Vento helps DEECD go green with 'envi'

Vento Australasia, one of Australia's leading providers of sustainable building solutions, is participating in a Victorian State Government initiative to provide inspiration to the next generation of energy efficient relocatable classrooms.

As part of the Department of Education and Early Childhood Development's (DEECD) exemplar relocatable building named 'envi', Vento Australasia tailored a highly intelligent natural ventilation system for the prototype classroom expected to be launched for use in October 2011.

To provide natural cooling and maintain an optimum internal environment, Vento Australasia created a hybrid system utilising automated windows from WindowMaster® and secure, solar-powered roof top ventilation from Monodraught.

James Idle, Senior Engineer of Vento Australasia said the system utilises cutting-edge technology to provide an ideal learning environment that minimises energy consumption whilst maintaining occupant comfort within the portable classroom.

Artist rendering supplied by DEECD.

"The intent of this building is to showcase an array of innovative design elements for sustainable education facilities and this hybrid natural ventilation system is the first of its kind in Australia," he said.

"Vento's intent with this hybrid system was to provide maximum user control and maintain ideal temperature and oxygen levels whilst minimising the use of mechanical air-conditioning and heating.

"The hybrid SOLA-BOOST® solar assisted natural ventilation system and WindowMaster Natural Ventilation system allows the relocatable classroom to be naturally ventilated with fresh air as much as possible.

"Through intelligent control and monitoring, both internal and external conditions are measured so that when natural ventilation is precluded the control system has the ability to tell the air-conditioning to turn on or off when required, however the key to this function is that the air-conditioning has to be activated by the end user.

"This can potentially provide a dramatic reduction in energy use, helping to minimise the operating cost and carbon footprint of the classroom."

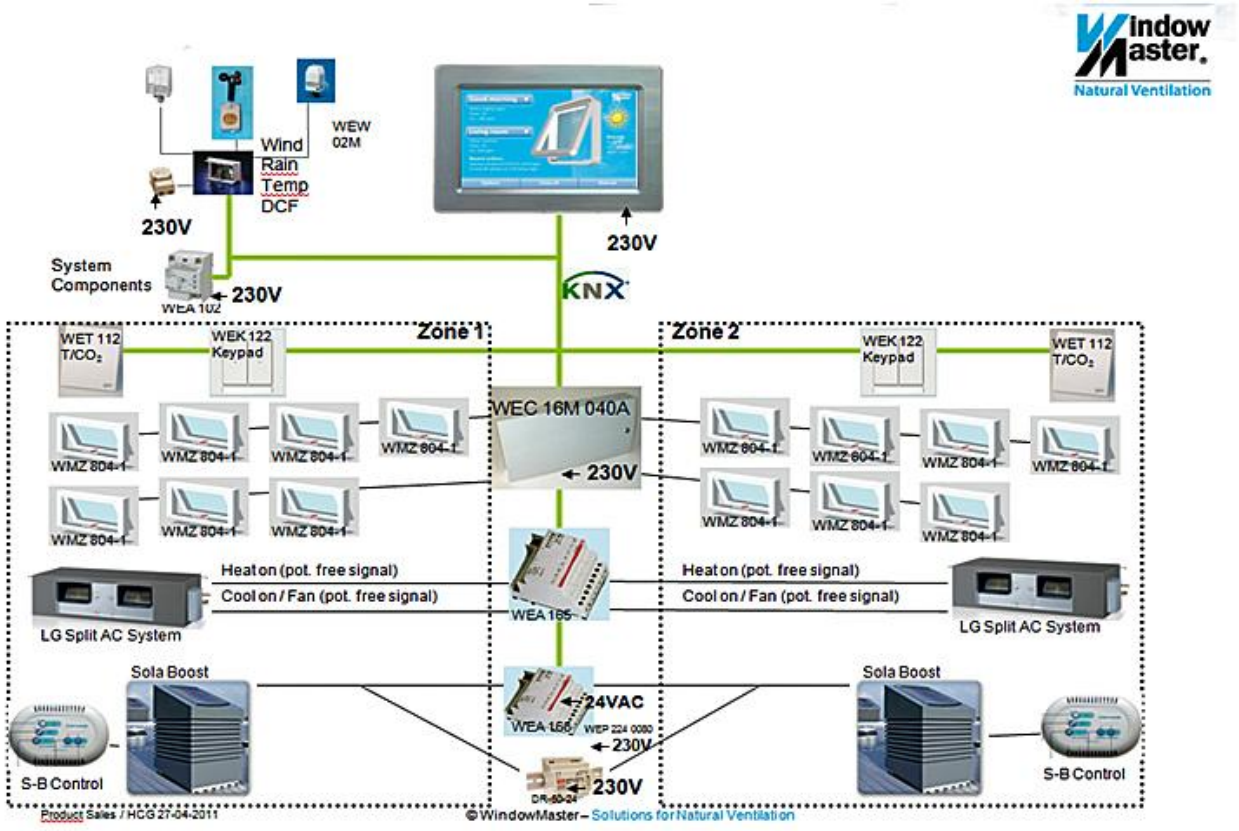
To achieve this goal for 'envi', which consists of two classrooms, Vento installed one GRP 900 square SOLA-BOOST system from Monodraught above each classroom.

The SOLA-BOOST system uses prevailing winds and a solar powered fan to channel cool fresh air into a building while simultaneously extracting warm internal air.

Within each classroom sixteen actuators were installed to allow windows on two sides of the each room to incrementally open and close automatically as required.

The operation of the rooftop ventilation and automated windows is controlled by a WindowMaster NV Comfort™ system that negates the need for a stand-alone building management system (BMS) and features an intelligent touch screen for user control.

Mr Idle said this system delivers an unmatched range of user control, remote access and controllability of the functions of each system, therefore saving on the cost of a BMS to run air-conditioning and other functions.



"This system represents industry best practice for sustainability and will provide a fantastic tool for children to learn about energy efficiency as they will be able to experience it firsthand," he said.

"Teachers can control the conditions of the classroom using the touch screen which has a very large range of controls and students will be able to monitor the internal environment and energy use of the classroom."

In addition to the automated natural ventilation and automated windows, 'envi' aims to incorporate recycled and recyclable products, natural day lighting and state-of-the-art low energy lighting with automated controls.

The aim of 'envi' from DEECD is to use state-of-the-art environmentally sustainable design philosophies, innovative construction methods and materials to build an exemplar building that provides inspiration towards the design of the next generation of relocatable school buildings.

Low embodied energy will be delivered through careful selection of materials with thermal efficiency from double-glazed windows, the use of super insulated wall and roof panels and a fully sealed building envelope.

Vento is the Certified Partner of WindowMaster, as well as the sole distributor of Monodraught products in the Australasian region.

With access to highly acclaimed product solutions, expertise and resources, Vento is backed by more than 30 years experience in the climate solution industry.