

Case Study - Early Education Centre, Walthamstow, London



Smith's fan convectors transform pre-school into warm and welcoming place of learning



Background

Early Education Centre operates 4 pre-school facilities in the Walthamstow area of London. All of the pre-school nurseries provide Ofsted registered, approved and funded childcare by the London Borough of Walthamstow to children aged 6 months to 5 years.

The Saint Saviour's facility was acquired by the Early Education Centre in 2013. The building dates back to 1903 and is a former Church Hall sited adjacent to Saint Saviour's Church. As church attendances declined the Church Hall, which was used as a Sunday School, fell into disrepair and became dilapidated.

The new owners repurposed the building when they acquired it in 2013 and they retained the charm and the key features of the building including the parquet flooring in the ante rooms, corridors and offices and retained the sprung (for dancing) maple floor and stage in the main hall. The original wooden doors and panelling were also retained. The original heating for the Church Hall were gas-fired heaters dating from the 1950's and 60's and these were replaced in 2013 by more traditional radiators which were located along the walls, taking up valuable teaching space. The radiators proved to be very inefficient because they had to be turned down to setting number 2 on the thermostatic radiator valves so that the radiators weren't dangerously hot-to-touch for the children. Consequently, the teaching space never got any hotter than 17°C. The walls of the building are so thick that the space didn't get warm enough. The only upside was that even in high-summer the temperature remained a constant 17°C too.

The Challenge

The building needed a solution for the heating system that would be sympathetic to the history and features of the building as well as being both efficient and able to provide effective heating all-year round. The existing solution of wall-mounted radiators was unsatisfactory as it was unable to provide enough heat to heat the space, partly because the radiators couldn't be run at their maximum because of the risk to children from burns. Whilst the thickness of the walls provides welcome respite from the heat of summer they trap in cold air and make the room become difficult to heat in the winter. The space to be heated is also a factor for consideration with a high vaulted ceiling.

The Solution

Working with the contractors and owners, Simon Butcher, Senior Technical Manager for Smith's Environmental Products developed a solution that would overcome all of the heating issues the facility experienced. The solution Simon selected to overcome the issues with the Church Hall's particular problems was a heating system comprised of Smith's Caspian and Ecovector High Fan Convectors. Being able to be sited high up on the ceiling the Caspian UV fan convectors could heat the room efficiently when needed. Proportional Heat Output Controllers (PHOC) were installed in the Caspian fan convectors to modulate the fan speed of the Caspians to ensure a speedy heat up first thing in the morning when the most heat is required. The PHOC were set to operate the fan speed at maximum when the room temperature falls below 15°C, and as the room temperature increases the fan speed modulates so that when the children and staff are in the room the fan speed is very low and inaudible maintaining the required set temperature of 21-22°C. RF thermostats were installed in each room to allow full control of the heating.

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Mahf Ambia | Director of the Early Education Centre



The four Caspians in the main hall were painted by Smith's in a RAL colour sympathetic to the décor and features of the Church Hall. The Caspians were located high up on the ceiling releasing the wall space for teaching activities and the surface temperature of the emitters was no longer a concern to the teaching staff. The positioning of the Caspians on the ceiling enabled an even distribution of the warm air so that a more even temperature was achieved. The location of the Caspians also contributed to the destratification of the air by drawing in the warm air from the room as it rises towards the ceiling. A fifth Caspian UV fan convector painted in standard RAL 9010 was located in the office.

Above the doors Smith's Ecovector High fan convectors were used to prevent heat loss when the door to the outside or the corridor was opened. A Smith's Ecovector High was also used in the baby room.

Mahf Ambia, Director of the Early Education Centre says 'never has the hall been as warm as now, we've never been able to get the temperature beyond 17°C because of the thick walls'

Products

Smiths' Caspian fan convectors have been specially developed for a wide range of applications in larger spaces and commercial environments. With the ability to rapidly heat large areas at low cost, Caspian fan convectors are both practical and energy efficient. They can be also installed in an adjacent room, or storage cupboard, with the warm air outlets positioned at the rear of the appliance and ducted into the adjacent room such as a sports hall or even a narrow corridor, permitting an obstruction free wall space. They can also be supplied in any colour to meet the demands of the installation location. Fully compatible with renewable energy technology, such as heat pumps, Caspian can also enhance your environmental credentials.

Smith's Ecovector High fan assisted heaters (hydronic) provide effective and dependable heating for both small and large commercial areas, fitted unobtrusively above head height. They work particularly well in shops and libraries, where lower wall space is limited. They are compatible with most types of wet central heating systems, functioning equally efficiently with conventional boilers, biomass technology or heat pumps. Ecovector is also available as Ecovector Low, and Vertical. Ecovector Low fan convectors provide warmth from the floor upwards and are more energy efficient and effective than radiators. Ecovector Vertical is ideal for those hard to heat places, such as reception areas and alcoves

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