



e:Pave

News from Interpave

November 2011

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Accordia Cambridge
revisited
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track
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Interpave

THE PRECAST CONCRETE PAVING
AND KERB ASSOCIATION



www.paving.org.uk

digital magazine from Interpave



local hero

precast concrete sustainable paving

Precast concrete products from Interpave manufacturer members are produced locally on modern, automated manufacturing plant working as an essential part of the local economy and community, while giving effective national coverage. And they also satisfy the broadest sustainability criteria including:

- Low environmental impact endorsed by the BRE Green Guide, generally with A or A+ ratings
- Predictable and consistent characteristics for safe surfaces, accessibility for all and long-term durability
- Permeable paving options to take care of rainwater and meet Government obligations for SUDS
- An extensive palette of styles, scales, textures and colours for paving blocks, flags, kerbs and related products

Update your view of precast concrete paving and kerbs. For the full story visit: www.paving.org.uk/sustainability.php

Welcome

e:Pave is the digital magazine from Interpave for all those involved with the development and construction process – particularly designers, developers, planners and contractors. e:Pave takes over from Interpave's popular hard-copy magazine *Pave-It* and covers a wide range of current topical issues affecting the paved environment.

To make sure you receive future issues of e:Pave via email, register now on www.paving.org.uk. If you are viewing e:Pave on-line, look out for the live links within the text to take you straight to articles, related documents and web pages. And, of course, back-issues of *Pave-It* can still be viewed via the website with a summary of articles in each issue.

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On Tour with Permeable Paving – around Oxfordshire with a proactive approach to planning and adopting SUDS as mainstream.



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Concrete block and flag paving, and kerbs form a key part of the external materials palette at Accordia, Cambridge (pages 5-7)



Cover – top left image:

Precast concrete paved shared surface at Barnfield Avenue, Murdishaw (page 10)



About Interpave: Interpave – the Precast Concrete Paving & Kerb Association – represents the leading manufacturers of concrete block paving, flags and kerbs. Its main objective is 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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Essential Resource Relunched

Interpave has relaunched its Commercial paving and hard landscape website www.paving.org.uk. The latest improvements will ensure that it remains the definitive information resource on all aspects of the paved environment for architects, urban and landscape designers, planners, engineers and contractors.

The redesigned Interpave website now consolidates the extensive information available and highlights topical issues. These include master-planning and creating attractive spaces between buildings with the same care that designers apply to the buildings themselves. There is a complete section covering all aspects of sustainability including BREEAM and the Code for Sustainable Homes. It demonstrates how precast concrete paving and kerbing satisfies them, ranging from Green Guide A+ and A ratings to the benefits of a locally based industry.

Government guidelines

Interpave's website is referred to in the government's own guidelines because it contains essential information on sustainable drainage systems (SUDS) and permeable paving as a positive landscape amenity, as well as meeting new legislation. All these issues are illustrated with project case studies and, of course, you can download current and previous issues of e:Pave.

In addition to background information to help the widest possible audience, www.paving.org.uk includes separate, detailed design and construction guidance documents. They cover permeable and impermeable concrete block paving as well as flag and kerb products. A separate Domestic Paving website, also accessed via www.paving.org.uk, provides inspiration and guidance for drives, patios and other hard surfaces essential to creating and enjoying a beautiful garden. It also includes guidance on how to meet new legal requirements when installing or resurfacing driveways.



Keeping SUDS Law on track

Interpave has added its voice to a campaign resisting creation of a possible legal loophole, which would enable developers to avoid using SUDS.

Recent reports that provisions in SUDS National Standards, currently being prepared by the Department for Environment, Food and Rural Affairs (Defra), could include a 'get-out clause' are a particular concern. It has been suggested that this might allow developers to use alternative drainage methods where they can demonstrate that SUDS would be disproportionately expensive.

This move flies in the face of the coalition administration's intent of being *"the greenest government ever"*. It also significantly reduces our ability to defend against a repeat of the widespread flooding events seen in recent years where increased urbanisation and climate change have led to the sewer network being overwhelmed. The 2010 Flood and Water Management Act, which makes SUDS mandatory, is seen by many as an essential component in the fight against repeats of these flooding events and their cost in both financial terms and human suffering.

Cost-effective SUDS

The move could also be seen as unnecessary given the cost-effectiveness of SUDS schemes, particularly those incorporating concrete block permeable paving. Independent research commissioned by Interpave found that: *"concrete block permeable pavements proved the most effective paving solution over 40 years"* when using a whole life costing analysis. It also demonstrated that fully infiltrating permeable paving had the lowest initial costs wherever it could be used, when compared with various other impermeable paving materials using concrete block permeable paving with conventional drainage systems.

Apart from the Flood and Water Management Act, there is wide ranging encouragement to use SUDS techniques such as concrete block permeable paving. Government planning policy guidance throughout the UK already requires SUDS on all developments wherever possible, as does the new draft National Planning Policy Framework document. SUDS is also an important component of both the Code for Sustainable Homes and BREEAM 2011.

A summary of the cost research can be downloaded from: http://www.paving.org.uk/commercial/cost_of_paving.php

Accordia in 2011

Following on from Interave's original 2009 case study, we recently revisited the 2008 Stirling Prize winning Accordia housing project to review the latest progress and the success of earlier phases in use.

Accordia was the result of an unusual collaboration between three of the UK's most highly regarded architects. It was led by masterplanners Feilden Clegg Bradley Studios with associate architects Alison Brooks Architects and Maccreanor Lavington – working closely with landscape architects Grant Associates and other consultants. Although designed before publication of Manual for Streets, Accordia is an exemplary demonstration of its principles.



They serve more intimate shared surface mews streets for access to individual homes, paved wall-to-wall with concrete paving blocks in a distinctive pattern. A limited palette of hard surface – as well as architectural – materials was developed to reflect the local civic character, including precast concrete block paving, flags and kerbs, with sustainability principles in mind.



“Sustainability is important and products of UK origin – the more local the better – are used throughout, avoiding imported materials.”

Peter Chmiel, Grant Associates, 2009

Differentiated External Spaces

It includes a range of clearly differentiated external spaces allowing permeability of pedestrians and cyclists, as well as vehicles, throughout the site. Generous, tree-lined boulevards are vehicle free, containing play areas and other recreational facilities amongst the landscaping. Access roads into the site are of a modest scale with conventional raised footways delineated with enhanced finish precast concrete paving blocks.

At this stage in the development, masterplanning, applied through the planning system, appears to have ensured ongoing and consistent application of good design, detailing and implementation of the hard surfaces throughout, irrespective of changes in developer and designers.

Design limits traffic speeds

The overall design itself limits traffic speeds, enhanced by a considered use of different paving materials and other visual clues, rather than dedicated signage (which remains minimal) or traffic calming devices. Having said that, the ubiquitous 'table-top' junction has been transformed at Accordia to form small, landscaped 'Courts' or squares, offering far more to residents than just traffic calming. Here, precast concrete paving and kerbs are used in conjunction with other materials to define the space and develop an individual character for the project.



Other techniques have been used to develop a 'language' differentiating uses and priorities of paved areas. For example, a transition area highlights the entrances to mews courts directly from the access road, whereas a simpler border of block paving is used where mews meet raised courts. As more of the project reaches completion, the hierarchy of streets becomes more clear with the application of these techniques.



Limited Palette of Materials

Block paving and concrete kerbs combine with resin-bonded gravel and coloured macadam to give richness combined with restraint in material choice. As with all aspects of the project, the paving at Accordia succeeds through a considered application of a limited palette of materials with straightforward layouts and patterns. But importantly, the paving has been carefully detailed and executed on site with nothing left to chance – an approach that points the way for urban design generally.



"Concrete block paving is used in a straightforward way to provide 'grain' and help develop a sense of place."

Peter Chmiel, Grant Associates, 2009





'Tumbled' concrete block paving, with a randomly textured edge and one individual colour mix, is applied throughout with interest added by use of pattern. Extensive use is made throughout the project of precast concrete kerb and edging units with a consistent textured surface. They are used for conventional footway edges as well as within level, shared surfaces to delineate areas, and to contain planting areas. In addition, they form defined ramps to provide a simple, consistent building access detail for disabled people. Distinctive red concrete dished channels are also incorporated to channel water runoff where needed.



Attention to Detail

One particularly impressive aspect of Accordia is the attention to detail taken with paving. This mirrors the care taken by the designers in detailing the buildings themselves – often forgotten on other schemes. This exemplary approach looks holistically at all the hard surfaces from a visual point of view, as well as seeking to achieve long-term performance. Varying block laying patterns and delineation with concrete kerbs and edgings defines different areas. Ironwork has been thoughtfully detailed and integrated within paving patterns.



“The values of Accordia are those British cities need more of: a subtly controlling masterplan, a collaborative approach and an eye for both the detail and the big picture in the landscape and the architecture.”

2008 Stirling Prize Judges' summary.

Download the updated and expanded Accordia Case Study from: www.paving.org.uk/commercial/research_and_case_studies.php



green giant

precast concrete sustainable paving

Precast concrete products from Interpave manufacturer members have low environmental impact endorsed by the BRE Green Guide, generally with A or A+ ratings, with a firm commitment for continuing improvements transparent to stakeholders. And they also satisfy the broadest sustainability criteria including:

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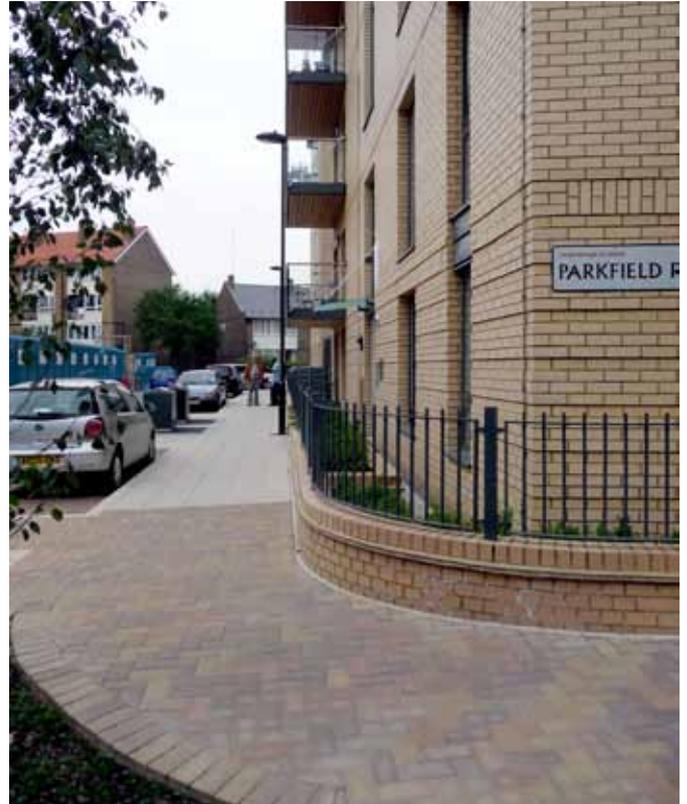
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Clapham Park – On Site

Last year one of Interpave's Masterplanning case studies looked at the work of PRP Architects, one of the world's largest multidisciplinary practices specialising in sustainable residential and mixed-use design. It discussed how precast concrete block paving, including permeable pavements, flags and kerbs form an important part of the hard landscaping vocabulary of a major multi-disciplinary practice involved with a diversity of projects.

We recently visited one of the PRP projects featured – Clapham Park in London - to see the first complete phase. In their Design Code, PRP set out to establish design guidance, both mandatory and advisory, for the built space at Clapham Park. This is to ensure that the implementation and construction of individual plots results in an architecturally coherent whole whilst integrating areas with different characters, senses of place and community.

One of its overarching principles is *“the unification of the site by use of a simple palette of hard landscaping materials, creating a landscape language that links the overall site.”* It proposes a selection of materials including concrete paving blocks in various sizes, patterns and colours to suit specific areas, concrete paving flags including tactile ‘blister paving’, as well as concrete kerbs and channel edgings. These products meet the Code's requirement for BRE ‘Green Guide’ A-rated constructions and locally sourced products. Permeable paving further enhances this sustainability ethos.



Concrete flag paving and multi-coloured block paving form part of the simple palette of materials.



Precast concrete kerbs used both flush and traditionally to raise footways, with ramped crossings defined by 'blister' paving.



Concrete block permeable paving used for internal courtyards contained by residential blocks.

Download the PRP Architects Projects Case Study from:
www.paving.org.uk/commercial/research_and_case_studies.php

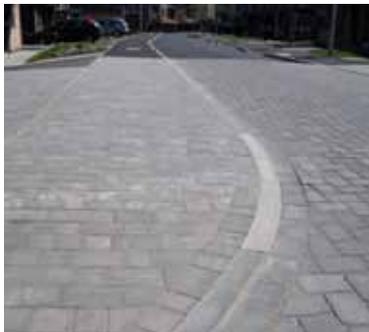
Streets of contrast

A new social housing project near Runcorn demonstrates a vivid contrast between conventional asphalt residential streets and concrete block paved shared surfaces.

The Barnfield Avenue project in Murdishaw, designed by John McCall Architects for Riverside Housing Association and Liverpool Housing Trust, provides a mix of housing, some for rent and others to be offered on a shared ownership basis. The 74 homes will be inclusive and cover single people, couples and families. They offer a mix of bungalows, apartments and 2, 3 or 4 bed houses – generally with open frontages, within-curtilage parking and secure private gardens to the rear.

Whilst the majority of the scheme is single or two storey height, three storey feature blocks have been located at key junctions in order to give the scheme a distinctive presence. Although conventional in layout, the streetscape is defined by extensive areas of concrete block paved, shared surfaces based on Homezone principles. These areas successfully meet the architects' aspiration for outdoor spaces designed to encourage social interaction.

They are linked by short sections and turning areas in asphalt with conventional raised footways and regular drop-kerb crossovers. This contrasts with the uniform surface of the block-paved areas, enriched by the textures and tones provided by two different block paving systems. Concrete kerbs laid level and reinforced by block string courses help to delineate spaces. Concrete block paving is also used extensively throughout the project for footpaths and driveways.



With thanks to John McCall Architects for help with this article and providing some of the photos shown here. Interpave's guidance on Homezones can be downloaded at: www.paving.org.uk/commercial/designing_home_zones.php

Kerbing Buses

Recognising the importance of public transport in helping to cut carbon, the Greater Manchester area is in the midst of a bus stop upgrade programme, which has already seen more than 1,400 upgraded. Central to these improvements is to raise the stops for easier access on and off buses. Here, dedicated concrete kerb units, supplied by an Interpave manufacturer member, are being used to generate a seamless junction between low-floor buses and bus stop paving.

The roadside wall of the kerb guides the vehicle into the optimal stopping position, leaving a maximum gap of just 50mm between vehicle and kerb. This not only improves

passenger safety - especially for wheelchair users, those with limited mobility and the visually impaired - but also reduces delays and expensive wear and tear on vehicle tyres. Concrete flags and block paving borders also form part of the bus stop improvement package.

For more information on the diversity of concrete kerb products available today, visit:
www.paving.org.uk/commercial/kerb_appeal.php



Cape Paving

Another Interpave member has been working with its South African partner on concrete block permeable paved parking areas of a new multi-million social housing development in Steenberg, a 'restructuring zone' and suburb of Cape Town. This 450-unit housing development, undertaken by the Social Housing Company (SOHCO), is the first social rental housing project in the Western Cape.

Following the launch of the revised Management of Urban Stormwater Policy by the City of Cape Town, with particular focus on SUDS, and situated on flat terrain underlain by aeolian sands, this site was seen as the perfect opportunity to use permeable paving. Some 5,500 m² of concrete block permeable paving deals with surface run-off as well as roof and verge flow. The infiltrating permeable pavement stores and treats water before it filters downwards to the underground aquifer. There is, therefore, no impact on the existing infrastructure or watercourses.



On Tour with Permeable Paving

Barry West has long and varied experience in local government encompassing architectural, drainage and engineering departments, before joining Oxfordshire County Council in 1991 as Section 38 Manager and Adoptions Officer. He has always been keen to promote progressive layouts and drainage systems.



Oxfordshire County Council has been taking a positive and pragmatic approach to adopting streets and other areas using concrete block permeable paving for some 15 years. Interpave spent a day out with Highways Adoption Officer Barry West looking at projects old and new around the County.

At Oxfordshire CC, SUDS is considered an essential component of any development and concrete block permeable paving mainstream technology, as Barry West outlined: *“With hundreds of permeable paved schemes around the County now, we have developed real confidence in the technology and how it performs. We have had no problems with any permeable pavements – even during the 2007 summer floods. Of course, lessons have been learnt over the years: for example, maintenance is now far less of an issue for us. This modest scheme in Standlake (1) is a prime example with ground water just 18” below the paving surface, immediately adjacent to the River Thames and some lakes.*



Designing for Services

“During its 10-year life, the paving has been cleaned just once and it remains problem-free. Another scheme, The Fairways in Kennington (2), is not adopted and has never been swept in the 5 years since installation. This project also demonstrates an important lesson: to keep service runs out of the permeable paving. Instead, services run in verges or impermeable paving. Impermeable block paved service crossings, which we like to highlight visually, then cross the permeable pavement. Another permeable paving benefit on this scheme is the absence of standing water on level areas such as pedestrian crossing points.”



Concrete block permeable paving is particularly popular for high density, urban projects, combining paving and drainage in a single attractive hard landscaped area with no additional land-take. The Penlon project in Abingdon (3) is a clear example of this benefit. However, permeable paving is equally applicable to low density rural developments, such as the live/work, rural barn style development in Kirtlington (4). Barry West added: *“In 2008, a decision was made at County level to insist on SUDS for all developments – irrespective of type, location or density. This ties-in with national planning policy, as well as the draft National Planning Policy Framework, and is seen positively by many designers in helping to meet the Code for Sustainable Homes and BREEAM.*



Treating Water as an Asset

“Of course, permeable paving can be used wall-to-wall as a shared surface on high density schemes, such as this housing project in Littlemore (5). But it is particularly effective as a source control tool at the head of the SUDS management train, treating the water for pollutants, reducing and slowing flows then feeding other SUDS features. In fact we are turning our attention to making use of the clean water from permeable paving for other uses – treating it as an asset, rather than a problem. On the major new Great Western Park development of 3,300 homes, 3 schools and 3 commercial areas in Didcot, water from permeable paving will be used for allotments and ponds. Here is an example (6) of permeable paving under construction on the first phase, incorporating an impermeable block-paved service crossing.

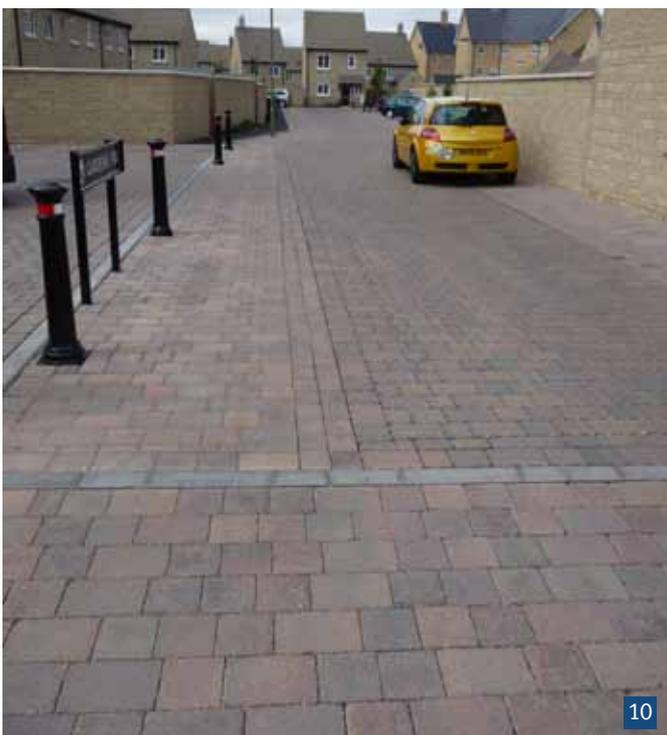


“Another benefit of concrete block permeable paving is its adaptability to fit into different urban designs, with a wide choice of styles and colours. We see it applied to conventional layouts using raised footways and concrete kerbs, as at Tower Hill in Witney (7) as well as shared surface and home zones. The latter approach has been used extensively throughout Shilton Park, a growing area of Brize Norton. Much earlier phases use block paving for attractive shared surface areas, but with conventional drainage (8). Later phases are permeable paved but give a similar character (9) and, again, areas of impermeable block paving are used for footways containing services (10).



Adopting – Best Practice

Of course, for most of these housing schemes we have seen here the street paving – including permeable – has been adopted by the Highway Authority. But what happens when the Flood and Water Management Act finally takes effect? Barry West explained: *“We have been using Section 38 agreements to adopt concrete block permeable paving for a decade or so – and it works well, particularly when all parties are involved from the very start of the planning process.”*



10



11

“Developers have nothing to fear as there should be initial cost savings for permeable paving without conventional below-ground drainage and no worries about surface cross-falls. We do charge a ‘commuted sum’ for maintenance of permeable paving but aim to reduce this based on our growing experience and the minimal maintenance actually required. And we have already put in place what is needed to operate as a ‘SUDS Approving Body’, so that when the new Act does take effect, it will be business as usual!”

We mustn't forget that the new Act, SUDS and concrete block permeable paving are not just for housing. We ended our tour of Oxfordshire at the recently completed Bicester Avenue retail park where the extensive car parking (11) is all permeable paving, at the head of the SUDS management train. But step inside the massive garden centre complex and the concrete block permeable paving continues (12) throughout sales and storage areas – a truly sustainable paving solution.



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Interpave thanks Barry West for his help in preparing this article.

Interpave has just published a Case Study looking at the work of Oxfordshire County Council in promoting and adopting permeable paving and SUDS. We shall also be covering major new masterplanned projects in the County over the coming months.



raining champion

precast concrete sustainable paving

Precast concrete permeable paving is a unique SUDS technique used, with no additional land-take, to minimise, slow down and clean up rainwater runoff – an essential part of the fight against flooding. And products from Interpave manufacturer members also satisfy the broadest sustainability criteria including:

- Low environmental impact endorsed by the BRE Green Guide, generally with A or A+ ratings
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