tint for the carriageways, and a complementary red-brown for adjacent parking bays. The paving was meticulously detailed to indicate the

CONCRETE BLOCK PAVING HARMONISES WITH THE NATURAL MATERIALS OF THE HISTORIC TOWNSCAPE.

THE MATERIAL OFFERS A FLEXIBLE SURFACE WHICH IS CAPABLE OF BEING LAID AND RE-LAID TIME AND TIME AGAIN.

line of movement, with special attention to the direction of gauging and bond pattern. The composition of the blocks was another key factor. “The blocks comprised a crushed red aggregate, which meant we regarded the product more as reconstituted stone,” says David Bradley.

With the town’s historic core following a medieval grid, it is difficult to access the centre other than on the existing roads. “We can’t put in service roads or turning heads, so we’ve gone for a traffic management solution with controlled timing instead of more pedestrianisation,” says David Bradley.

“We were trying to influence driver behaviour by changing the signature of the road. Both the appearance and tactile value of the chamfered blocks and joint configurations contribute to this. We wanted to move away from blacktop, white lines and standard kerb heights and on completion of the work there were no white lines. Initially we received frantic calls from the public but motorists worked things out for themselves and the town centre is now effectively traffic-calmed. Moreover, a number of historic buildings with shallow foundations and cellars adjoin the carriageway, so we didn’t want to introduce the extra axle impact associated with speed humps.”

The council’s head of highways engineering Ian Brewster expects block paving to prove more economic than asphalt. “We expect a longer maintenance free period from our investment,” he adds. “Block paving gives a perfect, uniform road surface without the linear patching always apparent in blacktop. It offers a flexible surface which is capable of being laid and re-laid time and time again, in fact you just unzip it and reinstate it. What is more, in the historic zone the ground conditions are extremely disturbed, with differentiation in settlement. We have some subsidence but it is easy to rectify and reinstate uneven surfaces with flexibly laid block paving.”

The concrete block road pavements were installed by the council’s agent Suffolk Highways Contracting and local sub-contractor Archley Paving. The council has gone on to use block paving for carriageway resurfacing in the centre of Haverhill, the second largest town in the borough.

The experience of St Edmundsbury District Council indicates that on every count, concrete block paving provides a viable solution and a step up from asphalt for urban road enhancement, providing lasting value to highway operators and the public realm.

PAVING THE WORLD

paving stone a keystone

to Altoona's revitalisation

Call it what you will—the core, downtown, central business district, city centre – in every case it's really a city's living room. It's the place where life and commerce interact, a keystone location that supports and perpetuates citizens' notion of community. Successfully designed living rooms have flooring, furniture, plants, lighting and music that make you feel comfortable and Altoona's does that to you.

Altoona's living room accommodates about 52,000 residents. The 11th Avenue streetscape sets the stage for a variety of downtown civic events for them: the Fourth of July, Christmas tree lighting, Halloween, concerts, farmers markets, and the 500-rider Tour-de-Toona bicycle race. The city's stage flooring consists of interlocking concrete pavement for the plaza, sidewalk and streets. Its herringbone pattern enabled the designers, Icon Architecture of Boston, Massachusetts and Pellegrini Engineers in Altoona to integrate it into a repeated pattern of keystones, the omnipresent state logo for Pennsylvania and its historic railroad company. In addition, an existing mural depicting an earlier image of the

city provides a stage backdrop for the public square known as the 14th Street Plaza. Further reminiscences are found in an antique railroad car that serves as a city and local attractions information centre.

The streetscape was a collaborative effort initiated by a steering committee of downtown business owners and other stakeholders whose design was ultimately presented to and approved by the city council. The design came from landscape architect John Ryther, now with Icon Parks Design. In the late 1980s, he designed the downtown revitalisation scheme for French Square Park enveloped by the commercial core of Winthrop, Massachusetts. The success of that 1,600m2 project was pitched with Mr. Ryther's railroad logo design to Altoona's steering committee.

US federal ISTEA (Intermodal Surface Transportation Efficiency Act) funds provided 80 percent of the project with the remainder from the Pennsylvania Department of Transportation and city resources. The $4.2 million (£2.6 million) purchased 4,200m2 of interlocking concrete pavers, trees, lighting, furniture, street signs and banners. Mr. Ryther's project extends the railroad theme in the pavement to the plaza and furniture. The rollerblade area in the plaza doubles as an amphitheatre for outdoor concerts and the plaza reminds visitors of railroad architecture.

According to Dave Diedrich, Altoona's Director of Public Works, pavers were selected because "they enabled the keystone designs with a durable surface for traffic." About 100mm of existing asphalt was removed from the streets. There was still some asphalt remaining after years of overlays. The concrete base under the asphalt remained in place and undisturbed. Sand to a depth 25mm was placed on the asphalt and covered with 80mm thick concrete pavers. For the sidewalks, 150-200mm thick compacted stone base (PennDot 2A modified crushed stone) supports 25mm of sand and 60mm thick pavers. Geotextile was used under the base for the sidewalks.

The layout of the repetitive keystone pattern was carefully detailed in the drawings, almost paver for paver. This enabled the contractor to do the first one and repeat the pattern around the city square. By joining the pattern, it generates another entirely new pattern, and an entirely new living room for Altoona.

VISUALLY RICH AND INTRIGUING, CONCRETE BLOCK PAVING IS BEING USED TO CREATE VIBRANT PUBLIC SPACE ALL OVER THE WORLD.

THE REVITALISED TOWN SQUARE AT ALTOONA, PENNSYLVANIA, IS A FINE EXAMPLE OF HOW THE MATERIAL'S COLOURS, SHAPES AND PATTERNS CAN BREAK DOWN LARGE AREAS, CREATING A BETTER QUALITY ENVIRONMENT AND A SPECTACULAR PUBLIC STAGE.

CONTRIBUTOR'S PAGE

time to reconquer our neighbourhoods

Have you seen the first MATRIX? If not, rent it on video before you see the sequel. It's about a future world where machines have taken over. Each human lives in an isolated pod. This nightmarish vision of a world where human interaction is extinct is not just in the MATRIX.

Tom Franklin,
Director of Living Street

LIVING STREETS

It's a theme that plays on our deepest fears, because humans are sociable creatures. We like being around others – meeting them, or simply watching them go by. We like the unpredictability of human encounters, where any moment is never the same as the previous. Throughout history, we've formed ourselves into neighbourhoods, and created public spaces in which to share experiences. These spaces have served several purposes. They've been our market places, for exchanging goods and services; our meeting places, for passing information, culture and customs from one generation to another; and also our traffic spaces, for travelling from A to B.

But something profound has happened more recently. With echoes of the Matrix, we've slid towards public spaces created around the needs of machines – automobiles – rather than people. The insatiable desire for these machines to go further and faster has distorted our priorities. They've been allowed to take over. Many streets and public spaces today are simply traffic corridors, where the people's need for social exchange has been edged out. The consequence: neighbourhoods that are unwelcoming, where people don't linger, and neighbours have been replaced by residents. To measure the health of our public spaces, measure the number of people walking. Good public spaces attract people. Uninviting, mono-purpose streets frighten them away. The number of people walking in public space has dropped dramatically: we now walk one-fifth less than just ten years ago. We may use our cars instead, but there's little human interaction between two windscreens.

The good news is that this can be reversed – and in some places, it's already happening. We already know instinctively what works – we simply need to build and manage public spaces around the needs of humans. That means creating public spaces designed for people travelling at three miles an hour rather than thirty or sixty.

I recently visited Portland in the US, where they've been re-learning the art of public space. The US isn't renowned for people-friendly streets, but in Portland they've bucked the trend. Few of their streets are pedestrian-only, but bit by bit, they've taken road space back from cars to widen the pavements, giving people the space to move around. They've changed the road crossing priorities, so that people can cross where they want – and they're not herded around like sheep, penned in by the metal barriers that are so common on our streets. The extra pavement space has been filled with public art – lots of it. And with seating, so that humans can do what comes naturally: take a rest, converse, and people-watch. They've created space for young and old to play: water fountains for children to run through as if they're at the seaside; giant chess boards for adults to pass the time. They've beautified the street with flowers and trees. Planning permission isn't granted unless it includes tree-planting along the pavement edge. Buildings have been brought down to human scale, with all new developments requiring at least 75% 'transparency' on the ground floor, so there's plenty of interest for people walking by. And they've paid attention to the detail that humans like when they're walking around. Good quality paving materials, surfaces without obstacles or trip hazards, and even drinking fountains on street corners so the humans can refuel.

The not-so-good news is that it's going to require a monumental change in mindset if we're going to reconquer our neighbourhoods on a grand scale. There have been some stunning street improvement schemes in the UK, but they have largely been confined to prestigious centre of town locations. We need to apply the same principles to the places where people live. But the latent demand from people is huge and the payback will be equally great – because the streets define our lives. To adapt a quote from Churchill, "We shape our streets and afterwards our streets shape us."

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joiningforces

The surging growth in concrete block paving has led to the elite manufacturers and contractors uniting in one trade body. We look at what it means to training, product development and design – and why the days of the cowboy installer are numbered.

The policing of standards in the block paving business has taken a giant step forward with the merger of the industry's top trading associations.

Interpave, representing the leading manufacturers of concrete block paving, flag paving and kerbs, is tying up with Interlay, its well-respected counterpart for elite paving contractors and installers.

The first result of the tie-up will be a new training programme for block layers. The two bodies are drawing up the programme in conjunction with the Construction Industry Training Board, and hope to launch it later this year.

With Interlay now the contractors' arm of Interpave, that will mean far greater understanding on design and product development between manufacturers and installers – great news for clients.

"The impact of the amalgamation will be felt across the industry," says Dale McRobbie, the chairman of Interlay. "This will result in unprecedented co-operation within the block paving forum in our efforts to increase the information and the market place for our products and services and maintain the highest levels of professionalism."

The merger is also a direct result of the burgeoning growth in the sector. A record of more than 20 million square metres was laid last year as more and more clients catch on to the versatility, durability and the great looks of concrete block paving.

Unfortunately, this surge in popularity has also favoured inept installers. It's vital to eliminate these cowboy contractors as far as possible, if the industry is to continue going from strength to strength. "The industry simply cannot afford the horror stories that have characterised other building materials," says Interpave development director John Howe. "By amalgamating with Interlay, we advance together and together we will reap the rewards."

The standards demanded of members by both organisations are already widely recognised. For example, many major clients insist on paving contracts being undertaken only by Interlay members. Such clients include public authorities, top housebuilders, and major groups such as the British Airports Authority, which has used hundreds of thousands of square metres of concrete block paving for airside resurfacing schemes across the UK including Heathrow, Gatwick and Stansted.

The tie-up solidifies long-standing links between the two associations. Both are represented on the British Standards committee and had linked up on training, marketing and promotion. "For some time we have felt that a closer and permanent link with Interpave would add to the strength of Interlay and be to the benefit of all involved," Dale McRobbie adds.

The amalgamation will naturally bring about changes in the administration of Interlay, which will be moved to Interpave's offices in Leicester.

Dale McRobbie
Chairman of Interlay

suds | SUSTAINABLE URBAN DRAINAGE

SUSTAINABLE DEVELOPMENT WAS THE CENTRAL THEME OF THE UN EARTH SUMMIT AT RIO DE JANEIRO IN 1992. THERE WAS A COMMON CONCENSUS THAT FUTURE DEVELOPMENT HAD TO HAVE REGARD FOR ANY SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS, WHICH MIGHT EXTEND OVER MORE THAN ONE GENERATION.

In a similar vein, the term 'sustainable drainage systems', or SUDS, has come to mean a new approach to stormwater drainage which incorporates consideration of, not only, the social and economic aspects of drainage of land and property, but also pays due regard to the environmental impact of that drainage on both the immediate area and the wider catchment.

In the early 1980s, traditional means of drainage were recognised to be having a number of damaging impacts on the environment. These impacts were varied in nature and in their scope, ranging from the immediate vicinity of the drainage system to catchment scale and even extending to regions of the UK. The impacts included flooding, soil erosion, pollution, reduction of stream flows and water supply shortages. In the 1970s and '80s with the development of computers and computer modelling, much progress was made in the understanding of the hydraulics and hydrology of catchment drainage and, in particular, of urban drainage. The rates of discharge and the volumes of stormwater leaving an area during a rainfall event could be predicted. Quantity aspects dominated design thinking.

By the late 1980s, the water quality of these discharges also became a cause for concern. Around this time, the design of rural and agricultural drainage systems began to incorporate approaches which employed natural pollutant trapping and degradation processes. The re-establishment of meandering stream to slow the flow rates and the introduction of wetland vegetation to enhance pollutant trapping and degradation became common elements in such situations. It was rapidly recognised that such drainage enhanced the environment beyond even the water quality improvements. The habitats created encouraged flora and fauna and a stream, with its banks and vegetation, also provided a wildlife corridor, which could extend into towns and cities.

The successful combination of quantity-quality-habitat in the context of rural drainage design led to an initiative, which aimed to bring the same concept into urban drainage design. In 1992, a report entitled 'Scope for Control of Urban Runoff ' was published by the Construction Industry Research and Information Association (CIRIA), which set out some of the opportunities and methods which might be introduced. From that date, a series of publications followed from CIRIA, which incorporated quantity-quality-habitat aspects into urban drainage designs, most recently being reports 'Sustainable Urban Drainage Systems: Design Manual for England and Wales' (C522, 2000); a Best Practice Manual (C523, 2001); and C582 (2002) covering the design of pervious pavements.

the interpave permeable block

The Interpave technical committee are pleased to announce the availability of the Interpave Guide to the Design, Construction and Maintenance of Permeable Concrete Block Pavements. Since the decision to prepare and publish a guide was taken, we have consulted far and wide to bring together expertise not just from the UK but from around the world. We have done this to ensure that we were providing the best available state of the art guidance on what is a rapidly developing application for concrete block paving.

THE RESULTING INTERPAVE GUIDE FOR PERMEABLE BLOCK PAVEMENTS WILL ENABLE POTENTIAL USERS TO ADDRESS IMPORTANT DESIGN CONSIDERATIONS SUCH AS:

- SUSTAINABILITY – specifically, sustainable urban drainage systems (SUDS) – and the resulting environmental benefits.
- MEETING THE REGULATORY REQUIREMENTS relating to the drainage of surface water from around buildings introduced by the new Approved Document H (Drainage and Waste Disposal) of The Building Regulations for England & Wales and Part M (Drainage and sanitary facilities) of the Technical Standards (Regulations) Scotland.
- the opportunities for the REDUCTION OF RUN-OFF FLOODING
- the potential for the reduction of loads on SURFACE WATER DRAINAGE SYSTEMS.
- the opportunities for the NATURAL FILTRATION OF WATER through the pavement and/or the soil.

USEFUL CONTACTS :

CIRIA – CONSTRUCTION INDUSTRY RESEARCH AND INFORMATION ASSOCIATION
WWW.CIRIA.ORG.UK

ENVIRONMENT AGENCY
WWW.ENVIRONMENT-AGENCY.GOV.UK

By Professor Chris Pratt
of Coventry University

SUSTAINABLE DRAINAGE SYSTEMS (SUDS) DIFFER FROM TRADITIONAL SYSTEMS BY:

- SEEKING TO LIMIT THE DISCHARGE OF STORMWATER FROM AN AREA, BOTH IN FLOW RATE AND IN VOLUME;
- ENHANCING THE WATER QUALITY OF ANY DISCHARGE; AND
- INCORPORATING DEVICES WHICH PROVIDE HABITAT AND ENHANCE THE ENVIRONMENT.

It is not expected that SUDS will achieve all these aims in one device at one location, but rather that a series of measures and devices will probably be necessary. This has led to the concept of the 'surface water management train'. Limiting the discharge might be achieved by local storage of stormwater within the curtilage, such as in rainwater butts, or by discharging the waters into a soakaway. Enhancing the water quality of any discharge might be achieved by passing the waters through a device on the site, which encourages the retention of polluted sediments or provides biological treatment, such as a permeable pavement, pond or wetland. After site treatment, the onward conveyance of stormwater down the catchment might then include further treatment within the conveyance device, such as in a swale, or in a regional pond.

An aim is to reduce the demand placed on water resources and even to enhance those resources. Hence there is an emphasis on the infiltration of stormwater. The reason for this is three-fold: firstly, waters which are infiltrated locally do not contribute to flood hazard further down the catchment; secondly, such waters enhance the groundwater resources, or provide base flow to streams, which maintains their ecology during dry weather; and thirdly, it is important to maintain soil moisture for the benefit of trees and shrubs, which provide local habitat, so limiting the use of potable water for garden watering. After any local usage or infiltration of stormwater, SUDS look to progressively enhance both the water quality and the general environment with downstream movement of stormwater off the site, into the catchment and through the river basin.

There are already signs of the benefits of this new approach, even at this early stage in its introduction. The number of sites, both large and small, being developed with sustainable drainage is increasing daily and the range of techniques detailed in CIRIA's reports means that few sites are unsuitable for their inclusion.

pavement guide

The permeable pavements guide features the 2 types of concrete paving blocks found, from experience from around the world, to be the most reliable in performance terms. These are either shaped blocks which, when laid, form voids in the pavement surface or rectangular blocks having enlarged joints. The pavement is finished by having these openings and joints filled with a nominal 6mm aggregate. These designs allow water to pass freely through the paving layer and into the sub-base. Whilst normal jointing sand used with traditional concrete block paving would also allow the free passage of water initially, it would not remain free draining. The sub-base material should be designed and constructed so as to be able to retain all the precipitation from a storm and to release it slowly, either to percolate through the soil or to be drained through pipework or alternatively by a combination of the two processes. The guide describes the options for handling the release of water from the pavement and advises on the selection of the appropriate pavement for the site conditions.

Simple guidance is given for the 2 factors needing to be taken into account in the design of a permeable pavement; which are adequate water storage capacity and the ability to support vehicle loadings. To aid comprehension of the process of designing for these factors, a simple worked example is given.

Guidance is also given on the selection of pavement materials and on key aspects of the installation of the pavement.

The design guide concludes with a chapter on maintenance. Whilst correct maintenance should be beneficial in ensuring that a permeable pavement continues to function as designed for many years, experience indicates that under normal service conditions little maintenance of a properly designed installed and permeable pavement will be necessary.

THE INTERPAVE PERMEABLE BLOCK PAVEMENT GUIDE IS AVAILABLE FOR DOWNLOAD AT WWW.PAVING.ORG.UK

PSLG / INTERPAVE AWARDS

worcester paving the way

closely followed by Ipswich and Ceredigion

THE MAKEOVER OF QUAYHEAD SQUARE IN WORCESTER IS A CLASSIC CASE OF WHAT IMAGINATIVE DESIGN, GOOD MATERIALS AND QUALITY WORKMANSHIP CAN ACHIEVE, WITHOUT BREAKING THE BANK.

The project has just been crowned winner of the first awards sponsored jointly by Public Sector & Local Government magazine and Interpave. Worcester received unanimous approval from the award judges. It's easy to see why.

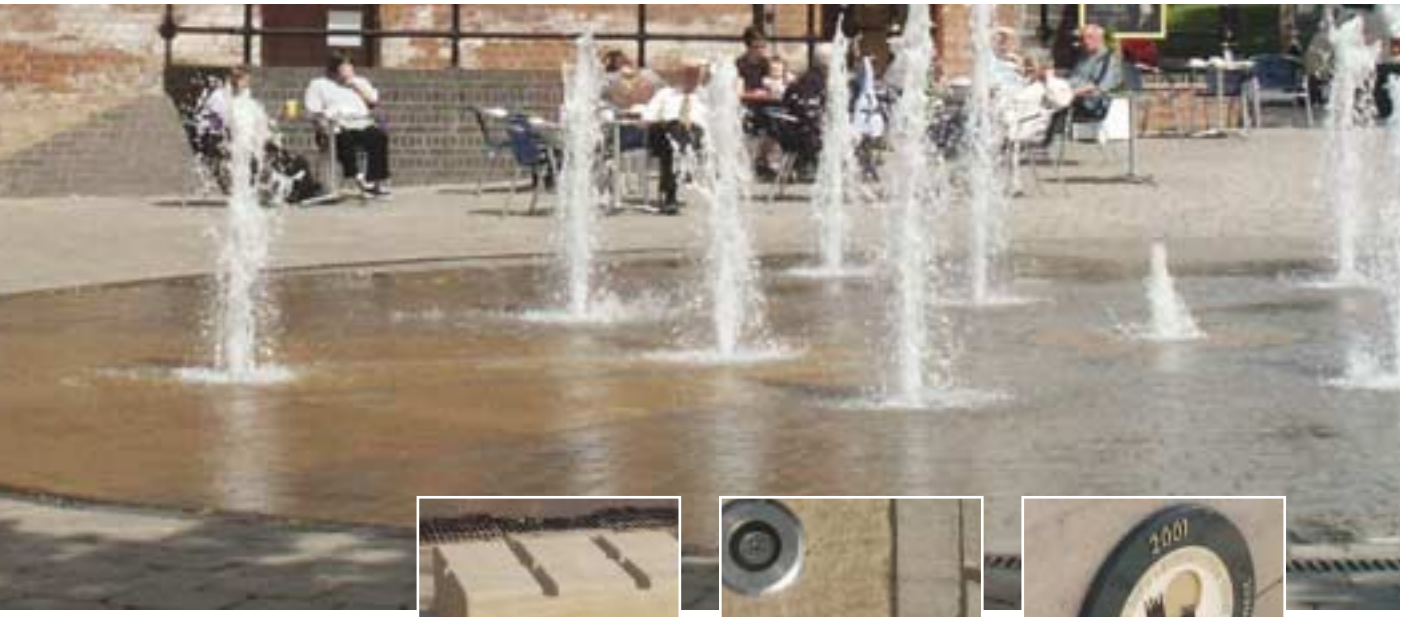
Previously a small stretch of tarmac highway fronting the River Severn, the area was prone to flooding and to abuse by vehicles. Pedestrian use was limited.

Now it's a key feature of the popular tourist town, drawing people toward the river and providing a venue for outdoor events. That's thanks to a combination of controlled water fountains, landscaping, lighting, and subtly toned and textured paving. It transformed a site that previously 'HAD HUGE UNREALISED POTENTIAL BUT NOW WAS VERY EXCITING AND WELCOMING,' the judges said.

The PSLG/Interpave awards, held at the RICS headquarters in Parliament Square, London, are designed to recognise excellence in local authorities' use of concrete block and flag paving in public spaces.

The panel of expert judges included Alan Adcock, head of highway management at Leicester City Council, Tom Franklin, director of the pedestrians' lobby group Living Streets, editor of PSLG magazine Sarah Sturt, British Precast Concrete Federation chief executive Martin Clarke and Interpave chairman Glen Sabin.

They set the bar pretty high. The contestants faced stiff tests on design,



overall improvements, integration with the surrounding area, value for money and in pleasing the public. 'Our new award scheme recognises that local authority regeneration policies are creating better quality environments right across the country, and sets out to reward the best of those schemes,' PSLG's Sarah Sturt adds.

The £462,000 Worcester project used flame-textured Yorkshire, tegula concrete blocks and keyblock concrete pavers.

Joint runner-up in the awards was the revamp of the 140-year-old promenade at Aberystwyth, entered by Ceredigion County Council.

The project included extensive new pedestrian paving, street furniture and lighting along the promenade's one-mile stretch. The materials had to be tough enough to withstand a battering from the sea during the winter months, yet still have the looks to lure the public. 'I found myself wanting to walk along that promenade and take in that view,' one judge said.

Second joint runner-up was the Northern Quays redevelopment on Ipswich Waterfront. This tricky project involved repaving the quayside road and the square around the Old Custom House, a conservation area amid listing buildings.

Prior to the redevelopment the Northern Quays was a run-down, overtrafficked area in 'VERY TATTY TARMAC'. Now it provides a user-friendly pedestrian walkway, access for business, parking, even a cycling path incorporating a National Cycle Route. It was 'an excellent example of a regeneration scheme which is welcoming and will attract investment to the area,' the judges said.

The winning team from Worcester City Council receive their award from PSLG editor Sarah Sturt

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