

Press Release  
October 13<sup>th</sup> 2014

## Fire safety and comfort cooling from SE Controls for new London apartment development

***A six-storey apartment development in North London is using an innovative smoke control system from SE Controls to not only provide smoke-free escape routes in the event of a fire but also ensure that day-to-day temperatures in communal areas and corridors are kept at comfortable levels for residents.***

The Notting Hill Housing Group's 108-home development at Micawber Street in Hackney was handled by Ardmore Construction, which included the demolition of existing buildings and the construction of the new residential block, which also incorporates more than 2,500 m<sup>2</sup> of commercial floor space.

Initially, the building was designed with a mechanical ventilation system and a separate dedicated environmental shaft to help cool the building and address the overheating effect in multi-storey buildings, caused as a by-product of routing heating distribution pipework in building voids to optimise space.



SE Controls was invited to evaluate this system by conducting a thermal modelling analysis on the building and the results showed that it provided negligible cooling benefit, reducing temperatures by just one degree Celsius on only a few days in the year.

Working closely with the design team and Ardmore Construction, SE Controls engineered a combined smoke control and environmental solution, based on its SHEVTEC® system, which uses the existing smoke shafts to provide significant thermal performance improvements and enabled major cost savings to be made on the project.

SE Controls incorporated additional automatic opening roof vents and lobby vents into the design, allowing the smoke shaft is to be utilised as a fresh air natural ventilation system, which enables the lobby and corridors to be cooled and avoid overheating. This is achieved by the use of 0.5 m<sup>2</sup> permanently open louvres at roof level and within the stairwell, while also utilising the automatic smoke dampers on each floor to vent heat into the smoke shaft. Larger automatically opening roof vents, dedicated to the smoke ventilation system, were also installed and enable the natural ventilation system to be over-ridden automatically in the event of a fire.

In normal day-to-day operation, the natural ventilation design allows air to enter through the lobby doors, which are held open by electro-magnetic devices and flow across the lobby before being exhausted through the roof vents, with the lobby temperature being controlled by a tamper proof thermostat.

If a fire should occur, the lobby doors close automatically along with all the smoke dampers, except the one located on the fire floor. This allows smoke to be drawn from the corridor, through the smoke shaft and away from the stairwell to ensure a smoke free escape route is maintained.

The entire system is controlled by networking the smoke ventilation system's smoke dampers on each floor with SE Controls' OS2 controllers incorporating OS link network cards. In addition, the system also incorporates an SE Controls NVLogiQ room controller in the first floor lobby core to monitor and log the system's performance for future analysis and tuning.

Dr Chris Iddon, SE Controls' Design Manager, explained: "Corridor and building overheating, particularly in multi-storey residential projects, is a key issue, as buildings become more airtight and the location of heating pipework in communal areas creates potentially uncomfortable levels of thermal gain, which can reach well in excess of 30 degrees C. In order to determine the most effective methods and provide a solution to this problem, we have carried out extensive studies and dynamic modelling of various ventilation scenarios, which show that natural ventilation is an effective solution to mitigate overheating risk."

He added: "Also, dedicated cooling systems wouldn't necessarily be considered for circulation spaces due to plant, installation and running costs for what are essentially non-profitable spaces. As smoke control systems are already a legal requirement within these spaces, our expertise can be used to adapt them to address both smoke and natural ventilation needs in a single, more economical solution. In addition, it can also be retro-installed to buildings with a smoke control system that are experiencing overheating issues with minimal disruption."

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 +44 (0) 1543 443060.

**Ends**