



Passivent Helps Create Sustainability at Community School

The £3.1 million first phase of London Borough of Barking and Dagenham's building programme to improve the borough's schools has begun with the completion of a sustainable, state-of-the-art Technology & Art Centre.

Central to the environmental ethos of the Centre, at Dagenham Park Community School, is the use of passive stack natural ventilation, to maintain a draught-free internal environment that remains at a pleasant temperature despite the heat generated by occupants and the technology including 17 computers, CAD-CAM systems and laser cutting equipment.

The whole ventilation system for the three-storey building has been designed and supplied by Passivent Ltd, one of the UK's leading natural ventilation companies and a member of the EC- EU funded NatVent™ programme.

Ventilation Strategy

For the ground and first floor, passive stack ventilation provides fresh air drawn

in through two high level Aircool ventilators on the exterior wall of each of the eight deep plan classrooms.

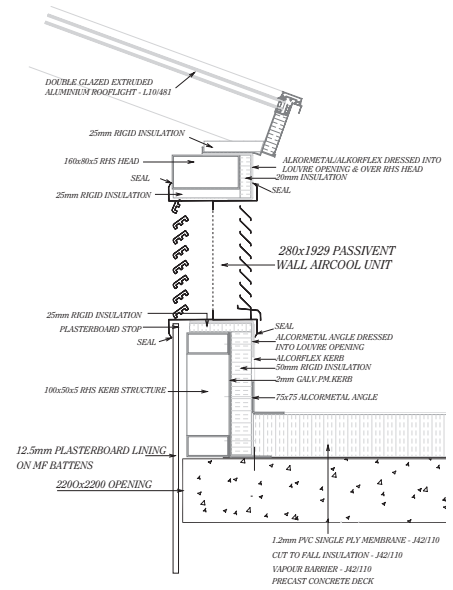
Warm, stale air driven by wind pressure and buoyancy effect is then extracted via a motorised insulated damper into builders' stacks at the rear of each classroom.

Thermostatically controlled Passivent Aircool units open automatically to draw replacement, fresh air into the building achieving penetration depths of five times the floor-to-ceiling height. Daytime heat build-up is also automatically dissipated

through the units at night.

The builders' stacks are ducted into pairs for a ground and first floor classroom and vent through four roof mounted High Capacity Terminals (HCTs), which combine high airflow capacity with low airflow resistance, and with the Aircool units provide effective ventilation for all eight classrooms, minimising the number of roof penetrations and maximising efficiency.





The four second floor art rooms are again ventilated by two Aircool ventilators each, but the "used" air exhausts through four Aircool units integrated into the upstand of the building's architectural rooflight, minimising the ventilation system's impact on the building design and aesthetics.

To further maintain the lines of the building, the atria and stairwells are ventilated by 16 additional Aircool units.

Controls



All the Aircool ventilators are controlled by Passivent's Enhanced Digital Control system, which allows the ventilation rate to be varied automatically according to the ambient temperature and air quality in each classroom along with a comprehensive a night cooling programme to help prevent overheating in warmer periods. Manual over-ride controls in each classroom give occupants the ability to regulate the ventilation as required.



Passivent is a member of the NatVent™ EC/EU funded research project co-ordinated by the Building Research Establishment to develop practical, natural

ventilation solutions for commercial building. Naturally ventilated buildings typically use less than half the energy of air conditioned buildings, and reduce both capital and maintenance costs. Natural ventilation is also proven to improve occupant performance and reduce incidence of sick building syndrome. Passivent is the only natural ventilation supplier to offer a 12 years insurance backed design and product warranty