

**Press Release**  
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## **Innovative natural ventilation from SE Controls helps keep pupils alert**

***A new £2 million science centre at Moreton Hall School in Oswestry, is using an advanced NVLogiQ natural ventilation monitoring and control solution from SE Controls to maintain classroom indoor air quality while providing a stimulating and comfortable environment for pupils.***

Founded more than 100 years ago, Moreton Hall is one of the UK's highest achieving independent schools, providing education for girls from age 3 to 18 and boys from 3 to 11, together with accommodation and facilities for boarding.

The new two-storey science building provides high quality teaching laboratories for the school's junior science, GCSE and A level students and was designed by Shrewsbury based architects, Baart Harries Newall who were keen to ensure that the building's indoor air quality was maintained within national standards and its energy consumption was minimised.



To achieve the designer's objectives, SE Controls worked closely with the architects and main contractors, Jones Brothers Weston Rhyn, to develop an assisted natural ventilation solution. Using compact NVLogiQ room controllers linked to automatic opening windows and a low energy cross flow fan in each of the eight lab classrooms, the system manages ventilation as well as the operation of radiators to provide a fully integrated low energy system.

The NVLogiQ room controllers constantly monitor carbon dioxide (CO<sub>2</sub>) levels in each classroom alongside indoor air temperature and relative humidity, as well as outside temperature, wind and rain via external sensors. Each NVLogiQ unit also incorporates an integral data logger to allow the recording and analysis of all key aspects of the room environment.

The sophisticated monitoring and control algorithm used within the compact NVLogiQ system was developed in conjunction with Loughborough University's School of Civil and Building Engineering to ensure indoor CO<sub>2</sub> levels and temperatures are precisely controlled while minimising building energy losses.

In addition to the eight NVLogiQ controllers and PSUs, 18 SECO N 24 40 400N twin chain compact actuators were also installed by SE Controls together with PIR finger trap sensors and all the appropriate cabling to control the automatic opening of windows and the small cross flow fans in each lab.

During normal operation, as CO<sub>2</sub> levels increase within each individual science lab, the NVLogiQ controller triggers SE Controls' SECO N 24 40 compact chain actuators to begin the incremental opening of the windows to allow fresh air to enter the classroom. Simultaneously, small dampers located on the wall opposite the windows are signalled to open and the low energy fans start to draw air from the room to stimulate cross flow and aid ventilation.

Dr. Chris Iddon, SE Controls' Design Manager, explained: "There are already a significant number of high quality studies that have identified a clear link between increased internal CO<sub>2</sub> levels and a reduction in the ability of students to learn and perform optimally."

He added: "Post occupancy monitoring of the Moreton Hall classroom environment has shown excellent indoor air quality proving that the design is an example of how having a clearly defined, controlled and executed ventilation strategy can maintain a high quality and stimulating classroom environment for students. Using NVlogiQ enables excellent on demand ventilation whilst minimising heating energy demand."

SE Controls specialises in the design, project management and installation of advanced smoke ventilation and natural ventilation solutions to meet the needs of architects, contractors, building services engineers and facilities managers worldwide. Further information on SE Controls' products, solutions and projects can be obtained by visiting [www.secontrols.com](http://www.secontrols.com) or calling 01543 443060.

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