

CASE STUDY



LEICESTER SCHOOLS | EDUCATION

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As part of the nationwide, £325million 'Building Schools for the Future' programme, Leicester City Council embarked on a series of school improvement projects that involved rebuilds, extensions and refurbishments of four schools: Fullhirst, Judgemeadow Community College, Soar Valley and Beaumont Leys. The projects coincided with the changeover from Approved Document B to BB100 for fire safety design in schools, which saw a greater emphasis on the specification of sprinkler systems for school buildings. In order to help reduce the cost of the projects, FDS Consult's value engineering expertise was brought in and the company applied its innovative fire design approach to the four schools, generating total cost savings in excess of £1 million.

At Fullhirst school, the project involved a substantial extension that would more than double the size of the original school building, with the new build element of the scheme wrapping around the old building, which was also being refurbished as part of the programme. Using the team's creative approach to value engineering, FDS successfully justified the removal of the sprinkler system from the specification by:

- Introducing a natural smoke control system to offset the need for sprinklers
- Using CFD (Computational Fluid Dynamics) modelling to demonstrate that smoke spread would be inhibited due to the smoke venting system
- Increasing sub-compartmentation in the original part of the building to inhibit the spread of fire and smoke
- Ventilating part of the old building into the new extension to improve smoke clearance in the event of a fire in the original part of the building

While the open plan layout and architectural style of the remaining three schools made it advisable to retain the sprinkler systems in these environments, FDS Consult's experienced team was able to help the client make cost savings by downgrading these systems wherever possible. FDS Consult worked with the architectural design of each building to reduce the specification whilst enhancing safety and the FDS team's value engineering and fire design expertise delivered further cost savings and safety improvements by:

- Justifying extended travel distances to avoid the need for additional staircases and exists
- Improving the means of escape and developing a means of escape strategy to identify key exit routes and assist management and occupation

- Optimising compartmentation to avert the cost of smoke venting to floors voids
- Using CFD modelling to justify creative approach to fire strategy

Type of Project: New build & refurbishment

Client: Miller Construction

Architect: Aedas Architects

