



West Yorkshire Fire and Rescue Service (WYFRS) attended a very serious fire incident at a residential block of flats in Leeds City Centre where significant fire spread from the flat of origin into the common corridor (second floor) then to several upper floors of the building through the natural smoke ventilation shaft system. The fire spread from the flat into the common corridor because the flat entrance fire door was left in the open position after the occupant of the flat made their escape (there was no self-closing device fitted to the door).

WYFRS want to inform the Responsible Person(s) (RP) in control at these types of premises about this fire incident and advise them about measures to take which will prevent similar incidents.

The spread of this fire seriously affected the evacuation of residents and subsequent firefighting operations and the reason for the severity and spread of this fire was due to the smoke ventilation shaft being designed/programmed incorrectly which allowed opening of multiple floor Automatic Opening Vents (AOVs) fitted to the smoke shaft spreading the fire and hot gases to floors above the fire floor.

Investigations suggest that the reason for multiple floor AOVs opening was because smoke entered the upper floors from the smoke shaft (possible leakage through the AOVs). Automatic smoke detectors linked to the smoke control system located on the flats corridors detected smoke and opened those upper floor AOVs.

Fire safety guidance states that the operation of smoke ventilation shaft systems should operate such that upon detection of smoke on the floor of fire origin only the AOV on the fire affected floor opens at the same time as the vent at the head of the smoke shaft and if required the staircase vent. **All other floor/corridor vents should remain closed even if smoke is subsequently detected on floors other than the fire floor.** The cause and effect operation of these smoke ventilation systems should be programmed so that following the first activation (AOV on the fire floor opening) all other AOVs should be configured to remain closed. This also applies where fire and rescue service override controls are provided these controls should not permit multiple floor vents to open simultaneously.

Therefore WYFRS request that the RP in control in buildings where these systems are provided undertake checks to establish how their systems operate. Where necessary, action should be taken to ensure that the systems operate in the manner as detailed above and ongoing through the life of the system during regular maintenance and testing schedules.

Checks should also be made to ensure fire doors (including flat entrance doors) protecting the means of escape are fitted with self-closing devices that operate correctly to reduce the risk of fire spread. Ongoing regular management checks should be undertaken by the RP for the common areas.

In order to correctly fully test the system and to confirm the system works as detailed above follow this procedure:

- 1) Actuate a lobby or corridor detector;
- 2) Check that the smoke shaft vent (AOV) opens only on that floor, the vent at the head of the shaft, vent at the base of the shaft and vent at the head of the stair opens if appropriate;
- 3) Without resetting the system proceed to another floor and repeat the test, nothing should happen i.e. no AOV should open;
- 4) Repeat as you feel necessary, to have a good sample;
- 5) Again without resetting the system, find a floor vent override switch and activate, again nothing should happen;
- 6) Have the system reset; any vents that opened should close now;
- 7) Where doors are used as AOVs check all doors are close fitting and have intumescent strips and smoke seals fitted.

The following guidance documents make it clear that these systems should operate in the manner detailed in this letter:

- 1) *Guidance on Smoke Control to Common Escape Routes in Apartment Buildings (Flats and Maisonettes) produced October 2015 by the Smoke Control Association Clause 6.2.7.1;*
- 2) *Approved Document B Volume 2 Paragraph 2.26 (b) (iv);*
- 3) *BS 9991:2015 Fire safety in the design, management and use of residential buildings Clause 14.2.2.4.*

If you would like to discuss the contents of this letter please contact West Yorkshire Fire and Rescue Service Fire Protection Office on Tel: 0113 3875738 or email fire.safety@westyorksfire.gov.uk