

# Fire protection

## AQ3000 case study

### Escape routes in residential apartments

#### Project

Redevelopment of former Victorian Print Works, Stratford Upon Avon, England

#### Fire risk analysis

A small prestigious development, including three contemporary town houses, eight stylish apartments, and three luxurious penthouses complete with roof garden. The Architects had designed open plan mezzanine floors for the penthouses. To satisfy the requirements of building control, it was decided to look at the possibility of installing modern residential sprinklers to protect the escape routes from each of the mezzanine floors.

#### Further information

Tel.  
+44 (0)121 693 6888  
Fax  
+44 (0)121 430 6007  
E-mail  
mail@autoquench.co.uk

#### Internet sites

[www.autoquench.co.uk](http://www.autoquench.co.uk)



#### Solution

An analysis of the escape route from the mezzanines showed that the area would be adequately protected using 3 or 4 concealed sprinklers. A scenario was envisaged where up to two sprinkler heads might operate to control a fire requiring a water flow rate of 84 litres per minute (42 lit/min per head).

Design calculations were made to establish the water flows and pressures through the proposed scheme. The results showed that a supply of 3 bars would achieve this flow through 25mm pipe work at the sprinkler heads. A check with the local water authority confirmed that the pressure in the 3" street main was in excess of 3.6 bars, and would therefore be suitable.

