Project Profile

'The Burlian, Mayfair, London'

Application: Smoke Location: Europe Sector: Commercial 251.514375-0.1463618

CONTROLS

BACKGROUND

The Burlian, centrally located in London, integrates high-end retail and office spaces across seven floors covering 37,414 sq ft. Retail occupies the ground and first floors, while offices span floors 2 to 7, complemented by a private rooftop terrace garden.

SE Controls played a key role in The Burlian's redevelopment, providing expertise in designing, supplying, delivering, installing, and commissioning a comprehensive smoke control system. The system, anchored by the OS2 SHEVTEC Controller, ensures high efficiency and controllability using powered fans for smoke extraction.

Mechanical smoke ventilation systems suit large multi-story buildings like The Burlian, optimising safety in areas with longer escape routes.



AT A GLANCE Product Focus

3kW-11kW Variable Speed Fan Control Panel

The SE Controls Variable Speed Fan Control Panel is a fixed modular design that is built and tested to provide a method of operating a single 400 V three-phase 50Hz duty/standby fan arrangement.

Pressure Sensors

This differential air pressure transmitter is engineered for ventilation, fan speed control, air pressure monitoring, and control system integration.

OS2 SHEVTEC Controller

The OS2 SHEVTEC Controller operates on 24V dc, specifically engineered to operate 2-wire 24V dc actuators in a smoke control system.

Manual Control Points

The MCP allows the Fire & Rescue Service to manually override the Smoke Control System via an accessible interface with open and close/reset buttons.

Repeater Panel

The SHEVTEC Repeater Panel provides system status information for each vent in a smoke ventilation system.

SECO Ni Folding Arm Actuator, Roller

This actuator is designed for outward-opening doors, offering concealed closures and fixed bracket options, with data logging capability for precise operation recording.

CHALLENGE

In a typical project, a roof vent AOV positioned at the stair's head is initially used for replacement air in the mechanical extract system. However, our in-house CFD model revealed that this setup wouldn't provide sufficient air volume to meet the required pass criteria.

To address this challenge, a vertical inlet fan assembly was deployed at the head of stair to deliver the necessary air volume and control replacement air using pressure control sensors and variable speed inverters.

This setup allowed the stairwell to be partially pressurised until stair doors leading to the lobby areas were opened. At that point, the extract fans at the head of the smoke shaft serving the lobby area were accelerated in speed, while the inlet fan was modulated simultaneously.

To ensure minimal impact on the aesthetics of the high-end rooftop garden, the inlet fan was seamlessly integrated into the surrounding structures, taking into account Construction (Design and Management) Regulations (CDM).

SOLUTION

- With over 4 decades of experience, the SE Controls team was brought in for consultation, design, installation, and commissioning of a compliant smoke control system.
- The OS2 SHEVTEC Controller manages two-wire 24V dc actuators in the system, operating on 230V with 8A power output.
- The mechanical smoke shaft connects all floors, ensuring a clear escape route preventing the rapid spread of smoke witin the building, prioritising safety and fire containment.
- The stairs are equipped with pressure sensors to modulate fan speeds for door opening forces within 100N; Folding Arm actuators at stair bottom and exit routes provide inlet air.
- Kamouflage AOV Smoke Damper discreetly hidden in the lobby partition wall, offering 2-hour fire resistance.
- The SE Controls team developed a solution using a 45mm Geotec board sleeve with a 2-hour fire rating around the shaft. This allowed for the damper to be installed, perfectly aligning with the partition wall and minimising any surrounding gaps.
- SE Controls 3kW-11kW Variable Speed Fan Control Panels externally installed at roof level to control duct-mounted fans, and will exhaust smoke when required and regulates pressure sensors in stairwells.



SE Controls 3kW-11kW Varaible Speed Fan Control Panels controlled duct mounted fans located on the roof of The Burlian



SECO Ni Folding Arm Actuators were installed on stair fire doors to automatically open in the event of a fire, providing additional replacement air

SE Controls integrated additional products to enhance system monitoring capabilities at The Burlian:

- Manual Control Points (MCPs) strategically placed within the building allow emergency services to manually operate the smoke control system during emergencies.
- A SHEVTEC Repeater Panel, positioned near the emergency services entrance, provides quick access to system status information for each vent in the smoke ventilation system. Under normal conditions, this panel supports regular maintenance and troubleshooting of building services.
- Furthermore, the system incorporates SE Cloudlink technology, enabling remote management of the smoke control system at The Burlian. This technology facilitates prompt issue resolution, performance monitoring, and service addressing, reducing the need for costly site visits and demonstrating proactive management of life safety systems to enhance building compliance.



A Kamoflage AOV Smoke Damper was installed in the Lobby area, seamlessly integrated into compartment walls while maintaining EN12101-8 certification. Its exterior plasterboard panel allows for decorative finishes that complement the Lobby's décor.



For over four decades, SE Controls has been a pioneer in the development of innovative control systems that harness sustainable natural elements resulting in safer and healthier indoor environments.

Our product range undergoes rigorous testing in accordance with the relevant EN12101 harmonised suite of standards for smoke control compliance. Furthermore, our designs adhere to the guidelines outlined in the BS7346-8 Code of Practice ensuring comprehensive planning, design, installation, commissioning, and maintenance of Smoke Control Systems.



THE RESULT

Despite facing challenges throughout the project, the implementation of a fully compliant smoke control system at The Burlian was successfully achieved. This ensures peace of mind for building occupants.

In the event of a fire on any floor, the smoke control system will automatically activate to clear smoke, facilitating the safe evacuation of occupants and assisting emergency services in swiftly locating and managing the fire.

COMMUNICATION

Right from the outset, establishing effective communication channels for the project was essential, especially as two Architects were simultaneously working on different parts of the development. One Architect oversaw the refurbishment, while the other managed the terrace garden.

Through regular Design Meetings, the SE Controls team consistently met the requirements of both Architects. The dedication to the principle of 'from concept through to completion' cultivated a robust working relationship.

This close partnership enabled a smooth and efficient installation and commissioning process for the smoke ventilation system at this prestigious site.

BENEFITS OF THE SYSTEM

When it comes to smoke ventilation, opting for a mechanical system, like the one installed in The Burlian, offers several distinct benefits compared to a natural system.

One significant advantage lies in the system's high efficiency and controllability, achieved through the incorporation of powered fans for smoke extraction in corridors and lobby areas.

This ensures a swift and effective removal of smoke, enhancing the safety of occupants.

Moreover, mechanical smoke ventilation systems are particularly suitable for larger multi-story buildings, like this with longer travel distances, providing a superior means of escape.

PRODUCT INFORMATION & IMAGES







OS2 SHEVTEC Control Panel

3kW-11kW Variable Speed Fan Control Panel





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Repeater Panel

SE CLOUDLINK

SE Cloudlink is an innovative solution that offers detailed and continuous system status interrogation. This comprehensive system enables SE Controls Engineers to efficiently deliver planned and corrective maintenance directly to The Burlian's installed smoke ventilation system.

Click on the Cloudlink logo for more information.

THE FINAL WORD

Josh Bloomfield, Project Manager at SE Controls said of the project:

"The working relationships forged with all parties made this project a joy to be involved in, and I am very happy with the final result. The system components blend seamlessly into the aesthetic finish while still performing as designed. Many thanks to the teams involved in this project from design, through to system handover."

Further information on SE Controls bespoke solutions, and projects may be found via e-mailing <u>sales@secontrols.com</u> or by calling (0)1543 443060.

SE Controls has NBS clauses and BIM Objects available on NBS Plus, BIM Object, and at http://secontrols.com/BIM