



Architecture
Today

281 September 2017

Office
Kenneth Frampton on
Four Pancras Square
by Eric Parry Architects

Forum
Alex Ely, Nicola Rutt, Phil Coffey,
Adam Nathaniel Furman

Works
Carver Haggard, PUP Architects,
Dow Jones, Chance de Silva

Focus
Envelope: Studio Seilern,
Eva Sópéoglou



Urban Calibration

Kenneth Frampton applauds Eric Parry Architects' Four Pancras Square

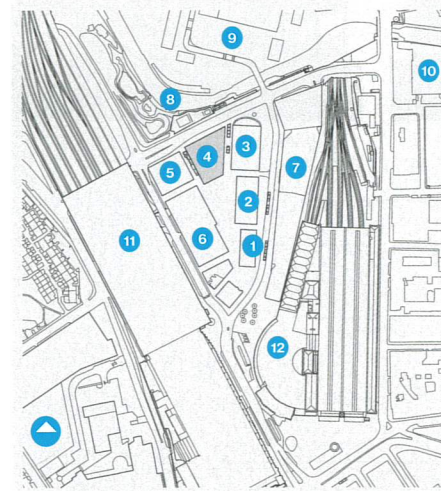


Left

Four Pancras Square is located adjacent to St Pancras International station on brownfield land formerly occupied by railway yards and gas containers. The overall development is by the King's Cross Partnership in which Argent is lead partner (phs: Dirk Lindner).

Below

Location plan, reception cafe, rooftop terrace and long-span vierendeel truss across the southerly entrance. Key: 1 One Pancras Square (David Chipperfield Architects), 2 Two Pancras Square (Allies & Morrison), 3 Three Pancras Square (Porphyrus Associates), 4 Four Pancras Square (Eric Parry Architects), 5 Five Pancras Square (Bennetts Associates), 6 Six Pancras Square (Willemotte & Associés), 7 Google HQ (forthcoming, BIG/Heatherwick Studios), 8 Regent's Canal, 9 Granary Square, 10 King's Place, 11 St Pancras International, 12 King's Cross station.



Ever since 30 Finsbury Square was completed in 2002, Eric Parry's reputation has been linked to the facility with which he designs medium-rise office buildings, a type which one may well regard as an endangered species given the current spate of freestanding mega-high-rises which, irrespective of their programmatic content, are popping up ad-infinitum in every capital city around the world; a dystopic 'value-free' cancer capable of destroying the socio-civic fabric of every historic city. This, fortunately, has so far not been Parry's destiny as an architect, which raises the imponderable question as to how does a reasonable, ethical developer — a rare species — find an appropriate architect and vice versa. In this instance we are referring to one David Partridge of Argent, the lead developer behind Parry's Four Pancras Square at London's King's Cross.

Eric Parry Architects' 11-storey office building, which completes the enclosure of Pancras Square, is an exceptional one-off; a quality that arises in the first instance from its compact civic form — which stems as much from its carefully calibrated height as from its site-imposed trapezoidal plan — but equally from the subtle topography of the square itself, warped to accommodate below-ground servicing (all factors determined largely by the King's Cross development's masterplan, originally devised by Allies & Morrison and Porphyrus Associates).



Below

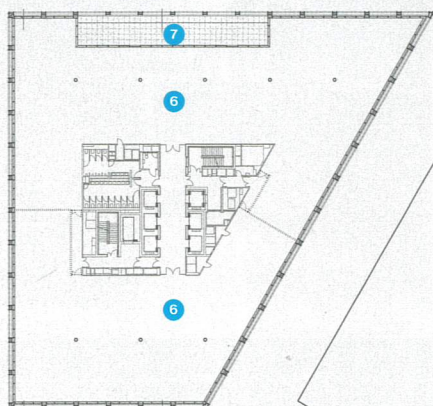
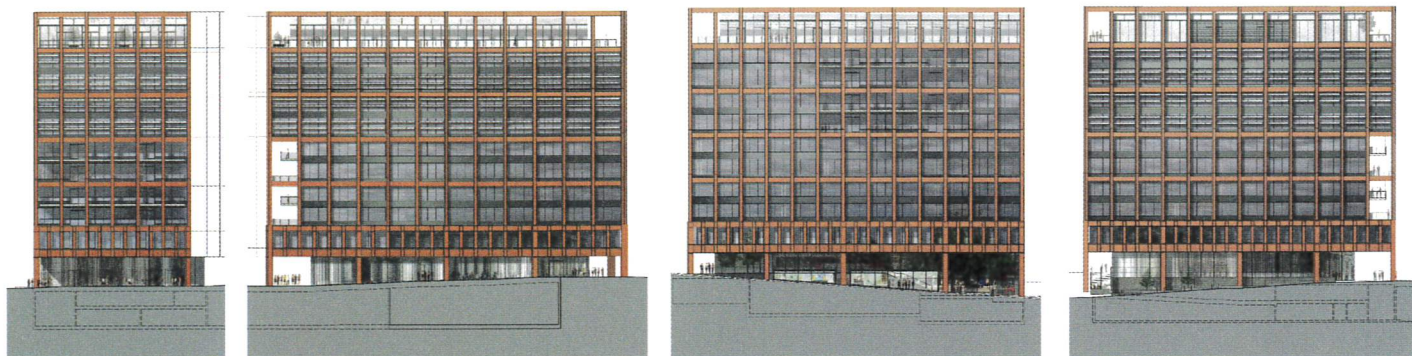
South, east, north and west facades; floor plans. Eric Parry Architects was commissioned in 2003 to prepare an initial design for Four Pancras Square to test the masterplan proposal. At the time a cast-iron gasometer was located on the site and this informed the notion of employing an expressed steel frame.

The building comprises 10 floors of office space above a ground-floor office reception, ground- and lower-ground level retail, and two basement levels with plant, cycle racks and showers.

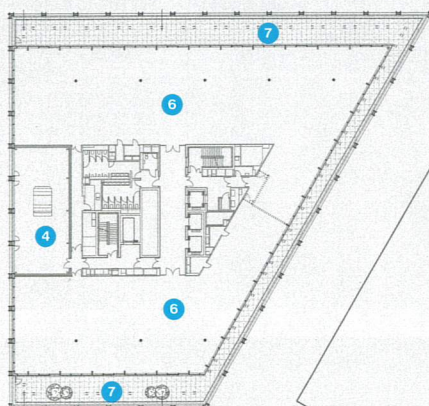
A vierendeel truss at the first floor allows the transfer of structure to widely spaced ground-floor piers, serving to open up the ground floor to a variety of public and retail uses. The vierendeel is formed of 16 individual segments, either welded or bolted together, the heaviest of which weighed 72 tonnes in two welded sections, forming a span of 27 metres.

Key

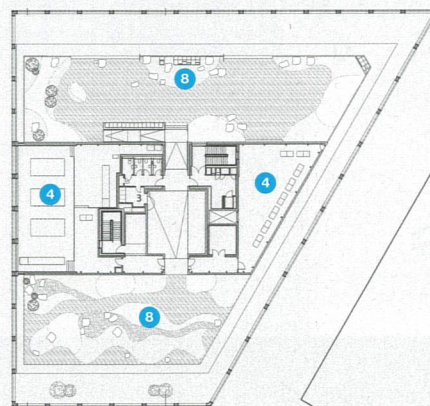
- 1 Office reception, cafe
- 2 Lift lobby
- 3 Retail
- 4 Plant
- 5 Cycles with adjacent shower room
- 6 Office
- 7 Terrace
- 8 Roof garden



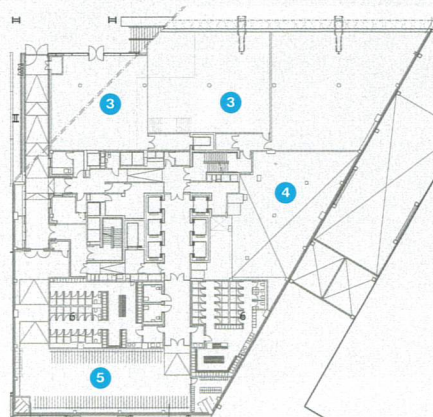
Sixth floor plan



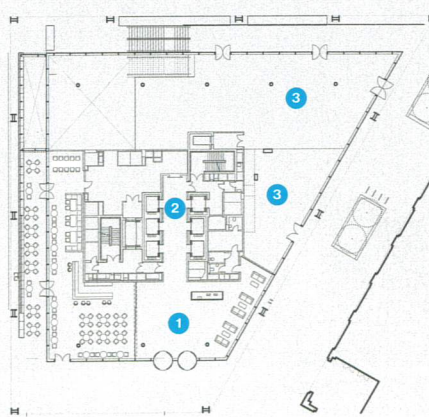
Tenth floor plan



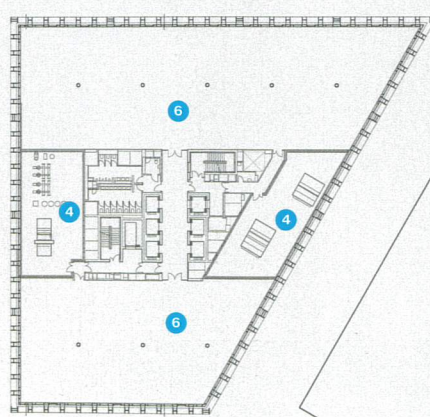
Roof plan



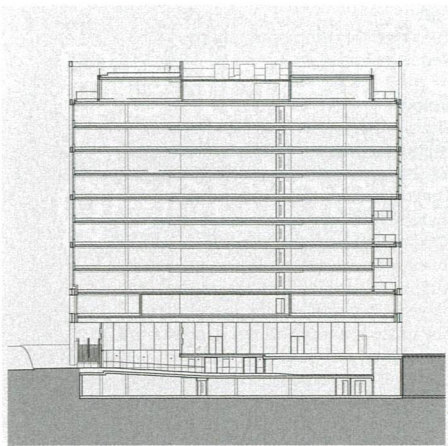
Lower ground plan



Ground floor plan



First floor plan



Above

North-south section, staircase and north elevation.

Right

Typical office floor and cycle store. A displacement ventilation system is fed through the raised-floor plenum, while exposed concrete soffits help increase floor-to-ceiling heights and decrease cooling loads. The building plugs into the King's Cross development's CHP system, boosting its energy rating and reducing the amount of plant required. Compared to similar office developments, the building will consume 65 per cent less gas and electricity. At design stage it was the first UK office building to achieve Breeam 2014 Outstanding.

At the same time it is patently an abstract, rhythmic composition of great refinement which not only depends on its modelling and proportion but also on a particular alternation between advancing and receding planes, the displacement of which gives an all-but musical structure to the building in section. Thus where the ground-floor foyer is recessed, the floor above (the traditional piano nobile) is advanced behind a monumental long-span steel vierendeel truss that establishes the tectonic language of the building, not only for the front-facing square but also for the other three sides, enabling the use of widely-spaced steel stanchions upon which the building rests.



The building is articulated in section into two groups of four floors each, of which the first group is recessed and the second advanced within an eight-floor sequence above the foyer level, while the building is crowned by an attic that is recessed by an open, steel-framed loggia continuing around its perimeter in lieu of a cornice. An equally syncopated rigour obtains in the detailing wherein prefabricated, welded spandrels of weathered steel make up the structural facade, rhythmically articulated by pairs of mullions in five-bay units. These spandrels are hoisted into position in a manner reminiscent of the construction of the facade of Mies van der Rohe's twin apartment towers at 860 Lake Shore Drive, Chicago, completed in 1951.

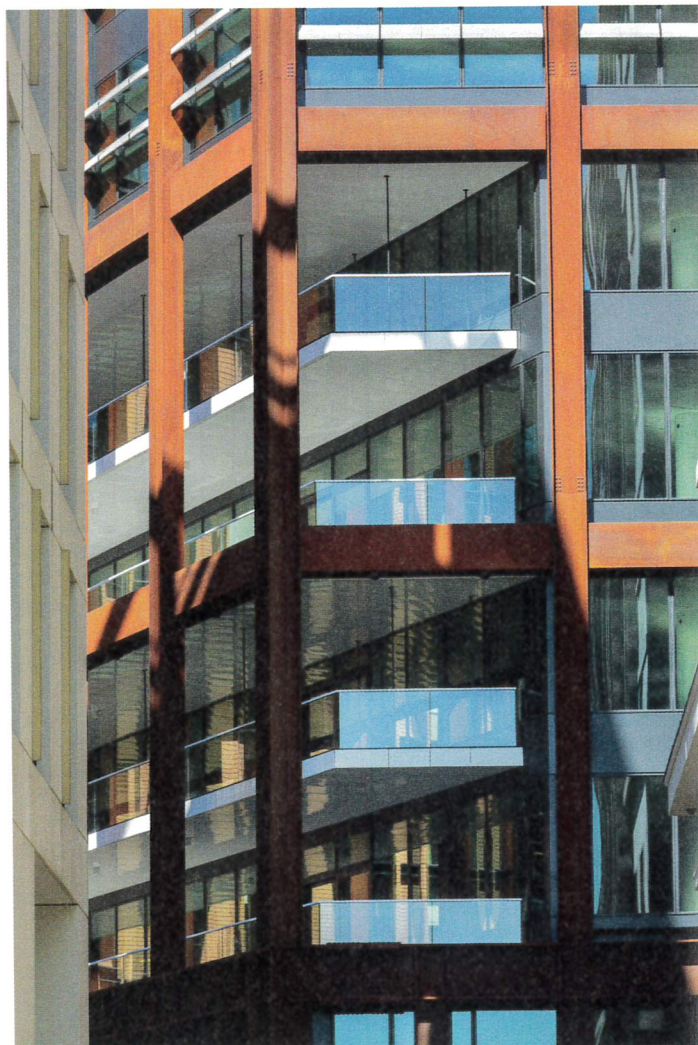
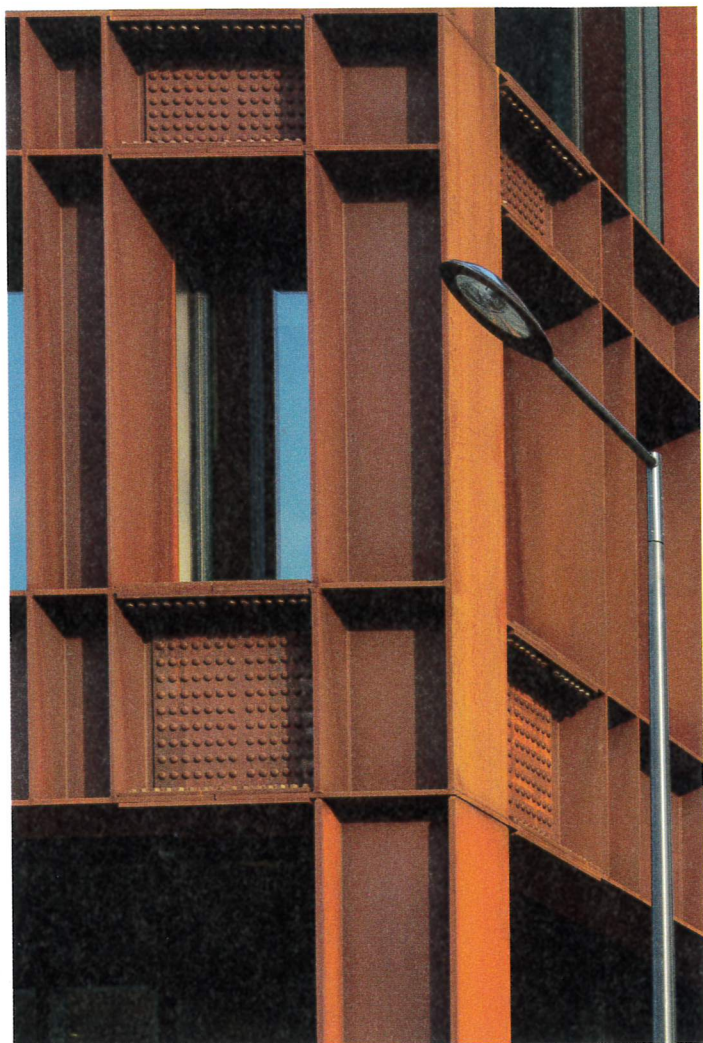


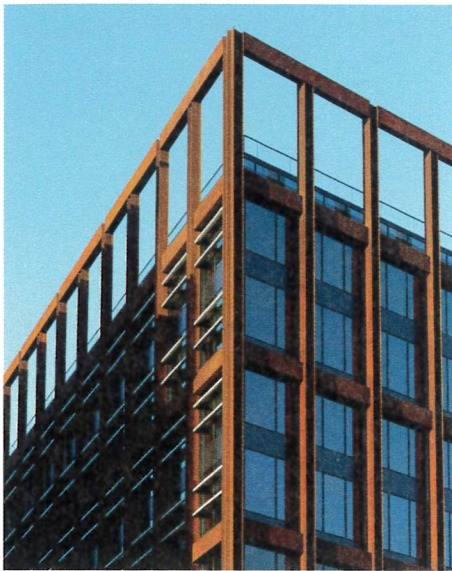
Left

The north elevation overlooks the Regent's Canal.

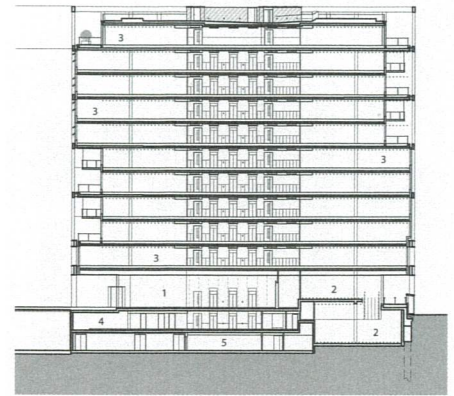
Below

The weathering steel of the facades is complemented by white glazed ceramic for the horizontal brise soleil shading. The expression of the structural and material qualities of steel recalls the heroic engineering of the Industrial Revolution, and in particular the nearby King's Cross and St Pancras stations that played a key role in London's growth. The glazed ceramic echoes its use in the nineteenth and early twentieth centuries as a response to high levels of urban pollution. The natural patination of the steel absorbs light, in contrast to the reflective ceramic surfaces.





At Four Pancras Square, however, the entire perimeter is loadbearing, so that the facade rises in coordination with the internal columns and the central structural core. This woven, loadbearing wall may be seen as an evocation of Mies's 'beinahe nichts' (almost nothing); a representational tectonic in welded steel, comparable to the flutes of a classical column. At the same time, the weathered steel, the structural perimeter wall, the cast glazed terracotta brise soleil and the white soffit panels and glazed terracotta fascias over the inset balconies on the second to fifth floors, jointly testify to the aim of achieving a low-maintenance, enduring structure.



Above

Corner detail and section.

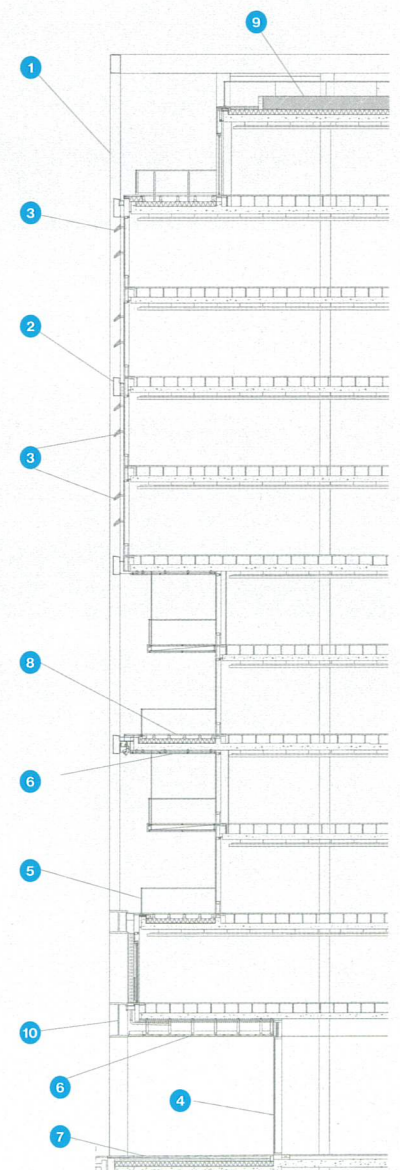
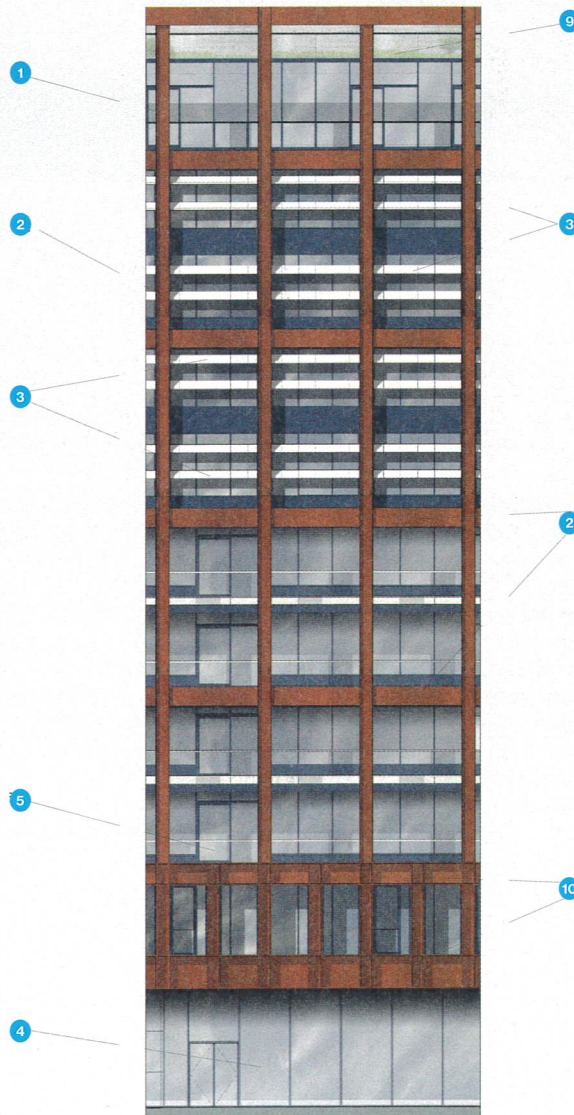
Right

The facades comprise an expressed weathering steel structural frame with a unitised PPC curtain wall behind. Glazed white ceramic is used for upper floor brise soleil and balcony fascias. The weathering steel panels are not structural beams, but help tie the corner piers. Rainwater is back-drained off the panels and viereindeel truss to an external ring drainage system routed behind the piers to minimise and capture run off. The piers all have drainage grilles at the base to prevent run off to the public realm paving.

A bespoke fire engineering strategy, developed by Trenton Fire, protects the steel frame by introducing steel plates on the back of the viereindeel truss and inserting T-sections within the external piers.

Key

- 1 Weathered steel structural pier
- 2 Weathered steel panel
- 3 Extruded glazed terracotta brise soleil panel
- 4 Full-height glazing
- 5 Structural glazed parapet with vitreous enamel handrail
- 6 Aluminium ceiling cladding
- 7 Terrazzo paving
- 8 Inverted roof system
- 9 Landscaped roof
- 10 Weathered steel viereindeel truss





Top
Southerly view from EPA's building to
George Gilbert Scott's St Pancras tower.

Above
Roof garden and entrance lobby.

A rental office building, as opposed to a bespoke corporate headquarters (though in this case a pre-let has made the building quasi-bespoke), is always a challenge for an architect, since apart from its capacity to produce income it tends to lack cultural significance. It may also afford well-serviced, well-lit, commercial space at grade, which Parry has succeeded in doing at Pancras Square. Otherwise the only gratuitous provision is a landscaped green roof, which apart from its ecological potential (as wildlife habitat and to counter the heat-island effect) provides for a certain amount of 'park-space' for the use of the occupants at the top of the building. It is noteworthy that the western flank accommodates a ramp giving access to bicycle racks, showers and lockers. This is a sustainable touch par excellence (as well as servicing a fire escape).

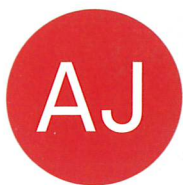
Appropriate to its situation, close to the threshold of Thomas Cubitt's King's Cross station, this is a twenty-first century tour-de-force playing a discreet homage to the heroic engineering achievements of the second half of the nineteenth century. **A**

Project team

Architect
Eric Parry Architects
Structural engineer
AKT II
M&E, fire engineer
Sweco (ex Grontmij)
Fire consultant
Trenton
Facade consultant
FMDC
Reception lighting
Speirs & Major
Roof garden designer
Todd Longstaffe Gowan
Acoustic consultant
Sandy Brown
CDM
David Eagle
Main contractor
BAM Construction

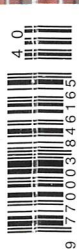
Selected suppliers & subcontractors

Facade
Focchi
Ceramic brise soleil
Palagio
Concrete frame
Morrisroe
Steel exo-skeleton
Severfield
Toilets, shower rooms
Maxwood
Roof garden
Willerby Landscape
Terrazzo
Simpsons
Reception dome lights
Mike Stoane
Reception soffit
Durlum
Lifts
Kone
Internal metal doors
Accent Hansen
Internal timber doors
David Smiths
Ironmongery
FSB, Elite
Steel stairs
Structural Stairways



Pinky + perky

*Duggan Morris's new offices in King's Cross
PLUS Three projects using offsite construction
by Waugh Thistleton, HKR and Eric Parry*



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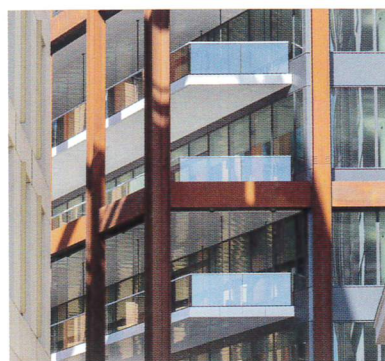
DANIEL SHEARING

30 Dalston Lane
by Waugh Thistleton Architects
Jay Merrick



SARAH J DUNCAN

40 Sail Street and Juxon Street
by HKR Architects
Rob Wilson



DIRK LINDNER

50 4 Pancras Square
by Eric Parry Architects
Jon Astbury



JACK HOBHOUSE

62 R7, King's Cross
by Duggan Morris Architects
Rob Wilson

05.10.2017

Offsite construction

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On the cover: Duggan Morris's R7 office development, King's Cross. Photograph by Jack Hobhouse



Building study

Completing the square

Eric Parry's 4 Pancras Square
embodies the aesthetic of London's
regenerated King's Cross



Four Pancras Square is the last of eight buildings to complete in Pancras Square at the gateway to King's Cross. The 11-storey building offers 16,350m² of Grade A office space with ground-floor retail; the office has been fully let to music giant Universal Music for occupation in 2018. The use of material, including a striking Cor-ten façade, and the structure of the building recall the heroic engineering of the industrial revolution and the railways that enabled the expansion of London, while addressing its keystone position at the head of Pancras Square and delivering a generous, highly sustainable building, rated BREEAM Outstanding to 2014 codes.

Words Jon Astbury
Photography Dirk Lindner

It is with no irony that the same elements that helped construct the simplistic narrative of blight surrounding London's King's Cross – that of an industrial 'wasteland' and hotbed of urban vice – are consistently being fed back via the designs of its regeneration. This has been at its most obvious in the act of literally filling a gas holder with luxury apartments, but every major structure in developer Argent's masterplan has cited some influence or reconnection with industrial heritage, be it David Chipperfield Architects' rather cheap looking woven-effect steel columns or Porphyrios Associates' more esoteric riffing on industrial robustness, seemingly via Gotham City.

Cue Eric Parry Architects' latest addition to Pancras Square – Number 4 – for which Parry conjures photographers Bernd and Hilla Becher and the 'magical quality of a wrecked industrial background' in the encasing of an office in something of a

weathered steel gas holder of its very own. Compared with its neighbours, it is perhaps the least discreet homage but it has turned out to be one of the most convincing.

King's Cross is far from perfect and while Argent may have received many accolades, its attempts to reduce the social housing allocation show it is not immune to the more controversial side of development. Architecturally, however, there are areas that, after a walk around ongoing works in Stratford or Greenwich, still surprise with their success at creating enjoyable new pieces of city. Parry, like many others, puts this largely down to the University of Arts London's decision to site Central Saint Martins there, comparing its role as a creative fulcrum to the Ikon Gallery in Birmingham's Brindleyplace, also developed by Argent. But while Central St Martins sits at the edge of the currently developed area, the completion of EPA's No 4 renders Pancras Square one of the most resolved areas of the scheme – and the masterplan's vision – so far.

Pancras Square is a trapezoid sitting off King's Boulevard, home to office space with public retail space peppered across



ground floors. Pinched at its southern end by No7 (the refurbished Stanley building) and Chipperfield's No 1, there is a play here of the open and closed, with this more intimate cluster of medium-rise blocks giving away little of the starkly different condition beyond Regent's Canal to the north. Acting as a staunch coda, EPA's No 4 straddles these two conditions, with views out to the south and of the St Pancras clock tower tightly framed by the two 'gateway' buildings and views to the north across the canal, the gas holders, Granary Square and the recently topped-out Coal Drops Yard (also by Heatherwick).

With this type of office build we are firmly in EPA territory. The firm has a proven track record of designing considered mid-rise office units, often of a scale and in settings one could call distinctly 'civic'. The difference here was a lack of immediate initial context (its scheme was perhaps the most well-resolved at the point of initial design workshops but has been the last to complete) and Parry describes this cluster of blocks as needing to be 'like chess pieces, able to have their own confidence.' The result is the usual robust, butch exterior treatment that EPA does so well, often most pleasingly resolved in stone but demonstrated here – as at 5 Aldermanbury Square and 40 New Bond Street – as just as effective in steel and glass.

While the rhythm of these compositions often speaks to a pushing and pulling of heavy forms, at Pancras Square things are far more static, in part due to the strong horizontality of the south-facing balconies and the glazed ceramic brise soleil placed depending on orientation (this material being another Parry signature), but mainly



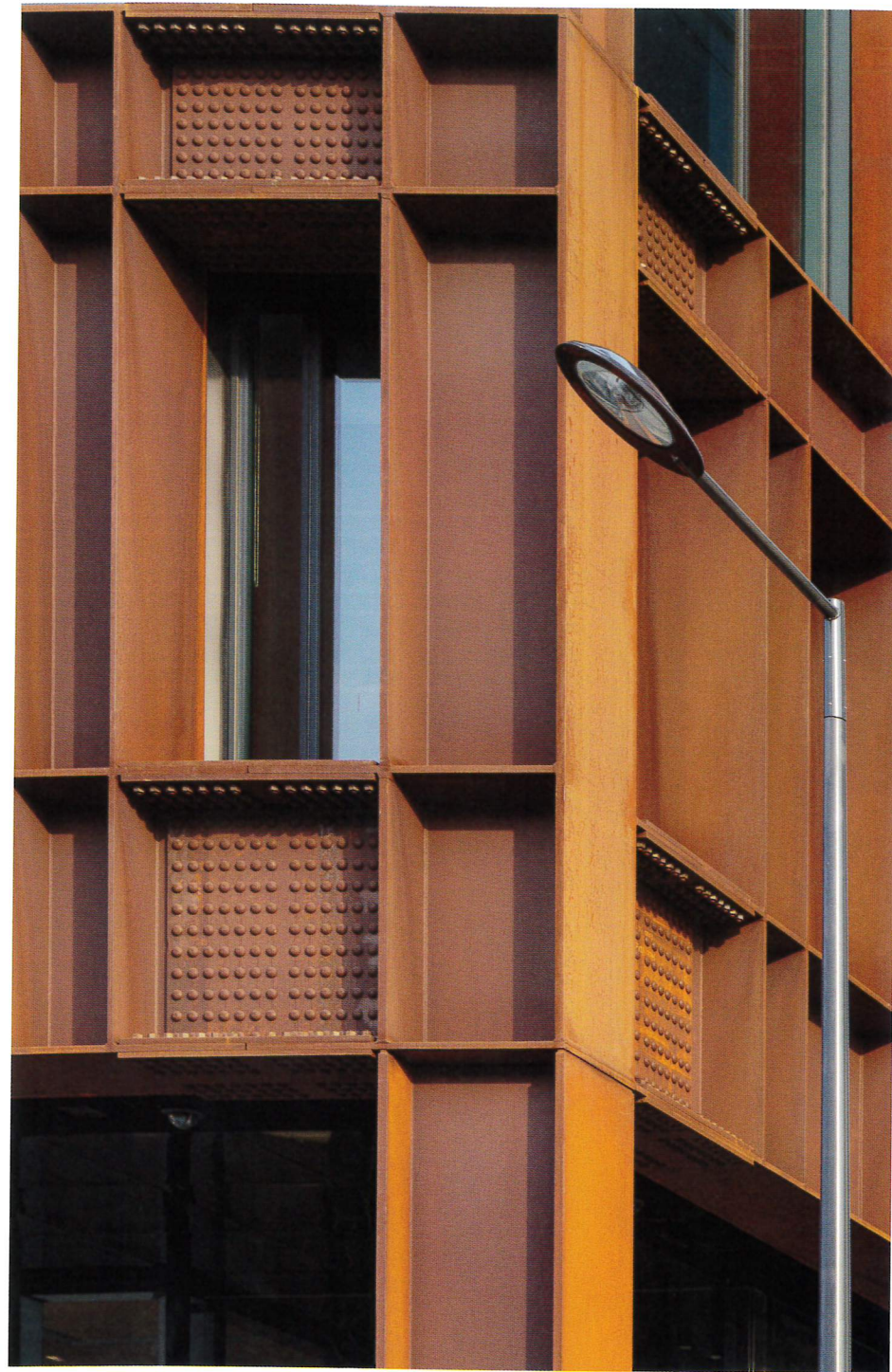
'There is a great satisfaction to be had in its sheer structural celebration as well as its ability to slot into an industrial backdrop'

owing to the mammoth Vierendeel truss that wraps around the building like a huge belt at first-floor level and upon which the whole exoskeleton sits. This truss was fabricated by Severfield and brought on to site in 18 sections – the largest being 17m long and the heaviest 72 tonnes – and craned into place. While the truss sections were originally to be welded together, value engineering changed this to a system of bolts at each corner (so many that it almost looks like fetishistic over-engineering), which have ended up being an impressive expression of process and force. The uninterrupted span created through the use of this truss stretches across the entire width of the building. The intention is to allow the square's public space to flow into and around the ground plane as naturally as possible, through to Goods Road behind where a ramp leads down to bicycle storage.

As with the rest of Pancras Square, some of the weakest points remain these corridors where buildings meet, but the glazed ceramic soffit of No 4's loggia and the entirely glazed ground floor that will house a café bring more activity to this relationship than its neighbours. Parry says the ground-floor unit has always been imagined as a gallery but could be let to a shop or restaurant. All being well, the space will serve to energise this end of the square and draw visitors away from the more immediate offerings at the southern end.

Despite the weighty statement of the truss, there is still movement in section. The ground floor is drawn in, and above this two sets of four floors shift to provide blocks of south or north facing balconies, with those on the southern entrance elevation running across the entire width and those on the plainer north elevation cut out of six bays. The top-floor office space is set back, leaving the final section of the exoskeleton framing the sky, a similar gesture to Allies and Morrison's Two Pancras Square, and one that further emphasises its condition as a container.

With support from the truss at their edges, the post-tensioned concrete floor plates are free to be simple and vast, able to be read back to a simple core, housing stairs and lifts with little obstruction from internal columns. This also allows for a huge amount of light, and the windows promote satisfying close-ups of the exoskeleton's construction and attachment as well as the brise soleil. The only departure from this otherwise spartan provision is a landscaped green roof, and here the top of the frame cuts across the



horizon line in an effect that was not planned but is now pitched as a positive feeling of being 'encased'.

If ever there was a building that embodied the aesthetic of new King's Cross – a sense of tectonic worthiness, slightly brash and 'hands-off' but thorough – then this is it. There is a great satisfaction to be had in its sheer structural celebration, as well as its ability to slot into an industrial backdrop without feeling kitsch. In a cluster of buildings that are at worst dull but nonetheless hit many of the right notes in terms of scale and massing, No 4 does that rare thing of elevating its neighbours and the square.

Client's view

Eric Parry's Four Pancras Square is a fantastic building and one of the next generation of our office product at King's Cross. It will be a great home for Universal Music and I'm sure they'll make great use of the roof gardens. With completion of this building, the momentum very much now shifts to the next phase of offices around Handyside Street, neighbouring Central St Martins and Coal Drops Yard, which have already started to complete. *Will Colthorpe, partner, Argent*

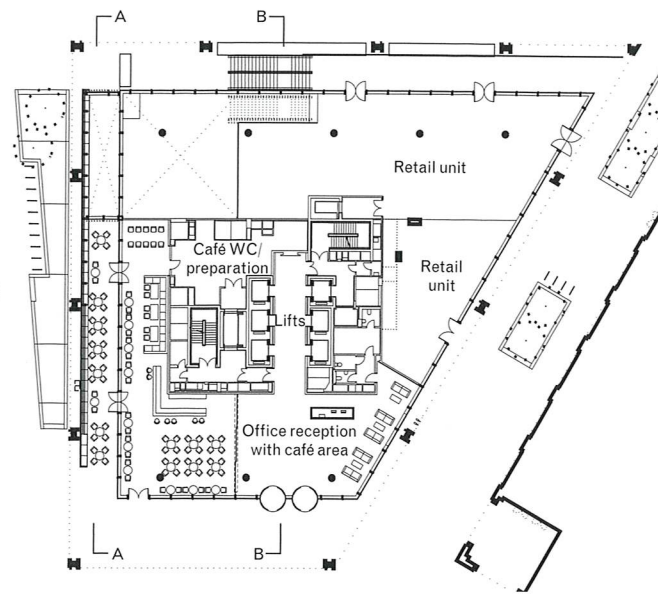


GRANT SMITH

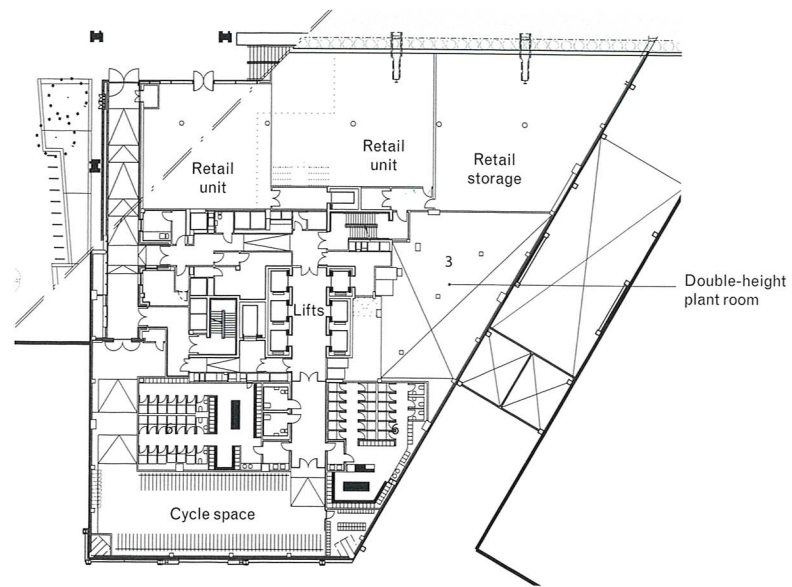


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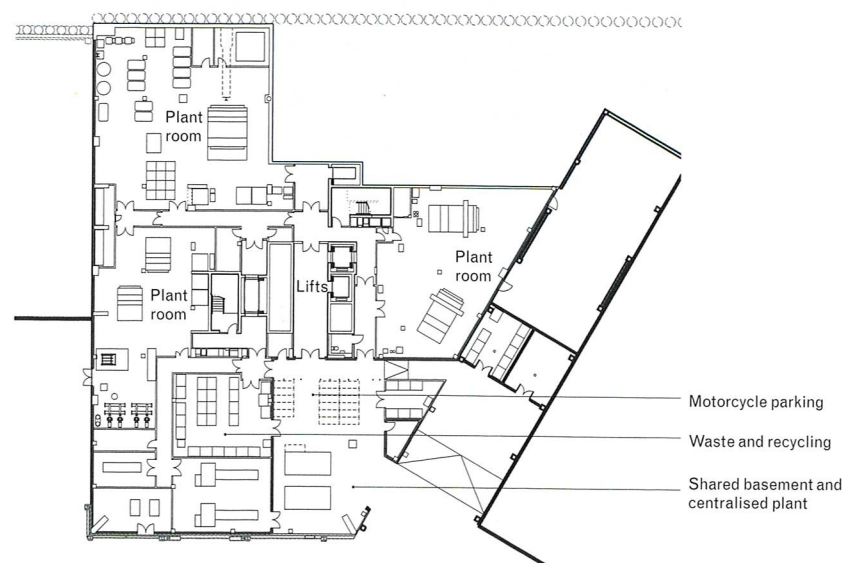
Ground floor plan



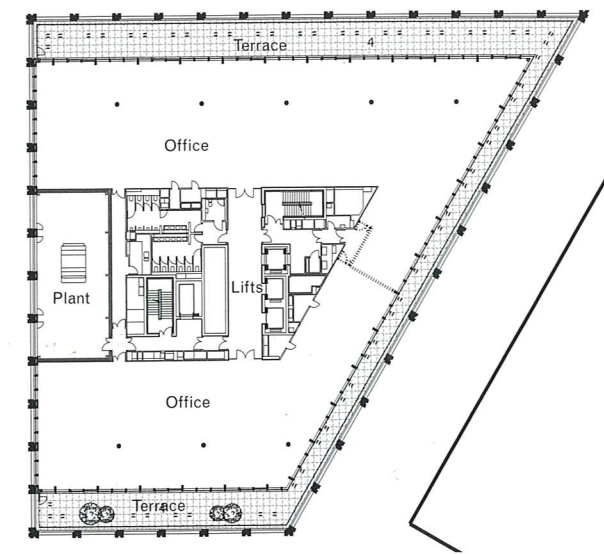
Lower ground floor plan



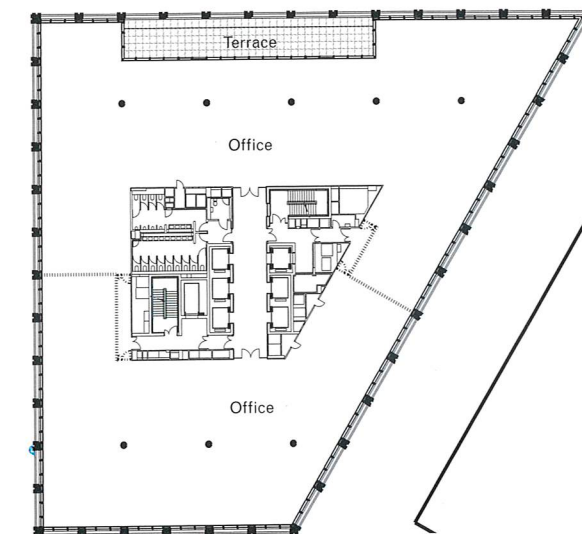
Basement plan



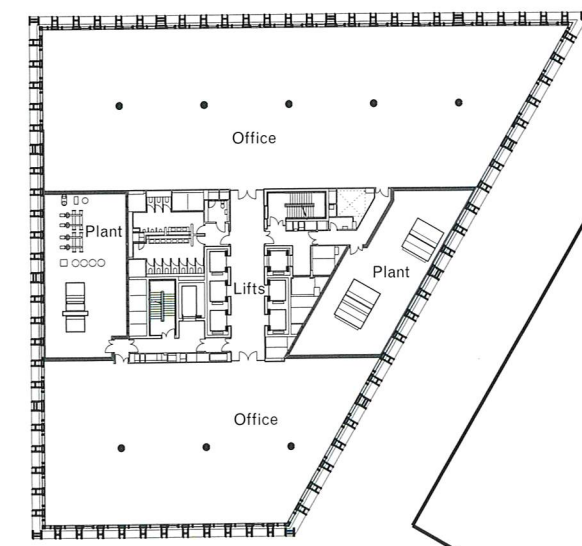
Tenth floor plan

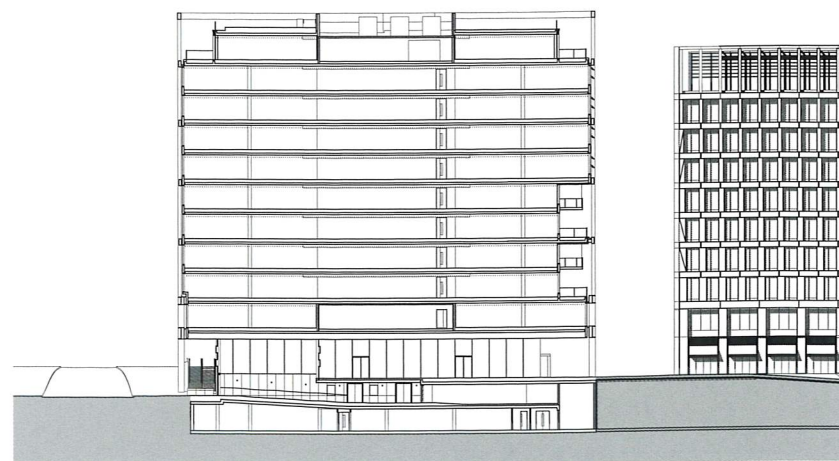


Sixth floor plan

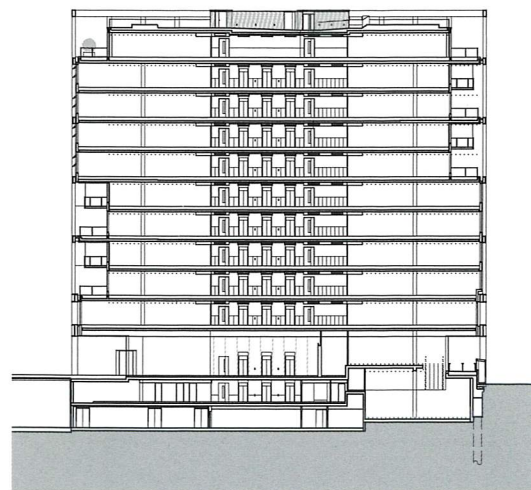


First floor plan





Section A-A



Section B-B

0 5m

Project data

Start on site May 2015
 Completion Summer 2017
 Gross external floor area 25,722m²
 Net internal area (upper floors) 16,350m²
 Form of contract Two Stage amended JCT Design and Build
 Client Kings Cross Central Limited Partnership
 Architect Eric Parry Architects
 Executive architect and engineer BAM Design
 Structural engineer AKTII
 M&E and fire strategy consultant Sweco
 Quantity surveyor/cost consultant Gardiner & Theobald
 Landscape architect Todd Longstaffe-Gowan
 Main contractor BAM Construction
 Façade Consultant FMDC
 Specialist Structural Fire Engineering Trenton Fire
 Acoustic Consultant Sandy Brown Associates
 Lighting Consultant Speirs + Major
 Workplace Consultant KKS Strategy
 Main contractor BAM Construction
 Annual CO₂ emissions 14.2Kg/m²

Architect's view

Our building is the keystone project that completes Pancras Square in King's Cross. Its steel structure recalls the heroic engineering of the industrial revolution and London's railways.

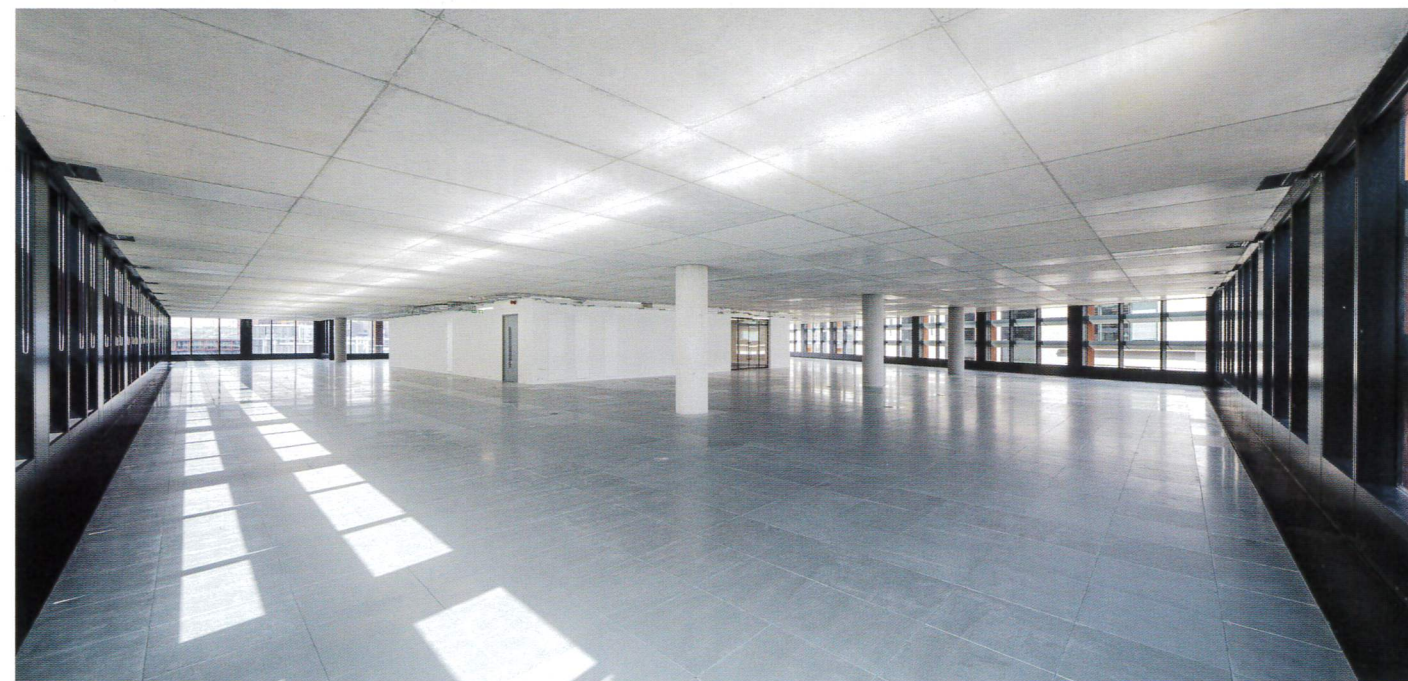
The Vierendeel truss encircling the first floor enables a 27m-long span over the building's reception and creates an important connection between the building and the square that rises dramatically towards it.

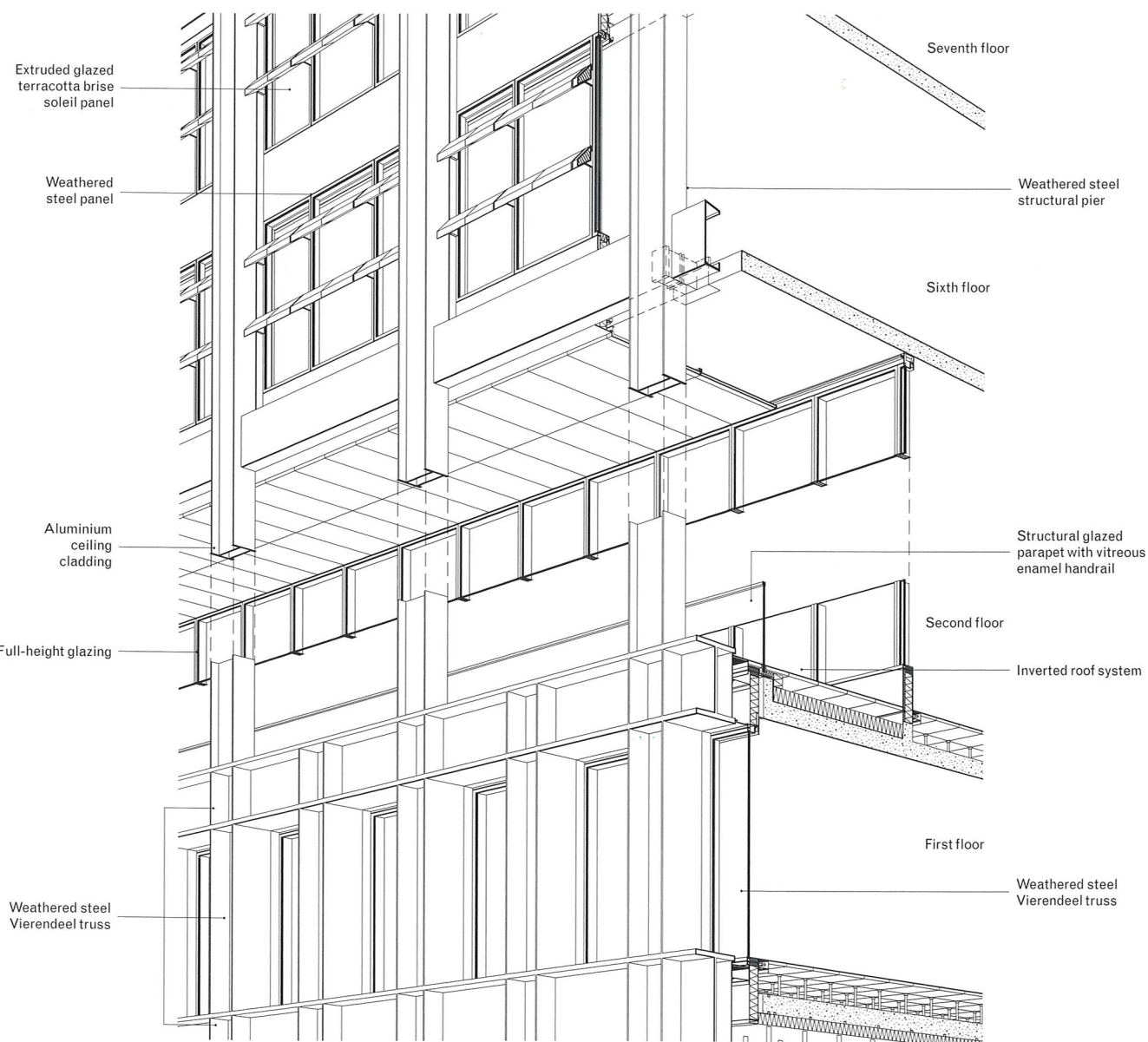
The structure was prefabricated from steel plate varying in thickness up to 90mm, and assembled with great accuracy on site. Extensive fire engineering, robust detailing to manage water run-off and careful analysis of thermal movement shaped the steelwork detailing and connections back to the internal exposed post-tensioned concrete slabs. The generous soffit heights, displacement air system, structural cooling and a centralised CHP energy centre make this the most sustainable office building we have undertaken. It is the first office building in the UK to achieve BREAM 2014 'Outstanding'.

The exposed weathering steel structure creates a stable protection that subtly weathers differently on each elevation. Glazed ceramic used for the horizontal brise soleil shading of the upper levels reflects the light, in contrast to the light-absorbing patination of the steel.

A covered external ramp gives direct cycle access to the extraordinary 206-space bike facilities. This strategy also enabled the ground floor to be fully glazed, avoiding the visual clutter of fire doors, louvres and service entries.

All upper floors except for Level 1 have access to an amenity terrace or balcony and offer spectacular views across the canal to Granary Square and St Pancras clocktower. *Eric Parry, principal, Eric Parry Architects*





Perspectival section

Engineer's view

Internally the structure is a concrete post-tensioned flat slab supported by internal concrete columns, yet at the edges this post-tensioned floor is supported off the external weathering steel frame at intermittent support points. The driver for the internal floor typology was mainly in response to the environmental design strategy, which is a displacement ventilation system.

The single biggest challenge was the Vierendeel truss, which spans 27m – the full width of the entrance on to Pancras Square. The equivalent 'belt truss' then wraps the whole perimeter of the first floor on the remaining elevations, creating smaller column grid changes between first floor and the ground plane.

We had to pay close attention to the intricacies of the detailing and consider how the steel plate would be cut, welded,

connected and spliced, and to ensure the 'weathering' performs correctly. We worked closely with Eric Parry Architects to make sure top surfaces of plate were chamfered to create falls off the building, for example.

The detailed design of the trusses was collaborative, particularly with Severfield and BAM Construction's delivery team. Detailed planning was needed to ensure the safe, timely transportation and erection of the trusses (the largest single piece weighed some 62 tonnes, while the whole southern truss is 142 tonnes), and continuing outer steel frame, in readiness to support the post-tensioned floor slabs.

The resulting building has an almost brutal honesty on display, yet the careful detailing and well-proportioned components of the external structure result in elegance. *Steve Toon, director, AKT II*

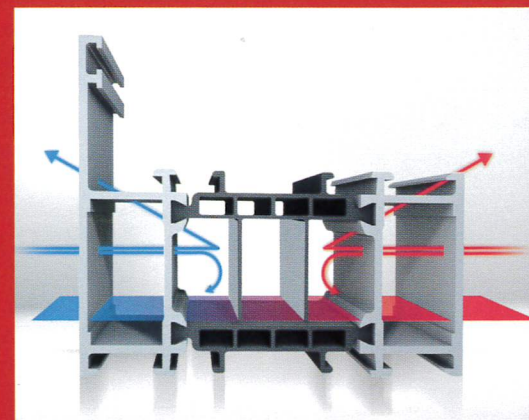


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