

Auckland Art Gallery Toi O Tamaki Auckland, New Zealand

SECTOR: Public
ARCHITECTS: FJMT & Archimedia

INSTALLATION TYPE: Double-Skin Glass Facade
HINGE SYSTEM: Micromaster MFH300

Winner of the
2013 World Architecture Festival
Building of the Year Award



The application detailed here is the long façade of New Zealand's national art museum, The Auckland Art Gallery/ Toi O Tamaki, which occupies one corner of Albert Park. Architects for the project, FMT and Archimedia, explained that the intent of the façade was simple:

"We were looking for very large glass panel sizes to provide maximum visibility out into the park and more importantly, for park users to see into the gallery. It was all about making art more accessible, not just for a select few. We wanted people to see a vibrant and lively place to encourage them to visit the gallery"

Big glass has two drawbacks in a gallery situation: energy loss and UV damage. The Architect's solution involved a double-glazed curtain wall – but-jointed on the exterior, hinged panels on the interior – which is instrumental in keeping the temperature inside the galleries within half a degree of the required 21°C (69.8 F). This super-insulating effect, coupled by the virtual elimination of UV, protects the works on display for all to enjoy, from inside and out.

The design team simply found out how big a piece of glass they could get into New Zealand and designed around that. The glass provider, Thermosash, approved the use of only two hinges per each 835-pound panel, allowing for easy cleaning between the two panels.

It is important to maintain this long line of flush overlay panels, especially in a new building. There were no other hinges available that would allow for panels of this size to be mounted and adjusted easily in three dimensions. Manfred Frank hinges, unlike any other hinge, can be adjusted under full load in a couple of minutes by a single person using a standard Allen key or spanner. There is no need for any lifting gear.

PANEL SPECS: Dimensions: 2.045m (6'9") wide x 4.2m (13' 9") high x 18mm (.7") thick laminated toughened clear glass.

Panel Weight: 380kg (835 lbs)

Each panel required only two MFH300 hinges. These were mounted to the curtain wall mullions, which were stiffened with internal steel plates. The opening glass panels have locks fitted on their leading edge, opposite the hinges, to secure the panels.