

Sistema Plastics Manufacturing, Mangere

Scope of Work

Sistema's new facility at Mangere is located on a 10 hectare site involving 51,500m² of manufacturing, storage and distribution area, plus 3,500m² of high-quality corporate office space.

The project was motivated by a need to consolidate five separate sites into one integrated future-proofed facility.

The completed building is impressive, not only for its sheer scale, but also the quality of the design, materials and finishing. From the outside the curved lines evoke the trademark Sistema 'Klip', while the interior is strikingly white, an aesthetic that speaks of crisp efficiency and high standards.

McAlpine Hussmann detail designed, supplied and installed the air conditioning and ventilation system for the facility.



Engineering Features

Direct Expansion Heat Recovery type VRF systems are employed to air condition the two level office spaces. A total of 5 systems are employed, generating a total cooling/heating capacity of 378kw across 77 indoor fan coil units of various sizes and capacity to meet the zone cooling/heating needs - all controlled by a centralised "Intelligent Controller".

15 other individual split type air conditioning units serve various satellite offices scattered around the warehouse.

Filtered fresh air is supplied to the floors via roof mounted fans and a network of ducting reticulated to deliver fresh air to individual spaces/zones. The fresh air system has in-line duct mounted air heaters fitted to adequately temper the incoming fresh air when required.. The warehouse is ventilated with large roof mounted fans that also act as smoke clearance fans when required. A total of 411,000m³/hour of air is exhausted providing adequate air changes. The fans are operated via variable speed drives and controlled via space temperature sensors.

The office HVAC facilities including all VRF air conditioning units and ventilation fans are controlled from a proprietary "Intelligent Controller".

Project Highlights

Project Start: August 2015
Project Finish: October 2016
Value: \$1.2million