

# Case Study: Imperial College, London

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Photos: Imperial College London/Fergus Burnett

## Two types of curtain walling by Kawneer feature at Imperial College London

Kawneer's unitised AA®201 curtain walling system, AA®720 fixed light casement windows and AA®720 commercial entrance doors feature on the main south elevation of the Molecular Sciences Research Hub (MSRH) in Imperial College's first new campus in over a century in London's White City.

**Building:** Imperial College, London

**Location:** White City, London

**Architect:** Aukett Swanke

**Main Contractor:** Laing O'Rourke



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# Kawneer systems get under the skin of a new campus

Modular or off-site curtain walling by Kawneer has played a key role in a building which forms the centrepiece of Imperial College London's new White City campus.

The bespoke, twin-skin and triple-glazed ventilated curtain walling, based on Kawneer's unitised AA®201 system, features on the main south elevation of the Molecular Sciences Research Hub (MSRH) in the college's first new campus in over a century. Designed for fast-track installation, it has been used alongside a single-skin version of the AA®201 curtain walling on the north façade and feature AA®720 fixed light casement windows and AA®720 commercial entrance doors. The AA®720 range is Kawneer's most thermally efficient.

The 26,000m<sup>2</sup> landmark building designed by Aukett Swanke was initially delivered as a shell and core scheme in late 2016, alongside the new Translation and Innovation Hub as part of the college's second-phase £110m development which followed the architects' Phase 1 post-graduate student accommodation project. It provides nine floors of Department of Chemistry laboratory space and support facilities and two basement levels which include lecture facilities and an Energy Centre for the whole site which has become a vibrant urban quarter integrating an academic programme with office, residential and retail facilities. The competition brief focussed on flexibility of the building. Imperial College and its joint venture development partners Voreda sought an agile 'chassis' for the building which could accommodate current uses but which could be easily adaptable for future change, and avoid the limitations of bespoke characteristics to the form, floorplates, superstructure, shell and services strategy. The college's estates team was also minded to employ pre-fabrication technology where appropriate and to explore methods to speed construction and avoid excessive site-based fabrication.

The design also had to address several specific aspects of site context and integration with Aukett Swanke's overall masterplan for the 7.70-acre, 125,420m<sup>2</sup> new campus. The brief called for a building of circa 25,000m<sup>2</sup> and the design evolved to three main transitional forms in stepped-in massing which respond to sensitive, key axial views from the residential areas to the east in North Kensington. The west and east façades employ modular panels of reconstituted stone whilst the south facade maximises daylight penetration into the U-shaped plan form with Kawneer's full storey-height curtain walling.

The factory-fabricated twin-skin curtain walling used here technically responds to the southern orientation and solar path but also provides noise attenuation from the nearby elevated Westway and the West London railway lines immediately to the east. The north elevation employs Kawneer's more conventional single-skin AA®201 curtain wall. The nine-storey stepped building form also features a dramatic full-height glazed atrium which creates an impressive arrival experience. Design refinements incorporated into the scheme with the client following the competition stages include a subtle mix of surface treatments to the precast façade elements and decorative perforated bronze finish cladding features on the main western approach façade. The perforated panels patterns are mirrored in the dot-matrix manifestation adopted on the south façade and the Kawneer feature windows which punctuate the main western façade. These more delicate touches provide a level of detail which contrasts in human scale with the more stately scale of the overall building. Together the whole composition creates a dynamic and powerful frontage to the new Imperial Square at the heart of the campus masterplan.

To meet all of these potential uses the scheme adopts a 7.5 x 7.5m structural grid and a conventional 1.5m planning grid. Although laboratory uses would perhaps adopt a 7.2m module the slight increase to 7.5m was adopted to meet the overall objectives of the brief. Factors determining the storey heights of the building focused on flexibility for laboratory use and office/academic research/teaching space, the town planning constraints and the optimum height for precast modular cladding. Flexibility to accommodate laboratory uses was the most exacting factor and resulted in a final storey height of 4m on most upper levels, with flat slab construction.

Working closely with the contractor, and after visits to its pre-fabrication plant in Worksop, Nottinghamshire, the scheme was proved flexible enough to adapt, adopting precast sub-structure and super-structure construction as well as the modular reconstituted precast fabrication of the storey height east and west façade treatment. This decision underscored the flexibility of the design and also proved beneficial in reducing the overall construction programme. At a later point in the design development the college's accommodation strategy led to the building being refined specifically for Molecular Research as part of the Department of Chemistry. Again the design of the 'chassis and bodywork' proved to be extremely flexible, incorporating high use of fume cupboards for extensive laboratory use. Plant room provisions were also refined to allow for more intensive servicing and ventilation, all within the envelope of the consented shell and core.

Please contact our Architectural Services Team if you have a project you would like to discuss: Tel: 01928 502604 / Email: [kawneerAST@arconic.com](mailto:kawneerAST@arconic.com)

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