

# Kaizon Engineering Helps Design New 10-Storey Terracotta Rainscreen at Homeground Auckland City Mission.



## Project Scope

Kaizon Engineering Limited (KEL), were engaged by Symonite Architectural Facade Specialists to perform PS1 design services for the structural attachment of the new Terracotta Rain-Screen Cladding installed at the Homeground Auckland City Mission Development located at 140 Hobson Street in Auckland's CBD. The project consists of a new 10-storey development replacing the previous Auckland City Mission building. Symonite were the primary Facade Contractors on the project and engaged KEL to provide a project-specific Design PS1 with supporting calculations and compliance report for the structural components within the Terracotta Rainscreen. KEL's design services were also supplemented with part-time Construction Review and Quality Assurance monitoring for the installation of the new rainscreen cladding.

**Project address:** 140 Hobson Street, Auckland CBD

**Client:** Symonite

**Lead Designer:** Steven Lawson Architects

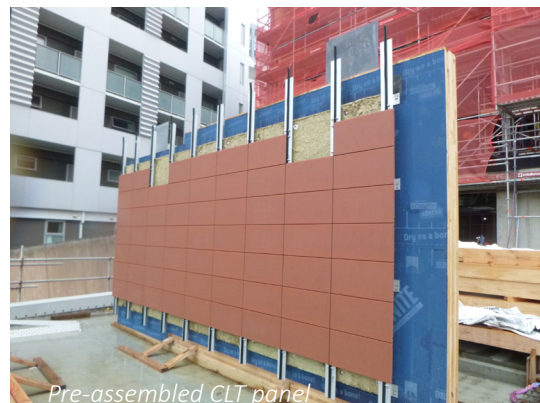
**Project value:** \$110m

**Services provided:** Terracotta Rainscreen Cladding Design (PS1) and Construction Review (PS4)

**Project start date:** 2019

## Terracotta Rain Screen Cladding

The Terracotta Rainscreen panels (Symonite's Terreal BREEZE system) with underlying vertical rail system, external insulation, and wall underlay (Pro Clima's Solitex Extasana Adhero) were pre-assembled on Cross Laminated Timber (CLT) structural wall panels before being lifted onto the building. Many of the pre-assembled panels were constructed at Symonite's facility before being transported to the site; while other panels were assembled on the lower roof and could be lifted onto the building, as shown in the photos below. Similar to other unitised facade systems, pre-assembled panels allow for a much faster installation on site and provide a much higher level of QA/QC during the installation and inspection of the cladding system.





“Working with a facade contractor like Symonite is very rewarding as they continuously take on challenging projects and are willing to do the work the right way. We look forward to continuing to provide engineering services for Symonite and helping advance the New Zealand facade engineering industry.”  
Kevin Raives, Senior Engineer, Building Envelopes, Kaizon.



## Designing the system

Kaizon Engineering's Director, Jonathan Hill, and Senior Engineer, Kevin Raives, collaborated with Symonite's design and fabrication teams to provide engineering calculations for the assembly's unique anchors and clip system. Their design included review of the previous design loading test reports on the cladding system, as well as providing supplementary Proof-of-Concept Calculations in accordance with various AS/NZS 1170 sections. The final PS1 report summarises compliance of the Terracotta Rainscreen with NZBC Clauses B1-Structure and B2-Durability.

The design of the rainscreen system includes stainless steel Dead Load and Wind Load support brackets anchored to the CLT panels designed for project-specific loads to support the vertical aluminium rails. The Terracotta panels are then clipped onto the vertical rails using proprietary aluminium C3 clips designed to engage within the profile of the terracotta panels. The Terracotta Cladding is anticipated to be completed by end November, 2020.



*C3 clips installed on vertical rails*



*Wind load support bracket*



*Terracotta panels on the C3 clip*



*CLT panel ready for installation*



*Pre-assembled CLT panels installed on building*



*C3 clip at base of rail*



*Dead load support bracket*



*Pre-assembled CLT panel*

## Get in touch

If you have any enquiries or any project requirements you want to discuss, please don't hesitate to reach out.

Building Envelope enquiries: Kevin Raives, [kraives@kaizon.co.nz](mailto:kraives@kaizon.co.nz)

Energy & Sustainability enquiries: Greg Inman, [ginman@kaizon.co.nz](mailto:ginman@kaizon.co.nz)

Fire Engineering, Ben Vallat, [bvallat@kaizon.co.nz](mailto:bvallat@kaizon.co.nz)

Or phone (09) 449 3011