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## **SIAC AND KAWNEER COMPLETE COMPLEX BUILDING ENVELOPE FOR MANCHESTER AIRPORT'S LANDMARK GTI BUILDING**

Specialist contractor SIAC Façades, in partnership with leading aluminium façade supplier Kawneer, has completed a £7 million contract to build the external envelope for Manchester Airport's new ground transport interchange building, known as The Station. The fenestration package was valued at approximately £1.8 million and features Kawneer's PF structurally glazed curtain walling, 1202S structural silicone glazing, 1202 zone drained curtain walling and 500 Series windows.



The Station is a multi modal public transport interchange housing Manchester Airport's ground transportation services under one roof. These include buses, coaches, trains and taxis, as well as a future tram link. The building consists of a striking, triple height 'hub' building, which links to the existing railway station, and an associated six storey office block that achieved a BREEAM (Building Research Establishment Environmental Assessment Method) rating of 'excellent'. As part of the Airport's ground transport strategy, The Station has been developed to encourage maximum use of public transport for journeys to and from the airport – one of the objectives is to ensure that, by 2005, 25% of all journeys to the airport are by public transport.

The concept design was completed by Nick Derbyshire Architects, with Aedas Architects designing the project up to Stage D, and overseeing both shell and core and fit out construction. Jefferson Sheard Architects, as part of Skanska UK, then took over and completed the shell and core detail design. Phil Pollington, project architect with Jefferson Sheard, describes the 'hub' building: "The 'hub' is a large, predominantly glazed structure that has been designed to be totally open. It is light,

../more

## **SIAC and Kawneer complete complex building envelope for... (page 2 of 4)**

airy and palatial in scale. Internally, the steelwork is exposed, with lattice trusses supporting the Kawneer 1202S structural silicone glazing, which has been glazed with Pilkington arctic blue double glazed units.”



The original fenestration requirement for the ‘hub’ had been for a frameless system. However, the Kawneer 1202S system was selected following a value engineering process carried out by SIAC, which demonstrated that the same visual effect externally could be more cost effectively obtained using structural silicone glazing. Phil Pollington comments, “I think we achieved a better aesthetic design as a result of the value engineering exercise. We were able to omit the additional steelwork required for the frameless system and put some new primary steel in where necessary to provide lateral support. These became feature trusses and enabled us to open up the space more, which was a design improvement.”

Peter Cochlin, director of SIAC, describes the complexity of the ‘hub’ fenestration. “Because of the sheer size of the building and the client’s desire to see more glass and less steel support, the Kawneer 1202S system was required to span some fairly large, unsupported heights. As a result, the mullions within the hub building are heavily reinforced, which was particularly challenging from a design and installation point of view. To ensure that they would withstand the load on them while spanning such unsupported heights, we incorporated Kawneer’s reinforcing sleeve profile, inside which we inserted continuous steel plate. The weight of the mullions was considerable and needed careful handling during manufacture and installation.”

The six storey office building provides a bus/coach concourse at ground floor level and five floors of offices featuring projecting ‘oriel’ curtain wall bay windows fitted with Kawneer’s PF structurally glazed curtain walling. The building also features Kawneer’s 500 Series windows, which are large – up to five metres in length – and fully integrated with Spanwall cladding. Kawneer’s 1202 zone drained curtain walling was used as strip windows into copper look-a-like Spanwall cladding, which

../more

## **SIAC and Kawneer complete complex building envelope for... (page 3 of 4)**

overclads the service cores of the office building. The Spanwall cladding to the office building has a dramatic blue duotone paint finish and the Kawneer systems, which are fitted with Pilkington high performance Suncool double-glazing, a metallic silver paint finish.

Asked to identify the most challenging aspects of the project for Kawneer and SIAC, Phil Pollington responds, “From a technical point of view, the junction between the new ‘hub’ building and the existing railway station was particularly challenging. As well as accommodating the varying movements of the two buildings, SIAC also had to detail design how to accommodate the existing structure of the railway station where it penetrated through the structural silicone glazing. The goal was to make the junction look as neat as possible, as well as aesthetically pleasing, whilst achieving the necessary performance standards.”



Commenting on this intricate interface with the railway station, Peter Cochlin says, “The interface between the two buildings at the roof level was complex and critical to the success of the contract. Because SIAC was responsible for the whole external façade, we were able to better control the issues and develop effective, workable solutions. Having sole responsibility also helped in the management of the installation process, which was complicated by the need to keep the railway station operational. The contract was subject to HMRI (Her Majesty’s Railways Inspectorate) and SRA (Strategic Rail Authority) conditions and use of access equipment highly restricted. We used a combination of cranes, scaffolding and mechanical access equipment, such as scissor lifts, to effect installation.”

All of the Kawneer products used on The Station building were subject to rigorous project-specific laboratory testing that was carried out on a test rig at Taywood Research Centre. The developer for The Station was Manchester Airport Developments Ltd, part of the Manchester Airport Group.

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../more

**Note**

An ISO 9001 company, Kawneer is the world leader in architectural aluminium systems, operating a global network of strategically located manufacturing facilities and service centres. Kawneer provides single source responsibility for the design, extrusion, fabrication and finishing of high quality aluminium systems. Since its inception in 1906, Kawneer has pioneered major advances in the use of windows, curtain walling, framing and rainscreen cladding systems.

Kawneer UK Ltd is one of the UK's leading manufacturers and suppliers of architectural aluminium systems. Based in Runcorn, Cheshire, the company has a turnover of £31 million and operates a nationwide network of fully trained authorised dealers, which fabricate and install its precision-engineered curtain walling, framing, window and door systems. The dealer network is supported by a dedicated project engineering team which also works directly with the specifier to provide sophisticated technical and design support tailored to meet the needs of any project, large or small.

Kawneer is also an Alcoa company. Alcoa is the world's leading producer of aluminium and alumina and is active in all major segments of the industry: mining, refining, smelting, fabrication and recycling. In Europe, Alcoa employs some 25,000 people in over 100 operating locations in 15 countries, providing primary aluminium production through to fabricated end products.

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