



SPRING 2009

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building sustainability

# Take 3 Architects



# News from the Editor

Spring 2009

IBSTOCK DZINE MAGAZINE

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## Contents

News	2
Stedman Blower	4
Bovis Homes	6
Feilden Clegg Bradley Studios	8
Back to Basics - A Brick is a Brick?	10
Brick Awards 2008	12

Welcome to the first issue of 2009 and one that is a little bit different to previous issues.



Over the past few months we have talked to three architects about how they feel about brick as a material and while they universally agree that they like it, it is interesting to hear their differing reasons why.

We also have a four page feature on the 2008 Brick Awards which were one of the most successful years ever for Ibstock. Projects featuring Ibstock bricks won 9 out of the 13 available categories, proving yet again that when it comes to outstanding design the best brick to use is one made by Ibstock.

## New Birtley Products

Two new products further extend the attractive range of traditional waterstruck bricks from Birtley. The Cumberland Blend combines both red and brown multi-coloured bricks. The Millhouse Blend is a subtle mix of buff multi and brown bricks giving the product a traditional northern cottage feel.



Cumberland Blend



Millhouse Blend

## Technical Topic

### Bricklaying in winter

During winter months the British weather can range from positively balmy conditions to sub-zero temperatures. This can affect brickwork construction if significant drops in temperature are not considered and planned for.

#### The effect of freezing temperatures on brick laying

Cold temperatures will slow the rate of hydration of the cement leading to delays in setting and reducing the rate of strength gain. If, after construction, the green mortar freezes before it has cured it will suffer from disruptive expansion. The bond will be lost between brick and mortar and brickwork may have to be taken down and rebuilt.

#### What can be done?

Keep the bricks as dry as possible prior to use. The drier they are the more absorptive they will be to form an initial bond and the less likely to be frozen.

Bricklaying should be halted if the temperature drops to 3C and looks like it may continue to fall.

Recommencing work on a site still covered in frost or snow could mean that freshly mixed mortar freezes on contact with the bricks.

Always cover freshly laid brickwork with suitable amounts of hessian or similar, then overlay with an impervious material such as polythene.

Proprietary waterproof fleeces are available.

As the development of mortar strength takes longer at lower temperatures there may be the temptation to add accelerators. These are generally only effective in mass concrete, not thin sections of mortar and may damage wall ties if they are calcium chloride based.

Admixtures intended to reduce the freezing point of the mixing water could also adversely affect cement hydration.

To improve frost resistance of fresh mortar, the provision of air spaces where ice can expand can be achieved by using an air-entraining agent. The air bubbles also make the mortar easier to work and therefore allow a decrease in the amount of water. However, air entrained admixtures rely on accurate dosage and mixing as excessive air contents will dramatically reduce bond strength. Also adequate protection from saturation and freezing is still paramount.

## Elementix Express®

Launched less than three months ago, Elementix Express® has met with universal approval and is causing quite a stir. The first project is already completed and another 15 projects are in the pipeline for early this year.

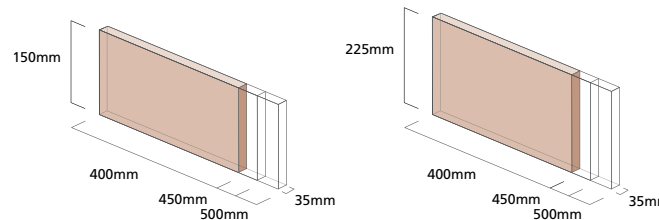
As the only UK manufactured rainscreen cladding system and having the backing of Ibstock, it is no wonder that it has proved an instant hit. The first project features 30 sq m of natural red on a residential building in Glasgow. All the tiles were installed on the rails in just one day, the rainscreen forms a feature panel above the entrance on the front of the building.

Elementix® Express has been engineered with the installer in mind to ensure ease and speed of construction. The range of natural clay colours and surface finishes add definition and detailing can be added to a façade in an instant.

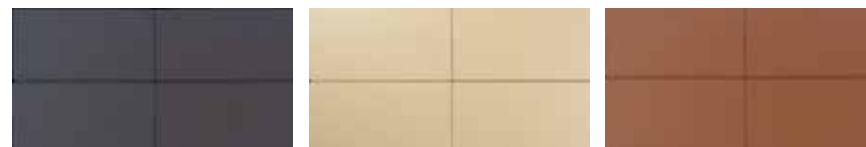
### Key Features

- Quick and easy to install
- Minimal components for cost-effectiveness
- Matches Fireborn Natural colours
- Flexibility of tile size (height and length)

### Sizes



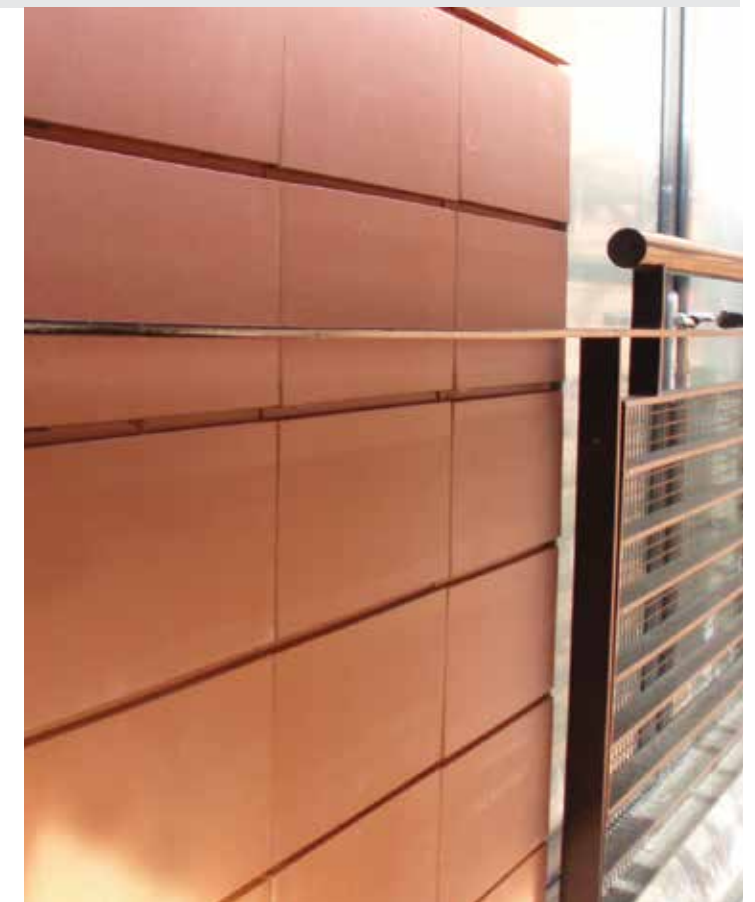
### Colours



Natural Finish | Blue 5221      Natural Finish | Cream 5222      Natural Finish | Red 5200

### Technical Data

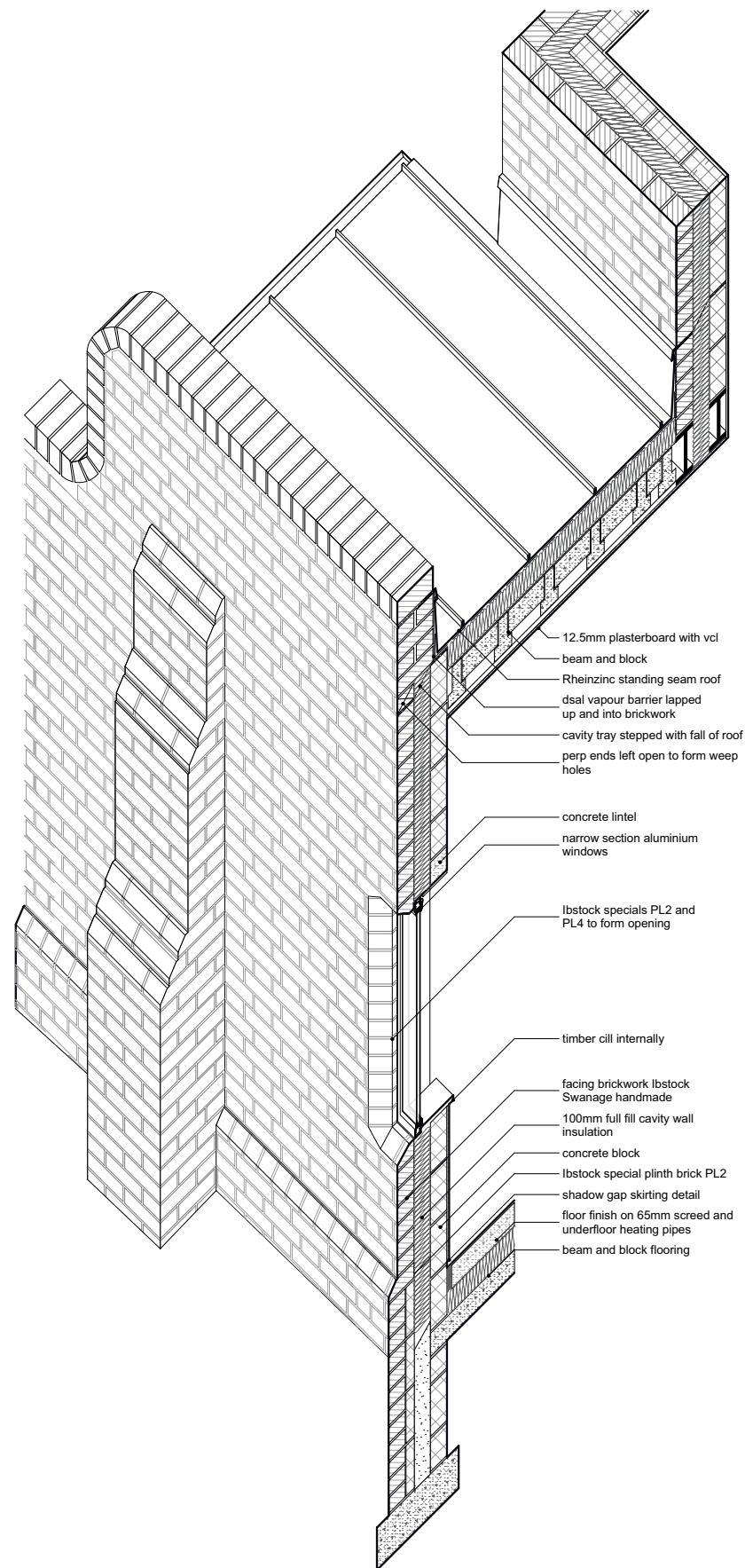
Size	Total System Weight	Tile Weight	Durability	Transverse Strength (Impact Resistance)	Water Absorption	Tolerance
400mm x 150mm	65Kg/m2	3.6Kg	Frost Resistant	Category E to BS 8200	< 8%	+/- 1mm
450mm x 150mm	65Kg/m2	4.0Kg	Frost Resistant	Category E to BS 8200	< 8%	+/- 1mm
500mm x 150mm	65Kg/m2	4.5Kg	Frost Resistant	Category E to BS 8200	< 8%	+/- 1mm
400mm x 225mm	65Kg/m2	5.4Kg	Frost Resistant	Category E to BS 8200	< 8%	+/- 1mm
450mm x 225mm	65Kg/m2	6.1Kg	Frost Resistant	Category E to BS 8200	< 8%	+/- 1mm
500mm x 225mm	65Kg/m2	6.8Kg	Frost Resistant	Category E to BS 8200	< 8%	+/- 1mm







# Stedman Blower, Farnham



The practice was founded in 1895, deep in the history and traditions of arts and crafts. Twelve years ago Damien and his brother Robert Blower took over the practice from their father which means they are the fourth generation to run Stedman Blower.

We talked to Damien Blower on how he has moved the company into a slightly new direction from the typical market town architect with a lot of school work to principally into residential work with private clients and how he feels about brick.

“In the last twelve years architecture has changed – with programmes like Grand Designs, people are a lot less conservative and more open to new ideas – sustainability has triggered in people a desire to think about architecture as more than just an ordinary building and think about it in terms of its technology and how it is built.

Now our clients do get involved in the making of the building – they engage in the materiality of the building and the quality. People want to create something quite lasting through the design of their building and they want the architect to produce something quite special.

This part of Surrey is particularly well known for its Arts and Crafts architecture. Stedman Blower uses these influences in their work including locally sourced brick and tiles in their designs. As a company they have worked on Lutyens buildings and other Arts and Crafts masterpieces all of which use local materials.

Damien also spent four years working for Frank Gehry in America which gives an organic feel to his work. His ambition in residential architecture is to fuse modernism and the Arts and Crafts tradition. He likes to use modern ideas in his designs.

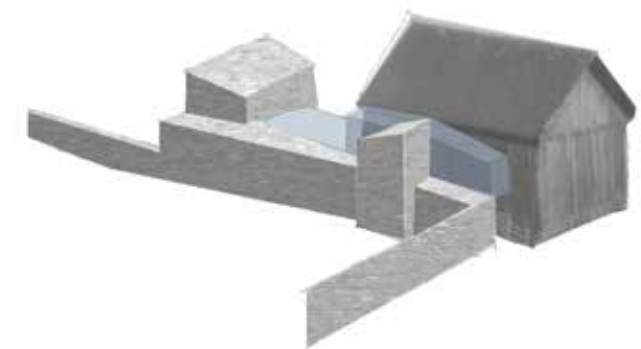
Brick is a fundamental material to the traditions of British architecture – providing a solid feeling, with mass and scale. The feel of brick is at the core of all the designs that the company produces. It is contemporary – part of the heritage and brick connects people to their cultural beginnings.

Brick is able to be used in a very contemporary fashion and clients feel more comfortable with using a material that is tried and tested. They like things that are solid and will last. People connect with different architects in the kind of materials that they use and it becomes a part of who they are.



Little Park Farm, Ashstead

Brick Type: Romsey Handmade Multi



Architecture should give a powerful sense of place and should encompass the cultural traditions of a particular locality. This is one of the main reasons why we use brick as it gives that real sense of place. Sustainability is driving this forward. There is too much short termism coming forward in some architecture which destroys the environment.

For the future we would like to push the boundaries with the technical properties of brick and do some cutting edge designs with brick on the edge of its performance. I also think in the future brick will be used more as a warming environment and will encourage more use of it as a material.”

One project that shows the contemporary twist of Stedman Blower's work is Little Park Farm – a new farmhouse built two years ago.

“Architecture should give a powerful sense of place and should encompass the cultural traditions of a particular locality.”





# Bovis Homes



As one of the most successful house builders in the construction industry, Bovis Homes has a long-established reputation for the design and quality of the homes it builds across England and Wales.

To find out more about why Bovis Homes' designs and specifications are so well-respected, we spoke to the Company's Group Architectural Director, Keith Pye.

**“Brick is of course a tried and tested material, used for centuries and has an excellent track record in producing durable, quality homes.”**

“As a company we’ve always had a strong preference for brick, based on its solid aesthetic appeal and the benefit it offers of being robust and with low-maintenance – qualities that are greatly appreciated by our customers.

Compared with other materials such as render, weather boarding or even tile-hanging, we find brick a very cost-effective and attractive finishing material for a new home. Other options can require extra maintenance, which for the customer is often an important consideration when buying a new home. For many purchasers brick is much the preferred option.”

Due to its longevity and design flexibility, brick is also a firm favourite for Bovis Homes.

Brick with its many types and forms - also lends itself to design diversity, a number one factor in producing a good urban development.

Keith said: “When designing an urban

**Keith said: “In our experience we prefer using a quality brick and less render on a new development, as by using a quality brick it helps ensure the building itself is more durable and is built to last.”**

development with a high proportion of homes, it is important to create an environment which is aesthetically pleasing; provides a sense of place and is an area in which people aspire to live.

Good urban design provides landmark buildings, attractive, varied street scenes and creates pleasant vistas and a feeling of place and community.

This can all be achieved through a combination of measures - through good development design, by using varying house types and by the external materials used. The huge range of quality bricks now available helps us to create developments and homes that are interesting, attractive and varied.”

The use of brick is also important to Bovis Homes for its sustainability value. Keith said: “If manufactured locally, brick stocks require little transport and their production helps support the local economy. If a local brick is used on a new development in the area, the added benefit is that the homes will suit the environment in which they are built. In turn this helps us meet one of the main conditions often stipulated by local planning authorities – that the design of our homes and external materials used, complements existing housing and natural surroundings.

The versatility and benefits offered by ‘the everyday brick’ make it, for us, one of the best products for the purpose – building quality homes in attractive designs.”

**“The huge range of quality bricks now available helps us to create developments and homes that are interesting, attractive and varied.”**





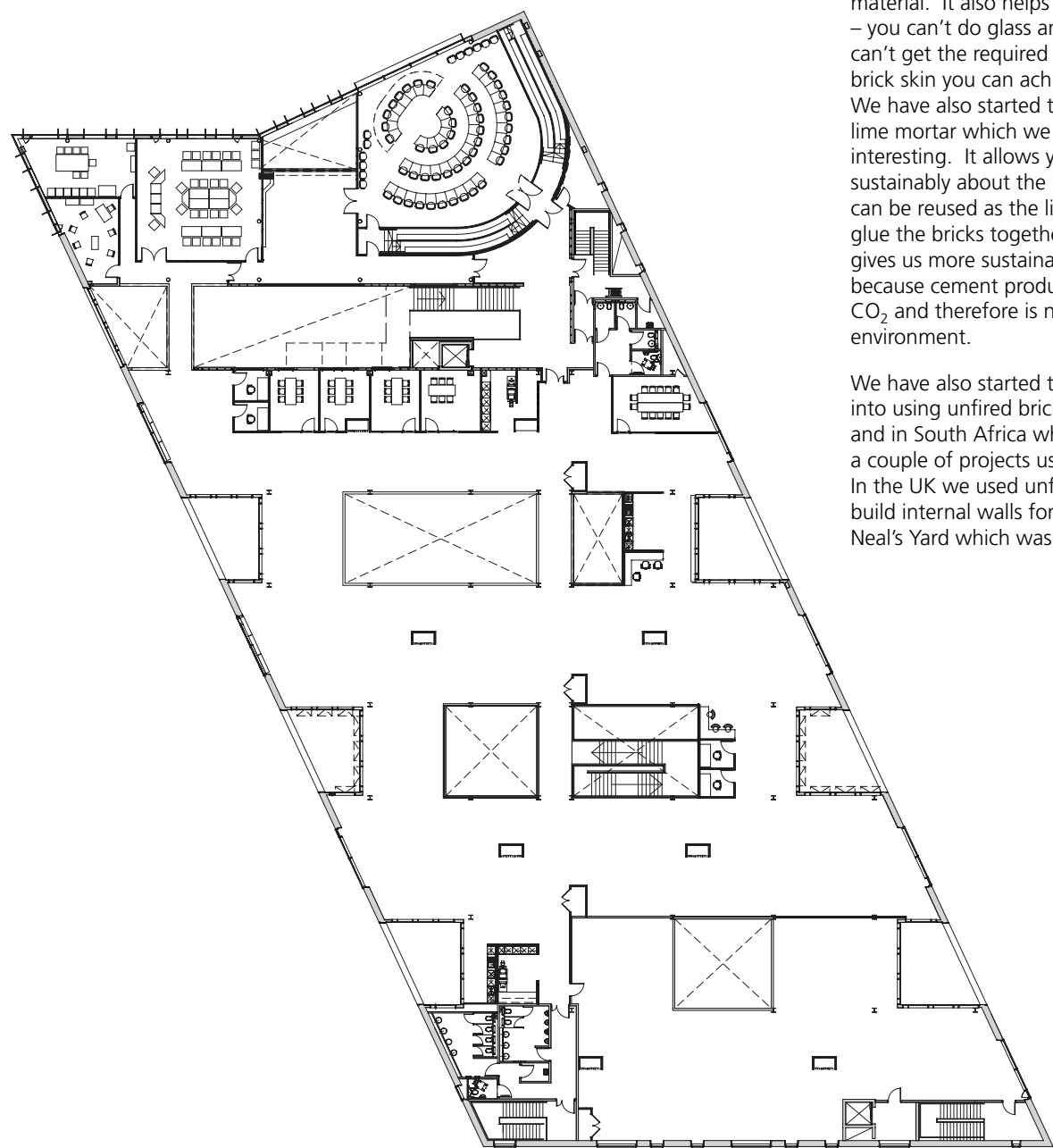
# Feilden Clegg Bradley Studios, Bath

Founded in 1978 and with offices in Bath and London, Feilden Clegg Bradley Studios is a substantial practice with an international reputation for design quality, environmental expertise and architectural innovation.

The Company's approach was recognised with the 2008 Stirling Prize, the UK's most prestigious architectural award, presented to Accordia, a scheme which is widely regarded as setting a new benchmark for housing in the UK. We talked to Matt Vaudin, one of the partners of FCB about how brick's sustainability credentials have influenced their choice of material.

"We tend towards brick because of the sustainability aspects of it – you can often find a factory that is near so it can be a local material. It also helps us with the U-values – you can't do glass anymore because you can't get the required U-values but with a brick skin you can achieve the right U-values. We have also started to use bricks with lime mortar which we have found very interesting. It allows you to think more sustainably about the bricks because they can be reused as the lime mortar doesn't glue the bricks together. Lime mortar gives us more sustainability credentials because cement produces a lot more CO<sub>2</sub> and therefore is not so good for the environment.

We have also started to do some research into using unfired bricks both in the UK and in South Africa where we have done a couple of projects using local mud bricks. In the UK we used unfired Ibstock bricks to build internal walls for part of a project for Neal's Yard which was very successful.



Runnymede Civic Offices, Chertsey

Brick Type: West Hoathly Dark Multi Stock, Wakehurst Multi Stock & Clinkers

Clients are interested in what their buildings will be made from, all projects now need to have BREEAM Excellent and so all materials need to be A+ so again brick helps us to achieve this.

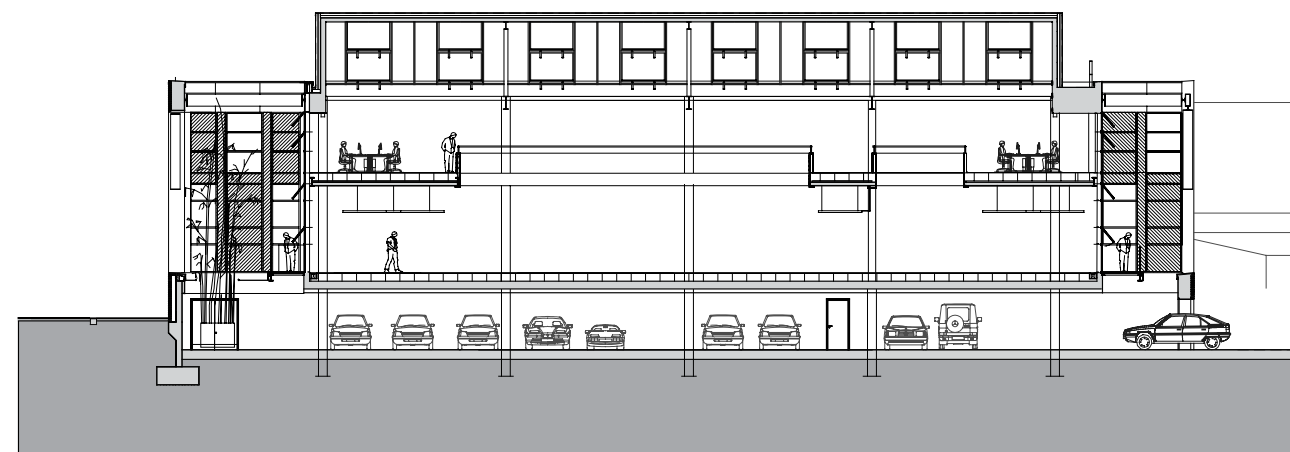
The other thing that has helped is that now Ibstock are producing long thin bricks which recreates the style that was only previously available by buying Dutch bricks. Obviously being able to source UK manufactured products is much more sustainable than bringing them in from Europe.

Our latest project for Runnymede – their new civic offices – also uses lime mortar but we wanted to create a very specific

aesthetic look – a tweedy effect. We had seen a German brick that created this but wanted to source a local brick and we found three bricks from West Hoathly that would recreate the look. Interestingly we also added a fourth brick to get the blend which were the overburnt bricks, so that the bricks that are normally wasted at the bottom of the kiln were also spotted within the brickwork and give it another layer of texture.

The design for Runnymede started off just about transparency and being able to see into the offices but ended up also being driven by using local bricks and sustainability".

**"In the UK we used unfired Ibstock bricks to build internal walls for part of a project for Neal's Yard which was very successful."**



East-West Section





# Back to Basics

## A Brick is a Brick?

Not so, there are a number of manufacturing methods which give a brick its characteristics.

Here are the main manufacturing processes and the resulting brick texture.

### Soft mud moulding or 'stock' bricks.

This covers a number of processes where bricks are formed in mould boxes. There are several methods but all have a common theme. Soft clay is thrown into a mould, a mould release medium prevents the clay from sticking to the box (this can be sand or water).

The excess clay is struck off from the top of the mould and the bricks are turned out. The term 'stock' originates from hand-making times as it was the piece of wood used to hit the mould against to release the clay.

### Hand-made stock

In its most simple form this is done by hand by a craftsman who would produce one brick at a time. This is labour intensive but produces a unique appearance.

Hand-made Stock – clots of clay are hand thrown into sanded mould boxes.



Traditional Hand-made

### Machine moulded stock

For a less labour intensive version, large automated machines can replicate the hand-making process.

By using banks of mould boxes on a continual circuit, the boxes are washed, sanded, filled with clots of clay, struck off level and the formed brick turned out.

When the clay is dropped into moulds a creased effect can be achieved by coating the clots of clay in damp sand. Regulating the dampness of the sand dictates the extent of the creasing.

Another method is to press soft clay into a mould using a metal plate to scoop clay from the mixing chamber or 'kettle' and press it firmly down into the mould creating an even, sandy texture.



Machine moulded stock-sand-creased



Machine moulded stock-sand-faced



Clots of clay are transported along conveyors to be dropped into the prepared mould boxes.

### Water-struck

A variation of this process is 'water-struck' where water is used as the release medium.



Bricks are formed by pushing soft clay into a wet revolving mould with a static base. Excess clay is struck off. As the mould moves on, the base is no longer holding the clay in place. A steel plate pushes the moulded clay the rest of the way through the aperture to a conveyor belt below. A relatively even, sand free texture is achieved with a slight 'lip' evident on the lower aris, formed when the mould moves away from its base.



Water-struck

### Brick shrinkage from 'green' to fired.

Calculations of the shrinkage rate of the clay are made after assessing laboratory test results. Mould boxes and formers are made larger than the end product to accommodate the change in size from the water intensive 'green' pre-dried stage to finished fired product.

### The 'frog'

As a general rule, moulded bricks tend to incorporate a rectangular indentation known as a 'frog'. It is thought that the term dates back to the days when ponies were used as transport in the brickyards. Their hoof marks in the mud showed a similar indent, from the horses hoof "frog".



### The Extrusion Process

Where 'stock' bricks use hand or machine force to compact clay in a mould, the extrusion process utilises a vacuum chamber to de-air the clay before it is formed. The clay body is mixed to a fairly stiff texture and is then fed into an extruder where a worm screw pushes it along a barrel into a vacuum chamber which compresses it through a taper and out through a die.

The die is made up from adjustable steel plates and is set larger than the intended fired size of the brick, again calculating how much the clay will shrink during the drying and firing process. The clay emerges as a continuous brick shaped column before being cut, by a set of tensioned wires, to single brick size.

Initially the extrusion is very smooth but it can be modified by removing a thin sliver of clay from the top and sides using a taut wire to produce a 'drag-faced' effect, serrated blades can be arranged to produce a 'rusticated' finish or textured rollers can be placed over the column to create a 'rolled' finish. The column of clay can also be blasted with sand.



Ibstock's 'Fireborn' product during the extrusion process. A 'die' can be modified to accommodate various size formats.



Serrated blades are used to achieve a roughened surface by 'peeling' back the outer surface of the clay.

Extruded bricks are generally perforated but can be solid but not frogged. Engineering bricks are manufactured using this process.

This outlines the processes used to give brick their textural qualities. A wealth of techniques can achieve the desired colour range.

### Perforations

Since the advent of the European Specification for masonry units, BS EN771-1, multi perforated products are emerging from British manufacturing plants. This relaxation of the void volume limit in British products has resulted in savings on fuel as drying and firing times can be shortened. The Code of Practice for the Use of Masonry, BS 5628 was revised in 2005 to take into account changes to calculation figures that may result.



Wire-cut sandfaced



Wire-cut smooth



Wire-cut drag-faced



Wire-cut rolled



Wire-cut rolled



Wire-cut rusticated



Wire-cut rusticated





# Brick Awards 2008

At the 2008 Brick Awards held in London on 5th November 2008, Ibstock scooped nine of the thirteen awards including the Supreme Winner.

Ibstock has been a leading supporter of architecture and architectural teaching in the UK for well over 25 years providing funding for university study trips, lectures and regional RIBA competitions. This, coupled with the Company's nationwide network of Design Advisors, has helped provide architects with the level of support and knowledge needed to produce winning designs.

Over the next two pages we look at the winning projects in a little more detail.

## Best Commercial Project & Supreme Winner



### NEW MUSIC BUILDING, LATYMER UPPER SCHOOL, LONDON

Architect: van Heyningen & Haward  
Brickwork Contractor: R Durnell & Sons  
Brick: Ibstock: Berkshire Orange Stock

This building links together a number of buildings on the site and creates a new set of spaces at the heart of the School. There is a limited palette of materials all of which combine well with the brick to produce a convincing design solution.

## Best Private Housing Development

### THE BARGE ARM DEVELOPMENT, GLOUCESTER

Architect: Edward Cullinan Architects  
Brickwork Contractor: Cowlin Construction  
Brick: Ibstock: Birtley Olde English

The Judges enjoyed the way in which this new building acknowledges its context by taking clues from the existing warehouses without slavishly copying them. Whilst there are a number of materials used externally, the brickwork provides a unifying theme that is fundamental to the success of the composition. The buildings create a number of external spaces that enhance the experience of living in these well designed apartments.



## Best International Project

### 2 HOUSES IN KILLINEY

Architect: ABK Architects  
Brickwork Contractor: Cedar Building Company  
Brick: Ibstock: Chailey Stock/Hamsey Multi Stock Paver

The Judges found many features to admire in this excellent development. The architectural concept and its realisation, the relationship of building to site, the use of landscaping elements and the skill of the craftsman who built it. A worthy winner of a close fought category

## Sustainability Award

### NEW HEAD OFFICE, FITZPATRICK CONTRACTORS, HODDESDON

Architect: Black Architecture  
Brickwork Contractor: Newton Brickworks  
Brick: Ibstock: Tudor Brown Blend

The Judges were impressed by the high standard of entries in this category, proof that Clients and Designers are beginning to appreciate the importance of Sustainability. Fitzpatrick Contractors commissioned their own Headquarters with the intention of making it a demonstration project for Sustainability. They have been successful in delivering a building that is rated 'BREEAM Excellent'. Every aspect of Sustainability has been considered especially the contribution of brick in forming an elegant and practical façade to this outstanding building.

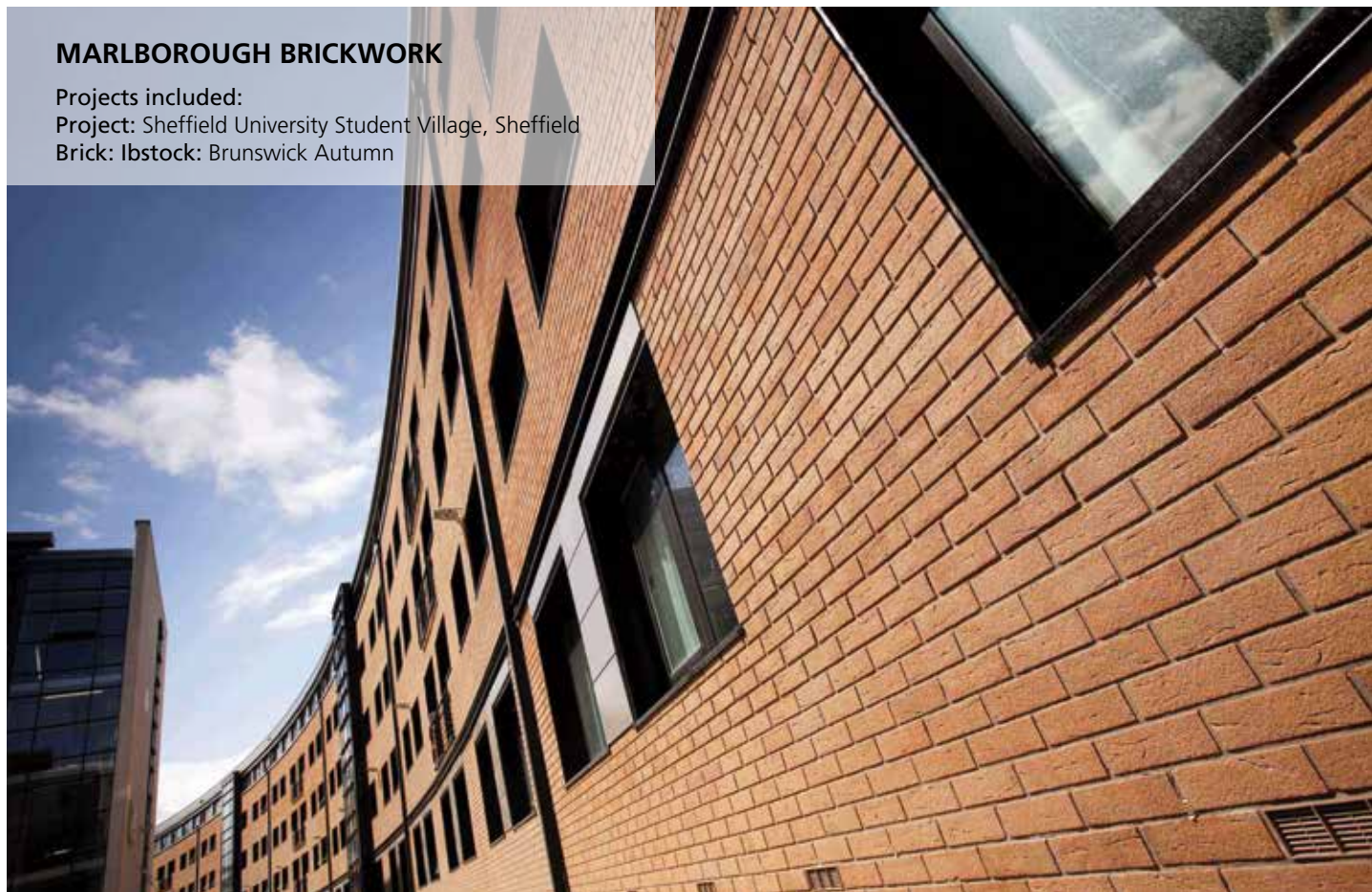






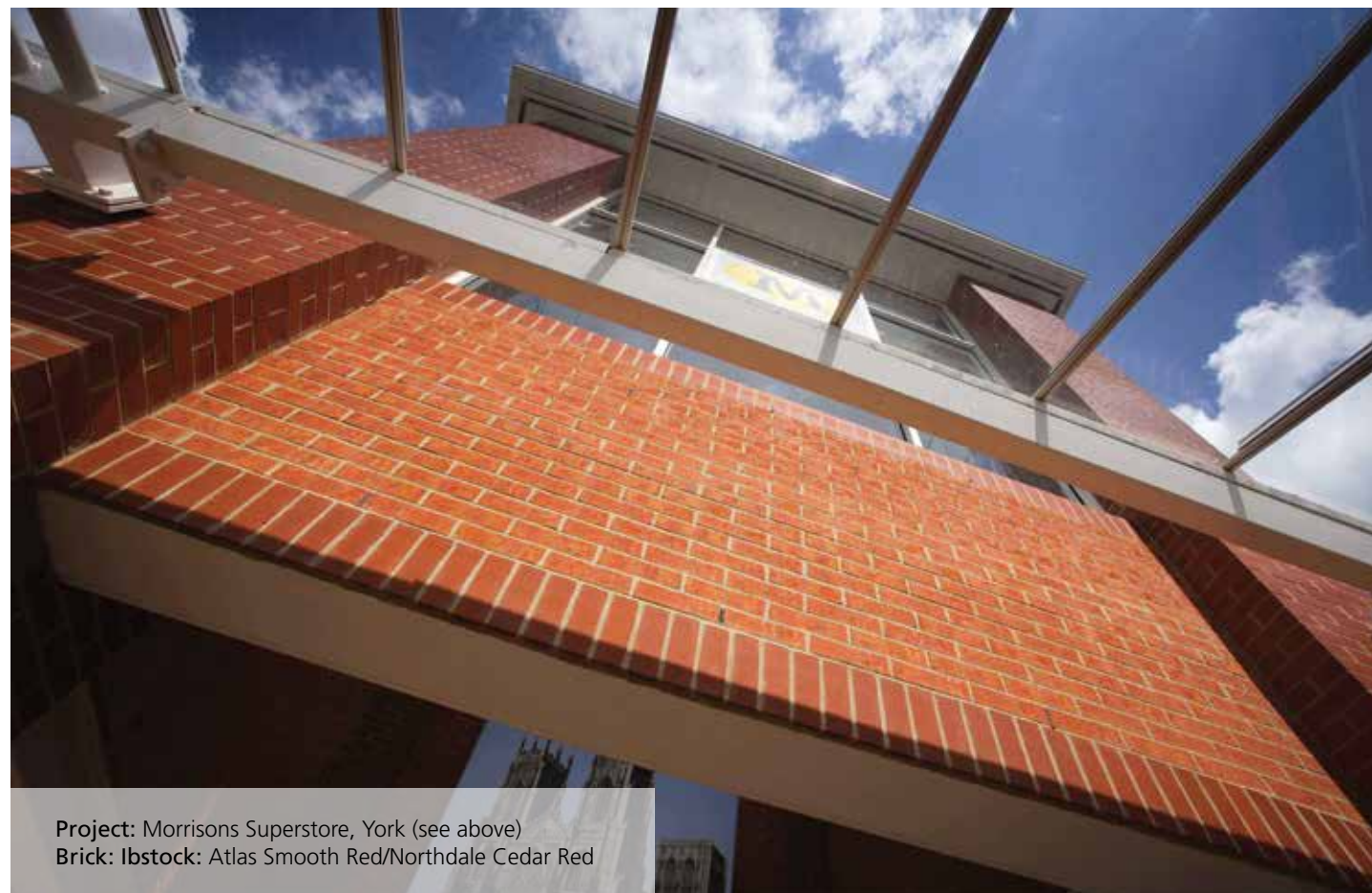
## MARLBOROUGH BRICKWORK

Projects included:  
Project: Sheffield University Student Village, Sheffield  
Brick: Ibstock: Brunswick Autumn



## Specialist Brickwork Contractor of the Year

This is a company with an excellent record in Health and Safety that provides training and development to all levels of Staff and has an all-encompassing management system. Nearly 80% of their contracts are negotiated repeat business and when you see the quality of their work it is not surprising.



Project: Morrisons Superstore, York (see above)  
Brick: Ibstock: Atlas Smooth Red/Northdale Cedar Red

## Special Award



### THE LOVELACE MAUSOLEUM, ST MARY'S CHURCH, EAST HORSLEY

Architect: The John Deal Practice  
Brickwork Contractor: Chris Anstey  
Brick: Ibstock & Handmades to Match

The Judges chose to mark the restoration of the Lovelace Mausoleum with a Special Award. The close cooperation between Architect and Contractor has resulted in a spirited restoration which even involved the Contractor in making some of his own special bricks. The restoration of this building has been a labour of love on the part of all concerned.

## Best Innovative Use of Brick & Clay Products



### HAIR SALON, BELFAST

Architect: Jamison Architects  
Brickwork Contractor: MPS Construction  
Brick: Ibstock: Birtley Olde English

The Judges considered this project an excellent demonstration of the adage that if the designer makes the effort to exploit brickwork it is possible to produce innovative and striking results without breaking the bank.

## Volume Housebuilding Award



### DAVID WILSON HOMES

Project: Heron's Landing  
Brick: Ibstock: Cheddar Red/Cheddar Golden/Audley Red Mixture Stock



Project: Eton Court  
Brick: Ibstock: Parham Red Stock/Berkshire Orange Stock



Project: The Hermitage  
Brick: Ibstock: Surrey Orange/Surrey Cream Multi

The Judges thought that these three schemes demonstrated the Developer's sensitivity to the potential of different sites and a determination to produce high quality homes whatever the location. They were impressed by the consistently high standard of finish in the buildings and the variety of designs on offer.





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