Project Profile

‘Delivering for Lincoln Maternity Hospital’

Application: Smoke **Location:** Europe **Sector:** Healthcare 53.233575 -0.519635

BACKGROUND

Lincoln Maternity Hospital is part of the United Lincolnshire Hospitals NHS Trust which serves the city of Lincoln and the surrounding area.

In early 2020 following a fire safety inspection the Trust was asked to incorporate staircase smoke ventilation on the 6th and 7th floors as part of building refurbishment work.

The SE Controls team was bought in at the inception of the project to advise on the best solution for this.

Reaching out to their supply chain and working with a third-party contractor, Parker Technical Services, they advised on a solution which would deliver a cost-effective, fully compliant installation.

AT A GLANCE

Product Focus

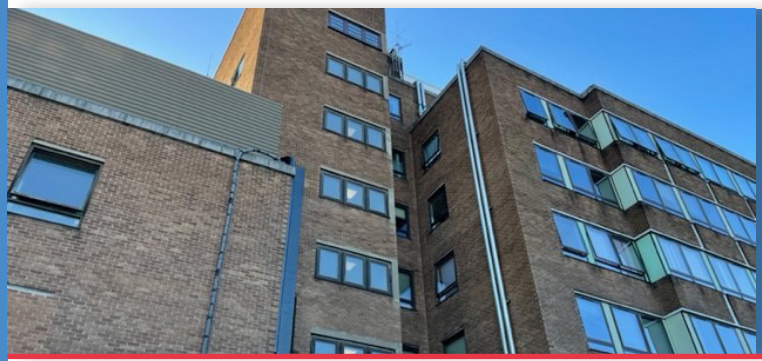
Glazed Louvre
A glazed louvre may be adopted in place of a hinged NSHEV from the same façade system when the AOV is in a reveal that obstructs the free area of a hinged AOV.

OS2 SHEVTEC Controller
The OS2 SHEVTEC Controller operates from a 230V AC 5A supply delivering up to 8A to drive 24V motorised actuators and magnetic catches. To ensure continuous operation in the event of mains supply failure 72-hour battery backup is provided.

Watch OS2 SHEVTEC overview video

Standard Manual Control Point (MCP)
The manual control point (MCP), provides open and close/reset operation in addition to system status LEDs and system monitoring to meet the requirements of prEN12101-9 (OSLoop only)

Tamperproof Manual Control Point (MCP)
Designed to eliminate nuisance activation of the Smoke Control System, whilst delivering the full functionality of an MCP in accordance with pr EN 12101-9.



CHALLENGE

To meet the requirements of the fire safety report as well as deliver a cost-effective, yet compliant solution to the need for effective smoke ventilation on the 6th and 7th floors of the building.

Outside view of the Lincoln Maternity Hospital

SOLUTION

A key component of the installation is the glazed louvres designed to vent smoke from the building in the event of a fire. In this installation, they activate automatically via a volt-free signal from the fire alarm.

Each individual installation is controlled via an OS2 SHEVTEC Controller mounted locally to the window and linked to the buildings fire detection system.

A Tamperproof MCP is located at the head of the stairwell which allows the louvres to be reset from an activated state or tested locally open and closed via an engineer’s key.

Along with this Tamperproof MCP, a Standard MCP is also located at the Fire and Rescue Service access level to allow for control of the louvres and vent smoke from the floors to not only facilitate the rapid location of the source of the fire but also create a safe exit for occupants should it be required.

A STRAIGHTFORWARD PROJECT?

At first glance this appears to be a straightforward project, however, it created additional challenges for the team in several areas some of which were unprecedented.

First, the timing of the project coincided with the start of the COVID Pandemic in 2020 and the lockdowns which followed meant the site was closed with the project being put on hold on more than one occasion.

The location of the installation on the 6th/7th floor of the building meant the team was working externally at a height of 30+ metres. This required additional working at height safety measures along with the introduction of specialist equipment, a truck-mounted cherry picker, for instance to the project.

On several occasions, the 'Great British Weather' intervened with high winds resulting in working at height and the operation of the cherry picker having to be curtailed until it was safe to resume installation.

Along with these challenges, it should also be remembered that the team was working in a Hospital environment. This meant that much of the installation had to be conducted at the weekend with noise and movement around the site being kept at a minimum.

With these challenges regular two-way communication was essential in ensuring delivery of the project to the satisfaction of the client.

PRODUCT IMAGES

Click to enlarge

Glazed Louvre

OS2 SHEVTEC Controller

Tamperproof MCP

Standard MCP

THE RESULT

Despite the challenges of the project, the hospital staff and public have the reassurance should there ever be a fire situation the building has a fully compliant smoke ventilation system.

The installation of the glazed louvres on the 6th and 7th floor stairwells delivers three key benefits:

- Provides effective smoke ventilation and heat extraction within a high wind environment.
- Increases natural daylight within stairwells.
- Provides both thermal and weatherproofing when compared to the traditional timber windows delivering potential cost savings.

Smoke Control Damper & Tamperproof MCP in situ

SE CONTROLS

For the past 40 years, SE Controls has been at the forefront of the development of innovative control systems that harness sustainable natural elements creating safer, healthier indoor environments.

Our product range is tested in accordance with the relevant EN12101 harmonised suite of standards for smoke control compliance and designed in accordance with BS7346-8 Code of Practice for planning, design, installation, commissioning, and maintenance of Smoke Control Systems.

The new face of Lincoln Maternity Hospital

COMMUNICATION

Each project team incorporates dedicated project administration, coordination, and installation resources. This ensures the client receives consistency and the highest levels of customer service and delivery management throughout the project.

SE Controls worked closely with the M&E Contractor Parker Technical Services to ensure the installation and commissioning were seamless throughout the project.

BENEFITS OF THE SYSTEM

From a fire safety point of view, hospitals are seen as complex buildings.

Not only are they occupied by vulnerable people, but there is the potential for fire risks from either electrical equipment or hazardous waste. It is therefore essential that escape routes are visible and smoke damage to the building is reduced.

From a safety point of view:

- The installation of the louvres is seen as an aid to evacuation by helping clear stairwells in the event of a fire, so creating a safe means of escape.
- By improving viability, reducing smoke and harmful gases, rapid smoke venting also allows the emergency services to trace and tackle the fire as early as possible.

From a cost point of view:

- Initial installation is shorter than traditional windows meaning reduced labour cost.
- Easy to maintain when compared to the traditional timber windows, so reducing the whole life cost of the building.

From a performance point of view:

- Provide noise reduction, the thickness of the glass does not transmit sound particularly well.

THE FINAL WORD

Billy Baines, Project Manager, Contracts at SE Controls said of the project: 'The project bought many challenges, with some being nigh on impossible to factor in at the time. However, we overcame the challenge of COVID and the 'Great British Weather; and focused on delivering for the customer.

The whole project was, excuse the pun, 'done with surgical precision' which reflects highly on the team's ethos in delivering the highest standards of workmanship.'

He went on to add,

'Despite the challenges we built a strong relationship with the team at the Trust whilst onsite which really helped with the delivery of the project. With everything we had gone through on this project, it was really satisfying to see it all come to fruition.'

Further information on SE Controls products, bespoke solutions, and projects may be found via e-mailing sales@secontrols.com 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