Breezair™ By SEELEY INTERNATIONAL

Case study
San Agustín School
Seville (Spain)

Fresh air, low temperatures and energy-efficiency: the perfect mix for a healthy learning environment.

Supplier: Australair Ecoclimatización

Design Engineer: Clisost

Consulting Engineer: Arsinger

Installing energy saving cooling equipment, San Agustín School in Seville (Andalusia) have been pioneers in adopting of IAQ improvement measures; reducing fatigue, tiredness and improving school performance for their students.

Background

In order to improve thermal and environmental conditions of Andalusian educational facilities, Junta de Andalucía Law 1/2020 approved on July 13th 2020. The purpose of this measure is to ensure the conditions of hydrothermal comfort, as well as the quality and air renewal of Andalusian private and public educational centres, through bioclimatic techniques and the use of renewable energies.

San Agustín School is an educational centre situated in Seville, that has both Primary and Secondary School buildings, with 50 teachers and almost 700 students.

The management team found that temperatures rose in autumn, spring and summer seasons coinciding with the school terms and was affecting quality and effectiveness of the educational process and at times, the welfare of students, teachers and other staff.

For these reasons, the school management decided to undertake measures to improve thermal conditions in the school buildings even before the above-mentioned law was approved.

Solution

The management team expressed particular preference for energy-efficient solutions and technologies, not using chemical refrigerants or harming the environment.For this reason they approached Clisost (officially approved

contractor for Seeley International products) & Arsinger (Consulting Engineers company) in order to find cooling solutions that could meet thermal comfort improvement and sustainability.

Considering the high ambient temperatures (especially in the month of June), the need for fresh air and an indoor design temperature of 26°C, Arsinger suggested installing a Breezair Direct Evaporative cooling system in the school buildings, where there was previously no installed air conditioning system. They also consider 20 air changes per hour as a general requirement for the Primary and Secondary school buildings.

The management chose Breezair EXS 220 Direct Evaporative coolers over other solutions, considered because of the value for money, energy efficiency and sustainability credentials.

Installation

- Primary School Building: 6 x Breezair units
- Secondary School Building: 4 x Breezair units
- School Hall: 2 x Breezair units

All units were installed on the sloped roof of the school buildings. Breezair units are all down supply discharge and self-supporting, with no need for additional support.

Results

Summer temperatures are no longer an issue for San Agustín school, as Breezair coolers are now bringing in 100% fresh cooled air, thus improving the Indoor Air Quality (IAQ) as well.

With no air conditioning systems installed previously, the school occupants were feeling fatigued, tired and had difficulty concentrating during early Autumn, Spring and Summer months. After the installation of the Breezair Evaporative Coolers, the working conditions have improved significantly and students can now enjoy a fresh and healthy environment.

Moreover, results exceeded expectations, as indoor temperatures now range from 22°C to 25°C, far below the specified 26°C setpoint temperature requested in the project design parameters.

Temperature control and improved IAQ (indoor air quality) are the two factors that play a key role when it comes to creating an optimal healthy learning and working environment. Meeting fresh air requirements in an enclosed space, also has a positive impact on dealing with factors associated with sick building syndrome.

- **Improving Indoor Air Quality (IAQ)**
- **Cool fresh outside air**
- **Energy & Cost saving**
- **No chemical refrigerants (only water used)**
- **Sustainable technology**
- **Easy to install and maintain**

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