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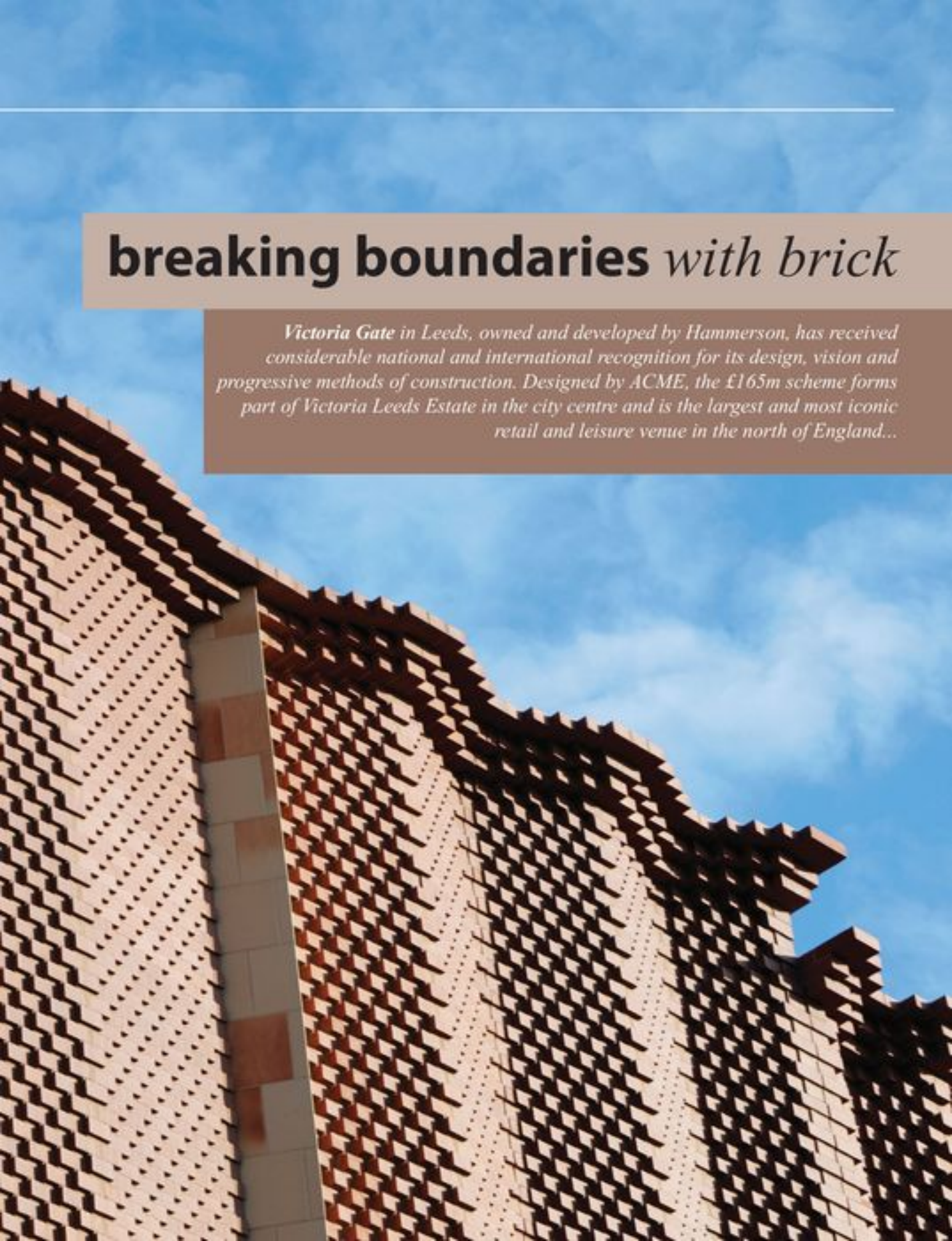
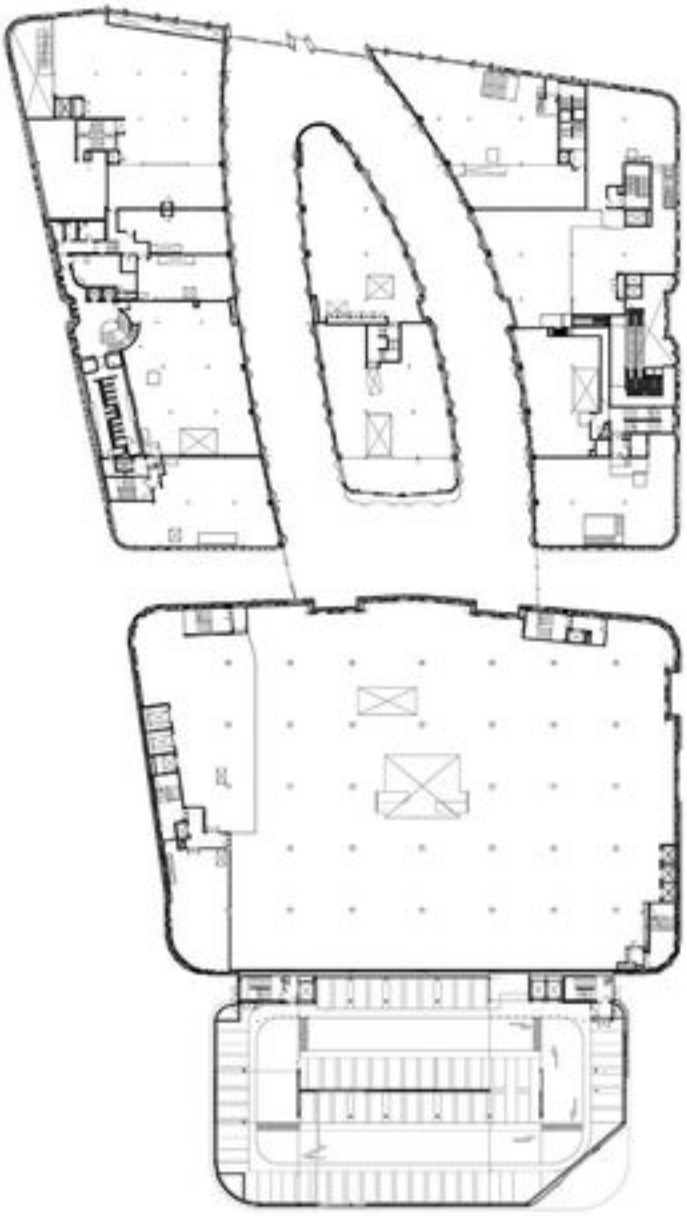
breaking boundaries *with brick*

***Victoria Gate** in Leeds, owned and developed by Hammerson, has received considerable national and international recognition for its design, vision and progressive methods of construction. Designed by ACME, the £165m scheme forms part of Victoria Leeds Estate in the city centre and is the largest and most iconic retail and leisure venue in the north of England...*





Described by RIBA awards judges as "cathedral like" in its scale, this modern interpretation of the city's rich architectural and commercial heritage blends traditional craftsmanship with bold, contemporary design, all made possible through the use of progressive building materials and the very latest advances in digital technology.

Already winner of RIBA National Award 2017, the development also scooped the 2017 prize for Best Commercial Building and Innovative use of Brick & Clay Products in the 2017 Brick Development (BDA) Brick Awards.

Recognised as a masterpiece in design and construction, it has also been named the Best Retail Project Worldwide in the 2017 WAF World Architecture Festival in Berlin, the Best New Shopping Centre at the MAPIC international property conference, and the Best Shopping Centre in the 2017 MIPIM Awards.

A distinctive design

Aimed at reinvigorating the area adjacent to the old Victoria Quarter at the east end of Leeds, the brief from developer Hammerson was that the scheme should not be simply a mall but more of a 21st century extension of the grand Victorian arcades for which the city is famous.

The 53,400m² development includes three distinct buildings: a department store, multi-storey car parking and two arcades containing a mix of premium shops, restaurants and leisure facilities. Though the buildings each have their own individual identities, they relate to each other as well as to the architectural vernacular of Leeds.

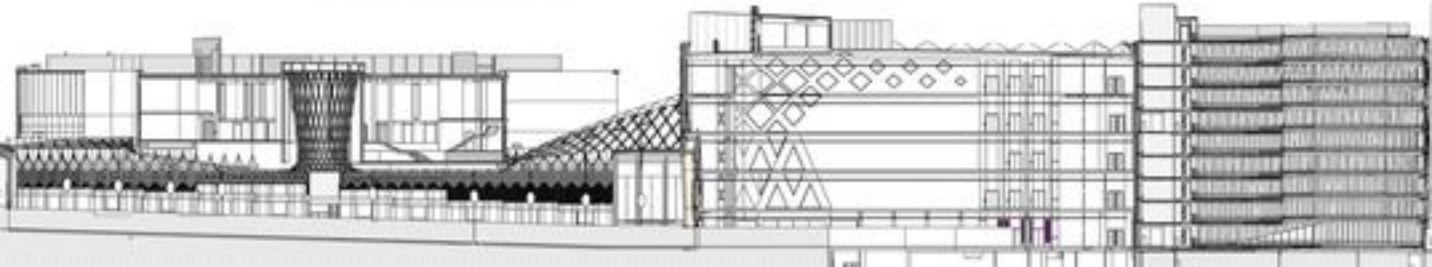
The centrepiece, which anchors the scheme, is the impressive John Lewis department store with its bold white latticed precast concrete façade, set in a diagrid pattern round the perimeter of the building, which is strongly influenced by the city's heritage in the woollen trade.

The textile theme is continued through the hundreds of twisted aluminium fins, which clad the adjacent multi-storey car park at the eastern end of the development.

In between the modern department store and the existing Victorian Quarter arcades sits the impressive new arcades building, a two-storey twin arcade, above which are restaurants and a large casino. Based on extensive research of the great arcades of the nineteenth century, the ornate pleated brick elevations and elaborate geometric design take their inspiration from the surrounding Blomfield and Victorian brick and terracotta buildings.

The roof of the new arcade rises above covered streets, its dramatic expanse of glazing flooding the space below with natural light, continuing the tradition of sculptural glazed arcade roofs in Leeds.

Above: Plan Combined First Floor
Below: Longitudinal Section



Distinctive brick façades

The Victoria Gate arcade and the John Lewis building are widely considered to be some of the most intricate and distinctive brick and concrete façades in the country.

The challenging scale and complexity of ACME's design was delivered through a combination of high specification materials, the latest advances in digital technology and the innovative use of off-site constructed precast panels.

The new arcade building has a particularly complex geometric pattern of brickwork on three of its external elevations comprising approximately 360,000 Staffordshire Red Class A snap headers, bespoke specials and brick slips from Dudley-based Ketley Brick.

The snap headers were specially designed to incorporate special perforations and snaps that would allow two headers to be generated from one brick without cutting, as well as providing a positive key for casting them monolithically onto reinforced concrete backing. This generated significant efficiencies in the production of the panels allowing the use of each full brick with barely any waste.

Chosen for their dimensional stability, strength, low water absorption and, importantly, the high frost resistance on all of their faces, the Class A engineering bricks offered a precise form and sharp-edged aesthetic, which was suited to the geometrical design. With the projecting headers, the bed faces are exposed, so the choice of a class A engineering brick was made to ensure no issues would arise from any water that may sit on the beds of the bricks.

In order to achieve the precision and complexity of the pleated pattern, the latest BIM processes and 3D mould technology were used to plot and place every individual brick onto a total of 550 precast panels.

"The three-dimensional texture of the brickwork, and how we could form pleats and steps, was an important factor in the decision to form the external façade from brick-faced precast concrete panels," said Friedrich Ludewig from ACME.

The 6,000m² brick façade pattern, constructed by Thorp Precast, featured a series of modules of seven, nine, eleven or thirteen bricks wide, which could be repeated in differing lengths. Each of the projecting headers had a 25mm overall projection, referencing the city's penchant for corbelled and highly decorative brickwork during the nineteenth century. The tops of the panels were dressed with corbelling made from full bricks with a dedicated cut out to secure them to the concrete backing panel. Plinth header and stretcher bricks were also used and these were made the same way as the snap headers.

Offsite construction enabled the quality of the finish of every brick panel to be carefully controlled before being delivered to site for installation.

"Victoria Leeds is a great example of a contemporary concept made possible by the combination of modern and traditional brickwork techniques. The sourcing of the right brick was key to creating textured façades with intricate detailing, complementing the Victorian Leeds vernacular," said Friedrich Ludewig.

An architectural legacy

An exciting addition to the Leed's architectural and economic landscape, Victoria Gate has comprehensively regenerated a substantial part of the city that had been previously underused.

As well as generating significant employment opportunities for the region, this flagship retail development has demonstrated how architecture can play a key part in creating a unique destination and a whole new 21st century shopping experience.