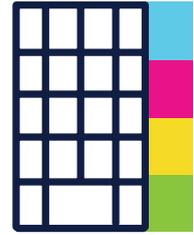


BEST TALL BUILDING FACADE ENGINEERING PROJECT



WINNER

HODDER + PARTNERS: DUNCAN HOUSE, STRATFORD

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Winner of the Best Tall Building Facade Engineering Award, Duncan House is a mixed-use development constructed by Watkin Jones Group and designed by Hodder + Partners. Consisting of 511 student bedrooms for the University of London, 3,150m sq education accommodation, 688m sq commercial space and 45 residential apartments, half of which are affordable.

Distributed across a 31-storey tower and a nine-storey podium base with spaces and functions arranged to avoid overlooking or privacy issues between uses. The tower sits on the north east corner of the podium, marking a gateway to the Olympic Park.

The building structure is reinforced concrete. The envelope is a robust framework of pre-cast concrete with infill concrete panels, bronze anodized aluminium windows, and vent panels set behind bronze anodized louvre blades. The pre-cast cladding panels were manufactured offsite by Techrete with glazing and vent panels pre-installed to minimise working at height.

The building facades are formed primarily from pre-cast concrete by Techrete, insulated and fire stopped with mineral fibre and lined internally with plasterboard. The full height anodized aluminium framed windows are glazed with high performance glass ensuring that habitable rooms receive good levels of daylight whilst minimising solar heat transfer. Horizontal fin blade louvres permanently fixed within the reveals of the pre-cast openings provide permanent edge protection when the floor to ceiling vent panels are open. Wind tunnel testing at various stages in the project was used to determine comfort, safety and structural loadings.

The aesthetic qualities of the pre-cast concrete are linked to its physical and technical characteristics - enhancing resistance to fire, air, water, wind and improving acoustics. It is a material that lends itself to modern methods of construction but also has a timeless quality that references key buildings within the local heritage.

At a detailed level, projecting sills are fitted across the horizontal surfaces and drips are cast into the underside of horizontal elements to throw water away from the face of the pre-cast concrete to reduce potential staining.

The bronze anodized aluminium has a timeless quality that is also responsive to lighting conditions, further adding to the subtle variation of surfaces and texture across the facade.

Pre-cast panel sizes were maximised in line with lifting capacity of the tower crane, minimising the number of external joints to be sealed. Rigorous supervision of the vapour barrier and internal air-seals helped ensure an airtight construction.

Thermal comfort modelling determined the extent of glazing by assessing overheating risks with areas of glazing and ventilation adjusted to mitigate issues. Full height insulated facade opening vents provide occupants with direct control over the ventilation of habitable spaces.

PROJECT TEAM

Developer / Contractor: Watkin Jones Group

Architect: Hodder + Partners

Structural Engineer: Tier Consulting

Building Services Engineers:

Carpenter Davies Partnership

Landscape Architects: Gillespies / TPM

Acoustic Engineer: Philip Dunbavin Acoustic Consultants

Fire Engineer: Exova

Pre-cast Concrete Contractor: Techrete

Window Manufacturer: Cheshire

Architectural Aluminium

Structural Frame: Corbyn

Building Services: ProMEP

Lifts: Schindler



For more information go to:
www.hodderandpartners.com