

FOCUS

TAKES BLOCK PAYING BACK
TO BASICS

BRINDLEYPLACE

THE UK'S LARGEST
MIXED USE CITY
CENTRE DEVELOPMENT

TECHNOLOGY

NEW CAD DESIGN TOOL

INNOVATIONS



Welcome to the first edition of **Insight** - a new magazine focusing on the way in which the built environment is developed and enhanced by the vision and

inspiration of design professionals working in the construction industry.

Good design forms the heart of any project but the specification of building materials is as crucial to its success.

Each issue will cover a series of in-depth reviews examining product development areas and market trends.

Insight also focuses on a number of case studies which, with the creative use of building materials, highlight the specifier's design requirements and the successful results that can be achieved.

In this issue we take a look at the UK's largest mixed-use city centre development - Brindleyplace in Birmingham and an innovative paving scheme in London's East End.

Block paving is increasingly being used to replace other traditional surfacing materials yet, for some, the advantages are not clear cut. **Insight** reviews the potential of block paving and examines some of the different schemes where it has successfully been put to the test.

Insight also reviews how computer aids can help the specifier in particular Streetscape 2 - a new AutoCAD add-on system offering a sophisticated detailing and drafting facility for paving and landscape design.

Further information relating to subjects covered in this edition can be received by ticking the relevant boxes on the response card in the centre of this publication.

I hope you find **Insight** of interest as well as a valuable source of information and ideas for ongoing referral.

If you have any comments or indeed would like to contribute to a future edition please contact the editor at the address below.

Rachel Brown
EDITOR

Insight is published by Marshalls,
Southowram, Halifax HX3 9SY.
Telephone: 01422 306000
Direct Line: 01422 306026
Facsimile: 01422 330185
<http://www.marshalls.co.uk>

Comment

The struggle for quality

By Sir Michael Latham

Immediate Past Chairman, Construction Industry Board.

Architects and Engineers have a key role to play in raising standards in the construction industry. They strive for excellence in design but they can also influence quality in the choice of materials and components. Both the professional consultants and materials manufacturers are directly represented on the Construction Industry Board and are taking a very active role in the implementation of the report 'Constructing the Team'.

Much attention has been given to my recommendation that the industry should seek to reduce its real costs by 30% by the year 2000. That is the core aim of the CIB, and involves clients equally within the industry.

That target is not about cutting fee bids, tender prices or margins which are often pathetically low. It is about extracting costs which add no value but also about achieving real quality, and paying properly for it. It involves helping lay-clients in the public and private sectors to understand the procurement and briefing process to get the best out of their designers. It insists that consultants be chosen on a basis of quality, not just price. It requires a massive cultural change by clients and the whole supply side.

The new emphasis on partnering, now being led by some major clients, is at the heart of this approach to non-adversarial real cost reduction. It must embrace the whole supply side, including consultants and manufacturers, if it is to be truly effective.

The CIB also exists to provide a coherent voice for the whole construction industry, in conjunction with government and other clients. 'Constructing the Team' urged the government to take a lead by improving its own procurement performance and raise it to best practice standards. There was a positive response. The 1995 White Paper 'Setting New Standards' and Sir Peter Levene's report both spelled out that it is now official government policy to move away from a lowest price approach and assess bids and tenders on quality as well as price. Following these reports, the machinery has been set up throughout Whitehall to require these changes to be implemented on the ground by departmental project sponsors and project managers.



Sir Michael Latham

The CIB must monitor closely how the implementation process is proceeding. The policy and structural pieces are now in place to raise procurement standards at all levels in the public sector. It remains to be seen if there is also the political will to drive those changes through.

Contents

4-7

Focus

Increasingly, block paving is being specified on schemes throughout the UK. **Insight** takes a look at the key benefits of block paving with illustrative case studies.

7

What's New

Introducing a selection of new block paving choices for the specifier.

8-9

Innovations

Leading the way with Petrapave - the UK's first sealed paving system. Soft landscaping solutions with new tree pit surrounds. Go Slow - innovative traffic calming features.

10-13

Solutions

Case study focus on Brindleyplace.

Natural Stone Solutions.

Drainage Detail - the importance of surface water drainage.

Gilpin Square - creative inner city paving.

New Cycleway Paving.

14-15

Technology

High Standards - raising design specification in the housing market with pre-cast concrete flooring.

Technical Boost - a new series of Symposia for construction industry personnel.

Untapping autocad resources in the workplace.

16

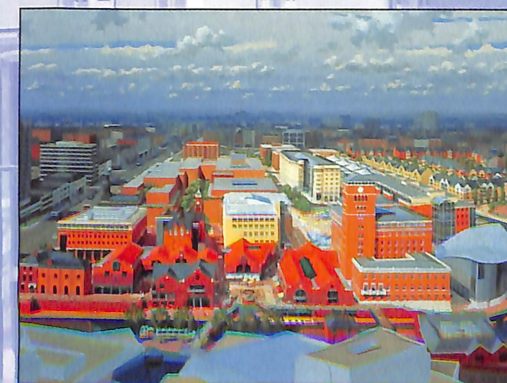
New Literature Showcase



Block paving bringing design quality to a range of schemes.



Sealed paving technology.



Brindleyplace - the UK's largest mixed use city centre development.



Design developments using Streetscape.



Trinity Container Terminal, Port of Felixstowe

Back to Basics

From small beginnings more than 20 years ago, the UK block paving market has grown substantially. *Insight* examines the key elements which make block paving such a successful material.

So why are more specifiers choosing block paving over and above other traditional surfacing materials such as black top and insitu concrete? The answer lies in the key benefits it offers the civil engineer, architect, contractor,

developer and end user alike. Block paving's physical performance, aesthetic appeal, ease of reinstatement and whole life costings make it the preferred choice in a wide range of different applications.

Super Strength

Block paving is renowned for its ability to accommodate extreme point loadings. This strength has led to its widespread use at docks, airports and heavy industrial sites.

The strength of the pavement is achieved through the unique interlocking properties of block paving - a process which prevents blocks moving relative to those adjacent to it. When heavy point loads are applied this interlocking action dissipates load sideways and downwards into the sub-base.

Flexible

Similarly, if the underlying material moves, block paving is flexible enough to follow the line of settlement without losing its integrity.

It was partly for this reason that block paving was specified at the Trinity Container Terminal, Port of Felixstowe - Britain's largest container port. The land on which the terminal is located was reclaimed from the sea using sea dredged ballast. Whilst treatment to stabilise

the land was undertaken, settlement of up to half a metre was still expected to occur in some areas.

Specifiers for the Port of Felixstowe chose block paving because it would remain structurally sound under such extreme circumstances plus minimise disruption and costs caused by surface repairs.

Since the first installation in 1986 of 200,000 sq.m. of Keyblok, it has successfully stood the test of time, settlement and heavy usage. Furthermore, block paving has since been used on two further development phases.

Long Life

Block paving's inherent strength makes it a hard wearing surface with a potential lifespan of more than 40 years based on widespread European experience.

Andrew Padley, managing director of Wakefield-based Cobra Railfreight began testing block paving in 1984 in a bid to find an effective surfacing material which could handle extreme point loading, heavy machinery and bulk storage.

Black top and insitu concrete had previously broken up at Cobra Railfreight, which operates 80 tonne side loaders, industrial fork lift trucks and stores thousands of tonnes of potash and steel at its two sites.

After successful tests, Marshalls Eskoo Six machine laid block paving was installed and 12 years on it is still performing. Commenting, Andrew Padley said: **"The blocks have successfully withstood some of the most punishing treatment. They have resisted major damage caused by heavy duty vehicles and borne the brunt of industrial bucket loaders transferring thousands of tonnes of materials day in day out."**



Standing the test of time - Marshalls Keyblok at Euston Bus Station.

Slip/Skid Qualities

Due to block paving's excellent slip resistance properties, it is increasingly being used on highways and footways from town centre and residential roads to bus stations and pedestrian crossings.

London Transport Buses specified Keyblok at Euston Bus Station some 18 years ago. More than 3 million bus movements later it is proving its worth as a surface capable of withstanding heavy trafficking. The success of Keyblok has led to specification of block paving at 40 London bus stations and bus stands including Liverpool Street, Kingston and Stratford.

The Reinstatement Factor

Access to services laid beneath carriageways and footways, and the increasing activity of cable TV companies, have resulted in roads and footways throughout the UK being dug up and re-laid. Consequently, the ugly scars of patching is all too common.

One of the key benefits of block paving is its ability to allow easy access to underlying services. The paving is lifted or 'unzipped' and following maintenance work re-laid with virtually invisible reinstatement. Additionally, lack of exposed joints avoids water and frost damage which often leads to the early failure of other reinstated surfaces.

Reinstatement can be carried out relatively quickly under most weather conditions and the area trafficked immediately after work is complete. Minimising costs further blocks removed from the repair area can often be re-used.

Whole Life Costings

In the long term, concrete block paving offers significant cost advantages over alternative surfaces.

Its longer lifespan, effective reinstatement properties, recyclability and low maintenance requirement reflect favourably when comparing costs over the whole life of a pavement.

Whilst many specifiers choose block paving for its physical capabilities, substantial growth in usage is also due to its aesthetic appeal.

The rapidly expanding choice of colours, shapes and finishes offers the specifier a vast design palette which works in harmony with all environments. From traditional conservation schemes through to contemporary projects, the designer can use block paving to create visual impact.

In contrast, there is also a strong trend towards simple, more natural paving designs which complement yet set off surrounding architecture to its best advantage. Use of subtly coloured block paving setts and cobbles, with an 'instant' aged appearance, are proving to be particularly appealing in conservation areas and where the character of traditional architecture is to be retained.

New texturing techniques and different aggregate mixes also offer greater scope for scheme design, especially when used in conjunction with other products such as concrete flag or natural stone paving.



Nori Clay Pavers used at Huddersfield New Street, West Yorkshire.

Added Value

The enhanced appearance of block paving not only goes towards creating a visually attractive environment but gives an overall impression of prestige and quality.

This perceived added value is recognised by an increasing number of developers looking for greater commercial benefits.

In the domestic housing market, block paving is replacing black top and insitu concrete on driveways, footways and estate roads. In the commercial world, it is being incorporated into the entrances and landscaped areas of business developments.

Preferred Choice

Findings in a survey carried out by Sheffield City Council's Design and Building Services in 1992 echo the popularity of block paving and led to changes in estate road specification.

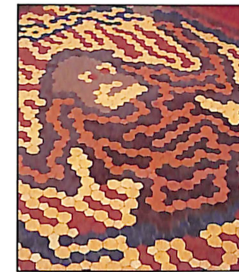
The research, amongst 2,000 local residents, examined preferences for block paving or black top on new shared surface roads, these being residential roads without footways where vehicles and pedestrians share the same access to dwellings.

More than 80% of people living on a block paved road preferred it to black top and two thirds felt drivers took more care when driving on block paving. Block paving is also preferred in both public and private sectors. The report concluded that all new shared surface roads should be constructed in block paving. It was also stated that the capital costs of providing block paving would be only marginally greater for developers than black top because of its durability, long term maintenance benefits and therefore, lower long term cost. In light of the report's findings, Sheffield Design and Building Services has changed the specification of all shared surface estate roads to incorporate block paving as standard construction.

Even in such a relatively short time, block paving has developed into one of the most appealing surfacing materials available to specifiers and client alike, and it looks like a success story that is set to run and run.

ENQUIRY CARD NUMBER 1

IT'S Amazing



The rich vibrant colour, abrasion resistant properties and Marshalls' ability to create special shapes were the reasons behind using more than 3,700 purpose made clay pavers to create the centre piece of the new Darwin Maze at Edinburgh Zoo.



Two sizes of five and seven sided Clay Pavers in Allendale Gold, Sherbourne Red, Rushmere Brown, Ketley Blue and Ferndown Rose were specially manufactured and laid to form a paving picture of an orangutan, one of the world's most endangered species.

In addition, 360 square metres of rectangular NORI Clay Pavers were used to form a DNA spiral design along the upper terrace.

The hedge maze, believed to be the largest in Scotland, also contains 1,600 yew trees twisting around 642 metres of pathway. It is based on the theme of evolution and named after famous naturalist Charles Darwin.

Adrian Fisher, award winning designer of the Darwin Maze said: "We have used Marshalls Clay Pavers on a number of other maze projects for their rich, contrasting colours and consistency of quality. Its durability and abrasion resistant surface is also very practical for mazes which attract thousands of people."

Portsmouth-based Adrian Fisher Maze Design has completed more than 135 mazes world-wide. These include over 20 in decorative block paving for shopping centres, pedestrian precincts, schools and courtyards.

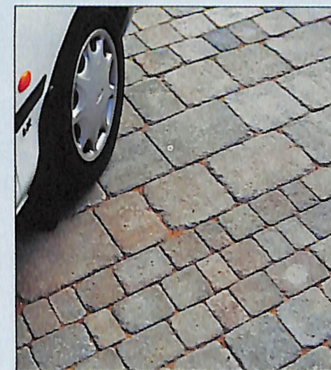
ENQUIRY CARD NUMBER 2

What's New

Expanded Design Potential

The design potential of creating different laying patterns has been enhanced with the introduction of four new sizes to Marshalls Tegula range.

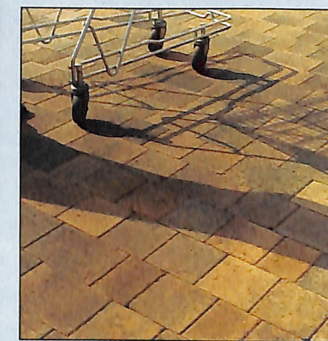
The new blocks have now created three distinct gauges or course widths which can be laid in combination with each other to form an extended series of random laying patterns. Other patterns such as herringbone and off-set herringbone can be achieved and the gauge choice of the Tegula portfolio can also reflect or change the perceived scale of an area.



To further complement traditional architecture, conservation schemes and landscaped areas throughout the country, both the 60mm and 80mm Tegula range is now available in two new colourways, Pennant Gray and Harvest Buff.

ENQUIRY CARD NUMBER 3

Savanna



ENQUIRY CARD NUMBER 4

Savanna offers the appearance of traditional, smooth sawn sett paving. Manufactured with a fine pencil edge chamfer, Savanna has a smooth running surface. This, however, continues to maintain its required skid resistant properties and is equally suitable for heavily trafficked areas as well as light duty and pedestrian use.

Savanna's three modular sizes, available in both Brindle and Burnt Ochre, permit the characteristic coursed, random jointed style of laying.

New Alternative to Natural Granite

Where the high cost of natural granite setts sometimes precludes their use on paving schemes, new Conservation Setts offer designers an economical yet authentic alternative.

The setts, made from selected granite aggregates, replicate the appearance and durability of natural granite setts and complement areas of high architectural and aesthetic value.

Design scope is enhanced by the setts' different surface finishes. They can be installed with a sawn or cropped face uppermost using either flexible or rigid construction.



Manufactured in three sizes, the setts can be laid in random courses, as feature banding or as a kerb/edging system.

ENQUIRY CARD NUMBER 5

New Sealed Paving System



Petrapave "The surfacing for the future".

Following three years in-depth research and rigorous testing, Marshalls has developed Petrapave - a high density concrete block paving with an elastic polysulphide joint sealant.

This sealed paving technology is set to have a significant effect on the specification of surfacing materials for petrol forecourts. It also has potential in dairy and brewery applications, tanker parks and waste management depots. In fact, any situation where organic compounds and hydrocarbons could contaminate soil or ground water.

In many European countries, legislation dictates that where there is risk of toxic liquids or substances polluting local water courses or underlying ground, a sealed surface material must be installed with drainage and catch pits provided to deal with accidental spillage. Since 1988, 2 million square metres of sealed block paving have been laid in the Netherlands and Germany alone.

"The Petrapave system has been developed for the UK market in anticipation of more stringent legislation from Europe. Similar systems are widely used in Holland and Germany on petrol forecourts where sealed pavements are compulsory"

said Bill Jackson, product development manager.

Growing concern about liquid contaminants percolating into the subsoil and the potential build up of hydrocarbon residues under petrol forecourt areas has led to the development of, what is believed to be, the UK's first fully sealed paving system.

"This forward thinking approach means UK specifiers will be fully prepared for likely changes in legislation from Europe."

Petrapave is a high density concrete block paving, roughly 300mm x 420mm x 100mm, with spacer nibs for accurate laying and a shoulder detail to accommodate the sealing system. Petrapave also incorporates chemical blockers specifically designed to further prevent petrol, diesel and oil penetration.

Petrapave's physical properties are complemented by its hexagonal shape and colour options which can enhance the scheme's appearance and offer the additional benefit of disguising spillage stains.

Petrapave is laid in a similar manner to conventional concrete block paving and works in conjunction with a joint sealing system applied to the paving joints after laying.

The sealant is a high specification, two part polysulphide compound which possesses the resistance to more than 100 different chemicals. When correctly applied, it prevents penetration of, and has long term resistance to, petrol, diesel and mineral oils. It will also withstand extreme climatic conditions and can accommodate minor deflections in the pavement without losing integrity of the sealed joint.

The sealant, qualified to the KIWA C50 specification under certificate K7462, is solvent free and self levelling. It is installed by specialist sealant application companies using



Applying the joint sealant to Petrapave.

a purpose built, computer controlled machine which has been developed to ensure precise component mixing, constant temperature and uniform flows.

The Petrapave system is creating considerable interest from a number of parties including petrol stations, fire authorities and supermarket chains, and has already been installed on two petrol forecourts.

Sherdley Park Service Station at St Helens is the first scheme in the country to have the Petrapave sealed system installed. This flagship site for Cooke Petroleum features a 640 square metre forecourt paved with Petrapave in Brindle and Charcoal colourways. The forecourt was completed in five days and all curing conditions were adhered to despite extreme weather conditions.

Specification of Petrapave by architect Keith Watmuff for Cooke Petroleum was heavily influenced at the planning stage by potential changes in environmental legislation and the strength of current lobbies in this arena.

In addition to Petrapave's high performance as a sealed surface, it also offers the advantages of normal concrete block paving.

Petrapave is quick to lay which is particularly beneficial for large applications and can be trafficked within 24 hours. The multi-directional interlock also gives excellent load bearing capabilities.

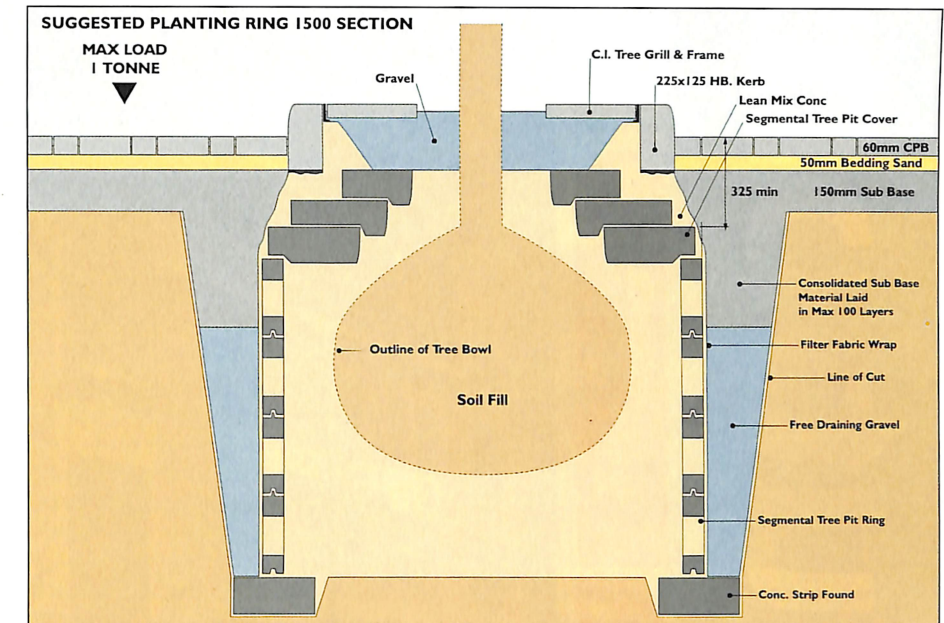
Underlying services are easily accessible by breaking the seal and lifting the paving away. Scarfree reinstatement and resealing is carried out without any loss of pavement integrity.

"There is no doubt that this is the surfacing for the future," added Bill Jackson.

Because the nature of installing the Petrapave system is a specialist process requiring suitably qualified teams, specifiers should contact Marshalls Technical and Advisory Department on 01422 306000 for further details.

ENQUIRY CARD NUMBER 6

Soft Landscaping Solution



How the Segmental Tree Pit Walls work.

The instant greening and softening of newly installed hard surfaces using semi-mature trees is growing in popularity, particularly as the number of out of town shopping centres with large car park areas continues to rise.

However, conflicting requirements of the tree and surrounding pavement have, in the past, led to settlement problems and fracturing of the surface material.

Whilst the pavement encircling the tree requires an adequately compacted sub-base to avoid settlement damage, confinement or any excessive pressure on the tree's root ball will restrict healthy growth.

To overcome this problem Marshalls has developed a novel solution using one of its existing products. Segmental Tree Pit Walls, based on the design of Segmental Soakaway Systems, provide natural growing space for the tree roots yet at the same time give support to the pavement material above.

The Segmental Tree Pit Wall comprises a series of circular, precast concrete segments with preformed apertures which permit the flow of water and allow virtually unrestricted migration of the tree's roots.

Close to the surface, a sectional capping system allows kerbs and/or edge paving to be bedded directly onto the tree pit structure without in any way, obstructing the root ball. Pavement compaction can be carried out without risk of damaging the tree and conventional cast iron tree grills can be installed normally, if required. The system also offers ease of replacement if the original tree dies or is seriously damaged.

The Segmental Tree Pit Wall is ideally suited to retail or commercial car park applications where regular vehicular loads will be applied close to the tree base.

ENQUIRY CARD NUMBER 23



Inventive traffic calming measures.



GO SLOW

It has been estimated that eight out of every 10 urban roads is potentially eligible to be part of a 20mph zone and improving safety levels on the highway is fast becoming a major focus for transport and traffic policy.

This traffic calming measure on an estate road in Colchester highlights key elements for a scheme requiring effective slowing of traffic, (top left).

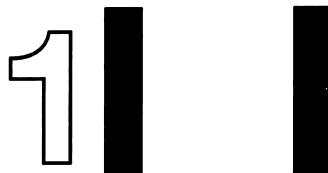
The Speedcheck road hump has a central pedestrian refuge, clearly marked with Black and White Coated radial Keykerb plus warning signage. Tactile paving leads the visually impaired pedestrian to and across the road whilst brick planters also act as protection barriers.

A solution to harmonising modern traffic calming measures with traditional architecture is shown in this second example, (bottom left).

A speed cushion formed using Speedcheck has been in laid with Tegula block paving. Detailing is also highlighted with the inclusion of White Coated Keyblok, cut and laid into the blocks forming clear directional arrows.

ENQUIRY CARD NUMBER 7

BUSINESS REPLY SERVICE
Licence No. 223



Rachel Brown
Editor - Insight Magazine
Marshalls Mono Limited
Southowram
Halifax HX3 9SU

Mr / Mrs, etc	Initials	Surname (Please use block capitals)	
Job Title:		Company:	
Address:			
Postcode:		Tel. No:	
Activity at this address (please tick)			
Architectural Practice	<input type="checkbox"/>	Landscape Architects	<input type="checkbox"/> Surveying Practice <input type="checkbox"/>
Building Contractor	<input type="checkbox"/>	Chartered Surveying Practice	<input type="checkbox"/> Civil Engineering Practice <input type="checkbox"/>
Local Government	<input type="checkbox"/>	Other (please state) <input type="text"/>	
For further information on any of the articles appearing in this issue, or to receive any of the new literature, please enter the relevant enquiry number in the boxes below.			Please sign here if you wish to receive future copies of Marshalls Insight Magazine
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Signature: _____ Date: _____			



First to be completed - Number One Brindleyplace.

Brindleyplace

Birmingham's Brindleyplace, developed by Argent Group plc, is the largest mixed use city centre development in the UK.

The 17 acre site, developed to create an identifiable, new commercial centre for Britain's second largest city, will comprise a mix of offices, shops, restaurants, Sea Life Centre, housing, a gallery, theatre and hotel. It also boasts all necessary support infrastructure and on-site car parking.

With housing and leisure facilities already completed, and office space let to some of the country's leading businesses, Brindleyplace dovetails into Birmingham's structured plans for the redevelopment of the City's central area.

The Birmingham Canal to the North and East boundaries of the development provides an attractive setting for leisure facilities both at Brindleyplace and adjacent International Convention Centre and National Indoor Arena. This is enhanced by carefully

considered landscaping features throughout including semi-mature trees, lawns, fountain features, and natural limestone, yorkstone and clay paving.

Moving away from eighties style curtain walling and granite cladding, it was decided that the majority of buildings would be of brick clad construction. This material which is traditional to Birmingham was chosen for its longevity, attractive appearance and because it could be sourced in the UK thus providing local employment.

Number One Brindleyplace

Number One Brindleyplace was the first office building to be completed and sets the specification and standard for the development.

Situated with the principle elevation on Broad Street, it is also located between

three existing listed buildings - The Brasshouse, Oozells Street School newly restored to the IKON Gallery, and the Old Church.

Architect, Anthony Peake Associates, was faced with the problem of visually unifying the four buildings. The resulting new building successfully achieves this through the elevational design, choice of materials and detail to break up the mass of the building.

The superstructure of the 68,600 sq.ft. building, comprises an in-situ reinforced concrete frame with ribbed floor slabs. The external walls are typical insulated brick/stone cavity walls.

The five floors, designed around a central atrium, align themselves at the external walls with the different geometries of the adjacent buildings.



Number Five Brindleyplace

The building is further enhanced by the choice of building materials. High quality red brick contrasts sharply with cream coloured reconstituted stone cill, cornice and wall panel features to provide a warm exterior tone.

The Lincoln Red brick, manufactured by Marshalls, was specified for its good load bearing capabilities and nil to slight efflorescence characteristics. It also complements surrounding buildings.

The main entrance utilises a double height portal and is surrounded by bay windows. This continues upwards to a glazed tower which is matched by a similar but taller structure at the corner of Oozells Street.

Internally the central glazed atrium forms the core of the building with office space leading from and around this. Two lift lobbies and staircases have also been incorporated at different sides of the building to provide greater flexibility for office space planning.

Number Five Brindleyplace

Overlooking the new Public Square is BT Place - a 120,000 sq. ft. building described by Tony Giddings, construction director for Argent Group Brindleyplace, as "a modern office building wrapped in a sculptured and attractive semi-traditional skin."

The design, by architect Siddell Gibson, tries to achieve good views for all people working in the building. As such the interior was designed around a long spectacular atrium with full height glazed wall facing onto the square. This is bordered by two curved wall towers creating a dramatic entrance to the seven storey building.

Rigorous selection procedures were undertaken for each elevation. Two large sample panels were erected on-site some four months prior to brickwork construction. The panels, comprising brick and glazing elements of the front and rear elevation, highlighted any problems likely to occur during construction and provided time for these to be "trouble shooted".

As a result, Marshalls Cambridge Burwell White brick was specified as a highly engineered brick with nil efflorescence character and attractive 'stock' colour. A tour of Marshalls brick operation at Stairfoot, Barnsley, also highlighted hand mix procedures which would help avoid colour variation problems.

More than 35,000 specials were manufactured to match the standard brickwork. Non-standard radial stretcher bricks were used to clad the building's circular features whilst various other non-standard specials including single and double bullnose, and pistol bricks were utilised.

The mass of brickwork is broken up with banding details of reconstituted stone and blue brick.

It was also decided that this should be a low energy building and so an upflow displacement ventilation system through a 400mm deep floor void has been installed. The external facade also has optimum sized windows to reduce heat gain but still provide views over the City. Internally, Number Five boasts completely column free floor plates for greater space planning flexibility, glass wallclimber lifts, a prominent spiral staircase close to the entrance and dramatic bridges across the atrium.

Number Two Brindleyplace

At the opposite side of Brindleyplace Square will stand Lloyds Place. Designed by architect Allies and Morrison, the building brings crisp, clean modern lines to the new development.

Once again, a full height, glazed central atrium takes centre stage of the 75,000 sq. ft. building offering maximum natural light and pleasant working views. An attractive lift screen with perforated stainless steel panels runs the full height of the seven floor building.

Initial views on the choice of brick to clad Number Two were split between yellow and red tones. However, having considered the characteristics of Marshalls Cambridge Burwell White, it was felt to have a sharp appearance complementary to the building.

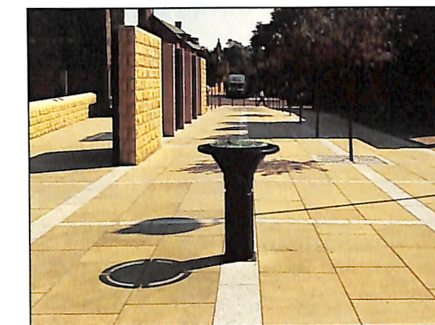
Number Two Brindleyplace is currently under construction and is due to be completed June 1997 for Lloyds to undertake fit out works.

ENQUIRY CARD NUMBER 8

Traditional Appeal

Glasgow's oldest house and garden area has been enhanced with a sensitive combination of natural and man-made paving materials.

Provands Lordship Garden in Glasgow, which incorporates Marshalls' Natural Yorkstone paving and Tegula concrete block paving, has also taken the Grand Award in the BALI National Landscape Awards presented last year.



Landscaping and civil engineering contractor, Lanrec Contracts Ltd, won the award for the scheme which is the garden of Provands Lordship - the oldest house in Glasgow and features a combination of hard and soft landscaping.

Specified by architect James Cunning Young & Partners, Natural Yorkstone paving from Marshalls Clockface quarry was laid in front of Provands Lordship House, under the garden's cloister and on adjoining McLeod Street.

A series of service diversions to the side of the garden led to Tegula concrete block paving being specified for use over service strips offering easy access and neat reinstatement.

Commenting on the specification, Gary Johnston of James, Cunning, Young & Partners said:

"Having used Marshalls' natural Yorkstone paving and Tegula blocks before we know they are quality materials which suit the historic heart of the city."

ENQUIRY CARD NUMBER 9

Individual Stone Style

At Watson Monument in Hamilton, Scotland, natural stone spheres, step details and raised planters with



special round top coping have been used alongside Diamond Sawn paving to achieve a striking effect.

These are just a few examples of the natural stone 'specials' created by Marshalls Natural Stone Division. Others include bollards, tactile paving and a wide range of street furniture.

ENQUIRY CARD NUMBER 10

DETAIL Drainage

David Morrell, drainage product manager for Marshalls examines the importance of effective surface water management.



Birco - a cost effective alternative to point drainage.

Torrential rainstorms and the unpredictable nature of British weather can cause serious problems if surface water drainage is not considered fully.

Storm water needs to be controlled in a quick and efficient way. It must be removed from the surface and transported to a suitable point for treatment and/or discharged to storm water sewer or water courses thus reducing the public nuisance caused by standing water.

In highway applications, surface storm water can greatly affect the safety of road users. Standing water reduces the road-holding capability of vehicle tyres causing aquaplaning. It can also create excessive spray seriously affecting visibility.

In cold weather, surface water can lead to the formation of ice which is of concern to all users of any landscaped areas whether driving a vehicle or



South Yorkshire Supertram drainage problems solved using Beany Block.

travelling on foot. Drainage systems must also be designed to avoid flooding buildings and in pedestrian areas keep the public's feet dry.

In addition, the overall pavement structure can be substantially weakened by the ingress and seepage of water, particularly where moisture susceptible sub-bases or sub-grade have been used.

Building material manufacturers like Marshalls produce a portfolio of linear drainage products specifically designed to control surface water.

Linear drainage systems have a number of advantages over conventional point drainage. The longitudinal falls and crossfalls are less complex - simplifying the design and construction of a project. Even in flat areas drainage is not a problem. False falls can be readily created in the invert of the drainage channel by varying the depth of channel or by incorporating channels with inbuilt falls.

The high capacity of the drainage channel means that outfall spacings can be at greater distances than with conventional point drainage giving considerable savings not only on the number of gully pots, manholes and outfall units but on the associated pipe work and connections too.

Linear drainage can be categorised by its design, the most popular being kerb units and grid units.

Kerb Units

Combined highway kerb and drainage is widely recognised as an efficient and cost effective means of disposing of surface water on a range of applications from carparks and lorry parks to trunk roads and motorways.

The system, known as Beany Block, comprises top blocks with an elliptical aperture in one side and a choice of three base blocks of differing depths. When laid, they form a combined kerb and surface water drainage system of exceptional capacity and which is able to withstand loadings imposed by both road and construction traffic.

Its surface drainage efficiency also makes it less expensive than conventional kerbing and drainage for many highway schemes.

Grid Units

Grid drainage, such as the Birco system, is becoming more popular in the UK not only for specialised areas but as an alternative to point drainage which clearly illustrates its cost effectiveness.

These systems are designed to take the full range of load classifications up to F900 as defined in DIN19580 and prEN1433, taking a wheel load of up to 90 tonne. In addition, the inherent strength ensures it can also withstand the twisting movements imposed by vehicles manoeuvring in confined spaces.

Another benefit of the system is that adjacent paving material can also be constructed right up to the channel body due to the strength of the concrete wall and steel angle. This allows the channel to act as an edge restraint and helps to improve the overall appearance of the scheme especially when used in conjunction with block paving.

ENQUIRY CARD NUMBER 11



Gilpin Square

The creative scope offered by concrete paving is perfectly illustrated at Gilpin Square, London. Created for London Borough of Hackney, as part of a major refurbishment programme, this simple yet impressive scheme highlights the striking effect of inventive design.

Given the objective of creating a safe, attractive and easily maintained communal area which would appeal to local tenants, architect Titos Argyris of London Borough of Hackney's Design Services, conceived a visually stunning focal point at the heart of Clapton Park Estate.

The original grey slab paved square was in need of repair and the grassed landscaped area had become the haunt of the local canine population.

Argyris viewed the square as a three-dimensional space incorporating existing shops, residential flats and offices as opposed to a stand alone surface. His overall design aimed to unify all these elements and draw the local community to it. **"I wanted the space to be used intensively and informally on a daily basis but I also felt it to be a grand venue where special civic activities could take place,"** explains Argyris.

His solution, which was presented to and approved by the estate tenants, is deceptively simple. He paved the whole square and planted 10 semi-mature trees in rows of five. A curved bench was positioned at the base of each tree and a "doggy loo" created at an adjoining area to the square.

The geometric design of the paved square is a bold and interesting zig zag pattern when viewed from the flats above. It is equally successful when seen from the square itself. In addition, the design presents different patterns when viewed from various parts of the square.

The pattern was maintained over accentuated falls which were established to direct rainwater

towards gullies located at points adjoining each tree. This was primarily designed to effectively water the newly planted trees.

Red Perfecta paving was chosen to harmonise with the brick of surrounding buildings. It contrasts effectively with Buff Perfecta and Charcoal Toscana paving which define the angular layout.

The strong contrasting colours and careful selection of paving materials resulted in consistent detailed patterning with a 'continental flavour'. In wet weather, the exposed aggregate of the paving is further enhanced, strengthening the visual impact even on dull days.

At the perimeter of the square, a fire path requested by the Fire Service is an integral part of the overall pattern defined by one row of trees and a row of 500mm Spherical Bollards in Brown/Black exposed aggregate. Following advice from Marshalls Technical and Advisory Department the bollards were placed on specially manufactured red recessed plinths to complement the surrounding paving.

"I was looking for a range of materials which would work together in this scheme and Marshalls could offer a wide selection of suitable co-ordinating products. This, combined with the technical advice from Marshalls' teams during specification, helped to make this scheme a reality. We are all very pleased with the results," Argyris concluded.

ENQUIRY CARD NUMBER 12

New Cycleway Paving

In 1994, The Royal Commission on Environmental Pollution described transport growth as possibly the greatest environmental threat facing the UK and called for a quadrupling of cycling on 10 per cent of all journeys.

This and other moves to encourage and provide better facilities for cyclists nationally has led to the launch of Cycleway Block Demarcation Paving.

Developed specifically for situations where a cycleway shares the same route as a footpath, it maintains a clear line of demarcation or a 'false kerb' between the two carriageways.

Cycleway Blocks alert visually impaired pedestrians to the proximity of the cycleway by providing an easily detectable underfoot warning. Cyclists are also able to clearly recognise the limit of their carriageway.

The blocks have a low central 'hump' and gently sloping sides, and can be used in conjunction with a wide choice of surface materials including flag and block paving. To significantly contrast with the surrounding pavement, the Cycleway Blocks are also available in a wide choice of colours.

ENQUIRY CARD NUMBER 13



High Standards

Independent research has revealed that close to 50 per cent of all new homes are now built with some form of suspended precast concrete floor.

This shift from often more costly 'traditional' methods is beginning to be extended to upper floors and is seen as a particular area for growth. John Duffy, national sales manager for Marshalls Flooring reports.



Precast concrete flooring is increasingly being seen as the environmentally friendly choice of construction for ground and upper floors in all sections of the market, with the product range available to specifiers constantly developing to meet the needs of this very demanding industry.

Precast concrete flooring's current popularity is borne out by statistics. In 1991, sales of pre-cast flooring to the housing sector stood at £28 million. Most recent estimates demonstrate a rise of more than 70 per cent to £48 million and this is rising rapidly.

CPD Technical Boost

Recent research studies have criticised many building materials producers for lack of technical information about the products they market. Marshalls has always recognised the importance of technical dialogue with specifiers and, through its CPD eligible technical seminars and exhibitions, has proved to be a valuable source of advice and information. The seminars, attended by thousands of delegates nationwide, have enabled Marshalls to build a solid reputation for technical expertise.

Now, responding to feedback from specifiers through a number of research studies, Marshalls is launching a new series of technical symposia for 1997.

'Insight' - a comprehensive two day programme of technical presentations and workshops has been developed for civil and structural engineers, architects, landscape designers, building and quantity surveyors and other construction industry professionals.

Covering a wide spectrum of subjects under the broad areas of Masonry, Surfacing, Drainage and Street Furniture presentations will include:

The use of masonry in civil engineering

The design & detailing of masonry

Structural design of hard surfacings

The repair, maintenance & cleaning of hard surfacing

Design and detailing of linear drainage systems

The format comprises three lecture theatres running different technical presentations with support from informal workshop groups. Delegates will have the opportunity to discuss subjects with presenters on a one-to-one basis and, in the exhibition area, view a comprehensive range of product displays.

Attendance at Insight '97 will contribute to I.C.E. and R.I.B.A. members' Continuous Professional Development Programmes.

To complement conventional beam and block, and hollowcore slab floors, composite ground floor systems incorporating expanded polystyrene blocks have been developed. This is clearly targeted at the house builder to provide a cost effective solution to increase ground floor insulation as required by the recently amended Part 'L' of the Building Regulations (The Conservation of Fuel and Power).

Improving the quality of construction enhances the appeal of a new home to potential house buyers. Potential savings on heating bills due to increased insulation, reduction of internal noise transmission and higher comfort levels are strong and powerful selling points.

Practically, pre-cast flooring offers rapid and simple installation with no need for specialist skills. Once installed, the floor also provides a dry, sturdy working platform for following trades.

Tay Homes Midlands, a regional office of the national house builder, has long been aware of the benefits of pre-cast flooring and took the forward thinking decision, in advance of changes to Part 'L', to specify Marshalls Jetfloor Super several years ago.

Ray Shah, director of Tay Homes Midlands, explains: "We particularly like the product as it is quick and easy to install, can be utilised as a standard form of construction to suit varying site conditions and enables us to out perform the minimum insulation requirements of Part 'L' cost effectively."

Taywood Homes has specified Marshalls Jetfloor Super for a 70-house development in Crawley, Surrey.

This composite suspended flooring system, can achieve 'U' values as low as 0.25W/m²K - well inside the required level of 0.45W/m²K. Designed specifically for ground floors it combines the merits of beam and block construction with the major advantage of thermal insulation.

Taywood Home's production manager, Clive Tipton, says the flooring system is being assessed for potential national use on sites requiring suspended ground floors as it saves construction and labour costs, whilst providing significantly lower 'U' values than those required by Part 'L'.

ENQUIRY CARD NUMBER 14

Additionally, day two is a repeat of day one so delegates unable to attend all their choices on the first day can return to hear further subjects of interest.

To register your interest in Insight '97, please complete the response card in the centre of this publication detailing enquiry card number 15. An invitation will be issued on receipt.

Insight

Date	Venue
8 & 9 April 1997	Lancashire County Cricket Ground, Manchester
23 & 24 April 1997	David Lloyd Tennis Centre, Renfrew, Scotland
13 & 14 May 1997	Brands Hatch, Kent
20 & 21 May 1997	The Racecourse, York



ENQUIRY CARD NUMBER 15

Untapping AutoCAD Resources

The world of IT for the specifier is a busy arena. AutoCAD, the Internet, electronic mailing and intra office networking - all billed as the way forward to increase productivity and efficiency. Insight visited two different practices to examine their use of AutoCAD systems and contributions third parties, like building material manufacturers, are making to aid design and construction.

Philip Gill of Sheffield-based environmental planning and landscape consultancy, Weddle Landscape Design, believes CAD has a big role to contribute to the development of landscape architecture.

"Whilst Cad is a prominent feature in large multi-disciplinary companies, it is fairly new to medium size and smaller landscape architecture practices. Increasingly, clients expect to read and exchange computer information and it is also particularly useful when working on a project involving other consultants. It enables us to communicate with each other easily and quickly."

Philip believes there is increasing pressure for landscape architects to acquire technology but in some instances it is being resisted. Its potential may not be realised by those who have limited knowledge of computer systems and there are also financial restraints for systems and training. More importantly, it has been said that with the introduction of computer systems, traditional design processes could be lost. Philip doesn't agree.

"Moving with the times doesn't necessarily mean that the skill of imaginative design is taken away. What we, as an industry, should be looking at is how CAD systems can integrate with traditional working practices to improve the work we already create - I don't view it as a stand alone tool."

Whilst CAD is relatively new to Weddle Landscape Design, training is being provided for all design personnel within the award-winning company.

"It is extremely valuable in testing design ideas for non-standard applications so you can consider the optimum solution. CAD opens up far more design options over manual methods because its speed allows greater experimentation using different building materials and planting. Used in this way it really is a creative design tool based on enhancing the ideas you've already developed in your mind."

The use of CAD is being boosted with the launch of design support packages. Philip has utilised Streetscape - Marshalls AutoCAD add-on system which has been developed in conjunction with civil and structural engineering practice, BSCR. Created for specifiers in the construction industry it offers a sophisticated detailing and drafting facility for landscape and highway design.

"Using Streetscape saves time ploughing through technical manuals at the initial design stage and you can quickly see how the product will look. The information is accurate and technical back up for installing and demonstrating the system has been very useful. We've loaded up the new updated version, Streetscape 2 and expect to use it on a range of projects involving paving and edge details."

CAD is no stranger to consulting engineers. Owen Williams - one of the UK's leading consultants in highways and transportation. CAD is used extensively with close to 90 per cent of technical drawings produced using AutoCAD.

The company's Sheffield operation is responsible for major trunk road and motorway maintenance

management for the Yorkshire & Humberside Commission and the recently announced award win, Highways Agency Area Six - 1,100km of trunk roads throughout East Anglia.

AutoCAD versions 12 and 13 are used typically to assist production of standard cross sections, drainage and edge details for highway maintenance schemes. Standard layouts have been developed for the system to speed up the process of planning traffic management activity.

Andrew Sturrock, Incorporated Engineer for Owen Williams in Sheffield, is responsible for producing the majority of CAD drawings. To improve efficiency he has created a library of standard details which can be pulled together to make up typical drawings. Within this 'library' are highways related drawings from Marshalls Streetscape which are used regularly on plans for maintenance projects.

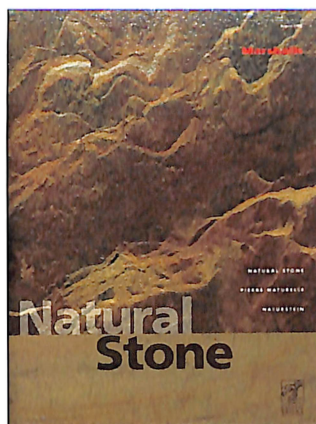
"We tend to pull detail from Streetscape on schemes with a lot of kerbs or where we require edge detail with Beany Block combined kerb and drainage system. We may have an increasing need to include drainage detail like this particularly for the Area 6 trunk road programme," says Andrew.

"The advantage of utilising a programme like Streetscape is that all the work has been done for you, - its quick and its accurate."

Streetscape 2

Streetscape 2 has been developed following the success of Streetscape. This advanced and more comprehensive version has a number of software improvements. Developed for AutoCAD releases 12 and 13, Streetscape is compatible with AutoCAD running under the DOS, Microsoft Windows and UNIX platforms. Available on application from Marshalls.

ENQUIRY CARD NUMBER 16



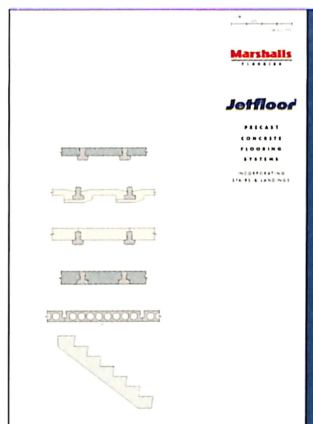
The Natural Choice

Specifiers considering natural stone as a paving or walling material for the UK and beyond need look no further than Marshalls new Natural Stone brochure. Written in English, French and German, it provides an overview of the Company's product and service offer.

The range includes paving, walling and setts in a wide variety of different sizes, finishes and textures.

To further enhance the appearance of a project, a wide selection of kerbs, bollards, street furniture and non-standard, architectural natural stone features are also available.

ENQUIRY CARD NUMBER 17



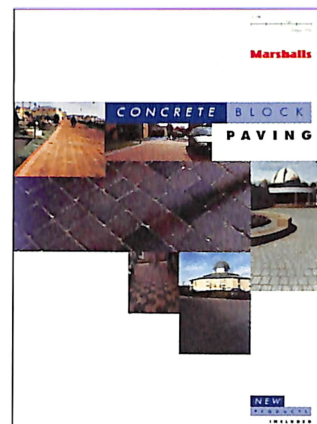
Jetfloor Suspended Flooring

Offering specifiers an instant look at one of the most comprehensive ranges of precast flooring systems, Marshalls Flooring has launched a new 24-page colour brochure featuring its Jetfloor products.

The brochure brings together the complete Jetfloor range of precast concrete systems suitable for all floors in housing, commercial and industrial schemes.

It also includes suspended composite systems, incorporating expanded polystyrene blocks, specifically for ground floor housing applications; stairs, landings and essential ancillaries.

ENQUIRY CARD NUMBER 18



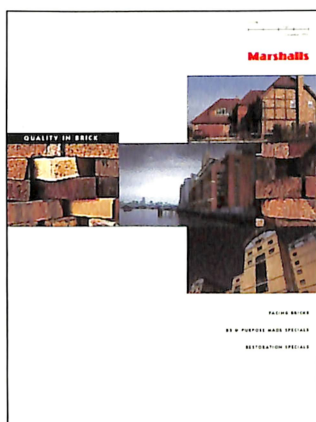
Paving the Way

Block paving is fast becoming known as one of the most durable, flexible and attractive surface materials available to the specifier.

Marshalls' new 76-page Block Paving brochure introduces a selection of new products such as Conservation Setts and Savanna. It also features its established range of concrete and clay block paving as well as range extensions.

The brochure is supplemented by a 16-page magazine - 'The Case for Block Paving' - which highlights a series of block paving applications in the public, commercial, housing and industrial sectors.

ENQUIRY CARD NUMBER 19



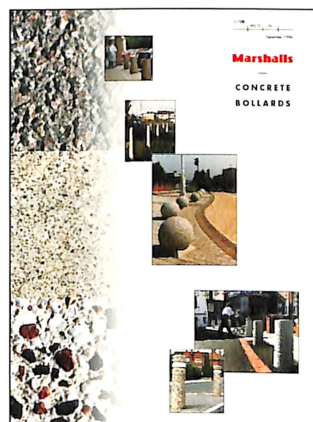
Improved Range of Facing and Restoration Bricks

Marshalls has introduced a 48-page colour brochure to highlight its full range of facing and special shaped bricks.

Together with a wide choice of brick for new build applications, a diverse range of products is available specifically for refurbishment projects.

The City 'Blend & Match' range offers a unique blend of reds and blacks developed to enhance the character of older buildings and closely match original brickwork. Additionally, Victorian Specials provide the opportunity to incorporate important period details to both refurbishment and new buildings.

ENQUIRY CARD NUMBER 20



Bollard Range Expansion

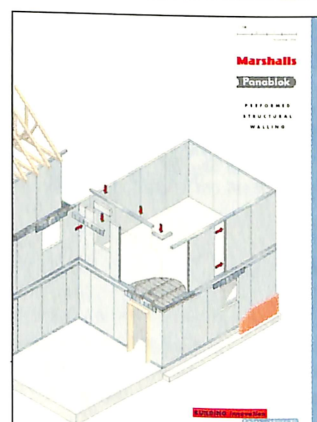
More than forty different concrete bollards have been brought together to form a new 12-page brochure from Marshalls.

The comprehensive range encompasses a variety of shapes, sizes, finishes and colours to complement both urban and rural environments.

New to the range is the Evesham Bollard available in Black, Gold and Silver Grey. Its recessed face is designed to receive a motif disk from Coats of Arms and company logos through to trafficking instructions.

The Castle Bollard has also been introduced with triple recessed grooves.

ENQUIRY CARD NUMBER 21



Quick Build Composite Wall

Panablock is a new preformed structural building panel which provides an ideal solution to contractors and developers looking to build to tighter schedules. The Panablock panel can reduce the overall construction period by up to 40 per cent and so significantly lower costs.

The storey height panel is a cost effective alternative to conventional brick and blockwork and can either replace the inner leaf of a traditional cavity wall construction or be used as a fully load bearing single skin construction.

Additional to its speed of build, Panablock combines proven structural performance with high insulation giving improved levels of comfort and reduced energy requirements.

ENQUIRY CARD NUMBER 22