



MALISHEV
WILSON
ENGINEERS

news release

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glass façade design is 'up front' at Vinoly's £26m Colchester Arts Centre

The striking looking glass façade of the new £26m Colchester Arts Centre building was always going to be an engineering challenge. Designed by acclaimed American architect Rafael Vinoly, it first of all has a large size and an unusual shape. Standing 11m tall by 24m wide, it is connected to a curved roof surface and walls at the edges. It is also inclined by 15 degrees outwards and rotates 5 degrees about its vertical axis, presenting a complicated geometry in design terms.

On top of that, the fixing method for the 40 tonne façade had to accommodate movements of up to 50mm vertically and 30mm horizontally in the main steel support structure, designed by others.

Specialist glazing contractor FA Firman called in Malishev Wilson Engineers (MWE) to apply their engineering skills to the task of meeting these challenging design requirements. Malishev Wilson came up with a two-way, sliding joint detail, which simplified overall façade construction.

The result is a successfully installed façade that now graces the entrance of the new Arts Centre building, which is expected to open next year, after fitting out work is completed.

MWE used state-of-the-art 3D software to translate architectural visuals into glass fabrication drawings and cutting schedules for the glass. This allowed high precision techniques to be applied during site installation.

Special analysis was carried out to establish the true thermal performance characteristics of a non-standard façade system, which comprised 250mm by 80mm thick solid steel mullions (each weighing nearly 2t) and 2.3m by 3.5m high performance, double glazed units (with a weight of about 600kg each) fixed to them.

Using a heat flow analysis, MWE established a system U-value of 1.4 W/m²C° for the whole façade, which complied with the architect's demanding specification.

The glass vestibule of the building is fitted into the façade to provide public access and also for the delivery of large scale artworks, by using integrated sliding and pivoted bespoke doors.

Construction of the facade was completed on time and within budget, to the delight of main contractor Mace.

Following pictures intended to be issued with the press release:

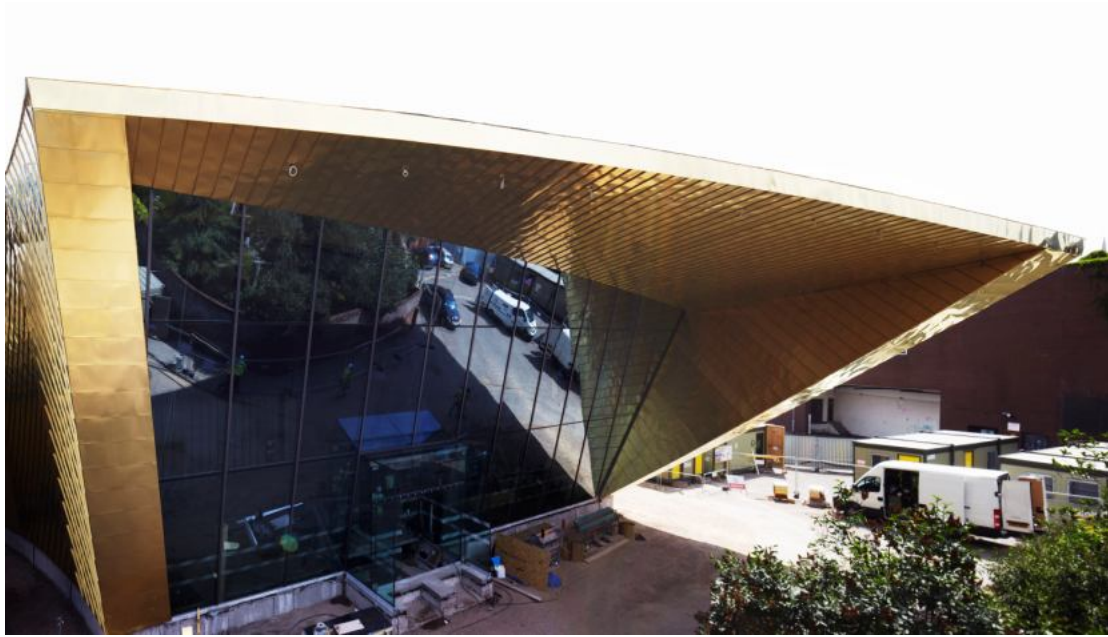


Figure 1 view from above



Figure 2 view from below



Figure 3 view from inside