

# Case Study - Stoneleigh Baptist Church, Epsom



Smart Control versions of Caspian fan convectors and an Ostro air curtain provide efficient and effective controllable heat to an Epsom Church



## Background

Stoneleigh Baptist Church in Epsom, Surrey was built in 1962 to replace the original church built in 1935. In 1998 further development work was completed to meet future requirements.

The buildings now serve a varied use and the existing heating no longer provided either the flexibility or the levels of heat needed to create a welcoming environment for the visitors. The space is quite large and is often only small areas are in use at any one time.

The existing heating was provided by Reznor units installed within a pitched roof void and the warm air was then ducted out to various areas of the church. The Reznor units were quite old and had failed.

## The Challenge

Initially the plan was to replace the Reznor units with something of a similar size. The original solution was to have installed a coil and fan arrangement within the existing ducting thereby using the existing heat only gas boilers to provide hot water to the coils via a low-loss header and multiple pumped circuits.

Simon Butcher, Senior Technical Services Manager at Smith's Environmental Products was contacted by the Contractor, Adrian Fuller of Fuller Heating in Epsom, to investigate the options to satisfy the requirements of the client. Whilst the survey was being carried out it became evident that the proposed solution of a Fan Coil Unit would not be suitable and that the existing ducted warm air system did not distribute warm air very successfully.

## The Solution

Simon Butcher and Adrian Fuller decided the most suitable solution was to install Caspian SL180 fan convectors on the walls at a height of 2.2m-3m above the floor. These fan convectors can provide up to 18kw heat output (at Flow Temp 75°C) and 3 units were placed on the wall in the main church, 2 units on the wall in the sports hall and 1 on the wall in the foyer. By placing the Caspian SL fan convectors on the wall in each of the rooms they do not take up space at floor level which is useful where space is at a premium or can interfere with activities especially in the sports hall. Placing them high up also moves them out of harm's way so they cannot be tampered with. Caspian fan convectors can heat large spaces quickly when needed.

To complement the Caspian fan convector in the foyer an Ostro air curtain was located above the door to the outside. Ostro provides a vertical stream of warm air across the door opening to prevent heat loss from the foyer when the door is opened. At busy times this will really make a difference in retaining heat in the foyer.

As part of the brief there was a requirement to enable the different areas of the site to be heated only when needed and to fulfil this need Smith's Smart Control was included in the project.

Smart Control was included in the Caspian fan convectors as well as the Ostro air curtain. Smart Control allows each of the different spaces to be heated individually thereby avoiding the waste of energy and therefore money. A further benefit of the Smart Control system is that it can manage the heating precisely meaning when the space is needed to be heated the Caspian's run at maximum heat output then when the set temperature is reached the Caspian's modulate to run very quietly maintaining the set temperature.

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Smart Control also enables the remote monitoring and control of the heating system via an app so that site visits by the facilities manager are not required. Remote diagnosis of potential problems can also be carried out by the contractor.

Finally, Smith's attended site to assist with the final programming of the Smart Controls and wrote the rules to determine when the zones would operate and subsequently shut down.

Overall the installed solution achieves exactly what the client required as well as adding the capability to monitor and manage the heating system remotely.

### Products

The Smith's SMART Control has been developed to integrate several of the most commonly sought-after control features into one control unit and more. At the basic level it offers room temperature control and additionally offers a range of time controlling features too, making it perfect for buildings that serve a varied community demand.

The SMART Control can automatically control the fan speed of the Caspian fan convector, and other equally equipped Smith's products, adjusting it in relation to the air temperature in the room providing a fast heat up period when required, and the quietest possible operation during occupied periods.

It is possible to have master and slave Caspian fan convectors that integrate the entire range of EC Caspian products. The thermostats can be used as standalone localised controls, or with the integration of our hub control multiple thermostats using our ZigBee platform and controlled via app over the internet. This level of control is cost effective and is far more economical than using a full BMS system. The control system with the app is very configurable to the needs of the

building users and can integrate with many other smart features, like boiler receivers, door, and window sensors. A key advantage to many community buildings is the ability to control the buildings' services remotely and the app makes this all possible.

Smith's SMART Control can become a part of a much wider control system in a building. It is possible to integrate wireless relays to control other appliances like boilers, along with proximity sensors to control lighting. The system can be expanded in many ways and the app can interact with other apps using IFTTT. The only limit is the creativity and willingness to embrace new technologies.

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.

Ostro is a range of commercial air curtains designed for use in the entrances of shops, offices, leisure facilities, hotels, schools, hospitals and most other public buildings. Ostro is available in 3 versions – hydronic, electric and ambient and available in heat outputs up to 40kW.

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