Meck Architekten in Munich
Martin Pearce profiles Hopkins Architects
DSDHA’s Pond Meadow School in Guildford
John Pardey on Jørn Utzon’s early brick projects
Ortner & Ortner’s garden city of house types
Testing times for unfired clay bricks
Historically, leaner times have often resulted in buildings of austere beauty. Limited funds tend to concentrate the minds of designers to achieve more with less and a ‘limited palette’ of materials becomes a creative virtue. The fact that no other construction material offers the creative potential of brick is amply demonstrated by a number of projects in this issue of the Brick Bulletin – from Ortner & Ortner’s catalogue of house types in its latter-day ‘garden city’ at Merschkamp to Meck Architekten’s masterly fusion of spiritual and social values in the Dominikanerkirche north of Munich.

Katherina Lewis
To find out more about the bricks or pavers in featured projects, or to submit projects for possible publication, email brick@brick.org.uk or phone 020 7323 7030
There is also the RIBA Building of the Year award for the overall winner. Entries are judged on design, choice of brick, brick finishing and craftsmanship. The awards will be presented at London’s Marriott Grosvenor Hotel on 4 November. The closing date for entries is 19 June 2009. Entry forms are available from www.brick.org.uk; 2009 awards, or by emailing brick@bda.org.uk or by calling the RIBA on 020 7723 7039.

Who is Tyler Rozicki?

Tyler Rozicki, an architectural student with a passion for masonry construction, is the man behind the Brick Blog. The website documents a number of inspirational masonry projects – discovered by the author during the course of his studies – including Studio Dione’s Gato Obracho Church in Atlantic, Uruguay (above), and carved brick enclaves at the University of Sydney (below) by Partin Studios (details: http://brickmasonry.blogspot.com).

About Face winners announced

Perth-based practice Portal & Nollé has been announced as the joint-winner and peer winner of About Face 2009, Think Brick Australia’s prestigious internationally design ideas competition. The design is for a new arts building in the centre of Perth, which draws on the city’s rich tradition of brick architecture. Located in Wolf Lane, a thoroughfare connecting King, Murray and William Streets, the four-storey structure is constructed using light grey buff coloured bricks externally and white glazed bricks inside. Unusual facade treatments, window openings and delights produce varied and shifting light effects throughout the building. The ground floor is occupied by gallery spaces, the first and second floors house administration and archive functions, while the third floor is given over to artist-in-residence and studio spaces. The building, the brick creates a lighter and more open aesthetic that will help the building anchor a new precinct on the east campus.

The Brick Development Association has launched this year’s Brick Awards. The principal criteria for entry is that projects feature clay bricks or pavers made by BDA members (unless they are entered in the worldwide category). There are 13 awards, split into these categories: housing, building, landscape, and technical and craft.

Frank Gehry’s Lewis Library has been completed at Princeton University, New Jersey, after four years on site. Distinguished by a curving roof and Weinstein high window, the 8000 square metre building is clad in brick, stone, glass and stainless steel. The library, which houses the university’s science collections and technology spaces, will anchor a new precinct on the west campus. The scheme is planned along a smooth ‘Portland’ buff brick. Considered more appropriate for a college building, the brick creates a lighter and more open aesthetic that will help the scheme assert itself within its context. The college is due to open in September 2010.

A perennial favourite of children and architects alike, Lego has celebrated the 50th anniversary of the day it filed its first patent for the iconic plastic brick. To celebrate, the company has released a commemorative edition of the first themed elements of the ‘system of play’. The set is called ‘The Original Town Plan’ and, true to the spirit of the original, the set is designed to be a miniature version of the streetscape of a typical English town. It includes a house, a shop, a church, a school, a police station, a bank, a cinema, a gas station, a bar, a museum, a garden, a sports ground, a river and a bed of flowers. The set is also designed to be a complete and self-contained system that can be expanded and adapted to suit the needs of individual players. The Lego brick is the foundation of the set, and it is made of a special type of plastic that is both strong and flexible. The set is available in two versions: a standard version and a limited edition version, which includes a special sticker that is only available with the limited edition set. The set is available worldwide from Lego stores and online at the Lego website. The set is a great gift for children and adults alike, and it is a great way to introduce them to the world of Lego brick building.
Ortner & Ortner, architect of the celebrated Vienna Museum Quarter, has completed the Merschkamp residential district near Münster in north Germany. The competition-winning scheme develops the idea of a compact garden city and is conceived entirely in brick, referring to the brick houses of Mies van der Rohe and Heinz Bienefeld as well as farmhouses in the region. The seven house types extend the language of brick from walls to carports and paved patios to create something akin to a courtyard house and suggest complexity and variety within the project as a whole. A central ‘ring’ road provides access to all 27 houses which range from 106 to 174 square metres. Water-struck bricks with flush pointing are employed throughout, with a variety of bonding patterns.

While the residential area is tightly planned, the development includes an open play and sports area to the south that is shared with the residents of nearby houses. The neighbourhood is landscaped with plants chosen for their colour. Prunus cerasifera provides shade for the parking areas and prunus accolade structures the park; beech hedges define the front gardens.

Ortner & Ortner’s Garden City revival

Ortner & Ortner: Architect; Ortner & Ortner, design team: Manfred Ortner, Laurids Ortner, Markus Müller (project manager); client: Wohn & Stadtbau Münster, Wohnungsunternehmen der Stadt Münster; photos: Christian Richters.

**PROJECTS**

Garden court house west (8)
110sq m, plot 220sq m

Garden court house east (7)
110sq m, plot 200sq m

Garden house (6)
130sq m, plot 250sq m

Court house (1 unit)
110sq m, plot 220sq m

Gate house (2)
110sq m, plot 220sq m
Site specific: DSDHA in Guildford

Brick is used to integrate yet subtly differentiate a special needs school from its surroundings.

DSDHA has completed a special needs school for 92 pupils aged two to 19 for Surrey County Council in Guildford. Pond Meadow School is part of a £33m flagship educational campus shared with Christ’s College, a Church of England secondary school.

Designed around the concept of an evolving journey through the building, every classroom is different. The layout is organised around three courtyards with classrooms located around the perimeter. The uniform arrangement is designed to accommodate the progression of large and small spaces.

Buildings in the surrounding area are predominantlyikhoe-stacked red brick houses. The school responds with high-quality brickwork, with intricate detailing, which the architect suggests gives it a more civic appearance. A high-quality engineering brick was selected, with an elongated module size (250x100x75mm) and a colour which slightly differentiates it from the predominant local brick.

A third-stretch/running bond was used to reintroduce a sense of horizontal movement across the facades. A seamless finish ensures that light and shadow contrast to highlight the angled elevations. In shadow the bricks are a deep maroon, but when reflecting light they appear olive.

Windows and doors flush with the facade. At the building ends, the brick detailing extends to emulate the four metre cantilevered canopies. By contrast, the entrance is defined by a carved recess, cutting into the smooth, sheer surface of the external wall.

Brick specials were developed with the sub-contractor to allow the bonding to continue seamlessly around the angled corners. Intricate brick setting-out meant that only 1/3, 2/3 and whole bricks were used throughout the project, avoiding the need for cut bricks of different sizes. This careful setting-out contributed to the proportioned brick-faced concrete panels that clad the cantilevered canopies, ensuring a visual consistency with the street-level bricks. Some tolerances were key, and the prefabricated ‘flying brickwork’ units were lowered into place in a manner of days.

Brickwork (similar in colour and hue to the existing building), together with ornamented porcelain and partially screen-printed glass, forms a clear connection with the historic facades. Careful consideration was given to the choice of mortar and movement joints; an acoustically efficient joint was selected. A variety of sample panels were offered by the contractor to enable an informed decision by DSDHA and, after deliberation, a bespoke grey mortar colour was produced by mixing two of the standard ranges.

In order to avoid cuts and unsightly junctions, the project team drew every brick in the building in elevation. Brick specials were carefully identified and detailed on the latest drawings. Great care was taken to ensure that the mortar colour and joints were minimised. Brickwork was made and inspected before the prefabricated combination was chosen.

Framing details and ground-floors above, the prefabricated ‘flying brickwork’ units were lowered into place in a matter of days.

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A special needs school from its surroundings.

Solutions; main contractor: Wates Construction; client: Surrey County Council; photo: Tim Soar.

In keeping with the soft yet robust aesthetic permeates the design, with robust workshop spaces, education facilities, bars, a 138-seat studio theatre, rehearsal and meeting rooms.

Due to open later this Spring, the £10m Hull Truck Theatre by Wright & Wright Architects resonates with Hull’s industrial past, with a civic relevance to the area.

An extension to one of Holland’s oldest theatres is rendered in brick, ceramic and glass.

Designed by Jürgen van der Sterre and built in 1919, the Municipal Theatre in Haarlem is one of Holland’s five oldest theatres. After almost a century of use, the listed structure no longer met contemporary requirements for theatre techniques, production facilities and building accessibility. This led to Erick van Egeraat Architects being appointed to undertake a major programme of restoration and extension. The most striking intervention is a new flight tower. The visual impact of this element is minimised through careful detailing and the layering of different materials. Brickwork (similar in colour and hue to the existing building), together with ornamented porcelain and partially screen-printed glass, forms a clear connection with the historic facades.

The use of lighter materials towards the top of the tower further reduces its visual impact. The ceramic ornaments, which make reference to the porcelain featured in the original facade, were developed in close collaboration with Dutch ceramic artist Babs Haenen.
Collective faith: Meck Architekten in Munich

Spiritual and social values are fused in a brick community centre.

Won in competition by Meck Architekten, the Dominikuszentrum forms the spiritual and social centre of a new residential district currently under construction in north Munich. Conceived as a series of powerful brick forms arranged around a central contemplative courtyard, the two-storey scheme comprises a chapel, community centre, day nursery and a Catholic youth centre. The building is connected to the surrounding area by a number of passageways designed to attract passers-by.

Rising above the other amenities, the chapel forms the spiritual centre of the complex and dominates the square. Adjacent to the chapel is the community centre with its large parish hall and various group activity rooms. To the east of the main entrance is the kindergarten. The youth centre is located on the first floor. Its rooms open out onto two large roof terraces, providing young people with a visually and acoustically shielded outdoor space.

Brick was chosen as the main construction material to emphasise the architectural concept of a body cut from a solid mass. A high-grade red brick, fired in a peat kiln, gives the centre its distinctive appearance. According to the architect, the size and tactile quality of brick stands for human scale and timeless building culture. It also acknowledges the primary building material: earth. Irregular bricks were favoured to give the facades a lively, sculptural quality.

Nord’s substation takes first place in the race to 2012

An electrical substation by Nord Architecture is set to be the first completed building at the Olympic Park site in Stratford, London. The concrete structure is clad in black, drag-faced brick with a matching mortar. This is intended to provide a sense of solidity appropriate to the building’s infrastructure role, and a visual reference to numerous dark brick buildings within the East End of London. A close-knit pattern of openings is set into the walls as a means of ventilating the transformer coolers. The voids are infilled with mesh to prevent pigeons inhabiting the spaces. As a counterpoint to the perforations, the upper areas follow a similar pattern, comprising a combination of recessed and projecting bricks.

Perforated black bricks walls are used to cool an electrical substation

Credits: Architect: Meck Architekten; structural engineer: Statoplan; project manager: Wolfgang Amann, Peter Trettin; photos: Michael Kiecol.
There was a time when to be called a 'lightweight' architect was a compliment. ‘How much does it weigh?’ was what Buckminster Fuller wanted to know when he visited Michael and Patty Hopkins’ own modular steel and glass house in Hampstead, at the bleeding edge of constructional technology in the late 1970s. Michael Hopkins’ architectural outlook had been formed in the ‘white heat’ technophilia of the Architectural Association in the preceding decade, a time that saw buildings as assemblages of lightweight industrial prefabricated components, borrowing from aircraft engineering. Buildings would become transitory consumer products; some would be able to walk, others would even be able to fly! The impact of these fantastical ideas was very real and led to the ‘white heat’ of the architectural Association in the preceding decade, a time that saw buildings as assemblages of lightweight industrial prefabricated components, borrowing from aircraft engineering. Buildings would become transitory consumer products; some would be able to walk, others would even be able to fly! The impact of these fantastical ideas was very real and led to the ‘white heat’ of the architectural Association in the preceding decade, a time that saw buildings as assemblages of lightweight industrial prefabricated components, borrowing from aircraft engineering. Buildings would become transitory consumer products; some would be able to walk, others would even be able to fly!


Today Hopkins Architects is strongly associated with the tensile fabric structures developed to enclose the Schlumberger Research Centre near Cambridge (1982) or the Dynamic Earth project in Edinburgh (1999). Buildings such as these and the Lord’s Cricket Ground Mound Stand canopy of 1987 have become a much copied leitmotif, now a familiar sight in shopping malls the world over. Charles Jencks has observed that Hopkins’ work, while light in weight, has an extreme gravitas. Jencks describes gravitas as an architectural system which demonstrates completeness or finality, a concept embodied by the great buildings of the classical past such as the Parthenon or the Pantheon. This timeless order and architectural clarity are the qualities that Le Corbusier and Louis Kahn so admired and sought to capture in their own work.

At Lord’s this underlying gravitas is quite literal: the canopy and seating are built upon Frank Verity’s elegant Soane-inspired arches of the original pavilion. This grounds the building in the language of the Roman arch and counterpoints the floating structure above. Working against Verity’s structure marked a point when Hopkins’ architecture took a greater interest in the use of masonry construction which came to the fore in the 1989 commission for the new opera house at Glyndebourne.

Rather than simply juxtaposing traditional with modern materials and forms, Glyndebourne celebrates the engineering potential of traditional materials, as high technology and age-old craftsmanship seamlessly combine. A Hampshire red brick – handmade to imperial sizes to match the existing house – is employed in generous arcaded apsidal forms. The simple flat arches and tapered brick piers expressing classical entasis and referring to Kahn’s Exeter Library are brought to life by changing light modelling deep reveals, the sense of movement, rhythm and intrigue – an appropriately theatrical
The Glyndebourne language is developed in Hopkins' 2007 addition to Bryanston School in Dorset, new science and maths departments housed in a three-storey building of soft red brick. The horseshoe plan is extremely economical – this is not an expensive building – and here is used to form a semicircular courtyard at the focus of which is a geodesic dome, perhaps paying homage to Buckminster Fuller.

The economy of the science block is in marked contrast to the school's main building, Richard Norman Shaw's 1895 Queen Anne-style house for Viscount Portman – a project where Shaw, with an unlimited budget and six million bricks, produced by his own admission one of his least accomplished works, thus proving that architectural quality is not necessarily dependent on the finances available.

As at Glyndebourne the sweeping brick-and-a-half solid lime-mortared facade with flat arches works architecturally as a design device. Simple yet moving in its effect, one is aware of the gravitas. As with Kahn, Hopkins' buildings often employ the repetition of a bay element frequently resulting, to the extent of being classical, in a refined symmetrical plan arrangement offering absolute clarity in form and legibility in use.

This clarity is apparent through to the detail at Glyndebourne. As a student Michael Hopkins bought a timber-framed house in Suffolk and in order to repair it had to discover how it was originally constructed. ‘This gave me real insight into timber frame construction,’ he says. ‘And immediately, as a flash out of the blue, I realised that there was a strong relationship between the way that buildings were put together and the way they finished up looking’.

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in dissimilar conditions, and all in the same building.

Hopkins’ current project to extend the Lutyens-designed Henrietta Barnett School at Hampstead Garden Suburb in north London is soon to commence on site and returns Hopkins to the area 33 years after his canonical early house. Outwardly these seem radically different, the former glass and steel, the latter brick and tile, yet the gravitas remains.

After 17 previous applications failed to proceed over a period of four decades, Hopkins Architects won planning permission with a scheme that sees two pavilions frame the Grade II* listed Institute building. Each pavilion comprises two volumes set at right angles and locked around an L-shaped brick colonnade. This creates new intimate quadrangles while linking to the existing grounds and building, a seemingly simple yet brilliant planning device and a model of compositional refinement and clarity. This rigour extends to the eaves condition and draws on Lutyens to create strong line of precast lintels to form a contrasting entablature. A projecting gutter tray supported on slender steel brackets forms a cornice that will cast strong shadows, serving to model the brick reveals and piers below. Above, a steep plain clay-tiled roof draws from the language of the Arts & Crafts in Hampstead Garden Suburb, the top-light oast house section accommodating drama and art studio spaces at first-floor level. An enclosing 215mm solid brick wall is to be of handmade bricks slightly narrower than standard to match the existing building and the intention is that the masonry will be lined internally with hemp batts to create a sustainable breathing envelope.

The Henrietta Barnett School follows several projects by the practice that make extensive use of brick—a sheltered housing scheme for Charterhouse at a former Carthusian monastery in London (2000) and the Haberdashers’ Hall (2002) designed for one of the livery companies of the City of London, are wonderful examples of exquisite material beautifully detailed. Michael Hopkins once said that ‘Our architecture comes out of our engineering and our engineering comes out of our engineers’ and it is true that he has collaborated with the very best engineering minds of our time. But we are perhaps minded to think of engineering as a product of reduction, the paring down too readily associated with the use of so-called high-tech materials—steel, glass and concrete. Great engineering is ultimately about the rigour, clarity and logic of how a building is made, transcending the particularities of individual materials and equally applicable to the use of traditional materials as to the latest composite polyme.

Great engineering is also a product of refinement over time. The Romans perfected the arch over a period of decades, and the medieval masons did not achieve the refinements of the high Gothic overnight. Those architectures were concerned with principles not personalities and today, in contrast with the early modernist avant-garde view that each scheme should be revolutionary, we are perhaps again getting comfortable with the idea that good design is an evolutionary process requiring the iteration of core ideas through different projects. It seems that only in this way can one ever truly strive for these timeless qualities of building. Over the three decades that Hopkins Architects has been in practice, architecture has been plagued by the ephemeral, yet this office has remained consistent, pursuing an architecture of gravitas founded on enduring principles. This concern with materials and making, of iteration and refinement gives the work a remarkable authenticity. It is perhaps an approach that above all touches on the timeless verities of architecture.
Jørn Utzon, who died last November aged 90, was among the greatest architects of the twentieth century and will forever be remembered for the expressive shells and free forms of Sydney Opera House and, back in his homeland of Denmark, the sublime Bagsværd church with its billowing vaults of concrete. Yet he had made his mark on the international scene well before these masterpieces with the design of his own modest family house in 1952, built in brick and timber in Hellebæk, just outside the town of Elsinor, home of Hamlet’s castle.

Working with the simple elements of brick and timber for his home, Utzon wrote: ‘viewing architecture as abstract sculpture or painting for the sake of shape... can easily become determined by fashion and appear formalistic, whereas the purely constructive and functional basis combined with sensitivity to light, shade, colour and space opens up infinite possibilities’. This attitude may seem surprising coming from the man who inadvertently began the cult of ‘signature’ building with the striking and memorable form of the Opera House, yet Utzon was wedded to the idea of design being the product of ‘built’ elements rather than free form. The shells of the Opera House in fact comprise 2250 prefabricated concrete ribs, and these are clad with some 4253 tiled ‘lids’ making the building one of the largest examples of concrete prefabrication on earth – Utzon was always convinced that a building should evolve from its elements of construction.

With the Hellebæk house, brick became a prefabricated module that must not be cut and this rigour was also applied to the standard timber sections employed – the house was equally uncompromising in plan, with its unbroken rear wall turning its back to the cold north winds, punctured only by infinite possibilities’.

The late Jørn Utzon should be celebrated equally for his work with the humble brick as with reinforced concrete, says John Pardey.

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The simple, primitive life in the country tribe in the mountains with skis or guns, sailing trips, some weeks spent with Arabs in the mountains and the desert is said to North America and Mexico the design of the Indians – all this has formed the basis for the way of life my wife and I wanted to lead and this follows in the design of the house. Fifty kilometres north of Copenhagen, near the coast and in the centre of a beech forest, Utzon found a site almost by chance. He persuaded the local forester to allow him to cut an entrance route through the forest. The long, narrow house is set on a brick plinth that is part of the gently sloping site and gives a horizontal dimension that belies its modest 130 square metre floor space. The glazed south elevation brings plentiful light to the open-plan living room with its freestanding fireplace, whereas the bedrooms are simple spaces lit by skylights.

the entrance, and fully glazed to the south beneath an overhanging roof. The house, based on the Danish tradition of brick building that had been revived with the 1940 Grundtvig church by PV Jensen Klint and influenced by Frank Lloyd Wright’s Usonian houses, came to represent what was to become known as Scandinavian Modernism, whose influence was destined to ripple through the world in subsequent decades.

In 1959, seven years after building the Hellebæk house, Utzon completed another essay in brick with the ‘Kingo’ houses – a group of sixty-three homes just outside Helsingør. Using the same logic of construction, set within individual boundaries of 15 by 15 metre square enclosures, each house is planned as two rings, one for living and one for sleeping, enclosing a courtyard. The Kingo houses simultaneously evoke Danish farmhouses and Chinese and Islamic courtyard dwellings – small wonder the development came to be nicknamed ‘Arab city’ and ‘Roman town’. In creating a community of houses all built in brick with matching tiled roofs and chimneys that rise directly from the walls resembling the wind-catchers common in Islamic settlements, the impression is reminiscent of the town in Iran that Roland Rainer described as ‘made in one casting’.

Within this uniform materiality, each house was given a unique imprint by Utzon setting the exact amount of bricks to be used for the walls of each courtyard with the simple rule that the bricklayer should build each to deal with its individual needs for privacy, shade, view and enclosure. The houses were built with state funding that set a limit of 104 square metres for a three-bedroom house.

The Kingo houses were to form the prototype for the courtyard housing project Utzon built in 1965 at Frederensborg, another essay in brick and tile that remains one of the most perfect housing projects in a natural and convincing order of the twentieth century.
The heat is off
Can unfired clay bricks offer a low-energy alternative in masonry construction?

Dr Ab Aresteh of the BDA reports on the initial findings of a research project led by the University of Bath.

**The project**
The Brick Development Association and three of its member companies, Barlow Brick, Hanson Building Products and Everit Brick Company signed up to partners in a technology research programme funded by the Department of Trade & Industry in November 2006. The project leader is the University of Bath and the other partners are Linn Technology and ARC Architects. This feature reports on the project and its findings to date.

**Materials**
The project began by collecting information from the project partners and obtaining brick samples in order to develop an evaluation plan to establish the material properties. Most of the materials used in the manufacture of unfired clay units are low-plasticity clays with low surface and chloride levels and a high degree of organic content. Due to differences in the shrinkage characteristics of clay, dimensional measurements showed considerable variation. Linear shrinkage was found to be a function of ambient moisture and could vary from around 0.5 per cent to over 10 per cent.

The net bulk density of the units was around 0.9-1.8g/cm³. The compressive strength of the units were determined in accordance with EN772-1:2000 on 18 samples, four moulded and the rest extruded, and values of 1.1N/mm² to 2.25N/mm² were recorded. Other findings include:

- **Compressive strength**
  - A function of moisture content; the higher the moisture content the lower the strength (see diagram above).
- **Flexural strength**
  - A low standard deviation which is very beneficial for low-strength construction materials for the remainder of the project.

**Conclusion**

The findings to date have demonstrated that unfired clay units can be used in the construction of domestic load-bearing walls as well as partitions. Such walls effectively control internal moisture and humidity and provide a healthier living environment. Their thermal mass can effectively store and release heat out of phase with the outside temperature, thus providing more comfortable indoor temperatures. They are also a low carbon footprint.

**Further information**
- BDA tel 020 7323 or email brick@brick.org.uk