

WINDCATCHER® X-Air and SUNCATCHER® Classic installed in award-winning French school building

Natural Ventilation

- **Groupe scolaire maternelle et primaire Simone Veil**
- **Sector:** Education
- **Distributor:** [ECODIS SAS](#)
- **Architect:** [Tekhne Architects](#)
- **Location:** Nr Lyon, France
- Products installed (2014)
 - » 14 N° WINDCATCHER X-Air 170
 - » 2 N° WINDCATCHER X-Air 140
 - » 2 N° SUNCATCHER Classic 155 with 450 SUNPIPE®
 - » 5 N° iNvent2 Control Panels

A recent export project of ours has been named as winner of a French “Green Buildings” Award from the [Construction21 Network](#) for Health and Comfort.

The school, which was built and began to be used in 2014 has around 350 pupils, is located in a re-generated district of Bourgoin Jallieu (France). The Simone Veil nursery and primary school combines a requirement for controlled energy consumption and low carbon emissions with a focus on health and comfort for its pupils and teachers.

The needs of the project were acoustic comfort – essential for student’s attention, generous daylight sources and air quality, a very important matter for this school as it is built on a former industrial site. In addition consideration was required for summer comfort in the building. The school needed to have a maximum temperature of 26°C without any active cooling system during 3 heat-wave days and with 30 students per class.

The WINDCATCHER X-Air is a 2nd generation natural ventilation system featuring the patented ACTIVLOUVRE® modulating aerofoil louvre technology. The system consist of an external static louvre and internal active louvre arrangement, which varies the opening and free area through the louvre face. The variable louvres can provide maximum ventilation rates when fully open or modulated to increase louvre pressure or closed to prevent the ingress of precipitation.

In addition to the ACTIVLOUVRE arrangement, the system also incorporates external air catchment fins to provide greater area at the louvre improving performance in relation to wind speed. Pressure release vanes at the fins provide a means to reduce face pressure under high winds.

The school has been able to adapt to strong climatic variations with nearly no use of energy due to clever architectural design, including using our WINDCATCHER and SUNCATCHER systems. 16 N° WINDCATCHER and 2 N° SUNCATCHER Monodraught products were installed above individual classrooms to create the natural ventilation system. The systems are supported by Monodraught iNvent2 Controls which allow the building to monitor CO₂ levels and also open and close the ventilation units as required. Air₂ quality was important to help students maintain concentration levels. The impact of installing this solution has allowed the school to guarantee a ventilation of 25m³/h/child.

The Monodraught system was selected as the natural ventilation system, it provides free-cooling and it provides a humidity sensitive air handling unit. Natural ventilation is supplied by the Windcatcher units, controlled class by class and by indoor and external temperature sensors plus a CO₂ Sensor. There is also autonomous night ventilation using the cool evening air. The solution requires almost no maintenance compared to mechanical ventilation systems.

Results have shown great indoor air quality and measured CO₂ levels within the various rooms are well below the indoor air guide values. The air renewal rate is 25/m³/h person, higher than the norm. Acoustics tests have also performed well, with WINDCATCHER open=39dB and WINDCATCHER closed =38dB. The acoustic quality of the rooms is critical to pupil’s attention spans. Feedback on the system has also been positive with the school being pleased to have manual controls.

Christian Charignon from Tekhne Architects stated “We selected the innovative Monodraught solution which ensures very efficient ventilation during the day when the children are in class and free-cooling at night. This enables the school to guarantee an ambitious ventilation rate. We were pleased to create a design which uses the environment as a strength rather than a constraint”



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