

Natural ventilation helps breathe life into New Zealand's schools



The roof of Ormiston Senior College incorporates 83 Sola-boost Windcatcher units from Monodraught

Environmentally friendly alternatives to traditional air-conditioning are making our schools a better place to work and learn.

As the Southern Hemisphere's most efficient education facility, the recently opened Ormiston Senior College (OSC) in Auckland incorporates a range of innovative design features (see the Feb/Mar edition of NZCN). Sustainable building solutions were a key part of the school becoming the first in Australasia to achieve a prestigious 5 Green Star rating under the NZ Green Building Council's Green Star accreditation system.

To help meet efficiency targets, VENTO Australasia replaced traditional air-conditioning, one of the most substantial contributors to a building's energy use, with 83 Sola-boost Windcatcher units from Monodraught.

The Windcatcher units now provide the college with energy-free, integrated natural ventilation, with clean, fresh air delivered directly to all areas of the school, helping to maintain a comfortable and healthy learning environment. Students are now benefiting from the cutting-edge technology that, in addition to cooling, also monitors and maintains optimum oxygen levels and temperatures.

Local manufacturing

Monodraught, headquartered in the UK, was formed over 30 years ago to pioneer the development of vertical-balanced flue chimney systems. Since then the company has specialised in the development of natural ventilation systems and low-energy concepts for the building environment. The Windcatcher natural ventilation system was launched in 2007.

VENTO Australasia, which

is based in Sydney, but with staff operating in New Zealand, was responsible for introducing this unique technology to the local market, and has now secured sole manufacturing and distribution rights for New Zealand and Australia.

Local manufacturing has allowed the company to make Windcatchers even more viable locally, with greatly reduced delivery times and costs reduced by up to 60%, while also reducing the carbon footprint of the product with far less shipping required.

A new benchmark

John Brodie, VENTO Australasia's managing director, says the use of the Windcatcher technology has helped OSC establish a new benchmark for sustainable education infrastructure in Australasia.

"Each Windcatcher unit is custom engineered based on the specifications of the particular installation, and provides a cost-effective cooling system that harnesses the prevailing wind and difference in pressure and temperature created by variances in height between the building roof and ground level," he explains. "There is no other natural ventilation system available in the Southern Hemisphere capable of providing a constant flow of fresh air while simultaneously extracting warm air to create an optimum ambient room temperature."

"Air-conditioning adds dramatically to energy consumption in the built environment, and is a large contributor to carbon emissions as it accounts for as much as 40% of the total

energy used in a commercial building. In becoming the first 5 Green Star rated school, OSC has set a new benchmark and is a perfect showcase for the benefits of this technology."

Green innovation

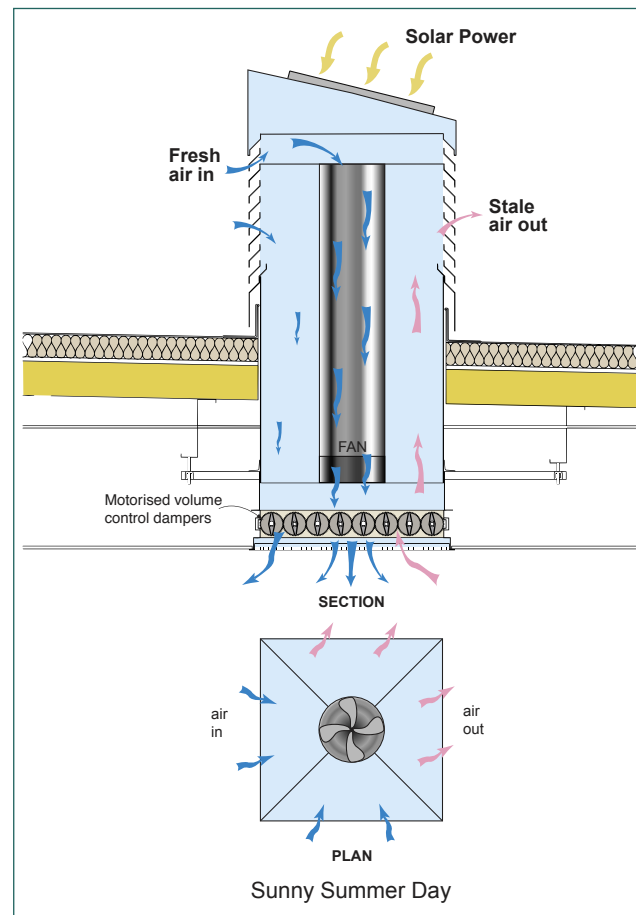
The use of Sola-boost Windcatchers, which incorporate a solar-driven fan to optimise airflow on sunny days, was instrumental in helping OSC secure an overall score of 68 points in the Green Star accreditation system, six points shy of a 6 Green Star rating. The exclusive use of Windcatchers also helped the college gain an additional point for Green Star innovation – an extremely difficult accreditation to secure.

VENTO Australasia has also supplied 36 Monodraught Windcatcher units for five schools in Adelaide being built under public-private partnerships (PPPs), and the technology is also being installed in a number of health and educational projects currently under construction, including Melbourne Grammar School.

Monodraught Windcatchers have been incorporated in educational facilities across Europe, with more than 1500 schools and 7000 total installations to date. They are endorsed under the independent Ecospecifier assessment which identifies embodied energy and lifecycle costs using an internationally validated protocol.

Ecologically sustainable development

Mark Habel, VENTO Australasia's head technical consultant in New Zealand, says the Kiwi climate is arguably better suited to the Monodraught system than the UK where they were designed and have been in use for decades.



Cutaway diagram of a Sola-boost Windcatcher unit

"New Zealand is at the forefront of ecologically sustainable development, and with Monodraught providing bottom-line savings and better environmental outcomes, we expect the technology to be readily adopted," Mark says. "Monodraught's systems are highly adaptable, making

Windcatchers suitable for medium and large facilities, including retail centres, hospitals, commercial buildings and hotels."

With a range of solutions on offer to suit various projects, VENTO Australasia is also currently supplying an automated window system from WindowMaster at the

Diocesan School for Girls in Auckland.

The way of the future

"With energy costs rapidly increasing, sustainable technology is the way of the future, and natural ventilation will form a key component of integrated energy-efficient building designs in years to come," John Brodie says.

He adds that another major benefit of natural ventilation is the ability for optimal levels of fresh air to improve concentration levels and provide better health outcomes by combating Sick Building Syndrome (SBS).

"SBS is fast becoming common vernacular in facility operations and management as a result of poor air quality and day lighting, heating, cooling, internal toxic emissions, toxic materials and inefficient or outdated operational practices," he says. "Heating and cooling can be a major factor – traditional units provide recycled air and often run constantly. If maintenance and cleaning of filters is allowed to lapse, there can be very serious effects on occupant health."

For further information, visit www.vento.co.nz



RIGHT PEOPLE. JOB DONE.

Experience, Reliability, Common Sense

Gone are days when you have to accept mediocre from your temporary labour provider. We will meet your specifications for skilled or unskilled construction, roading or infrastructure staff anywhere in New Zealand. Take a look at our credentials and see what we can offer you:

- AWF Labour provides reliable, properly inducted, H&S trained, drug tested, security and reference checked temporary staff, who know how to do the job you want done.
- AWF Labour is a division of AWF Group, one of the country's largest Site Safe trainers. AWF Group is an approved training organisation and is a Modern Apprenticeship Provider for the construction and infrastructure sectors.
- AWF Group is also ACC Tertiary accredited under WSMP and is the only temporary labour provider in NZ in the ACC Partnership Programme.



0800 LABOUR www.awf.co.nz