

DESIGN

from IBSTOCK BRICK

Winter 2017

In this issue: Emrys Architects,
Todd Architects, Burwell Deakins,
SPPARC, Paul Archer Design,
Sprunt plus Accommodating
Movement in Brickwork at Corners



Omaha Hospital, by Todd Architects (ph: Chris Hill Photography)

DESIGN

from IBSTOCK BRICK

IBSTOCK BRICK

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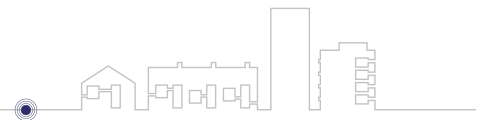
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A building family of exceptional brands



Ibstock Update

IBSTOCK'S WINNING WAYS AT THE BRICK AWARDS

Buildings that feature Ibstock Brick's products featured in many Awards and Commendations at the 2017 BDA Brick Awards, including the Supreme Award winner, South Gardens by Maccreanor Lavington. The judges included architects Joe Morris, Alex Ely, Jonathan Dawes, Alex Gordon and Luke Tozer, as well as Andrew Taylor, Alexis Harrison, Tom McGuire, David Cole-Adams, Michael Driver and Michael Hammett visited the shortlisted buildings and chose the winners from a record entry in excess of 300. The ceremony was held in November at The Hilton on London's Park Lane.



SUPREME AWARD :
AWARD: LARGE HOUSING DEVELOPMENT
South Gardens (1, phs: Tim Crocker)
Brick: Ibstock White Engobe with Engles Baksteen Mystique, and others
Architect: Maccreanor Lavington
Brickwork: Lee Marley Brickwork Ltd

AWARD: SMALL HOUSING DEVELOPMENT
Barretts Grove (2, ph: Timothy Soar)
Brick: Birtley Old English Buff
Architect: Groupwork, Amin Taha
Brickwork contractor: ECORE

AWARD: OUTDOOR SPACE
West Croydon Bus Station
Brick: Birtley Olde English Linear
Architect: Bus Infrastructure, London Bus Services Ltd
Brickwork: AVV Solutions

AWARD: LARGE HOUSEBUILDER
Barratt London: Blackfriars (3)
Brick: Facade Beek, Water Struck Garda/Sevan/St Joris, Brown Glazed, White Blend Colour, Green Glazed
Architect: Maccreanor Lavington
Brickwork: Eastlon Brickwork

AWARD: CRAFTSMANSHIP
Lady Margaret Hall (4, ph: Andreas von Einsiedel)
Brick: Grosvenor Light Red
Architect: John Simpson Architects
Brickwork: Lee Marley Brickwork Ltd

AWARD:
SPECIALIST BRICKWORK CONTRACTOR
Lee Marley Brickwork: South Gardens (1, see above) and Lady Margaret Hall (4, see above)

COMMENDATION: COMMERCIAL BUILDING
Marks & Spencer Foodhall, Northallerton

COMMENDATION: PUBLIC BUILDING
West Croydon Bus Station

COMMENDATION: INNOVATIVE USE
Barretts Grove, London (2)



Screen Gem

The Aperture House by Paul Archer Design employs extensive use of brick to harmonise with its context, while also exploiting the material to form open screens to filter light and views.







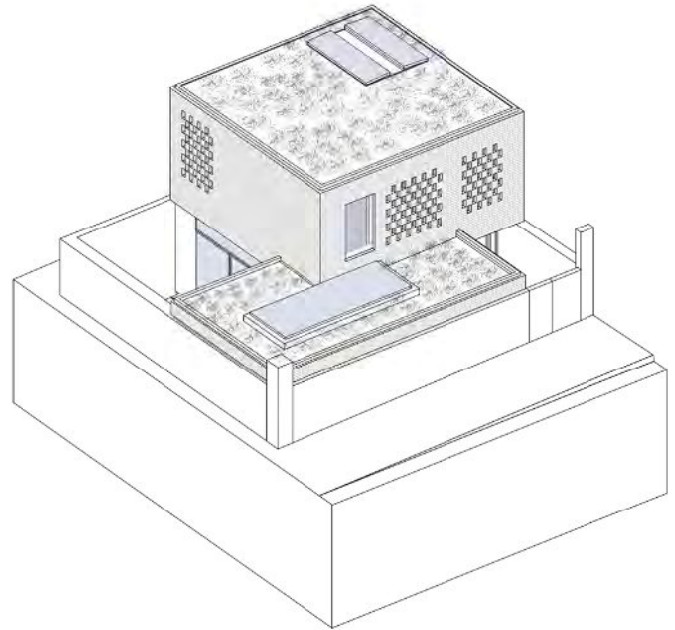
Secret courtyards and skylights flood the Aperture House with natural light, a new-build home enclosed in perforated brick in north London.

Designed by Paul Archer Design, the house is conceived as a modern dwelling that nonetheless fits discreetly into an Islington conservation area. Sited on a restricted plot, the key challenge was to maintain a sense of privacy, while creating internal spaces filled with natural light. Both are achieved through a collection of skylights, large glazed doors and perforated brick openings.

The site was previously occupied by a domestic garage that was enclosed by brick walls, dating from different periods, along almost three-quarters of the boundary. Most of the original boundary brickwork has been retained, and the brick-clad house is inserted behind.

The ground floor along with two courtyards, mostly hidden from the street, occupies the whole site. The facade of the top floor, visible from the street, relates directly to its neighbours and urban context. Funton Old Chelsea Yellow brick with a Flemish-like bond is used to respond to the existing predominant brick style of the older neighbouring houses. New and old brickwork is separated by an aluminum shadow gap detail to clearly distinguish new from old, equally defining 'loadbearing' from 'hung' brickwork.

Perforated brickwork with set-back glazing is designed to give a 'layering' effect to the facade and a level of detail similar to the surrounding houses. The brick perforations pick up the rhythm of the Victorian windows along the street

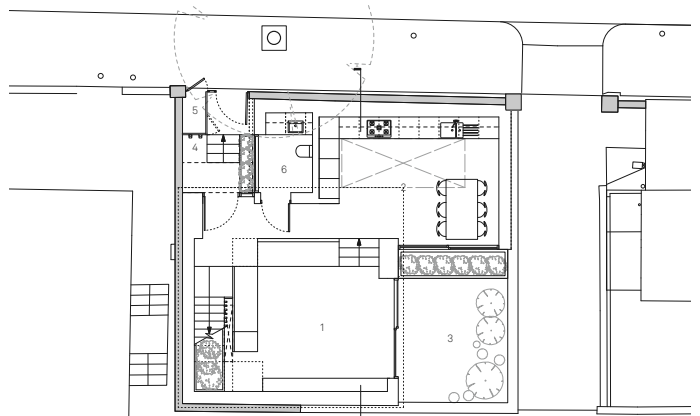
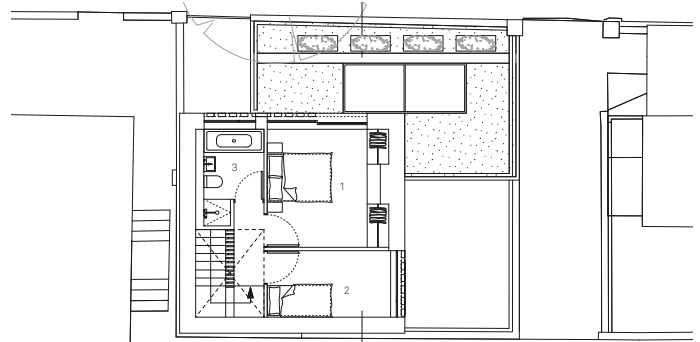


Upper level

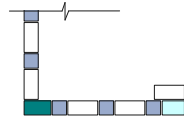
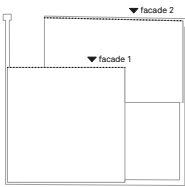
- 1 Master bedroom
- 2 Bedroom
- 3 Bathroom

Ground level

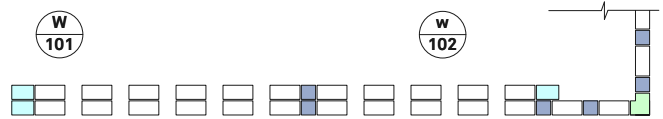
- 1 Living room
- 2 Kitchen
- 3 Garden
- 4 Bike store
- 5 Refuse/Recycling
- 6 Toilet/utility room







KEY PLAN




facade no.1 - plan




BRICK KEY


-  void
-  TYPE 1
65 x 215 x 102 - Standard brick
-  TYPE 2
65 x 159 x 102
3/4 batt
-  TYPE 3
65 x 102 x 102
1/2 batt

-  TYPE 7
65 x 215 x 194 - L shaped special
'Not' 90 degrees angle to be
confirmed on site


-  TYPE 8
NEW 65 x 102 x 194 - trimmed
special

-  TYPE 9
NEW 65 x 138 x 158 - trimmed L
shaped special


NOTE:
Type 8 and 9 can be trimmed from
Type 5 and Type 6.

-  No cut ends to be visible
at these edges

-  Brick slips
-  Bespoke corner slip/
whole brick corner junction

-  Double brick skin in this
area

-  Pistol bricks

-  Internal corner
no mortar joint along
these edges

U/S Brickwork
+22.55m

facade no.1 - elevation



facade no.2 - plan

U/S Brickwork
+22.55m

facade no.2 - elevation

Brick setting out / Specials

and suggest the floor levels and organisation of the two bedrooms and bathroom behind.

Planning guidelines restricted the Aperture House to one storey above the boundary wall, and windows at the back of the property were not an option. As a result, some of the more private functions are street-facing for daylight. The brick perforations allow a privacy screen during the day to these areas, and offer an interesting glowing pattern when backlit at night. In addition, natural light floods the open-plan spaces through floor-to-

ceiling glazed doors, two at the entrance level and two leading to a rear courtyard. A rooflight is positioned over the oak staircase, and another runs along most of the kitchen ceiling, bringing daylight to both floors. So as not to make the house feel overly small, the spaces are completely open plan, with areas defined by stepped level changes. The living space is three metres tall, making it feel generous and airy, despite being enclosed by the boundary wall. Space and light flows freely between the ground-floor open-plan kitchen and living area to the external courtyard.

Technical Note

Perforated brickwork exposes the bed surfaces of the bricks which in most cases have frogs or perforations and are not intended for exposure. In this development the bricks were inverted, however the bed face may not be the same colour as the stretcher face. To ensure consistency of surface finish and durability special bricks BD 1.3 – Standard bricks Faced on Bed Surface should be used, particularly where the building is in areas defined as 'severe' and 'very severe'. For further guidance please contact Ibstock's Design Advisory Service on 0844 800 4576.

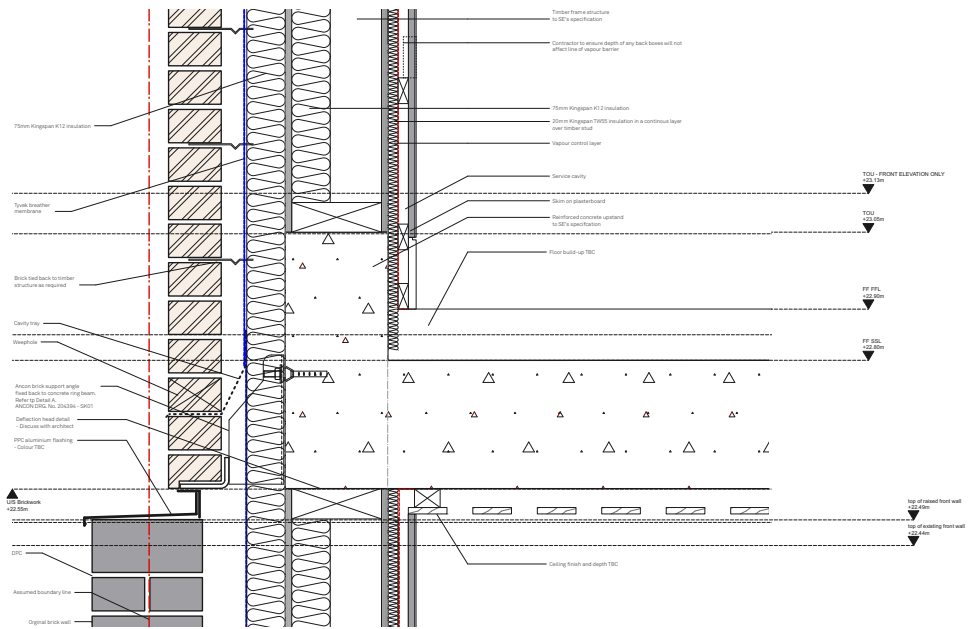
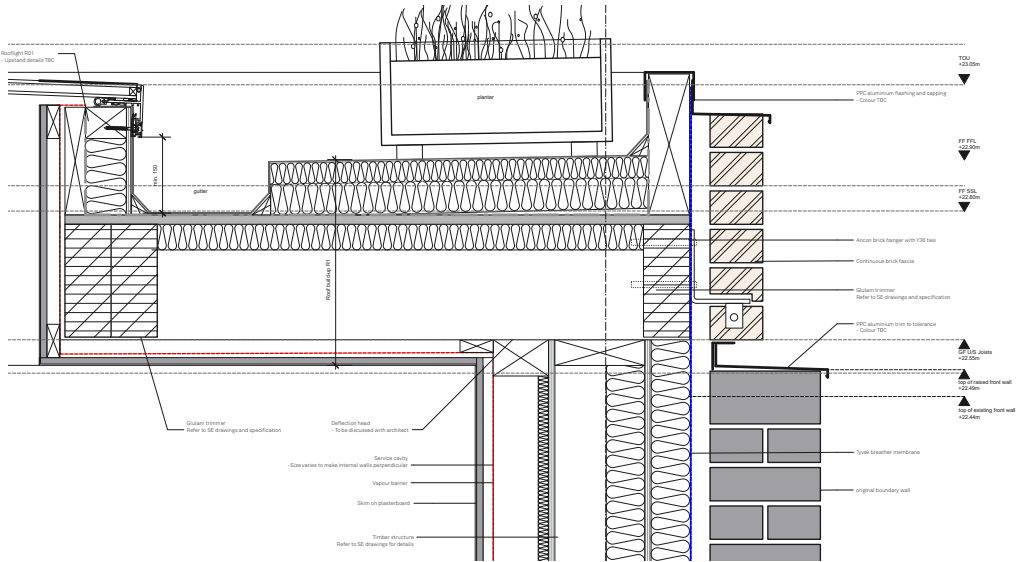
BUILDING
Aperture House, London

BRICKS
Ibstock Funton Old Chelsea Yellow

ARCHITECT
Paul Archer Design

CONTRACTOR
B&A London

PHOTOGRAPHER
Kilian O'Sullivan







Crafted with Care

Todd Architects' Omagh Hospital & Primary Care Complex in County Tyrone, Northern Ireland, employs brickwork to contribute warmth and familiarity to create a caring environment.





Main Entrance
Outpatient Entrance
Amput Unit
Urgent Care Entrance
Please use the steps for people in wheelchairs



NORTH ELEVATION



SOUTH ELEVATION



EAST ELEVATION

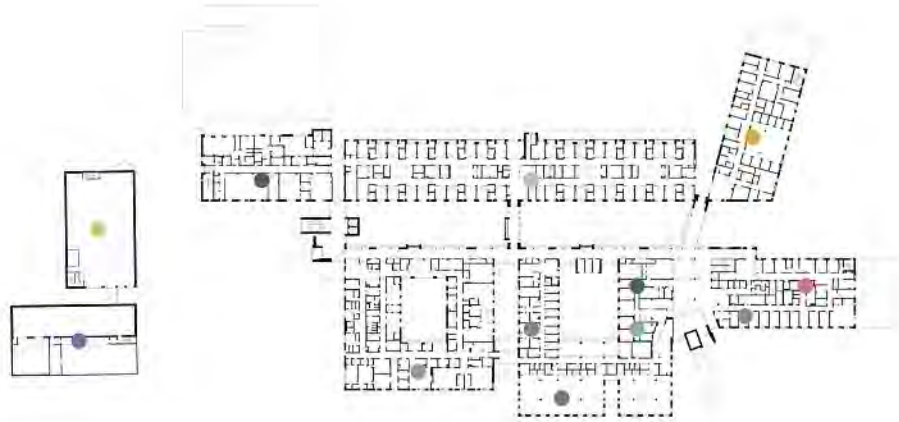
Constructed on a brownfield site within the grounds of the existing Tyrone & Fermanagh Hospital on the outskirts of Omagh in County Tyrone, Northern Ireland, the new enhanced local hospital has been designed to provide a range of services. These include an integrated Primary Care Centre, a 24-hour Urgent Care and Treatment Centre, a cardiac assessment unit, a renal unit, inpatient rehabilitation and palliative care services, day case theatres, imaging facilities, and comprehensive outpatient services and facilities to support the trust and its community care services.

Designed by Todd Architects with Hall Black Douglas, the £70m complex incorporates 40 inpatient and 17 day-case beds. The new hospital is unique to Northern Ireland for the manner in which services are delivered, and it is being cited as an exemplar scheme for such a model of healthcare delivery in the UK and Europe.

The project is the first phase of a wider plan to enhance healthcare provision on the site, with future components expected to include an expansion of acute mental healthcare facilities and improvements to the campus.

Design quality and the delivery of an environment conducive to healing were core objectives from the inception of the project. This informed the scheme design and layout, resulting in a bright, welcoming and sensitively considered series of spaces. Employing a mix of two- and three-storey elements, the scheme follows a predominantly linear configuration, along and around a central courtyard and connecting 'street'.





FIRST FLOOR

- | | |
|-------------------------------|---------------------------|
| ● HSDU | ● SHARED WORKING |
| ● SUPPORT | ● DENTAL DEPARTMENT |
| ● WARDS | ● PODIATRY |
| ● ALLIED HEALTH PROFESSIONALS | ● WOMAN'S & FAMILY HEALTH |
| ● ENERGY CENTRE | |
| ● DAY PROCEDURES | |
| ● MENTAL HEALTH SERVICES | |



GROUND FLOOR

- | | |
|---------------------------|------------------------|
| ● HSDU | ● CLINICAL CARE CENTRE |
| ● PHARMACY/DISTRIBUTION | ● GP PRACTICE |
| ● X-RAY (RADIOLOGY) | ● SUPPORT |
| ● OUTPATIENTS | ● CAFE |
| ● CHILDREN'S DEPARTMENT | ● RENAL DEPARTMENT |
| ● ENERGY CENTRE | ● COMMUNITY PHARMACY |
| ● URGENT CARE & TREATMENT | ● RETAIL SHOP |

The departments are modelled as a series of 'pavilions', each consciously articulated to help define their use, legibility and ease of orientation for staff and users within the overall building.

The scheme includes a palette of warm, rich materials, including brick, glass and aluminium cladding. Brickwork forms the key components of the external design, contributing to the project's sustainability and its sense of permanence.

The choice of brick was crucial to the success of the building, which needed to sit aesthetically within the sensitive rural location and riverside setting. Consequently Todd Architects worked closely with Istock Brick, Western Health and Social Care Trust, and the wider project team to prepare and review a series of brick sample panels. With colour, texture and regularity key to achieving the desired architectural approach, this led to the selection of Istock's Caledonian Buff Blend, a lightly-textured buff wirecut brick, for the main elevations.

While the architectural language is consciously simple, careful detailing and various brickwork features have imbued a unique character and detail to the various parts of the building. This is particularly evident within the Primary Care Complex 'pavilion', which was required to have its own unique identity within the scheme. Here, the brickwork facades are brought to life by a carefully executed regular pattern of feature bonding with projecting snap headers, bringing a unique texture to otherwise plain brick elevations.

Subtle modelling of the envelope throughout the scheme aids the articulation to reduce the impact of the scale and mass of the building. Deep brick reveals help shade the storey-height glazed windows that punctuate the elevations. Special recessed brick support head details, exposed edge treatments and feature panels of recessed brickwork, some mirroring the projecting head pattern of the Primary Care Complex, enrich the facades and bring together the various elements.



BUILDING

Omagh Hospital & Primary Care
Complex, County Tyrone

BRICKS

Ibstock Caledonian Buff Blend



ARCHITECT

Todd Architects

BRICKWORK CONTRACTOR

McLaughlin & Harvey

PHOTOGRAPHERS

Gordon McAvoy, Chris Hill

Suburban Sensibilities

A refinement of suburban domestic 'types', employing elegant forms of precise brickwork characterises the Oakwell Grange development for Barratt David Wilson North Thames, by Sprunt Architects









The design ambition for Oakwell Grange in Whetstone, north London, was to imbue the site with its own identity. Sprunt Architects adopted a minimalistic approach, based on careful detailing, to give the scheme a modern character that also respected the precedents of suburban housing and lifestyles.

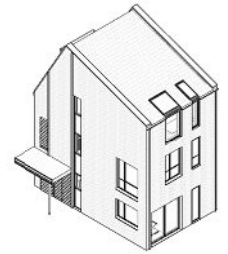
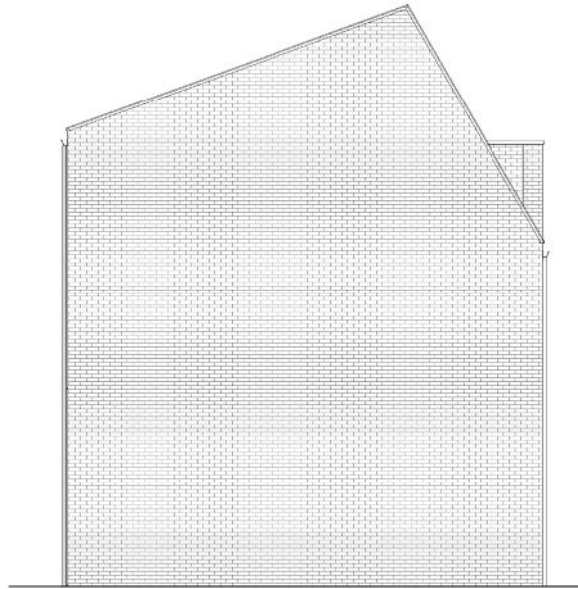
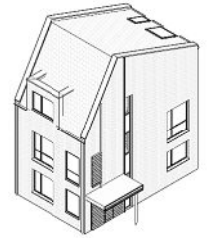
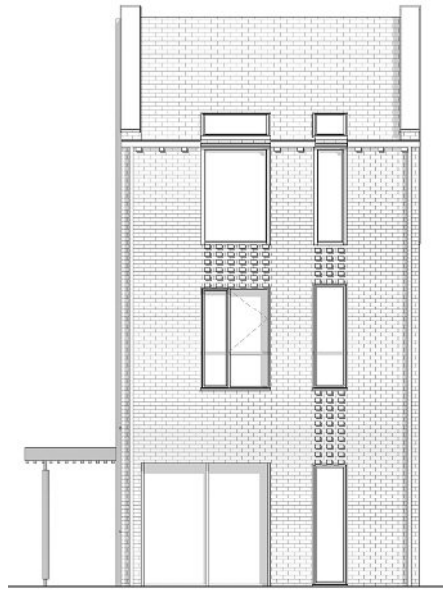
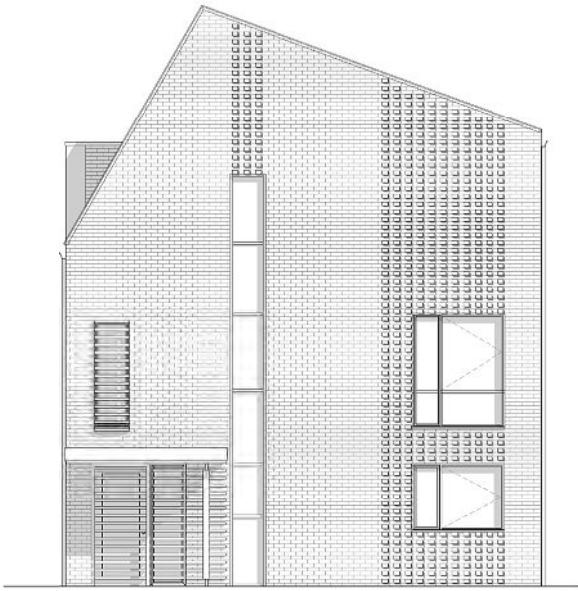
The design employs extensive use of brick volumes, with elegant detailing involving large openings, precise dentil work and refined slate roofs. The selection and careful workmanship of the brickwork – Ivanhoe Cream from Ibstock Brick, constructed by Landmark Brickwork – has been key to its success.

Oakwell Grange is a development by Barratt David Wilson North Thames comprising 70 homes, including eight three-bed, 46 four-bed, six 5-bed, of which about 30 per cent is classified as affordable. The site is located at the heart of Whetstone near to public transport and schools, retail, employment, play and sports provision, parks and other amenities of the High Road.

Each house is provided with a private rear garden, while the flats have a mix of private balconies and ground-level communal amenity space. The scheme also benefits from 1,000 sqm of landscaped public open space adjacent to the flats and Community Hub.

The urban plan responds to adjoining residential development patterns, with two access points that provide permeable movement for pedestrians and cyclists. An open space framed by the community centre/nursery and an apartment



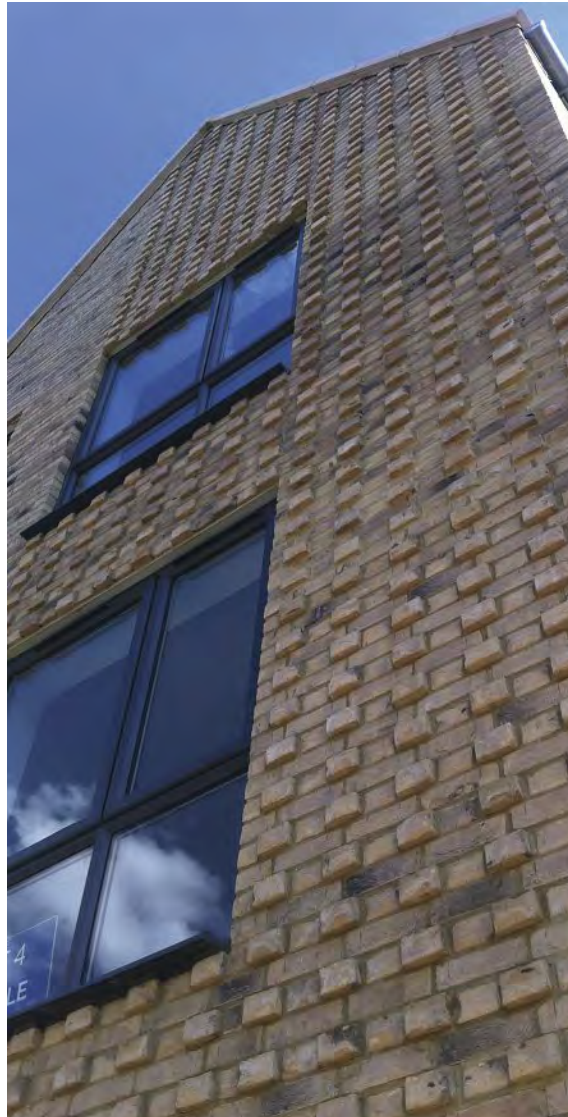


block at the centre of the scheme provides a focal centre that also distracts attention from the adjoining commercial buildings.

The scheme has a clear hierarchy of public, semi-private and private spaces, and focal buildings that frame and terminate view corridors, helping create a place that is easy to recognise and navigate. The typologies and massing of units applied are similar to the surrounding properties. With a contemporary architectural language, as well as elegant proportions and modern materials and details, the scheme creates a distinct character that enhances local identity and is evocative of the new London vernacular.

The perimeter block structure gives clear public realm definition and enclosure, while the landscape and streetscape design is generally unadorned and complementary to the architectural character. The new neighbourhood is easy to service and maintain with plenty of refuse and cycle storage, while parking is available on-street and at the curtilage, helping to make the streets neighbourly, social spaces.

A variety of typologies caters for a variety of lifestyles. Public consultation events were held at the outline masterplan stage, when the residents approved the scheme in principle. The stakeholders continued to be informed at the reserved matters stage and a number of exercises were undertaken, including sending newsletters to the surrounding residents, and a drop-in information event at a local pub was attended by 30 people who were interested in the development of the scheme.



BUILDING

Oakwell Grange, London

BRICKS

Ibstock Ivanhoe Cream

ARCHITECT

Sprunt Architects

PHOTOGRAPHERS

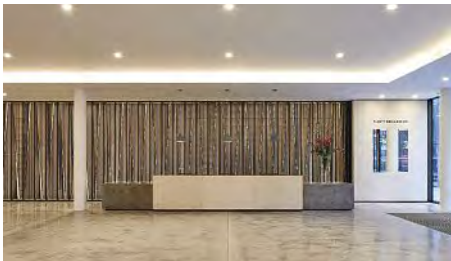
Sprunt Architects, Matt Streten, Chris Hadow, Image Creative

Rhythm of the Street

Articulated and inflected brickwork facades help mediate the scale of a large commercial building with the close-knit urban grain of London's Soho.







Thirty Broadwick is a substantial landmark building in London's Soho, designed by Emrys Architects for Great Portland Estates (GPE) and providing 120,000 square feet of contemporary office, restaurant and retail space.

The site is located at the corner of Broadwick Street and Poland Street within the Soho Conservation Area. The new building is designed to address the mixed urban context, with the principal facades disaggregated into component parts to respect the design and materials of neighbouring buildings. Emrys Architects also sought to expose previously hidden gems set within the building's context of fine historic terraces and twentieth-century buildings of varying degrees of quality, and the mews-like Livonia Street which leads to a hidden courtyard.

A neighbouring grade-two listed Georgian terrace influenced the design of the principal facade, allowing the new building to sit comfortably alongside by referencing its strong vertical lines, the rhythm of its fenestration and the relationship between the principal and upper storeys. A local view from Carnaby Street was taken into consideration, where retaining the prominent presence of the terrace was critically



Right
Ground and typical upper floor plans, cross section. A restaurant, retail premises and the office reception occupy the ground level.





Left, below
The mixed-use commercial building is a tour-de-force of masonry construction, with a variety of colours and finishes set within its carefully detailed facades.



important to Westminster City Council. Longer views were also a factor, with the building sitting a mere 300mm below a viewing corridor from Primrose Hill. As a result, the overall bulk and mass of the building were judged from these points, with three upper floors progressively stepped back to create deep terraces with various views across the surrounding streets.

In seeking to avoid the bulkiness of the 1980s red-brick building that previously occupied the site, lessons were drawn from further back in its history, specifically a 1950s subdivision. This was the genesis for a faience-clad bay to the east of the site, which reads as a separate element and provides a strong visual contrast within the principal Broadwick Street elevation.

In contrast to the previous building, Emrys Architects has employed a palette of materials that corresponds to the materiality of the conservation area's vernacular, yet applied in a contemporary manner. One section of the facade is of Roman brick with Portland stone, another is clad in petrol-black faience and Poland Street is finished in white-glazed brick with green-glazed brick piers. Geometric carved stone panels by artist Sasha Holzer are integral to the design and are incorporated within the facades.

A key principle of the design was to weave some aspects of Soho's history into the fabric of the building and Emrys Architects has taken inspiration from the shape of a dart or pleat used in the local fashion and garment industry as a motif within the architecture. It is manifest in the cranked shape of the piers on the brickwork





facade, in the fluted form of the faience, in the decorative bronze louvres that adorn the shopfronts and in details throughout the interior. The reception resembles a comfortable lobby, with warm rich polished concrete floor cut through by crisp bronze detailing and five large Portland Stone carvings providing a centrepiece. A long wall of illuminated 'dart motif' bronze panels sits behind the reception desks.

Thirty Broadwick has been designed to promote a sense of wellbeing in the occupier, with glazing around much of the perimeter of the building and good floor-to-ceiling heights. Opening windows ensure a connection to the surrounding

streets of Soho and a generous staircase and 163 cycle spaces encourage fitness. It is also the most energy- and carbon-efficient building that GPE has commissioned, with large, bright and airy spaces that have achieved Soho's highest office rents. Glyn Emrys says, 'the challenge to create a 120,000-square-foot building that sits comfortably within the narrow streets of Soho has been achieved through an analysis of what makes Soho work: its character; the palette of materials; the proportion of buildings to streets; and through an understanding and appreciation of the public realm. All of these factors influenced and evolved into an approach that is evident throughout the design of the building.'

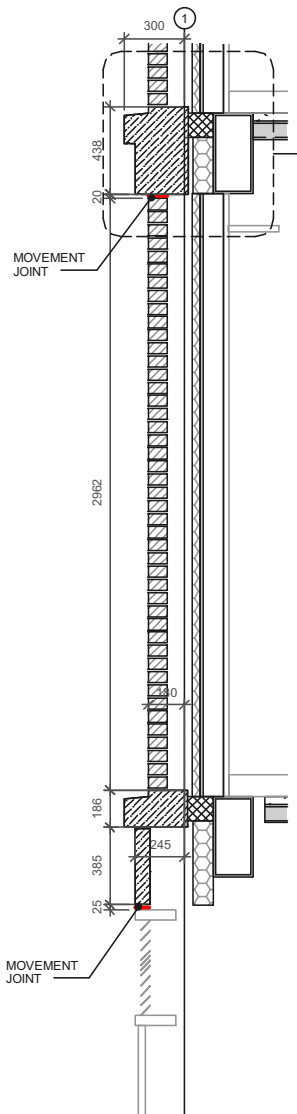
BUILDING
30 Broadwick Street, London

BRICKS
Ibstock White WT-10 glazed,
and Special Green Gr-09 glazed

ARCHITECT
Emrys Architects

CONTRACTOR
BAM Construction, Szerelme

PHOTOGRAPHER
Andy Stagg, Alan Williams



Linear Emphasis

Black linear bricks are employed to great effect in Burwell Deakins Architects' extension to a refurbished red-brick warehouse near Tower Bridge in London.





19 Queen Elizabeth Street comprises the refurbishment and extension of a warehouse building in the historic Shad Thames area of London, south-east of Tower Bridge, to provide a headquarters for property developer Hollybrook, plus nine residential units. The concept design was by Bluebottle and the detail design and delivery was by Burwell Deakins Architects.

The former warehouse, which dates from 1904, had been used as offices for a number of years prior to the refurbishment and extension. The complex project involved a change of use to the existing building to provide residential accommodation at the upper floors while retaining commercial use at the lower levels. The construction of a penthouse extension accommodates additional residential units, while a new side extension incorporates a car lift, office space and reception with residential above, and a basement excavation beneath the existing building creates car parking.

The side extension was conceived as a contemporary piece of architecture within the streetscape. Its siting and scale respond to the surrounding context, mediating between the mass of the existing building and the adjacent smaller scale housing development. The new building is set back from the line of the existing building to provide relief at pedestrian level and a transitional glass link creates a buffer between the masonry blocks. Openings are arranged as a geometrical composition of faceted voids within the mass of the extension, in contrast to the regular grid of the existing building.

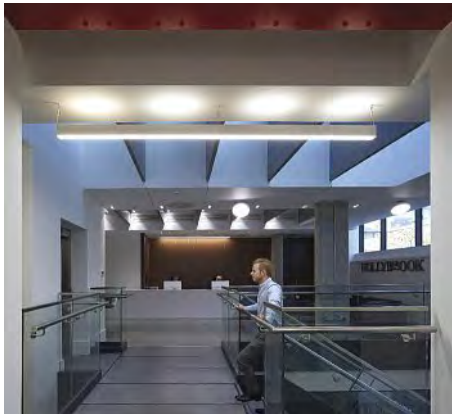






The dark grey colour of the brickwork of the extension is a deliberate contrast to the red of the existing building and accentuates a reading of the block as an abstract composition distinct from its neighbour. Throughout the project, new elements are in a palette of dark grey and white, in contrast to the multi-coloured original building. Within this palette, the colour of the bricks was chosen to match the metalwork of the new windows and roof extension while also picking up on the colour of the engineered brickwork base.

The extra long bricks lend a horizontal emphasis to the brickwork pattern, distinguishing it from the original building. The dark mortar colour was chosen to match the brickwork, while recessed joints accentuate the horizontality. Laser cut screens to the base add decorative interest to the curtain walling, car lift doors and entrance area. These were also coloured to match the adjacent metalwork and brickwork.



19 Queen Elizabeth Street offers a model for an ambitious extension and modernisation that restores and provides a new lease of life to an existing building. In addition to the appealing aesthetics of the masonry, the decision to utilise brick as an external skin to the rainscreen facade also simplified the construction and future maintenance, satisfying the clients' aspirations in terms of longevity, budget and time constraints.

The use of double soldier courses and coloured panels to the 'wall' blocks along the park edge emphasises their horizontality. Their omission on the canal edge volumes accentuates their verticality and enhances the finger-like quality of each wing. At a pedestrian level, concrete and blue facing bricks contrast with the yellow stocks on the upper levels. A series of colonnade panels of recessed brickwork articulate the individual apartments, while panels of blue bricks define the corners of the building, helping to temper the perceived mass of the scheme.



BUILDING

19 Queen Elizabeth Street, London

BRICKS

Ibstock Linear Smooth Black

ARCHITECT

Burwell Deakins Architects

BRICK CONTRACTOR

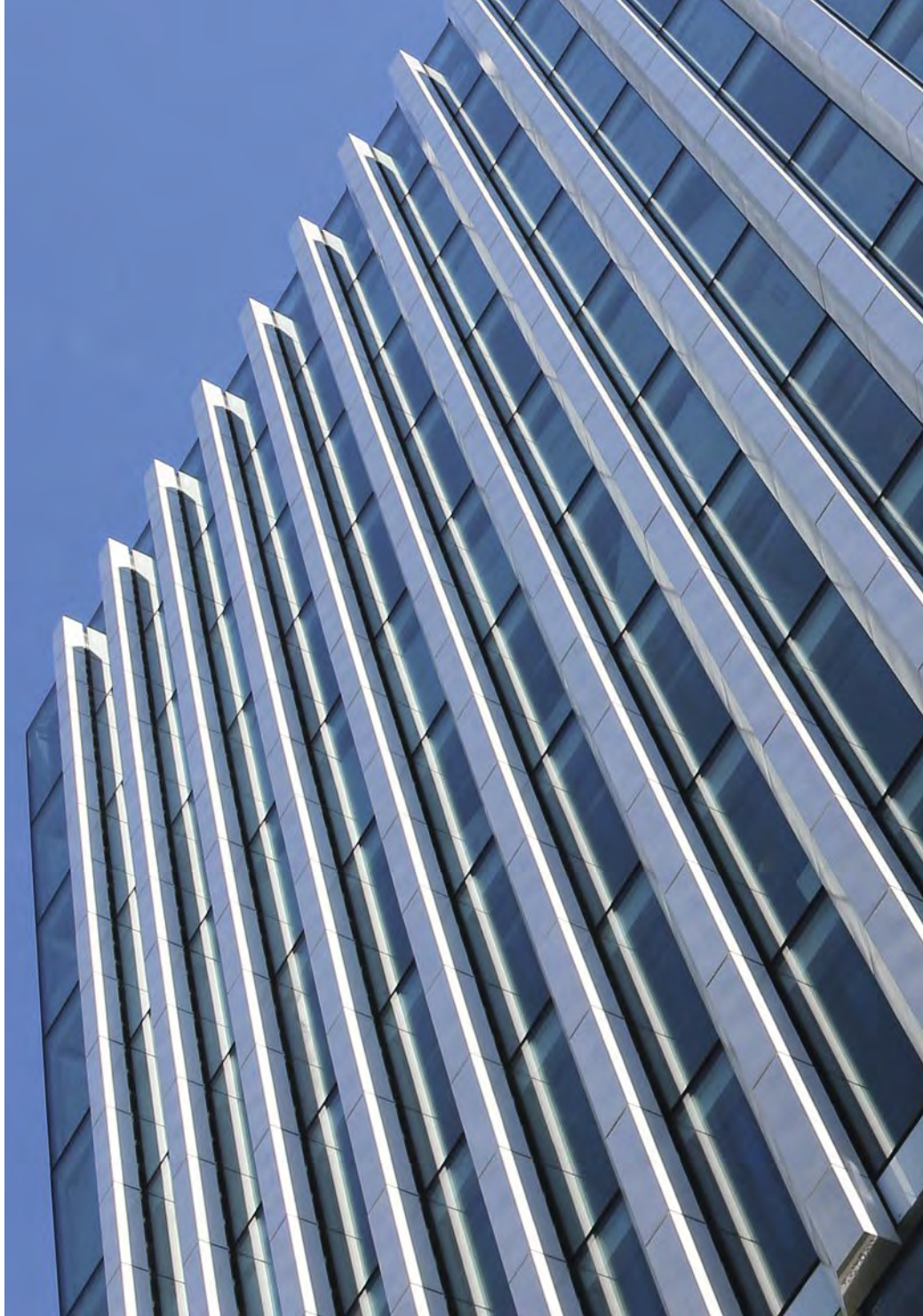
Quality Brickwork

PHOTOGRAPHER

Edmund Sumner

White Room with Black Curtains

A hybrid building housing a college and apartments, The Music Box, designed by SPPARC Architecture, is a bold contemporary response to a disparate inner-London context. White glazed brickwork roots the base of the building to its site while forming a plinth for the glazed and clad upper floors.







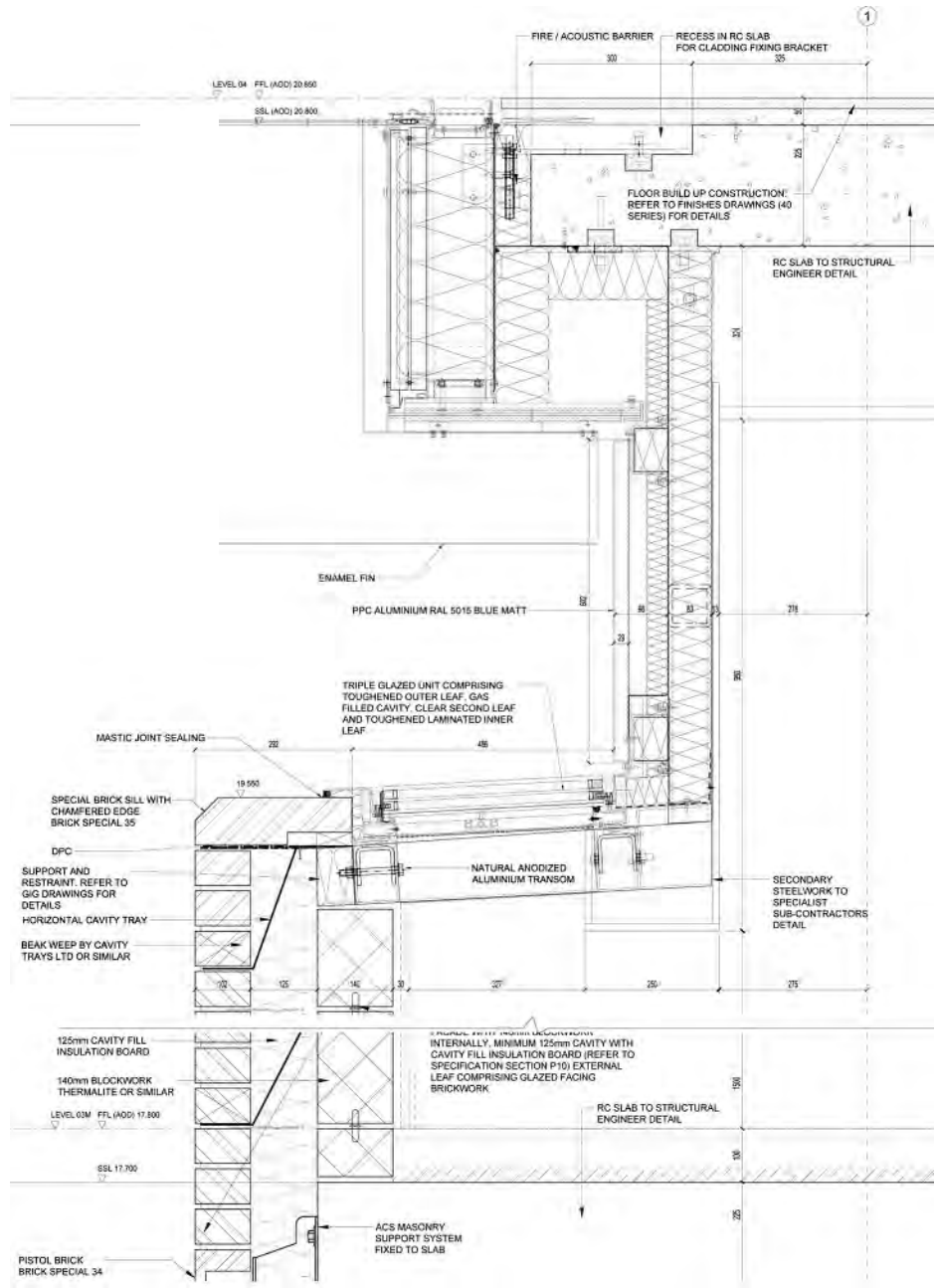
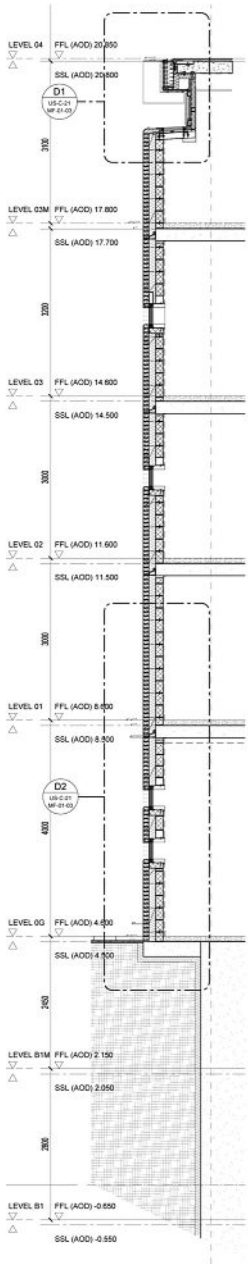
Designed by SPPARC Architecture as “a place for living and a space for learning”, the 14-storey Music Box is a mixed-use development incorporating a campus for the London College of Contemporary Media (LCCM) and 55 residential units, including on-site affordable housing.

The college occupies the basement up to the fourth floor, and above are the residential units with a mix of tenures, developed by Taylor Wimpey Central London. A landscaped public realm and ground-floor cafe complete the 10,000-square-metre project.

The site, near to Southwark underground station, is bound by a railway viaduct to the east and local authority housing to the west. The purity of the built form is reflected in the simplicity of its external surfaces, with a clear differentiation between the brick-clad college and the apartments above. SPPARC Architecture’s design is intended to respond to the variety and differing scales of the surrounding properties while relating to the robust horizontal intervention of the adjacent elevated viaduct.







BUILDING

The Music Box, London

BRICKS

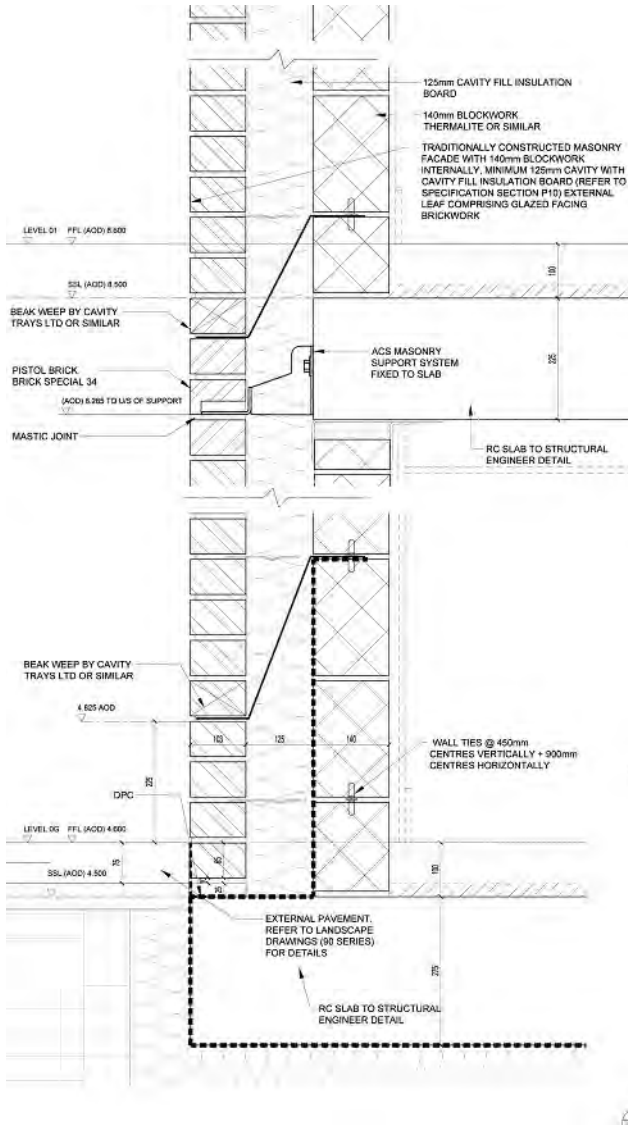
Ibstock White WT-10 glazed,
Linear Ibstock White WT-10 glazed

ARCHITECT

SPPARC Architecture

CONTRACTOR

Rainsford Contracts



Within these parameters, the design of The Music Box is also informed by Golden Section proportional systems and the rhythm and format of musical composition. SPPARC says the project represents “an exploration of the spatial ideas of sound, noise, acoustics, melody and harmony through the use and format of the external materials and their colour”.

The use of brick reflects the robust character of the surrounding area while its white colour imbues the building with its own identity. The sustainable use of masonry, sensitive urban design and strong architectural detailing are key principles that have informed its delivery and help integrate it with the London Borough of Southwark’s defined cultural corridor.

The three-dimensional projecting brickwork pattern, which required special bricks glazed on all visible surfaces, reads like a sheet of musical notes across the page, providing relief, rhythm and interest. “Those able to read guitar tab”, says SPPARC, “may recognise that the brick patterns resemble Eric Clapton’s guitar riff in Cream’s song ‘White Room’”. The glazed brick facade is returned with special bricks at the head and sill into a random pattern of long and slender deep-recessed windows intended to reinforce the robust nature and horizontal emphasis of the base.

The Music Box, says SPPARC, “is centred on the design philosophy of systems of harmony and proportion. Faith in mathematical order closely bound to the golden ratio has produced a form and external rhythm apparent to the eye and clear in their relationships with one another”.

PHOTOGRAPHERS

Stuart Bakley, SPPARC Architecture

Technical: Accommodating Movement in Brickwork at Corners

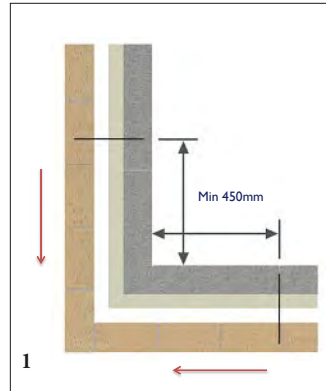
We can be easily misled into thinking that corners need to be very stiff and reinforced with cavity wall ties to avoid the potential adverse effects of wind suction. While this is partly true, there is a case for not over specifying the ties as flexibility of the brickwork is required to accommodate movement too.

Yes, we do require wall ties, but within 450mm of an inner corner they should be the more flexible light duty 'wire' rather than the stiffer heavy duty 'folded plate' ties. The brickwork will tend to expand towards the corner from both directions, as in fig 1, and wire ties will accommodate any movement better than rigid folded metal ties. If we do not allow brickwork to flex around the corner then cracking can occur. Where corners are less than 1000mm apart, ie 'short returns', we need to accommodate

movement so the two lengths of wall can expand and contract without causing the short length between them to bend and fracture.

Fig 2 shows the forces trying to make the walls bend like fig 3. The simplest and most effective solution is to locate a movement joint at the back corner as in fig 4, where it is most effective and visually least obtrusive.

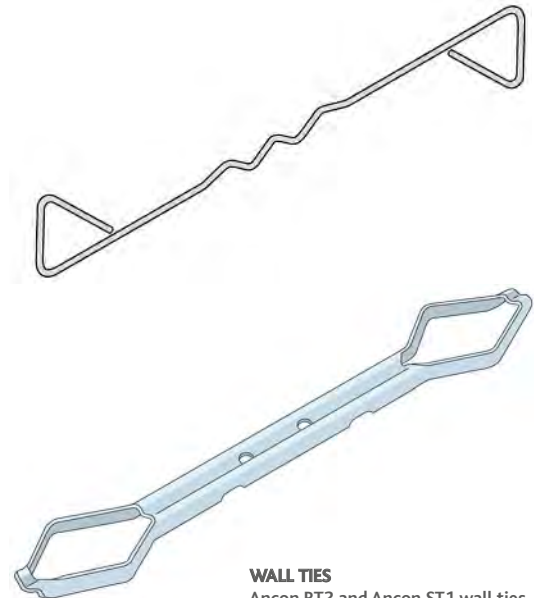
Generally we do not require any more specific movement at or for corners. Movement joints should not be more than six metres from a corner, although in design we should be aiming for five metres, as this reduces the stress on the brickwork as shown in fig 5. Locating movement joints a minimum of one metre from a corner allows for the flexibility of the brickwork, and will allow for more rigid ties beyond the 450mm 'exclusion' area shown in fig 1.



1 WALL TIES

All movements in the brickwork, no matter how small, will impart a twisting action into the cavity wall tie, particularly differential movements between inner and outer leaves.

Some designs of wall ties are better able to cope with movement than others and this can be a critical factor in the development of cracks in service. There is a proliferation of proprietary ties available and their accommodation of movement may be a factor in the choice. The stiffer types should not be used within 450mm of the internal corner of the masonry returns. Two types made by Ancon are shown below – RT2 and ST1.



WALL TIES

Ancon RT2 and Ancon ST1 wall ties (reproduced with the kind permission of Ancon).

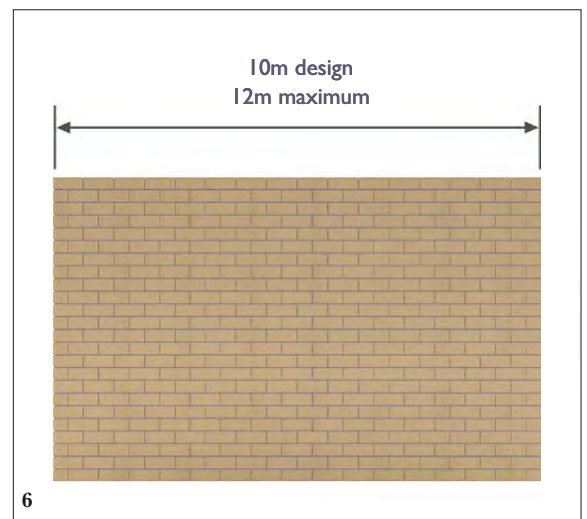
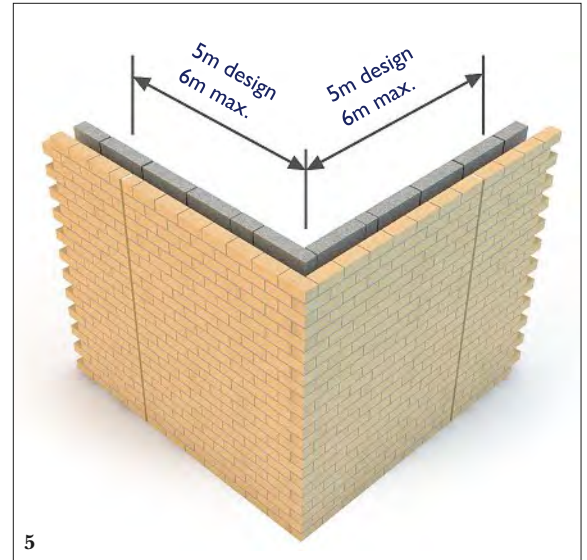
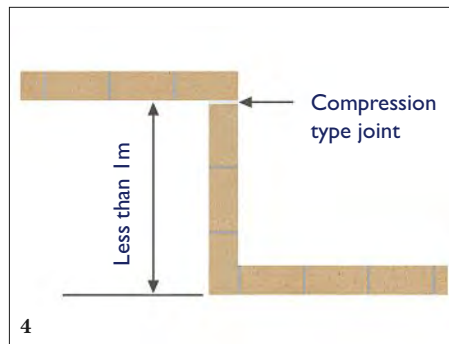
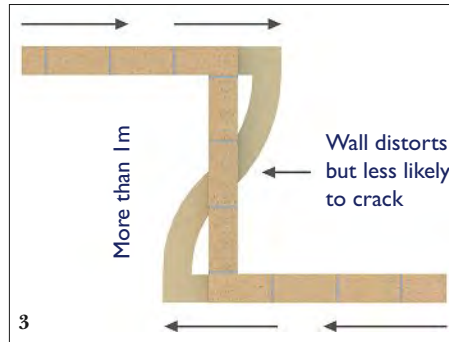
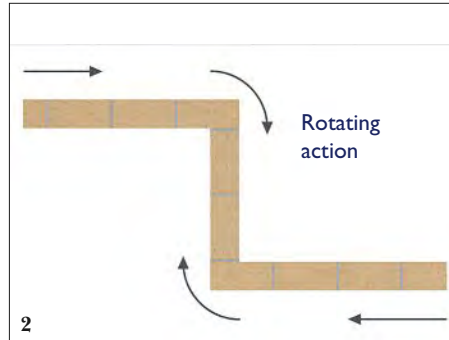
Further information

This technical feature is an edited extract from Ibstock's new 'Technical Information Sheet A18 – Designing for Movement', which is available to download from: www.ibstock.com/technical-support/

The new Technical Information Sheet will help you in positioning movement joints around the brickwork to your buildings. Alternatively, our Design Advisors can provide you with recommendations for the locations of movement joints in your building. Simply contact them on 0844 800 4576 or email at technical@ibstock.co.uk

2-4 CHANGES IN DIRECTION INVOLVING SHORT RETURN WALLS

Return walls should be designed to have adequate stability to withstand the adjacent wall movement. Any return wall will be affected by the expansion forces in the brickwork in both adjoining walls (fig 2). Where short returns are a design requirement, incorporate a movement joint (fig 4). The movement at short returns is aggravated by the wall sliding on the DPC. Correct choice of DPC material is therefore important and advice should be sought from the manufacturer or the Ibstock Design Advisory Service.



5-6 VERTICAL JOINT SPACING

Simple guidelines exist for the spacing of vertical joints to accommodate horizontal movement, the most common being 12 metres maximum for a half-brick-thick skin to cavity walling. Current thinking in the light of modern construction techniques and higher insulation requirements for external walls is that the design spacing should be 10 metres. 12-metre centres is possible however it does stress the brickwork and will be dependant of door and window openings (fig 5). The 12-metre spacing will also require wider more obtrusive movement joints. Distance from returns and angles should be approximately half of the above dimensions (fig 6).

Ages of Brick

Postcards from the bridge

While brick tends to be the material of preference for constructing buildings, its potential in bridge-building is sometimes under-appreciated.



These historic examples include the Oberbaum double-deck road and rail bridge across the river Spree in Berlin (1896), the Göltzschtal Bridge in east Germany (1846-51, reputed to be still the largest brick bridge in the world), Maidenhead Railway Bridge (1838), designed by Isambard Kingdom Brunel and featuring the widest and flattest brick arches to date, and Trier's Roman bridge, whose pillars date from the second century.







Queen Elizabeth Street, London, by Burwell Deakins (photo: Edmund Sumner)

Thirty Broadwick, London, by Emrys Architects (photo: Andy Stagg)



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