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Bricks, stone & ceramics supplement

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FROM THE EDITOR

Brick is back! As shown by the record number of submissions to last year's Brick Awards (325 projects), and testimony from our expert columnist in this special supplement, Arup's Alexis Harrison, the material is now at the top of architects' agendas. No longer saddled with the stigma of faceless volume housing, brick's potential to offer precision-matching of a new building to its historic context, highly crafted facades, and a sense of warmth, is seeing its use increase in all sectors.

The resurgence of brick's popularity is seen in the two schemes we selected for our Project Reports, namely Maccreanor Lavington's South Gardens scheme in south London, and another residential scheme, this time in Copenhagen, and designed by COBE and Vilhelm Lauritzen Architects.

In the former's case, the task was to replace a sprawling estate with a set of buildings which provided much more of a tie-in with well-loved Victorian housing of the area. Judicious application of a limited but varied palette of bricks achieved this and a lot more. In the case of Krøyers Plads in the heart of Copenhagen, brick has also been used to help the scheme bed in, this time with the harbourside area's warehouse heritage. It's also been used to enhance the playful new forms that the architects have devised for the apartment buildings.

South Gardens was given the Supreme Winner award at the Brick Awards, which I think means the judges really, really liked it. It's certainly a showcase of how the variety possible with brick can break down the volume of a huge new development. It also shows how a bit of design ingenuity can produce appealing, detailed mid-rise facades, bolstering the popularity of the once-maligned clay.

However is brick on the rise in the commercial sector too or is it restricted to resi? When we come to compile the content for next year's supplement, it would be good to see more high quality commercial sector brick buildings in the mix.

We hope you enjoy this supplement as much as we've enjoyed preparing it – we think it contains a rich variety of interesting case studies and viewpoints. In addition to a big focus on brick, it also looks at the key current issues and applications possible with both stone and ceramics, in current and future buildings.

James Parker
Editor

ON THE COVER...

Krøyers Plads – an apartment scheme on the harbour-side of Copenhagen designed by COBE and Vilhelm Lauritzen Architects.
For the full report on this project, go to page 12

© Rasmus Hjortshøj - COAST

CERAMICS

Dubai's Wasl Tower to be one of the world's tallest ceramic facades

UNStudio, in collaboration with Werner Sobek, designed the new Dubai high-rise Wasl Tower, currently under construction with a 'low tech' ceramic facade.

In consultation with the client Wasl Development Group, clay was chosen as a basic material, as such the facade fins will be manufactured as "low-tech, glazed ceramic elements," said the architects.

The geometry of the mixed use tower achieved its "holistic" appearance by means of "parametric design and high-tech engineering," said the architects. The available sustainable measures required in the broader region have been "seamlessly implemented into the design".

The project is located in a central position in Dubai – along Sheikh Zayed Road, the main thoroughfare that connects the Emirates north to south – and faces the Burj Khalifa. When completed in 2020, the tower will be one of the world's tallest ceramic facades.

"Dubai's reputation as a transfer hub is rapidly transforming into one of a long stay destination, especially during the cooler winter months," said UNStudio. "The city also enjoys impressive infrastructure, connecting places, people and culture."

The design concept for the tower – a slender 300 metre tall super-high-rise – "reflects the notion of these connections, adopting a classic 'contrapposto' movement. It faces in almost every direction and offers public areas high up in the building".

The building is, according to the architects, due to "take cultural sustainability, health, and innovation to the next level." Ben van Berkel, founder and principal of UNStudio, said: "As the project strongly relates to and interconnects with Dubai's urban experience, the aim is to make a visit to the Wasl Tower as attractive and contemporary as possible. As such, a dedicated concept of health, comfort and well-being throughout was developed for the building."

UNStudio's design is closely interlinked with the engineering and sustainability concept developed by Werner Sobek. This close co-operation "defines scale, light, building physics and material specification". In addition, smart access, communication and security provide a "seamless technological base which is integrated with the architecture".

"Clean materials, interactive light levels, in addition to good acoustics" will be implemented in all spaces throughout the building. This is particularly the case on the public levels, where they will be combined with a "specific food experience, hosting and aesthetics, resulting in a seductive activation of the human senses".

STONE

Barrault Pressacco completes Parisian social housing units in stone

Parisian practice Barrault Pressacco has completed a social housing project in the French capital in "massive stone".

The project, said the architects, "articulates an environmental approach to design whilst echoing the Hausmannian building tradition that characterises the city. The use of this natural material equally contributes to the sense of wellbeing and comfort that permeates the project."

Stone is abundant in the vicinity of Paris, so is "virtuous environmentally and highly contextual, drawing on local resources and engaging the regional economy," said Barrault Pressacco.

They commented on its sustainability: "The energy necessary to extract, cut and lay stone is limited in comparison to other materials. It undergoes little transformation and its intrinsic properties are conserved in the process."

The site is located in the 11th arrondissement of Paris, where local vernacular architecture coexists alongside Hausmannian renovations from the latter half of the 19th century.

The construction of the building is hybrid, composed of different materials each assuming a particular mechanical or thermal role. All the facades are in massive stone supported by reinforced concrete porticos on the ground floor.

COMMENT

Sourcing done right

Jane Buxey from the stone industry's trade body speaks to Hutton Stone's Marcus Paine about what the sector's focus on ethical sourcing means in practice

Stone Federation Great Britain is the official trade association for the natural stone industry, which helps architects, designers, specifiers and clients collaborate with suppliers to foster best practice. It has taken a firm stance on increasing ethical sourcing practices in recent years, including producing an Ethical Stone Register of suppliers.

Stone Federation's chief executive, Jane Buxey spoke to Marcus Paine, managing director of natural stone merchant Hutton Stone, to see how the company had achieved the first Ethical Stone Register Tier 2 Verification level.

Jane Buxey: Congratulations on the achievement – what was the business rationale for you undertaking this process?

Marcus Paine: Thank you. We pride ourselves on supplying the finest quality natural and sustainable sandstone to clients, so for us this was a really simple choice. We take an enormous pride in the projects we supply whatever their size or location, and this project allows us to proceed with further confidence that we are doing our best.

JB: Has increasing demand from your clients to demonstrate your sustainability and sourcing credentials driven you to seek the Tier 2 Verification accreditation?

MP: We are a family business who have a personal relationship with our staff, customers and suppliers, and therefore we take our reputation with all our stakeholders very seriously. We want to be a leader in the sector and take every opportunity to lead on "doing the right thing," for us this was the primary driver.

In the wider sector, we are beginning to see a rise in demand for this level of surety in supply and origination of product. Price is still 'king', but we are keen to differentiate ourselves by putting our money where our mouth is.

To achieve the higher level of Ethical Stone Register, we realised early on we would need to invest time and resources to formalise our business practices and to provide evidence. The process challenged some of our preconceived ideas about accreditation and verification, and interestingly we discovered benefits we did not expect, such as identifying inefficiencies in our quality and environmental management systems that translated into real business benefits when addressed – previously we believed this process would cost us extra in terms of resources and time.

JB: We now see almost daily coverage of 'modern slavery' in the media, did you not consider sustainable procurement as a business opportunity previously or feel it important for you to manage risk in your supply chains?

MP: Being a UK-based company and taking pride in being 'local', we did not really appreciate 'modern slavery' as being a relevant topic to us – that is until we realised that we buy PPE, stationery and other auxiliary products from all sorts of sources, and not just in the UK. Applying a formalised approach to our practices and procedures, that didn't require major changes, has allowed us to be more strategic in regards to our environmental impacts and overall business growth. It gave us an opportunity to present some of our activities around social and community involvement, increase staff engagement and put in place common sense 'zero waste' initiatives.

We discovered benefits we did not expect

Marcus Paine, Hutton Stone

JB: Would you say that your customers see sustainability as a representing a 'green premium' and would you feel it necessary to pass on such a premium? Or do you feel the ROI has already paid for itself by identifying opportunities for saving, promoting current practice and being able to showcase local community involvement?

MP: The bottom line for me is 'doing the right thing,' which can be enough of an incentive, but I would say anything that gives you a cleaner business operation ultimately provides you with a clearer vision and more efficiency, which has been proven in this pilot study. This has several benefits and promotes positives both within the company and to our customers – all of these things add up to and create a compelling reason both morally and commercially.

JB: Would you say that sustainability/responsible sourcing will pay dividends for future business?

MP: I think there is a growing sense that responsible sourcing is really going to matter more and more to supply businesses. I think we are going to be asked to demonstrate our sustainability credentials increasingly more often, certainly on larger projects, to which our Verification level from the Ethical Stone Register helps greatly.

JB: Where do you see the Ethical Stone Register, responsible sourcing and sustainability for SMEs to be in the next five years?

MP: I think this area is only going to become more and more relevant. I think the ESR should be widely discussed and promoted by Stone Federation. There are large client groups out there looking to back a scheme like this, and I feel that the demand for being able to show your position will only grow in future.

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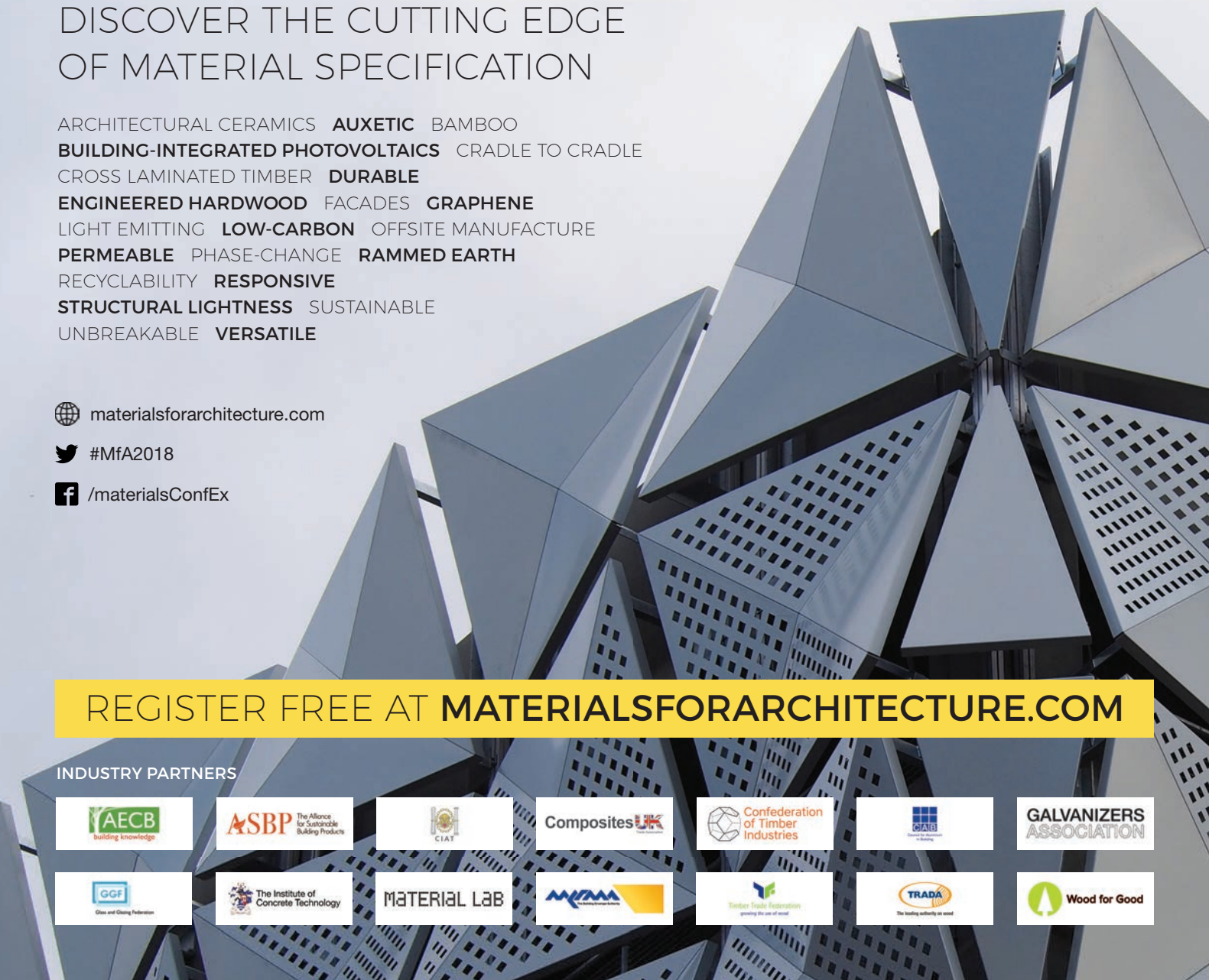

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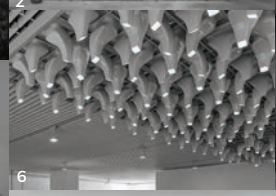


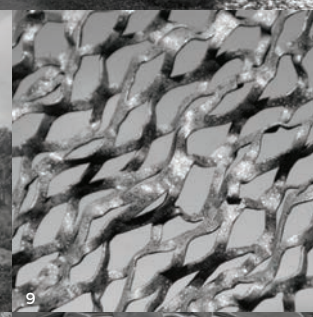

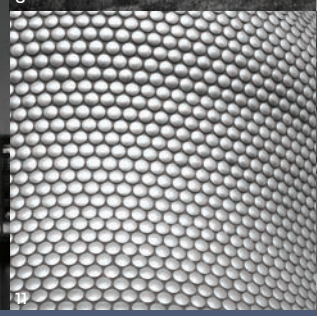
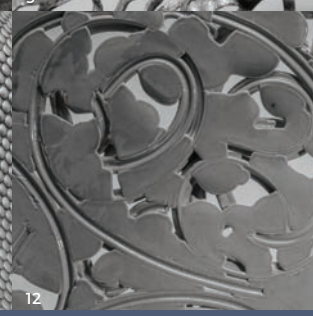

Materials for Architecture 2018 celebrates all that is new and innovative in the specification of building materials during every stage of architecture and construction.

There is a clear focus across the two days on how construction materials are being innovated to provide better buildings; from **sustainable concrete** and **hardwood CLT**, to **smart materials**. Those attending the event will be able to gain a host of insights on how to apply the latest thinking on materials for architecture, and are guaranteed to come away with inspiration for their projects.

Materials for Architecture 2018 will be held at the ILEC Conference Centre, London from **25-26 April 2018** and will combine a conference programme, exhibition hall, CPD seminars, material galleries and evening reception.

VENUE
ILEC Conference Centre
Ibis London Earls Court
47 Lillie Road, London SW6 1UD

DIRECTIONS
Take the District Line to West Brompton (4 min walk* to ILEC) or the Piccadilly Line to Earls Court (8 min walk* to ILEC)

* Estimation via Google Maps

COMMENT

Will brick facades slip up?

Arup's Alexis Harrison says that while the bricks sector has responded to increased demand from architects seeking to use the material in highly crafted exteriors, they still have questions about the long-term performance of brick slips

When I joined the brick industry in 2001, it was almost on its knees. Sales had plummeted year on year in a commodity market where manufacturers fought to make and sell the cheapest red bricks to volume housebuilders and builders' merchants.

Brick wasn't cool, and couldn't have been further from the palette of avant-garde architects. As product innovation manager for a major brick maker, my attention was focused on the then-Government's Construction Task Force (led by ex-Jaguar boss Sir John Egan), which told us that the future of construction lay in modular off-site manufacturing.

Fast-forward 16 years, and brick couldn't be more popular. Brick buildings have won the Stirling Prize for three of the last five years, and have dominated other materials in every shortlist. Whether it's one-off houses or concert halls, elegantly crafted brick buildings feature in every edition of the architectural news sites and publications, and as you enter almost any UK city you will be greeted by shiny new high-rise brick-clad apartments.

Demand is huge. In the late 2000s the brick industry was hard hit by recession and took time to catch up with that demand, but this is now being met after mothballed kilns were relit and state of the art factories opened. Brickwork contractors are busy, but the skilled labour is out there, despite reports to the contrary.

Offsite

Nevertheless, there is a strong driver for offsite fabrication of brickwork. While the systems cost more, there can be major programme advantages from using a unitised system of brick cladding – delivered 'just in time' to tight city sites and installed within hours to create a finished facade. The pros and cons of conventional hand-set brickwork versus offsite manufactured panels are different for every project, and are not always the right answer, but high demand for offsite solutions sees many opportunities in the market place.

The solution to offsite fabricated brickwork usually meant one thing: brick-faced precast panels, where bricks are cut in half with dovetailed slots in their backs and set into reinforced concrete to create storey-height cladding panels. This approach has provided robust and durable cladding to many buildings, and despite many architects' concerns about the visual disruption of wide panel-to-panel joints, precast can work beautifully if the system is considered from the beginning. Maccreanor Lavington's Cartwright Gardens project in central London is an example of a finely crafted brick facade that looks nothing like a unitised system.

AWARD WINNING
Piercy & Co's Turnmill Building in Clerkenwell has won several awards, the brickwork of its facade echoing local warehouses © Paul Carstairs

Slips

Another approach is the application of brick slip panel systems. They vary enormously, but typically consist of a brick slip (usually a 20 mm sliver of clay either cut from a standard brick or manufactured like a tile) which is adhesively bonded onto a backing panel. This allows lightweight panels of seemingly 'real' brickwork to be applied to facades in a matter of minutes. Aesthetics and material honesty aside (and you would be hard pushed to tell the difference from real bricks once installed), the appeal to contractors and developers under increasing time pressure is huge.

Brick slip systems are being installed in vast areas on high rise buildings across the land, to a height of over 20 stories. Many also

Brick slip systems are being installed in vast areas on high rise buildings across the land, to a height of over 20 stories

Arup's Alexis Harrison

feature large overhanging soffits. But are these systems safe, and should we be concerned about their long term robustness?

There are a dozen or so proprietary brick slip systems on the market in the UK, most of which have emerged in the last five to 15 years. The majority of systems began as a means of upgrading the insulation on existing low-rise housing stock – insulation could be applied to the outside of say, a terrace of brick houses, and slips could be bonded to the insulation face to reinstate the neighbourhood characteristic. More recently, as new-build high rise brick buildings have become increasingly popular, the system manufacturers are keen to get in on the action, even though such systems may never have been designed for use on tall buildings, with their increased exposure and serious hazards if slips should fall.

Adhesives and testing

Almost all brick slip systems rely on the adhesive bond of bricks slips onto a rigid substrate – these vary from plastic sheets, insulation boards, cement particle boards and steel sheets. Some provide a robust mechanical interlock which retains the slip should the adhesive bond ever fail, via either metal fixings or by casting dovetailed slots into thin, high performance concretes. The majority of systems however, rely entirely on adhesives.

Manufacturers and their agents are quick to point out the proven performance of adhesives, backed up with data sheets and independent tests showing huge bond strengths which only ever fail with a cohesive failure of the slip (whereby the adhesive is stronger than the slip). Likewise, our attention is often drawn to adhesive technology in automotive and aeronautical applications. But the lifespan of performance cars, planes and spacecraft is relatively short, and rigorous and regular inspections are undertaken. Buildings (especially towers) are often neglected for years due to difficult access, and frequently exceed their design life by decades.

Recent research by Arup has identified the potential for failure modes in adhesively bonded brick slip systems due to deterioration of the adhesive and/or its interfaces. For example, many adhesives are known to lose their ductility over time, meaning that they become brittle with age and have less capacity to accommodate movement of the system components. Most bricks are porous, allowing moisture and air to the interface between the adhesive and the slip. Hydrolysis and oxidation are just two of the mechanisms that can deteriorate adhesive bonds over time.

Accommodation of movement is an essential consideration in any facade system as the materials will be subject to thermal and moisture expansion through endless cycles of day and night,

PRECAST
Maccreanor Lavington's Cartwright Gardens is a student halls scheme in the heart of central London – it has a finely crafted brick facade using precast panels that "looks nothing like a unitised system"

summer and winter. Each material has a different rate of expansion, some considerably so, and the adhesives have to take up the difference, leading to the potential of long-term fatigue. Additionally a facade is subjected to long term cyclical loads, such as positive and negative wind load deflections, and deflections in the primary structure under live loads.

Considering the high risk of serious injury if failure occurs, there is little evidence of adhesive-only brick slip systems being tested to verify that they avoid these known failure mechanisms. Most come with certificates from independent authorities, detailing multiple tests that have been undertaken, but there is no product standard that ensures a system will be durable. These certificates are accepted by building control officers, government departments and insurers, leading to the assumption that the systems are suitable for their application, and so adhesively-fixed brick slip systems have crept into the common language of building facades.

These concerns need to be seriously considered when specifying a brick slip system which relies entirely on adhesives ,where falling slips could be hazardous. It is too soon to judge from track record alone how such systems will perform in the long term, and we are yet to see sufficient evidence from testing. Until such time, my approach is to specify brick slip systems with robust mechanical connections.

Alexis Harrison is a designer at Arup specialising in clay and ceramic materials – alexis.harrison@arup.com

BUILDING PROJECTS

KRØYERS PLADS
COPENHAGEN

New angles on warehouse living

Located on the doorstep of Copenhagen's Nyhavn tourist trap are a trio of desirable new harbourside apartment blocks which echo the area's traditional brick architecture, but with a modern twist. Sébastien Reed reports

Probably the most immediately striking aspect of the Krøyers Plads apartment scheme is its location, in the very heart of Copenhagen. Three substantial new buildings have been inserted next to the harbour on a tight, very central site – facing architects Lundgaard & Trandberg's 2008 Royal Danish Playhouse across the water, and next to the former location of the 'world's best restaurant,' Noma. It comes almost as no surprise that it took 10 years and a plethora of submissions from top European practices

before COBE and Vilhelm Lauritzen Architects' (VLA) joint proposal for a development by NCC for the empty plot was accepted in 2011.

Five previously-submitted bids were all rejected by local interest organisations and the city due to excessive height, and deviation from Copenhagen's historical and aesthetic contexts. Following additional stagnation caused by the 2008 financial crisis, the highly politicised site was an "architectural battleground," according to COBE – and this context would later inform the sensitive and strategic approach it would adopt for this project.

The finished project combines three five-storey mixed-use buildings, together housing 105 high-end residential units, each with its own distinct form. The buildings are skirted at ground-level by a range of retail and food outlets, their high-end nature befitting the neighbourhood.

The plot is sandwiched between the water and Strandgade, a historic and picturesque street running along the harbour front. A basin protrudes into the plot from the harbour towards Strandgade to form one side of the plot, framed on two sides by attractive 18th century warehouses. The one to the north-east was Noma's former home, now housing a new eatery with the world-beating restaurant having recently relocated to a site not far away.

Hyper-democracy

If the design was to be successful, the approach had to be "hyper-democratic and contextual," says COBE project architect Nikolaj Harving. Well aware of previous failures further down the harbour, such as "office buildings in the 1980s with no public access," plus the more recent succession of rejected proposals for this site, COBE and VLA's first priority was to fully consult local stakeholders and build a collective vision for the project. The two firms working in partnership conducted a series of workshops to open the design process to the public.

"We involved them, and listened to them," Harving says, "they said 'no' if it was too high, or the wrong material," adding "for some of them, the only thing they had an opinion about was that it was too many square metres."

This provided the architects with the opportunity not only to inform the public as widely as possible, but also to explain the rationale behind their decisions. "It was very much about involving everybody," Harving explains, "but also to act as

Rather than conjuring up an entirely new typology for the buildings, inspiration was taken from the warehouses scattered along the harbour

VIEWS
Some of the apartments enjoy views over the harbour through generous glazing

middlemen throughout the design process."

But, as in any democracy, opposition is a given. Naturally, their client was also eager to reap the most from the 20,000 m^2 plot. When first designed, Krøyers Plads was programmed as two deep-plan office buildings, and one residential. The overwhelming response from buyers however meant that the programming was changed to make all three mixed-use but primarily residential.

Contextual stories

The brief was to "develop the 20,000 m^2 and involve the public in the process", Harving says. Acknowledgement of the sensitivity of the high-profile site was the first step in producing a design that was to be welcomed by stakeholders.

As part of respecting the context, rather than conjuring up an entirely new typology for the buildings, inspiration was taken from the historic warehouses scattered along the harbour. The key design idea was to produce a contemporary vision of this vernacular theme.

To this end, Krøyers Plads also pays subtle homage to the "cut-out" appearance and external symmetry of its warehouse neighbours. Harving explains how the facades communicate this symmetry as well as regularity found in the buildings' antecedents: "the windows follow the same strict size and rhythm, even until they reach the cornice lengths."

The way in which the new buildings are arranged topographically is also designed to be a continuation of the other warehouses, replicating the even pattern of distribution along the harbourfront – "like pearls in a necklace," in the architect's words.

"From the harbourfront, you see that the buildings share the same scale," he says, despite Krøyers Plads' volumes being much deeper planned than those of its neighbours. The architects delivered this trick thanks to meticulous 3D modelling to get the right mix of height and depth.

The roofs' angular corners reflect the heights of the neighbouring warehouse structures, maintaining continuity and helping to preserve the city centre skyline, punctured by church steeples. However while providing some continuity of rhythm they also playfully and subtly distort the traditional contours of the original warehouses. Harving also notes that this departure from traditional forms was motivated also by the client's scramble to maximise the utility of the given space.

Brick innovations

Another key area of concern for locals was that appropriate materials would be specified for the project, but the resulting choice of brick would also mean discovering an innovative means to deliver the forms required. In the meantime, the architects settled on the colour palette early in the design process, with response to the site context being paramount. Harving explains: "We wanted red and black, which were very common in the roofs of surrounding historic warehouse buildings."

VLA and COBE's interwoven design approach precipitated the development of an entirely new cladding method. Due to structural reasons and the sheer size of the buildings' roofs, the monolithic aesthetic that the architects were keen to create couldn't be achieved using traditional facade bricks.

Harving and his team took regular trips to Wienerberger's Copenhagen brickyard, where they experimented extensively with different clay and kiln techniques to produce precisely the desired shape and colour palette.

The result of this collaboration with Wienerberger was "a new type of brick – a cladding brick that can be used for both roofs and facades," he tells *ADF*. The shallow U-shaped cladding tile are hung from the wooden roof and facade slats, making it possible to clad a range of more atypical geometries – such as found on Krøyers Plads' roofs.

This innovative material is used extensively on the two parallel buildings closer to the water's edge (which were originally to be office buildings). The material continuity of each structure's exterior eliminates any obvious frontier between roof and facade, blending construction elements apparently seamlessly.

On the facades facing the Strandgade, the original intention was to use a standard Danish brick rotated 90 degrees to reveal the individual recesses created in the brick casting process and create a more rugged look. However, again a traditional approach was not structurally feasible: "The engineer said the facade would not be able to stand as it would be too thin," Harving explains, "so, we used a special heavier brick."

A third brick was also devised by cutting away the sides of the rotated bricks and using them to clad the interior of each balcony. Harving admits to having his

The choice was a new type of brick – a cladding brick that can be used for both roofs and facades

Nikolaj Harving, architect and project manager, COBE

ROOFS
The angular design of the roofs reflect the design of the neighbouring warehouses

negative perceptions of the material were shattered: "I found out through the process that there are so many possibilities – with colouring, depending so much on the clay, the heat – every stone is unique."

Ground floor passages crossing through the colossal buildings are clad with mirrors. The reflective properties of the material carry light through the tunnels, allowing passers-by to feel more secure; and the "non-material" concedes to the red-black colour scheme.

High return

"The most amazing thing is that there has not been one negative response – that's really remarkable", Harving chuckles. Winning the MIPIM 2015 Award for Best Residential Development, COBE and VLA managed to design a building that is almost indiscriminately generous each and every user and party involved.

Although the harbourfront space at Krøyers Plads is owned by the property's residents, it is open to the public. "Traditionally in Copenhagen," says Harving, "you have these courtyard houses, with a private courtyard in the front, whereas here the whole ground floor is functionally 'public.'"

Nearby additions to the built environment have placed yet more emphasis on the public realm, with the inclusion of a foot and cycle bridge easing the circulation of pedestrians to and from the Nyhavn district, and the establishment of a new square. All of this together has transformed Krøyers Plads from a neglected milieu to a new hotspot.

The scheme exceeds Danish energy efficiency standards by nearly 40 per cent, resulting in Krøyers Plads housing the first apartments awarded with the Nordic Ecolabel certification – normally applied to eco-friendly cosmetics and toiletry products in Scandinavia.

The architects were no less successful in terms of fulfilling their client NCC's aspirations, and the initial delays paradoxically delivered it an even more handsome return. Due to the fallout of the decade-long litany of unsuccessful planning applications, the developer was able to purchase the land for a sub-market price. Now, the finished apartments are among Copenhagen's most desired.

Comfortably progressive, the architects' new cladding methodology is catching a wave as other projects begin to specify similar brick facades. In this way it has been the catalyst for other modern emulations of familiar monolithic structures which are now appearing across the city. ■

PROJECT FACTFILE

Project: Krøyers Plads
Location: Copenhagen, Denmark
Client: NCC Bolig
Size: 20,000 m^2
Architects: COBE and Vilhelm Lauritzen Architects
Landscaping: GHB Landscape Architects
Engineer: COWI
Contractor: NCC Construction

british ceramic tile

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PROJECT

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BUILDING
PROJECTS

SOUTH GARDENS
ELEPHANT & CASTLE, LONDON

New faces in town

Maccreanor Lavington's award-winning South Gardens in south London is a showcase of brick's ability to help major new housing projects blend in to their context, as well as provide detail and variation. Roseanne Field reports

South Gardens forms the first phase of the Elephant Park development in south London – a £2bn project by Lendlease and Southwark Council that sits on the site of the former Heygate Estate. The name doesn't come from the development's huge scale, but from the regenerated neighbourhood of Elephant & Castle.

Due to complete fully in 2025, the development comprises 160,000 ft^2 of retail space and a total of 2,500 residential units. Of these, 500 will be affordable and less than 100 will be for social rent, with the rest up for private sale. The fact the now-demolished estate provided 1,200 social rented units saw the scheme replacing it seeing its share of controversy.

Undeterred, Lendlease and Southwark Council stuck to their vision that Elephant Park will be "London's new green heart," and a place "where everybody loves to belong." And so far, given the race to buy flats in the scheme pre-completion, they are not wrong. South Gardens was designed by Maccreanor Lavington (bar an energy centre by Duggan Morris) and completed at the end of 2017.

Even the most vociferous critics of Elephant Park would have a hard time defending the aesthetic of its predecessor's concrete slab blocks. Maccreanor Lavington's brick-clad replacements by contrast focus on respecting the local Victorian architecture, as well as the building's current and future residents.

Arrangement

South Gardens includes 360 units in eight buildings of varying heights and designs.

The tallest is a 16-storey red brick blend tower (H06D on plan shown above) that houses 60 one, two and three bedroom apartments. Each features its own inset balcony – to break up the facades and offer amenity for all residents. "They work really well that way because they feel like an extension of your apartment and not simply an addition," explains Gerard Maccreanor, director of Maccreanor Lavington. For a practice renowned for its detailed brickwork designs, it is of course also important not to let balconies "dominate the facade," he adds.

The tower's double-height ground floor will eventually be home to retail units. It also boasts a 24-hour concierge service, gym and communal residents area and terrace on the 16th floor. An eight-storey block (H06C) is connected to the tower, featuring a green roof and solar panels as well as the same double-height retail units.

To the east of this block, lining the northern side of Wansey Street, is a collection of 15 three and four bedroom townhouses (H06A and H10A). These houses have been built to Passivhaus standard with a cross-laminated timber (CLT) frame, and have an almost zero energy bill. They have been designed to emulate the Victorian terraced houses on the other side of the road and are finished with a yellow-white brick. The street is reasonably wide, with many of the existing trees were retained.

The portion of affordable housing sits on the east of South Gardens (H13A, B and C). These blocks are finished with the Mystique brick and feature large bay window-style inset balconies – another design decision influenced by traditional local architecture. "It's traditional throughout London," explains Maccreanor. "A lot of mansion blocks have bay windows which are about getting views out and more light in."

FIRST PHASE
South Gardens comprises eight buildings and is the first phase of the £2bn Elephant Park project

SPACE
The retained trees allow for wider routes, giving a sense of space to the development

Each of the buildings has a unique look, thanks to applying a limited palette of brick varieties in different ways

External balconies facing onto busy road are rarely used. "The balcony as a bay is a more protected space and works as a more appropriate language for the front facade and streetscape," says Maccreanor.

Running up the side from the end of the townhouses and part of the way along Heygate Street are two mansion blocks built in another red brick blend (H10B and C). The lower of the two is three-storeys high, while the other sits at eight-storeys. These blocks are of different tenures – H10B is all affordable while H10C is almost entirely private – as well as two houses that sit on the top levels of the eight-storey block. A roof terrace has vegetable grow beds that can be rented by South Gardens residents.

The last of the eight buildings (H06E and F) is another eight storey mansion block, stretching along Heygate Street until it meets the 16-storey tower. Similarly, this features a range of apartment types, and a green roof. Rain gardens have also been designed into the development at various points.

Both these mansion blocks feature balconies overlooking the rear courtyard rather than inset balconies. "Exterior balconies work much better with private courtyards," Maccreanor says. For these balconies Maccreanor Lavington designed bespoke laser cut balustrades that give protection and enclosure while allowing a degree of transparency.

The Elephant Park development is one of 18 projects worldwide to be part of the Climate Positive Development Program, which looks for the world's greenest urban regeneration projects to act as models for future large city developments

Brick specialists

In the architect's view, brick is now almost the "default material" for cladding such schemes, and "there is a move away from other materials." The 2017 edition of the Brick Awards saw South Gardens winning Large Housing Development and the Supreme Award, among five gongs in total for the practice. The judges described South Gardens as having a "level of refinement", which was gratifying for Maccreanor, who says the practice prides itself on "careful detailing of all the elements in the facade". He adds that being "a specialist in brick" means "knowing how to get the best out of them, knowing the right ones to choose, knowing what type of details you can achieve."

Detailing is key to the success of the South Gardens development, which illustrates the decorative abilities of the material in its various facades. Each of the buildings has a unique look, thanks to applying a limited palette of brick varieties judiciously across the buildings. This variety was important to the client. "Lendlease didn't want 'one' development, they wanted us to make a number of different buildings with different architectural styles so it really feels like part of the city," explains Maccreanor. "If this had all been one style it would have been quite substantial whereas as it's broken into different buildings, different heights, it becomes varied, but it all blends in."

Summarising their brick specification choices, Maccreanor says: "There's are a number – it's a Mystique on a number of the buildings and then two of the others have different tones of red and brown brick, and then there's lots of detailed brick. We definitely wanted these to be a family of buildings, so that there is some relationship between them."

Only a handful of different brick types were used, but Maccreanor Lavington used mixes in different ways to provide decorative variation on each building. "It's not just changing the colour of the brick," Maccreanor explains. "Some buildings have much more decorative elements than others. That was important."

One brick in particular that has been used across almost all the buildings is a pale glazed product. Of course its use is partly as a decorative element – on the majority of buildings it's used laid vertically on the lintels. However, there is also a more practical reason. "We also used it down the side of windows, which is about reflecting light into the rooms and inset balconies," Maccreanor explains.

The pale and buff brick combination has worked particularly well on the affordable housing blocks with their bay windows and balconies. "We are particularly proud of these," says Maccreanor. "The brick combination is really successful."

This combination was also used on the mansion block HO6E/F (see right), but to different effect. The ground and first floor layer them alternately in a horizontal striped pattern. Similarly the tower and adjoining block utilise a black glazed brick up to door height, where the white glazed brick then takes over to the top of the first floor. "There's more attention on the lower levels because that's what you walk past and are close to, that's what you really see," says Maccreanor.

The practice has been working with glazed brick in many of its recent projects. "It's a traditional way of decorating buildings in London – historically many pubs used glazed bricks to elaborately design their ground floor," Maccreanor explains. "It's something that people are familiar with in the city, and provides a high quality street elevation in a relatively cost effective manner."

Maccreanor that says that an important design goal for the practice is that when finding inspiration in traditional London buildings, they get the balance right between respect and pastiche. "We're not aping anything historical but we're also not averse to doing things that have a historical reference," he explains. Referring to the mansion blocks he says: "Particularly with these two we were really looking at that typology of mansion blocks that was very common over large parts of London."

Despite brick's resurgent popularity, alternative cladding materials are still widely seen. Maccreanor insists that while they

occasionally consider alternatives for commercial projects, their practice won't use anything other than brick when it comes to residential developments. "I think the reason we use brick is that it's the most sensitive choice," he says. "For people who buy apartments it's generally the biggest investment they'll make in their life, and it has to look good and weather well."

All of the brickwork was completed by Lee Marley Brickwork, with whom Maccreanor Lavington have a good working relationship. "What you see when you give bricklayers something a little bit more challenging is they like it, because actually it can be pretty boring building a big wall that's totally flat!" Maccreanor says. "They like a degree of complexity, many of them are very highly skilled so I think generally they prefer to have a little challenge in their work."

Going green

The Elephant Park development is one of 18 projects worldwide to be part of the Climate Positive Development Program, which looks for the world's greenest urban regeneration projects to act as models for future large city developments. As well as solar panels and the CLT-constructed houses, water sensitive urban design (WSUD) has also been considered, managing groundwater and the reuse of water.

Brick may not immediately spring to mind when considering sustainable materials, but Maccreanor believes the material has a better sustainability case than many accept, on longevity grounds. "I think the sustainability aspect is just that it requires very little maintenance and it will be there a long time," he explains. Referencing the demolition of the Heygate Estate he says: "The construction standards in the 1960s were poor, maintenance has been very poor, so it's right that these projects have to come down but you displace communities. If you have solid brick projects, there's no reason why they can't be there for hundreds of years so then you're also building communities." ■

BALCONIES
Large bay window-style inset balconies are a part of the design that was influenced by traditional London architecture

BRICK SUPPLIERS: SOUTH GARDENS

Freshfield Lane (Anthracite, Lindfield, Lights, Darks, Firsts)
Engles Baksteen (Mystique)
Ibstock (Ibstock White Engobe)
Wienerberger (Black glazed)
CPI (Natural Mortar)

Tough at the bottom

Claire O'Brien at British Ceramic Tile looks at the compelling benefits of ceramic tile in commercial environments

Ceramic tiles have become one of the most popular surface material options for homeowners, purchasing through the big name 'sheds' for their home projects. Now they are increasingly being recognised for their advantageous nature when used in commercial fit-out projects too. As ceramic tile increases in popularity, the pattern, texture and size options of ceramic tiling are expanding too. So what's behind the new trend in the popularity of ceramic tile in commercial environments?

Durability

A primary beneficial factor associated with ceramic tiles is durability. Surfaces in commercial spaces need to be really tough. Unlike most tiled surfaces in the home, commercial spaces are often subject to a very high footfall and can often be subject to great weights when used as a floor surface. Installed correctly, ceramic tiles can withstand vast weights. Their durability is proven by the discovery of intact ceramic tiling installations found in the ruins of Ancient Rome and Europe.

Handily, a scale of hardness exists for ceramic tile, rating the products from zero to five. Zero to two is categorised as being suitable for wall tile, three is appropriate for most residential uses. Four and five are the hardest ceramic tiles and are suitable for commercial applications. This scale not only gives customers the choice of their type of ceramic tile, but it also ensures that the tiles are approved as suitable for the desired use.

Resilience

Resilience is an important feature needed in commercial applications, another reason why designers and specifiers are increasingly opting to pick ceramic tile ranges for commercial projects. Ceramic tiling is easy to maintain and clean. Heavy duty cleaning equipment and chemicals are often used in commercial spaces due to their efficiency and ceramic tiles are not only able to withstand the cleaning equipment's weight easily but also are not negatively affected by the chemicals in the cleaning products.

When specifying for outdoor areas the critical point is a material's ability to survive everything the weather throws at it

Wellness

Crucially, ceramic tiles do not harbour germs, making them the ideal choice for surfaces in any commercial environment. This hygienic feature means unwanted smells don't linger and it helps in the battle to ensure the healthiest environments possible. In spaces where large numbers of people must be in close proximity, such as transport hubs, public bathrooms and workplaces, a responsibility exists for specifiers to choose materials that perform positively in respect to the inhabitants' health. Additionally, recent studies have shown a correlation between healthy workplace environments and company productivity and profitability. So the less germs carrying coughs and colds around, the better it is for the economy!

Exteriors

Once properly sealed, ceramic tiles can easily be made waterproof, making them a safe choice in spaces where people may be walking in and out frequently in all weather conditions such as shopping centres or reception areas. When sealed expertly ceramic tiling can even be used for exteriors. When specifying for outdoor areas the critical point is a material's ability to survive everything the weather throws at it, including extreme temperature changes: rain, snow and sunshine. Ceramic tiles are the runaway favourite in this respect – and if proof were required

Architects, designers and specifiers are able to choose ceramic tiles safe in the knowledge that they will be delivering a quality finish

then the fact that most roof tiles are made of ceramic materials should reassure any doubts. The worry of tiles becoming slippery when wet is easily handled – choosing tiles with a 'slip-rating' of R11 means the tile is textured and will not become dangerous when there's moisture or water around.

Style

Ceramic tile can be used on floors and walls in almost any style of environment. New HD printing technology means that any design can be applied to ceramics. Natural stone effects like terrazzo and other marbles, dark grey slates or sandstone can be convincingly recreated at a fraction of the cost of the real thing and without the huge carbon footprints ordinarily involved. The same HD technology allows for any design to be produced in the most vibrant of colours – from traditional Victorian or Moroccan styles to contemporary graphic and linear patterns, the options are endless. And the design options aren't just 2D – the surface of a ceramic tile can be moulded into textures or patterns that create tactile environments and add richness to interior schemes.

Cost

Ceramic tiles are incredibly good value. Customers can confidently specify based on durability, resilience, hygienic performance, multi-application ability and a vast array of design choices with confidence on almost any design budget. Whether a luxurious hotel lobby, a modern office kitchen, a trendy restaurant or bar, commercial space architects, designers and specifiers are able to choose ceramic tiles safe in the knowledge that they will be delivering a quality finish.

Claire O'Brien is head of design at British Ceramic Tile

Brick slip cladding for modern construction

Richard Haines of Eurobrick outlines the benefits of specifying brick slip systems for today's buildings

A brick finish remains as popular as ever in British architecture, but as increasing numbers of projects are delivered using modern methods of construction, what is the best way to achieve it?

The offsite construction and modular sectors have long recognised the benefits of brick cladding systems compared to traditional brickwork. Without doubt, speed of delivery is an important consideration for most sectors. Using brick slip cladding offers a quick, easy and robust solution. Being able to install cladding offsite is also key a benefit. Quality brick slip cladding is robust enough to withstand the stresses of being lifted, transported to site on the back of a lorry and craned into position. A modular building that can be delivered to site and that does not require substantial finishing works to the exterior helps in reducing onsite operations which can be costly, are subject to other scheduled site activities or delays and which will also be at the mercy of the weather.

In a controlled factory environment, an installer should be able to install around 1 m² per hour, depending on the system. With the skills shortage in the construction industry still causing concern, reducing the dependency on traditional skilled labour is beneficial. Some cladding systems can be assembled by semi-skilled labour, helping to ease pressures both in terms of finding workers and the associated costs.

A brick finish is sometimes required to fit in with existing buildings in the surrounding area. The wide range of brick slips now available allows for matching the finish of existing structures, or even for over-cladding building extensions as well as the original buildings to create a seamless finish, with the option of added insulation benefits. It is also possible to have brick slips cut if a specific brick is required, although this is a more costly option. For a more modern finish, brick slip cladding

systems are flexible and can be used in conjunction with other cladding systems (such as timber, render etc.) so a mixed palette of finishes, popular for creating a contemporary look, is also achievable.

Cladding systems can incorporate insulation or can be used in conjunction with insulation systems. Insulation can usually be supplied in a range of thicknesses to help meet the U-value targets of a project. Traditional bricks have low insulation properties and their production is much more costly to the environment, in terms of the amount of energy and raw materials used during production, and the associated carbon emissions.

In some areas where space is at a premium, building upwards is an achievable option with brick slip cladding systems too, which are generally lightweight and do not

A brick finish is sometimes required to fit in with existing buildings in the surrounding area

CONTROL
Brick slip cladding installed offsite can enable greater quality control and speed up project delivery

require the foundations associated with traditional masonry. When extra floors are added to structures, low weight can simplify design and reduce engineering costs, compared to traditional brickwork. Cladding can also be fitted to a number of different substrates, including timber and steel frame.

Brick slip cladding is durable too. Kiln fired clay brick slips weather and age in the same way as conventional brickwork and a brick slip exterior will require little to no maintenance. It is important to note that the life span of different cladding systems may vary, and so this should be checked with the suppliers. It should also be noted that not all available brick slip systems have been through an independent rigorous testing and certification process. Confirmation of certification from the cladding supplier should always be requested.

Eurobrick's P-Clad system was used on a residential project in Liverpool, a new £3.5m development of 33 eco homes for Liverpool Mutual Homes. Modern methods of construction were adopted to build the modular houses and the cladding was installed offsite, to benefit from greater quality control and assisting with the speed of project delivery.

The aesthetic advantage of achieving a real brick finish, without compromising on speed of delivery, have given slips in a firm place in the future of modern construction

P-Clad has a cement particle board backer panel, developed to work as an external sheathing to structures and is certified for installation on buildings over 18 m high. The Point, in Ilford, is a large residential development comprising one, two and three bed apartments. Sections of the development exceeded 18 m high and as such required a cladding system suitable for this purpose.

There are many advantages to brick slip cladding for new projects. Most notably however, the aesthetic advantage of achieving a real brick finish without compromising on speed of delivery, has given it a firm place in the future of modern construction.

Richard Haines is director at Eurobrick

Finding the perfect match

Jason Hughes, managing director at Imperial Bricks, looks at the growing popularity of handmade, colour matched bricks for new build, period buildings and interiors

Lansdowne Gardens, a residential project in London SW8, features 68 mm Reclamation Yellow Stock, as a perfect match to original brickwork

One of the oldest building materials, the humble brick, is experiencing a fresh resurgence within architecture. It's much more than the universally-known red brick – new-builds, refurbishment and extension projects are paying more attention than ever to colour, size, texture, style and application. Glazed and crackled bricks, used for feature walls or kitchen splashbacks, are increasing in popularity, as are lime washed bricks for a softer look. Brick 'slips', cut from the face of the brick, are also increasingly popular in the UK. They can be used both for external facades (timber frame construction and cladding of existing exteriors) and for decorative use on internal feature walls.

There's a thriving market for traditional handmade bricks – used to create an authentic period look or a contemporary 'imperfect' urban finish, to highlight modern fittings. There has been a rise in specifications from architects and developers who want to differentiate their projects, while stockists are reporting more enquiries from contractors and self-builders.

There's still a demand for reclaimed bricks, but these are hard to come by in any quantity, expensive and a relatively lucrative target for thieves. Age – and transportation – take their toll. There is no standardised testing, so builders typically report 20 per cent wastage. 'Kiln-fresh' handmade bricks are a viable alternative – still a premium product but much more cost-effective, CE marked, fully frost-resistant and available on reasonable lead times.

Architect Richard Lomas, of Lomas Architecture, comments: "Getting the colour and size of brick in the quantities we need is an important factor. Working across the north of England, we use many different styles and colours. Obtaining samples and choosing the closest match can be difficult, so the opportunity to source as many new handmade bricks as we need, knowing they will be exactly what we want, is a real advantage."

It's now possible to match new handmade bricks to each area of the UK, from London yellows, to rich oranges in the Midlands, deep blues and reds in the North and reds in the South. Textures are different according to the period of the brick, the area it's from and even its position on the building (in some regions facade bricks were smoother and of better quality than those on the back and sides). Sizes vary too, from standard imperial 2¾" to the 3" bricks popular in the North and Midlands. Pre-1965 all bricks were imperial sizes, so it's important to use an exact match when extending or refurbishing a period property. Brick blends of colours and types, or off-the-shelf or bespoke weathering and tinting are additional options which ensure new brickwork integrates seamlessly with the original. It's best to consult a specialist manufacturer for advice on this.

Architects are also designing new-build projects with regionally-matched, handmade bricks. This is essential for – but not restricted to – new developments in conservation areas, and doesn't necessarily mean a pastiche of old styles. Niche developers are coming up with fresh approaches, building small groups of homes that reflect local architecture with a twist. Reclamation style bricks mixed with floor-to-ceiling glass make a bold statement. A property instantly matches its surroundings yet stands out - for all the right reasons. Unusual combinations of bricks and mortar – such as a London yellow brick with a dark grey mortar, or a Cheshire 3" brick with a red mortar, adding an individual touch to a traditional design.

Translating trends to real life projects

Recent projects Imperial Bricks has supplied show how versatile handmade bricks can be.

For example, a modern three-bedroom house has replaced a derelict medical surgery in Lansdowne Gardens, SW8, London. Situated between two listed buildings in a conservation area, planning conditions stipulated that the new build had to appear the same visually from street level. Phillips Tracey Architects used the 68mm Reclamation Yellow Stock to match salvaged brickwork from the site and repair boundary walls, creating a seamless finish.

Another sensitive scheme was Moray Mews, a terrace of eight contemporary courtyard houses near Finsbury Park, London. A former stable and coach house, the narrow development site overcame many challenges to create a radical but sensitive scheme. Large projecting glass bay windows combined with the rustic texture of the 65mm Reclamation Yellow Stock ensured an instantly established appearance to the new-build properties. The Yellow Stock is used throughout homes in the surrounding area, and by using the metric sizing, Peter Barber Architects and developer Roberto Caravona could easily incorporate the bricks with modern measurements.

Our RIBA-approved CPD gives specifiers and developers better understanding of traditional brick manufacturing methods, and which bricks are suitable for different building types and applications.

Facing the future

There are many benefits to building with Architectural Facing Masonry (AFM) blocks, as Steve Frost of Lignacite explains

Designed for internal and external applications, Architectural Facing Masonry blocks combine an inherent decorative appeal with strength and durability. Used for many years in construction projects around the UK, they have been used to construct walls, floors and interior finishes on homes, schools, factories and offices. They are one of the most sustainable and long-lasting building products available with many different textures from clean flat surfaces, to heavily textured and irregular faces, to stunningly beautiful polished masonry.

Aesthetics aside, building with facing blocks offers a number of benefits including structural strength and durability, sound control, fire protection and energy efficiency. Laying one standard block to six bricks shows construction savings too. Maintenance costs are reduced, as moisture, for example – which can undermine other building materials – has no adverse or weakening effect on concrete. The blocks are also not subjected to large daily temperature fluctuations, having a positive effect on ventilation, heating or air conditioning.

Due to the increasing demand for more 'environmentally friendly' products, manufacturers are constantly searching for new and improved methods of production. These include processes such as the refinement of raw materials and the use of greater quantities of recycled materials such as glass, shells and flint and selected secondary aggregates. As a result, it is now possible to find facing blocks containing in excess of 75 per cent recycled materials.

The cost of building materials such as natural stone can be a prohibitive factor facing architects and designers. Research and development within the concrete block industry has led to the creation of a number of man-made alternatives which closely replicate these natural products, while showing cost savings and environmental benefits.

An example of this can be seen on some of the recent phases of the Royal Wharf housing development in London, E16.

It is now possible to find facing blocks containing in excess of 75 per cent recycled materials

Different manufacturing techniques are used to achieve a varied range of finishes and textures

Today's blocks are generally manufactured to a standard 440 mm x 215 mm face size, however smaller, lighter and more contemporary formats are now available. A good example of this is the 'Roman Brick' format which is 440 mm x 65 mm. This module has the length of a standard block but the height a standard brick. Having all the benefits and flexibility of a brick and only weighing 6 kg, it makes an attractive alternate to brickwork or conventional facing blocks. This provides savings in both material cost and labour, giving architects and designers the opportunity to design modern buildings which can blend into more traditional settings.

Facing masonry shapes are a simple and effective way of adding character to buildings, while providing solutions to some technical and aesthetic issues. Shapes are normally available in a range of standard units including quoins, cill blocks, trough lintel blocks and jamb blocks. Few manufacturers can offer full length hand cast versions of these shapes together with design and bespoke manufacturing services.

Different manufacturing techniques are used to achieve a varied range of finishes and textures.

Smooth or natural masonry is produced straight from a mould and is best suited to situations where clean crisp lines are required in conjunction with monotone colours. Enhanced visual effects can be created by using bands of different textures and colours. This may be particularly desirable where wall heights span several stories.

Splitting blocks creates a craggy and heavily textured look producing a decorative masonry finish. Shot blasting exposes the natural aggregates within the block, producing a flat but weathered texture.

Polishing a block produces a high gloss finish with a shine that is both lustrous and distinctive while creating further visual interest by exposing the raw materials beneath the surface.

Stone faced masonry offers designers the opportunity to use high quality natural stone, normally granite and marble, in a conventional facing block manner with a bed of mortar, in a very cost-effective way. 10 mm slips of stone are bonded onto a dense concrete backing block. The bonding process uses the latest construction adhesive technology which has been rigorously tested for shear resistance and bonding. In addition, the finished product has been subjected to fire resistance and freeze/thaw testing.

A broad colour palette of blocks is available, created with the use of pigments and coloured raw materials. The most common are the earthy or natural tones such as sandstone or terracotta.

Facing masonry blocks are extremely versatile. They are available in a wide variety of colours, textures and formats and offer good design flexibility. Additionally, use of blocks creates both unique and stunningly visual impacts on buildings and in a cost-effective manner.

Steve Frost is head of sales and marketing at Lignacite

Enhance a facade with cast stone cladding

Simon Scott of Haddonstone looks at the different options available when it comes to cast stone and its varied applications

There have been more imitations of stone than any other natural building material. This persistent emulation has been for reasons of economy, availability and fashion. Today, cast stonework is being used by architects as a substitute in the applications where quarried stone is difficult, time-consuming and expensive to employ.

Cast stone is becoming increasingly popular as a cladding material, particularly during the current brick shortage. The distinctive looks and texture of cast stone along with its flexibility of size, shape and colour, means that architectural cladding can be created to suit the precise requirements of a housebuilder or architect.

Cladding and rainscreen cladding is often used purely as a decorative architectural feature to embellish the facade of a building. Manufactured for traditional, classical and contemporary styles of architecture, cast stone cladding is a versatile product suitable for many design constraints. High quality cast stone has been used for cladding building projects such as offices, hotels and restaurants, as well as private houses.

The versatility of cast stone as a cladding or rainscreen cladding was recently demonstrated at Wimbledon High School Rutherford Centre. The dramatic entranceway to the Performing Arts centre utilises custom cladding featuring bespoke wording, cast within the stonework. The cladding offers a more contemporary finish, contrasting with the traditional architecture of the existing school.

The ability to mould cast stone into almost any shape means that cladding designs can be manufactured to suit individual requirements. The beauty of cast stone is that it matures and weathers just like natural stone, yet normally costs significantly less than quarried stone.

The best forms of cast limestone cladding are manufactured using a semi-dry mix that creates a surface texture similar to Portland stone or natural limestone. The principal materials of the finest semi-dry cast stone are limestone, white cement, sand and a very small amount of water, giving the mix a damp feel. A reputable manufacturer will ensure that every single batch of raw material is quality checked to ensure complete control of the production process.

The semi-dry cast material is gradually packed into ingeniously crafted moulds using pneumatic hand tools. The material is usually left overnight to cure before the stone can be revealed in all its glory. Reputable manufacturers will employ a state of the art curing system to prevent water loss and ensure that the product achieves optimum strength in excess of relevant British Standards. Thus architects, developers and private clients can have every confidence in its durability.

There are alternatives to the dry cast mix in the form of wet-cast and fibre reinforced stonework production. The wet cast production technique produces a denser cast stone material with a smoother finish to meet demanding design and performance criteria specified in new build projects. The innovative fibre-reinforced cast stone production benefits from drawn glass fibre which has a high strength to weight ratio. Its thin wall construction and GRC technology means the component weight is reduced by approximately two thirds when compared with alternative cast stone production methods. Fibre-reinforced cast stone is ideal for retrofit, refurbishments, timber frame and new build projects where weight is an issue.

The choice of cast stone material depends on the constraints of the project along with the client's individual requirements. Cladding and rainscreen cladding can embellish and complement an otherwise perhaps rather ordinary facade, uplifting it to much grander proportions.

Simon Scott is a director at Haddonstone

QUOTABLE
Cladding with cast-in quotations at Wimbledon High School Rutherford Centre

Cast stone is becoming increasingly popular as a cladding material, particularly during the current brick shortage

The Latest Evolution in Illumination

Looking to make a unique impression with profiles? Look no further than Schlüter®-LIPROTEC. Combining Schlüter's reliable profile technology with integrated LED strips, this innovative lighting solution protects and accents tile and stone installations.

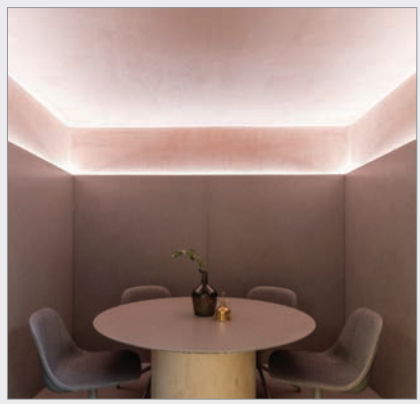
Schlüter®-LIPROTEC RGB+W LED strips allow for coloured and white LEDS on a single strip, giving the ultimate freedom for creating coloured light and temperature-controllable white light, which can be selected from 2500 K to 6500 K. If your client is looking for a particular ambience or to bring brand colours into the design, then the system can be programmed from 16 million colours easily selected via a Bluetooth app and remote control.

Suitable for moisture-rich rooms, the LED strips are completely encapsulated and conform to IP67 protection rating, allowing subtle detail to be incorporated into the smallest rooms in a house, hotel, or wherever your imagination takes you.

LIPROTEC can be experienced in action at 49 Leather Lane, an exciting showroom of tile and stone, created as a collaborative venture between Pentagon Tiles, Schlüter-Systems and Ardex. The solution's application as meeting room and wetroom accent lighting, as well as within statement displays, demonstrates just a couple of the impressive range of specification possibilities.

For more information, visit the dedicated product website.

01530 813396 www.liprotec.co.uk



NFTMMS Member renovates Historic Ceramic Mosaic floor at major Stately Home

Restoring the historic ceramic mosaic floor in the game larder at one of the UK's leading historic houses has been undertaken by **National Federation of Terrazzo, Marble and Mosaic Specialists (NFTMMS)** member JW Restoration. According to Federation spokesperson Brian James, this exemplifies the quality of the skills and craftsmanship of NFTMMS members which can produce the most spectacular results. The game larder, which dates from 1909, was used to hang game that was shot on the Estate. It became derelict following the arrival of modern refrigeration techniques and was subsequently used to house chickens in the 1950s and 60s. The initial report revealed that the large octagonal mosaic floor was missing large sections of ceramic tiles, called tesserae, and there was damage where the original internal metal work had been removed. JW Restoration hand cut the tesserae to the correct size and appearance to match the original precisely. They worked from a rubbing of a section of the mosaic which allowed them to replicate the fan pattern of the original and the missing sections were then made in their workshop and transported to the stately home for the installation.

www.nftmms.co.uk

FILAMARBLE AID launches in the UK

FILA has launched a new protective treatment for natural stone surfaces. New FILAMARBLE AID is an odourless, solvent-free treatment that protects against the aggression of staining, blocking the damaging effects of acids, alkalines, stains and heat. It creates a natural-look polished barrier for stone, marble, limestone and travertine that won't yellow, discolour or create an 'acrylic' look. FILAMARBLE AID has a safe, water-based formulation, with a low VOC content. It can be applied to new and existing surfaces, where it 'buys time' by giving protection for up to 24 hours. Unlike traditional treatments, which are UV-cured and removed by grinding, the new protector is applied onto a clean dry surface, in two coats, with a short-hair applicator. It can then be easily removed, if necessary, with FILANOPAINT STAR and re-applied. The new treatment is ideal for all bathroom and kitchen surfaces, and is certified safe for food preparation areas. As well as post installation application, it can also be applied 'in-line' as a factory finish, to give protection before fitting. FILAMARBLE AID is a two-component treatment and it gives approximately 9.2 m^2 of coverage per 233 ml package.

01584 877286 www.filasolutions.com

New Reclamation handmade bricks

Imperial Bricks, has added a new 3" Reclamation brick to its range following growing demand in the Midlands and North. Historically used on traditional buildings in the region, the imperial-sized Reclamation Handmade is ideal for a period property extension or renovation. The rustic red handmade brick is a like-for-like alternative to genuine reclaims which are difficult to source. The Reclamation Handmade brick undergoes a traditional weathering and tinting process to produce a reclamation finish for an instantly aged appearance.

01952 750816 www.imperialbricks.co.uk

Architects Datafile website

The Architects Datafile (ADF) website is an online provider of past and present products and news items for the architect or specifier. architectsdatafile.co.uk is a one-stop source for all the latest press releases providing any visitor with access to information about products and services that they may require. From the website, you can find links to digital issues that have live links to advertisers' sites, as well as daily email alerts to keep you as informed as possible.

www.architectsdatafile.co.uk

British Ceramic Tile rolls out new brand

Ceramic and glass tile manufacturer, **British Ceramic Tile**, is rolling out a new brand across the business. Not just a logo tweak or colour palette change, this new brand is the result of a six month research project and forms part of a wider business strategy to become the industry expert within tiles. Following an extensive consultation period cross key markets, British Ceramic Tile has introduced a distinctive new mark to represent the different sides of the business. The hexagon shape will become a clear symbol of innovation and expertise, and will be applied to packaging and communications material over the coming months. Head of specification marketing at British Ceramic Tile, Liam Poole explains: "2018 is the year of the brand for us. Through all channels we will be working to communicate our brand messaging to customers. From our research it was clear that we are a business obsessed by tiles. For us it's the small things that make a big difference with quality, innovation, design, heritage, expertise and collaboration at the heart of it all". The new brand can be seen on the website.

0207 490 0338 www.britishceramictile.com/specification

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