STANDARDS THAT ARE FAR FROM STANDARD

CASE STUDY

OUNDLE SCHOOL | EDUCATION

fds consult

CASE STUDY - OUNDLE SCHOOL | EDUCATION

Located in the picturesque market town of the same name, Oundle School is an independent school for day students and boarders that encompasses a diverse range of buildings – some contemporary, some dating as far back as the 17th century – which are spread around the town. As part of a refurbishment programme, the school was building a new Science & Technology Centre combining teaching space and a learning resource centre (LRC), which includes a library and an IT centre. The architectural design of the Science & Technology Centre would have required a costly sprinkler system in order to comply with code so FDS Consult's expert team was brought on board to apply a creative approach to the project's fire strategy and gain approval without a sprinkler system. The innovative fire strategy that FDS Consult proposed saved around £1 million in construction costs, more than £300,000 of which was saved by avoiding the need for a sprinkler system.

The Science & Technology Centre at Oundle School is a four storey building (ground plus three levels) with the LRC located in the centre and classrooms to the side of this and on the storeys above it. It was this atrium-like feature that was so central to the architectural vision for the building that created issues with compartmentation sizes and meant that a code-based approach to the fire design would have required sprinklers. However, the school was not only keen to avoid this cost but also wanted to avoid losing any useable space to a sprinkler system and was concerned about the potential nuisance factor of the sprinklers being tampered with. FDS Consult's innovative approach meant that the fire strategy avoided the use of sprinklers by:

- Introducing natural smoke venting via automated doors and windows at both high and low level to minimise temperatures and extract smoke, thereby enabling larger compartmentation sizes and increasing evacuation time
- Integrating the smoke control system with the smoke detectors and fire alarm system to ensure automatic activation at the first detection of any fire
- Specifying an advanced fire detection and alarm system with remote monitoring to ensure that the fire services will be notified instantly in the event of a fire
- Utilising CFD modelling to justify smoke venting approach and compartmentation sizes

FDS Consult's value engineering expertise also enabled the removal of a staircase from the upper floors of the building, above the LRC, by adopting a creative means of escape strategy that justified a single staircase to this area. The FDS Consult team argued that a single staircase would be sufficient to escape from level three to level two and from here, if the main staircase was not available, evacuees could escape across a bridge to the staircase on the other side of the LRC. This approach not only reduced costs but also saved space and allowed the building's design to stay true to the architect's vision.

Type of project:
New Build and Refurbishment of existing school

Client:
Oundle School

Architect:
Feilden Clegg Bradley Architects LLP

fds consult